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February 21, 2023

VIA ELECTRONIC FILING

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Re: Docket No. PCN 5 – In the Matter of Idaho Power Company’s Petition for Certificate of Public Convenience and Necessity.

Attention Filing Center:

Attached for filing in the above-referenced docket is Idaho Power Company’s Reply Testimony and Exhibits of Christopher W. Lautenberger (Idaho Power/1300-1311).

Please contact this office with any questions.

Thank you,

Alisha Till
Paralegal

Attachments

DOCKET PCN 5 - CERTIFICATE OF SERVICE

I hereby certify that on February 21, 2023 Idaho Power Company's Reply Testimony of Christopher W. Lautenberger was served by USPS First Class Mail and Copy Center to said person(s) at his or her last-known address(es) as indicated below:

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Alisha Till
Paralegal

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

DOCKET PCN 5

In the Matter of)
)
IDAHO POWER COMPANY'S)
)
PETITION FOR A CERTIFICATE OF)
PUBLIC CONVENIENCE AND)
NECESSITY.)
_____)

IDAHO POWER COMPANY
REPLY TESTIMONY
OF
CHRISTOPHER W. LAUTENBERGER

FEBRUARY 21, 2023

Table of Contents

I.	INTRODUCTION.....	1
II.	BACKGROUND REGARDING REGULATORY FRAMEWORK FOR CONSIDERATION OF WILDFIRE RISK AND MITIGATION.....	4
III.	RISK ANALYSIS	10
IV.	EFSC PLANS RELATED TO PREVENTING FIRE	24
	A. Fire Prevention and Suppression Plan.....	25
	1. Safety Measures During Construction	25
	2. Safety Measures During Operation.....	31
	B. Right of Way Clearing Assessment.....	33
	C. Vegetation Management Plan	34
	D. Coordination with Fire Response Organizations	39
	E. Wildfire Mitigation Plan.....	42
V.	RESPONSE TO INTERVENOR TESTIMONY.....	46
	A. Assertions Regarding the EFSC Process.....	47
	B. Assertions Regarding Idaho Power’s Analysis of Fire Risk	47
	C. Assertions Regarding Soil Impact	56
	D. Assertions Regarding Local Fire Departments	57
	E. Assertions Regarding Other Powerline-Related Fires	59
	F. Other Assertions	61

Exhibit List

- Idaho Power/1301 - Curriculum Vitae of Christopher W. Lautenberger
- Idaho Power/1302 - Idaho Power's Response to Staff Data Request No. 26 – Attachment 1, Application for Site Certificate, Exhibit B
- Idaho Power/1303 - *In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058 (California PUC, Dec. 18, 2008)
- Idaho Power/1304 - *In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D.08-12-058, Appendix C (Dec. 24, 2008)
- Idaho Power/1305 - Snow Fire Incident Information Fact Sheet (June 5, 2015)
- Idaho Power/1306 - U.S. Attorney's Office, Dist. of Or., PacifiCorp to Pay \$3.4 Million in Civil Settlement for Ramsey Canyon Fire (June 9, 2020)
- Idaho Power/1307 - PG&E Fire Incident Data from 2014-2021
- Idaho Power/1308 – SCE Fire Incident Report Data Compiled from 2014-2021
- Idaho Power/1309 - SDG&E Fire Incident Report Data Compiled from 2014-2021
- Idaho Power/1310 - Docket UM 2209, Idaho Power Company's 2023 Wildfire Mitigation Plan (Dec. 29, 2022)
- Idaho Power/1311 - EFSC Contested Case, Deposition of Craig Kretschmer

I. INTRODUCTION

Q. Please state your name, your place of employment, and your position.

A. My name is Christopher W. Lautenberger. I am a founding partner of Reax Engineering Inc., a fire protection engineering and fire science firm with offices in Berkeley and Auburn, California, where I am currently employed as a Principal Engineer. I have been retained in this case as an expert witness on behalf of Idaho Power Company (“Idaho Power” or the “Company”).

Q. Please describe your educational and professional experience.

A. My CV is included as Exhibit Idaho Power/1301 to this testimony. I hold a BS in Mechanical Engineering and an MS in Fire Protection Engineering from Worcester Polytechnic Institute as well as a PhD in Mechanical Engineering from the University of California at Berkeley. I am a licensed California Professional Engineer in the discipline of Fire Protection Engineering. Prior to working at Reax, I was employed at Arup Fire. I have also co-taught courses in the Fire Protection Engineering Department at California Polytechnic State University.

My professional activities are presently focused on fire science and fire protection engineering. I am active in the areas of wildfire spread modeling and forecasting, wildfire risk quantification (including fires ignited by powerlines), forensic fire reconstruction, and design of fire-resistant structures in the Wildland Urban Interface (“WUI”). I have provided expert testimony at deposition and trial on more than 25 occasions on litigation matters related to both wildland and structure fires.

Q. What are your qualifications relevant to evaluating fire risk associated with utility infrastructure?

A. In addition to my experience described above, I have analyzed fire causation and spread issues associated with several large-loss powerline fires and have provided expert

1 testimony in federal and state court regarding powerline fire causation. I was a co-lead
2 (along with representatives from Pacific Gas & Electric Company (“PG&E”) and San Diego
3 Gas & Electric Company (“SDG&E”)) of a Peer Development Panel tasked by the
4 California Public Utilities Commission (“CPUC”) with developing high fire threat districts
5 that identify areas where overhead electrical utilities present elevated or extreme risks of
6 igniting damaging wildland or wildland urban interface fires. I have previously been
7 retained as a subject matter expert by several investor-owned utilities and communication
8 infrastructure providers in CPUC fire safety proceedings, and have conducted fire risk
9 modeling in support of several utility Wildfire Mitigation Plans. I am currently leading the
10 near-term fire risk forecasting and fire spread forecasting component of a \$5 million
11 research grant recently awarded by the California Energy Commission to develop the next
12 generation of wildland fire spread and risk forecasting models to improve electrical grid
13 resiliency. I also provided expert witness testimony for Idaho Power regarding the fire risk
14 and fire mitigation related to the Boardman to Hemingway Transmission Line Project
15 (“B2H” or “Project”) in the contested case proceeding before the Energy Facility Siting
16 Council (“EFSC” or the “Council”).

17 **Q. What is the purpose of your testimony in this proceeding?**

18 A. The purpose of my testimony is to respond to the assertions of several intervenors in this
19 proceeding in regard to potential fire risk and fire response planning for B2H. To provide
20 background and context for that discussion, I describe the information included as part of
21 Idaho Power’s Application for Site Certificate (“ASC”) which was approved by the Oregon
22 EFSC, and provide information regarding fire-weather conditions in the Project area, fire
23 risk associated with high voltage transmission lines compared to distribution lines, fire risk
24 during construction in comparison with fire during operation of the Project, Idaho Power’s
25 proposals to address those fire risks, and coordination with fire response agencies. I will
26 discuss Idaho Power’s most recent Wildfire Mitigation Plan, which was filed with the Public

1 Utility Commission of Oregon (“OPUC” or “Commission”) in December 2022. Finally, I
2 respond to the specific assertions made by the intervenors related to fire risk and fire
3 mitigation.

4 **Q. Please summarize your testimony.**

5 A. In the Company’s ASC—including the Fire Prevention and Suppression Plan, Right of
6 Way Clearing Assessment, and Vegetation Management Plan—and in the contested case
7 proceeding before EFSC, Idaho Power conducted extensive analysis of the potential
8 wildfire risk associated with the construction and operation of B2H. Idaho Power provided
9 expert witness testimony in the EFSC contested case proceeding addressing wildfire risks
10 and, as detailed below, the wildfire risks arising during construction are vastly different
11 from the risks during operation. My analysis, detailed below, shows that there is a low
12 probability of ignition associated with a 500 kilovolt (“kV”) transmission line like B2H.
13 Despite the low probability of a transmission line-related ignition, Idaho Power has taken
14 extensive measures to address risks during both construction and operation of the Project.
15 In this testimony, I provide a detailed explanation of Idaho Power’s analysis in the ASC
16 and Idaho Power’s conclusion that the risk of fire associated with the B2H Project will be
17 significantly reduced during operation compared to during construction. I discuss other
18 transmission line fires and show why the conditions that led to those fires are unlikely to
19 occur with the Project. Additionally, I discuss Idaho Power’s various proposals in the Fire
20 Prevention and Suppression Plan, Right of Way Clearing Assessment, Vegetation
21 Management Plan, and Wildfire Mitigation Plan that were required as part of conditions in
22 the Final Order approving the ASC and in the Site Certificate. Together, these plans will
23 mitigate the risk of fire.

24 In this proceeding, several intervenors submitted testimony that expressed
25 concern about the risk of fire and Idaho Power’s plans to mitigate this risk. In my
26 testimony, I respond to each assertion, noting Idaho Power’s extensive analysis of fire risk

1 and mitigation plans. The concerns raised by the intervenors are generally consistent with
2 the arguments that were made in the EFSC contested case proceeding—in some cases,
3 by the very same parties—and that were resolved as part of the Council’s Final Order and
4 issuance of the Site Certificate. Where similar concerns are raised, I will explain how
5 EFSC addressed the issue.

6 **II. BACKGROUND REGARDING REGULATORY FRAMEWORK FOR**
7 **CONSIDERATION OF WILDFIRE RISK AND MITIGATION**

8 **Q. In the context of a certificate of public convenience and necessity (“CPCN”)**
9 **proceeding, how does the Commission evaluate issues concerning wildfire risk and**
10 **mitigation?**

11 A. While I am not a lawyer, it is my understanding that there are no specific review criteria
12 associated with wildfire risk and wildfire mitigation. However, the Commission’s
13 consideration of wildfire related issues would likely be linked to the statutory criterion
14 requiring the Commission to evaluate the “safety” of the transmission line.¹ As it relates
15 to consideration of “safety,” the CPCN review criteria in OAR 860-025-0035(1)(b) provide
16 that the Commission will consider:

17 Whether the petitioner has demonstrated that it will ensure the transmission
18 line is constructed, operated, and maintained in a manner that protects the
19 public from danger and conforms with applicable Commission rules, and
20 other applicable safety standards and best industry practices.

21 **Q. Does the Commission give any deference to other regulatory proceedings?**

22 A. My understanding is that the CPCN rules in OAR 860-025-0035(2) state that the
23 Commission will give “due consideration to related regulatory reviews and permitting
24 approvals as pertinent to the proposed transmission line, if the transmission line has
25 already been acknowledged or approved by regulatory or permitting authorities.”

¹ ORS 758.015(2).

1 **Q. Are you aware of any other regulatory reviews and approvals that may be relevant**
2 **to the Commission's consideration of wildfire-related issues?**

3 A. Yes. In Docket UM 2209, the Commission reviewed and approved the Company's 2022
4 Wildfire Mitigation Plan.² The Commission is currently reviewing the Company's 2023
5 Wildfire Mitigation Plan in the same docket. Additionally, EFSC issued a Final Order and
6 Site Certificate for B2H that addressed issues concerning wildfire risk and mitigation.³

7 **Q. Are you familiar with EFSC's consideration of wildfire risk and mitigation prior to**
8 **issuing the Final Order and Site Certificate for B2H?**

9 A. Yes. I participated in the EFSC proceeding as Idaho Power's expert witness regarding
10 wildfire risk and wildfire mitigation.

11 **Q. Did the Council consider wildfire risk and wildfire mitigation related issues in the**
12 **EFSC proceeding?**

13 A. Yes. The Council considered the adequacy of the Company's analysis in its ASC and
14 related plans regarding wildfire risk and wildfire mitigation in its review of the Proposed
15 Order. Additionally, Idaho Power and certain limited parties raised issues concerning
16 wildfire risk and wildfire mitigation that were litigated as part of the EFSC contested case
17 proceeding. Those issues included:

- 18 • PS-2: Whether the Site Certificate should require that the public have the
19 opportunity to review and comment on the final Wildfire Mitigation Plan; whether
20 the Wildfire Mitigation Plan should include remote cameras to detect wildfire, safety
21 procedures during red flag conditions, and the requirement that firefighting
22 equipment be present on-site during construction.

² *In re Idaho Power Company, Wildfire Protection Plan*, Docket UM 2209, Order No. 22-312 (Aug. 26, 2022).

³ Idaho Power's Supplement to Petition for CPCN, Attachment 1 (Final Order) at 610-624 of 10603 (Oct. 7, 2022) [hereinafter, "Final Order"].

- 1 • PS-3: Whether Council's reliance on the Wildfire Mitigation Plan (Public Services
2 Condition 7) prepared by Idaho Power for OPUC was adequate to address wildfire
3 response consistent with EFSC's Public Services Standard.
- 4 • PS-4: Whether Idaho Power adequately analyzed the risk of wildfire arising out of
5 operation of the proposed facility and the ability of local firefighting service
6 providers to respond to fires.
- 7 • PS-5: Whether the Wildfire Mitigation Plan is adequately developed and includes
8 sufficient detail to allow for public participation.
- 9 • PS-8: Whether Oregon Department of Energy ("ODOE")-proposed revisions to
10 Public Services Condition 7 were redundant with Attachment U-3 and existing
11 condition requirements.
- 12 • PS-9: Whether ODOE-proposed revisions to the Fire Prevention and Suppression
13 Plan (Public Services Condition 6, Proposed Order Attachment U-3) incorrectly
14 referenced applicability to facility operations.
- 15 • PS-10: Whether the Draft Fire Prevention and Suppression Plan (Attachment U-3)
16 was adequate and whether local service providers would be able to respond to a
17 facility-related fire.

18 **Q. What standards and rules govern Idaho Power's responsibilities regarding fire risk**
19 **and fire response planning for B2H at the Council?**

20 A. While I am not a lawyer, my understanding is that there are several standards that the
21 Council applied when evaluating fire risk and response planning in its consideration of
22 B2H. First, the Council's Public Services Standard, OAR 345-022-0110(1) required Idaho
23 Power to demonstrate that the construction and operation of the Project is "not likely to
24 result in significant adverse impact to the ability of public and private providers within the

1 analysis area described in the project order to provide: . . . fire protection.”⁴

2 Similarly, as part of the Company’s demonstration of compliance with the Land
3 Use Standard, OAR 345-022-0030, and conditional use analysis for impacts to forested
4 lands, Idaho Power must comply with OAR 660-006-0025(5)(b), which required Idaho
5 Power to show that the Project “will not significantly increase fire hazard or significantly
6 increase fire suppression costs or significantly increase risks to fire suppression
7 personnel.”

8 Finally, because some of the construction will occur within the Oregon Department
9 of Forestry’s (“ODF”) protection boundaries, Idaho Power was required to demonstrate
10 compliance with the ODF fire prevention and forest practice regulations (“ODF
11 Regulations”).⁵

12 In July 2022, EFSC adopted a Wildfire Prevention and Mitigation Standard.⁶
13 However, my understanding is that this standard was adopted after the filing of the ASC
14 and thus did not apply to the B2H application.⁷

15 **Q. Did Idaho Power provide analysis addressing the applicable EFSC standards and**
16 **rules in its ASC?**

17 A. Yes. Idaho Power provided analysis regarding compliance with the Public Services
18 Standard—including the fire protection element—in Exhibit U of its ASC, as well as its Fire
19 Prevention and Suppression Plan, which was included as Attachment U-3 to Exhibit U.⁸
20 In that analysis, Idaho Power identified the construction-related and operations-related fire

⁴ The Public Services Standard also requires analysis of potential impacts to public and private providers’ ability to provide “sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police protection, health care and schools.” OAR 345-022-0110(1).

⁵ See *generally* OAR Chapter 629.

⁶ See OAR 345-022-0115.

⁷ OAR 345-022-0115(3).

⁸ Idaho Power’s Supplement to Petition for CPCN, Attachment 1 (Final Order, Attachment U-3, Draft Fire Prevention and Suppression Plan) at 10517 of 10603 (Oct. 7, 2022) [hereinafter, “Final Order, Attachment U-3”].

1 risks associated with a high voltage transmission line. Idaho Power explained that it will
2 address the construction-related risks by implementing the measures in the Fire
3 Prevention and Suppression Plan and will minimize the operational fire risks by
4 implementing vegetation-management procedures along the entire right-of-way and by
5 including fault-detection technology in the Project design to shut off power flow in the event
6 that debris contacts the transmission line.⁹

7 Idaho Power provided analysis regarding compliance with the Land Use Standard,
8 and OAR 660-006-0025(5)(b), in Exhibit K of the ASC.¹⁰ In that analysis, Idaho Power
9 explained how it will minimize fire risk through the design, construction, and operation of
10 B2H. Idaho Power will comply with design codes that reduce fire hazards, including the
11 Commission's Construction Standards and National Electric Safety Code requirements
12 pertaining to the prevention of fire hazards related to outdoor public utility installations.
13 During construction, Idaho Power and its contractors will maintain an active program of
14 worker training, strict requirements for smoking, equipment standards, fueling, road
15 management, assistance in fire-fighting, and restrictions on activity when the State
16 Forester declares a fire season. During operation, Idaho Power will routinely maintain the
17 Project right-of-way and roads in forested areas to reduce the risk of combustible materials
18 contacting the conductors and igniting a fire. Additionally, relevant to both construction
19 and operation phases, Idaho Power will adhere to the risk mitigation measures included
20 in the Company's Wildfire Mitigation Plan (as it may be revised from time to time).

21 Idaho Power provided analysis regarding compliance with the ODF Regulations in
22 the draft Fire Prevention and Suppression Plan and the Right-of-Way Clearing

⁹ Final Order, Attachment U-3 at 10532, 10536 of 10603.

¹⁰ See Idaho Power/203, Barretto/1810.

1 Assessment.¹¹ ODF commented on Idaho Power’s draft plans and advised Idaho Power
2 to add firewatch and water supply requirements to address recent amendments to the
3 ODF Regulations, which were incorporated into the draft Fire Prevention and Suppression
4 Plan included as Attachment U-3 to the Final Order.¹²

5 **Q. Did EFSC conclude that Idaho Power satisfied these standards?**

6 A. Yes. In its Final Order, EFSC concluded that Idaho Power’s proposals in the Fire
7 Prevention and Suppression Plan, the Right-of-Way Clearing Assessment, and the
8 Vegetation Management Plan are sufficient to ensure that the Project will not significantly
9 increase wildfire hazards, fire suppression costs, or risks to fire suppression personnel
10 within the surrounding area and therefore satisfy EFSC’s application of
11 OAR 660-006-0025(5)(b) under the Land Use Standard.¹³ EFSC further concluded that
12 the Recommended Public Services Conditions 6 and 7 will ensure that the Project does
13 not adversely impact the ability of public and private fire protection providers to provide
14 fire response services in the analysis area in accordance with the Public Services
15 Standard.¹⁴ Additionally, based on review and consultation with ODF, EFSC determined
16 that Idaho Power’s fire prevention and vegetation management measures are consistent
17 with all applicable ODF laws and regulations.¹⁵

18 **Q. In response to concerns raised by limited parties in the EFSC proceeding, did the**
19 **Council modify any of the conditions related to wildfire suppression and mitigation**

¹¹ Final Order, Attachment U-3 at 10526 of 10603; Idaho Power’s Supplement to Petition for CPCN, Attachment 1 (Final Order, Attachment K-2, Right of Way Clearing Assessment) at 9815 of 10603 (Oct. 7, 2022) [hereinafter “Final Order, Attachment K-2”].

¹² Final Order, Attachment U-3 at 10527-28 of 10603.

¹³ Final Order at 277-279 of 10603.

¹⁴ Final Order at 619-624 of 10603.

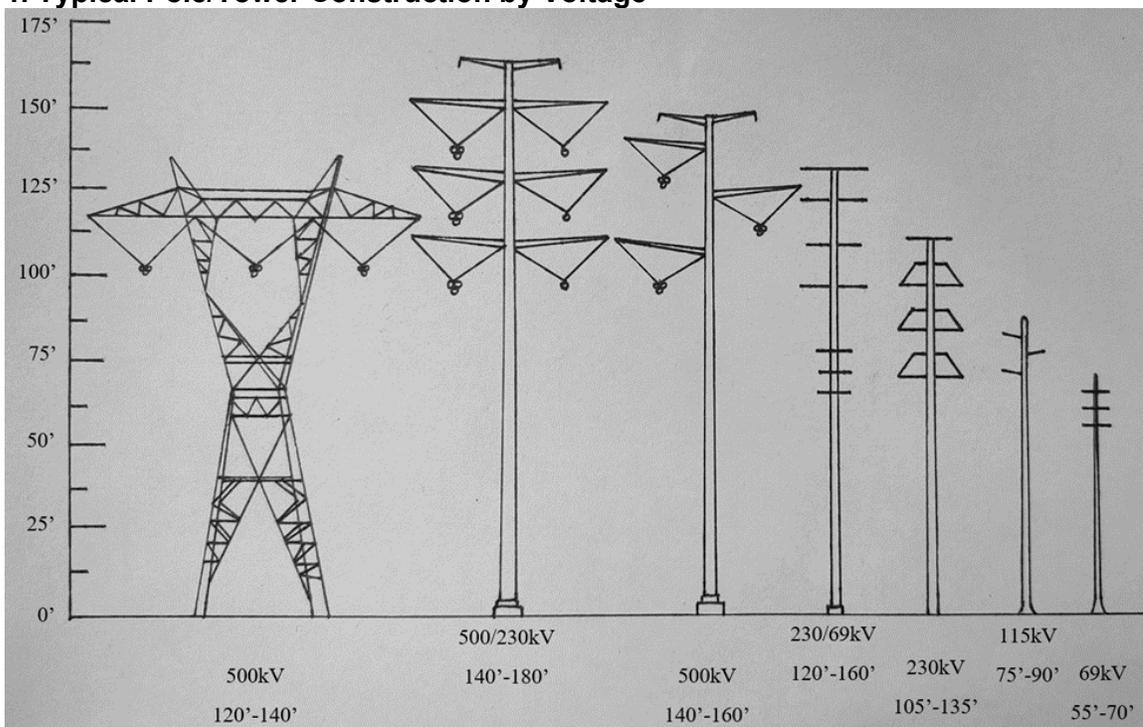
¹⁵ Final Order at 618 of 10603 (discussing ODF’s conclusion that “fire prevention measures and vegetation management objectives (proposed by [Idaho Power]) are consistent with current policies, laws and rules under Oregon Revised Statute Chapters 477 (Fire Protection of Forests and Vegetation) and 527 (Forest Practices) and Oregon Administrative Rules Chapter 629 (Department of Forestry), applicable to all areas and vegetation types (i.e. forested and non-forested lands) during facility construction”).

- 1 3. High voltage transmission lines: 115, 138, 161, and 230 kV
- 2 4. Extra high voltage transmission lines: 345, 500, and 765 kV
- 3 5. Ultra high voltage: > 765 kV

4 **Q. What are the differences in pole/tower construction for transmission lines of**
5 **different voltages?**

6 A. The qualitative differences in pole/tower construction and height are shown schematically
7 in Figure 1.

8 **Figure 1. Typical Pole/Tower Construction by Voltage**



9 **Q. Could you please provide additional detail regarding the characteristics of**
10 **distribution and the various classes of transmission lines as it relates to risk of fire**
11 **ignition?**

12 A. Yes, I will describe each of the characteristics of these powerlines in greater detail below.

13 **Q. Please describe the characteristics of distribution lines (<34 kV) in the United**
14 **States.**

1 A. Distribution lines carry electricity short distances from transmission lines to utility
2 customers. Voltages vary, but 12-14 kV are common voltages for distribution lines in the
3 United States. Due to these lower voltages relative to transmission lines, it is not
4 necessary to maintain distribution lines at the same height as transmission lines.

5 In the United States, a typical wood utility pole used in distribution circuits is 40
6 feet in length. Standard practice is to bury a pole to 10 percent of its height plus 2 feet.
7 For that reason, the top of most wood utility poles supporting distribution lines is 34 feet
8 above ground level, with conductors located 30 feet or less above ground level – often
9 below the height of surrounding trees (shown below in Figure 2).

10 Since conductors are often located below the height of surrounding trees, the
11 likelihood that vegetation contacts distribution lines due to tree fall-in, limb drop, or flying
12 debris is greater compared to higher-voltage transmission lines which carry conductors
13 higher above ground level. Additionally, distribution poles are usually made of wood and
14 are subject to environmental impacts that are unlikely to impact steel towers used to
15 support transmission lines.

1 **Figure 2. Distribution Line Height Relative to Adjacent Trees**



2

3

4 **Q. Please describe the characteristics of subtransmission lines (<70 kV) in the United**
5 **States.**

6 A. Subtransmission lines have more similarities with distribution lines than transmission lines.
7 Structures, often wood poles, are typically less than 60 feet in height but conductors may
8 be located at approximately the same height above ground level as distribution lines.
9 Subtransmission right-of-way widths depend on voltage and structure height, but are
10 typically around 50 feet.

11 Since conductors are often located at or below the height of surrounding trees, the
12 likelihood that vegetation contacts subtransmission lines due to tree fall-in, limb drop, or
13 flying debris is greater compared to higher-voltage transmission lines. Additionally,

1 subtransmission poles are often wooden and are subject to the same environmental
2 impacts as distribution poles.

3 **Figure 3. 69 kV Subtransmission Line**



4

5 **Q. Please describe the characteristics of high voltage transmission lines (71 – 230 kV).**

6 A. Transmission lines with voltages ranging from 71 kV to 230 kV are classified as high
7 voltage transmission lines. High voltage transmission lines are used to reduce energy
8 losses as electricity is carried over hundreds of miles.

9 Conductors, typically aluminum conductor steel reinforced cables, are sited at
10 heights ranging from approximately 80 feet to 200 feet. Cables are sited higher when
11 traversing canyons. Generally, the higher the voltage, the taller the tower. High voltage
12 transmission lines have restrictive right-of-way requirements, with right-of-way widths up
13 to 150 feet. Surrounding vegetation is strictly managed, and utilities commonly remove
14 nearby mature trees that are more than 10 feet tall. The conductors themselves are
15 typically located above the top of nearby vegetation. Combined with restrictive vegetation
16 management and right-of-way requirements, vegetation contact with energized lines is
17 unlikely. In rare cases where conductor clashing occurs, burning aluminum particles are
18 likely to burn to completion before contacting the ground.

1 **Figure 4. 138 kV Transmission Lines**



2

3 **Figure 5. 230 kV Transmission Lines**



4

5

6 **Q. Please describe the characteristics of extra high voltage (231-765 kV) and ultra high**
7 **voltage (> 765 kV) transmission lines.**

8 A. Extra high voltage and ultra high voltage transmission lines have stricter requirements on
9 minimum tower height, right-of-way width, and vegetation encroachment than high voltage
10 transmission lines. As can be seen from the generic tower diagrams shown in Figure 6,

1 500 kV towers have construction requirements that are much more robust than those for
2 lower voltages. Tower heights are increased and rights-of-way, usually between 150 feet
3 and 250 feet, are wider relative even to high voltage transmission lines. This reduces the
4 potential for tree line contact or conductor clashing to cause fires, since aluminum particles
5 are likely to burn to completion before contacting the ground. Furthermore, 500 kV lines
6 are typically mounted on steel lattice towers which are stronger than the single-pole steel
7 or wooden poles used for lower voltages. The stricter engineering requirements, higher
8 tower heights, and wider rights-of-way make extra high voltage transmission lines,
9 including 500 kV lines such as B2H, less likely to cause fires than high voltage
10 transmission lines.

11 **Figure 6. 500 kV Transmission Lines**



12

13 **Q. Please describe the B2H transmission line parameters.**

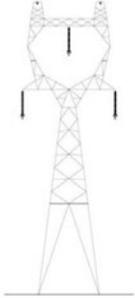
14 A. Current plans call for two primary tower designs to be used along the B2H line. These
15 include:

- 16 • Steel lattice towers (Figure 7). The majority (~282 miles) of the B2H line will be
17 supported by steel lattice towers varying in height between 114 and 200 feet, with
18 typical spacing of 1,200-to-1,800-foot spans between towers. Right-of-way widths will

1 be 250 feet nominally in forested areas and 165 feet in non-forested areas along
 2 approximately 282 miles of transmission line, primarily in Oregon. See Figure 7 for
 3 additional details.

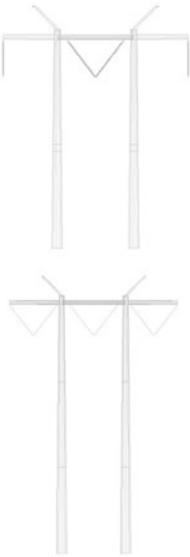
- 4 • H-frame towers (Figure 8). Approximately 13 miles will be tubular steel H-frames
 5 (Figure 8). Tower height will vary between 65 and 105 feet with approximately 350-
 6 to-1,200-foot spans between towers. Right-of-way width will be 90 to 250 feet.

7 **Figure 7. Summary of 500 kV Lattice Tower and Line Design¹⁷**

Facility	Description
<p>Proposed 500-kV Single-Circuit Lattice</p> 	<ul style="list-style-type: none"> • Proposed 500-kV structure type: Self-supporting steel lattice towers having a dulled galvanized steel finish. • Structure heights: lattice tower varies between 109 to 200 feet. • Approximate span distance between structures: lattice: 1,200 to 1,800 feet. • Right-of-way (ROW) width: lattice: nominal 250 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One optical ground wire (OPGW) containing 48 fibers and having a diameter of 0.646 inch. One overhead ground wire (OHGW) made of extra high strength (EHS) steel and having a diameter of 0.5 inch. • Minimum ground clearance: 34.5 feet. • Line length: Approximately 270.8 miles (Oregon only). • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

¹⁷ Idaho Power/1302, Lautenberger/85 (Idaho Power’s Response to Staff Data Request No. 26 – Attachment 1, Application for Site Certificate, Exhibit B).

1 **Figure 8. Summary of 500 kV H-Frame Tower and Line Design¹⁸**

Facility	Description
<p>Proposed 500-kV Single-Circuit H-Frame</p> 	<ul style="list-style-type: none"> • Proposed 500-kV structure type: Self-supporting tubular steel H-frame structures, having a weathering steel (Corten) finish. • Number of poles per H-frame: 2. • Approximate pole diameters: 48 to 72 inches (at base), 16 to 24 inches (at tip). • Structure heights: 65-105 feet and 90-100 feet. • Approximate span distance between structures: 350 to 1,650 feet. • ROW width: 90-250 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One OPGW containing 48 fibers and having a diameter of 0.646 inch. One OHGW made of EHS steel and having a diameter of 0.5 inch. • Minimum ground clearance: 34.5 feet. • Line length: approximately 13 miles. The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

2 **Q. Are you aware of any studies related to the relative rates of fire causation by**
3 **distribution and transmission lines?**

4 A. Yes. As part of the application and permitting process for the proposed Sunrise Powerlink
5 project, SDG&E prepared a four-year analysis of San Diego County fire history and
6 SDG&E's fire data.¹⁹ The analysis demonstrated that SDG&E's distribution and
7 subtransmission lines were responsible for a substantial portion of utility-related ignitions:
8 In the four years analyzed, 85.5% of SDG&E's power-line-related ignitions were attributed
9 to distribution systems, 11.5% to subtransmission systems (69-138 kV), and 3 percent to

¹⁸ Idaho Power/1302, Lautenberger/86 (Idaho Power's Response to Staff Data Request No. 26 – Attachment 1, Application for Site Certificate, Exhibit B).

¹⁹ Idaho Power/1303, Lautenberger/218 (*In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058 (California PUC, Dec. 18, 2008)).

1 230 kV transmission systems.²⁰ No ignitions were associated with a 500 kV line or
2 system.²¹

3 In a December 18, 2008, ruling regarding the Sunrise Powerlink project, the CPUC
4 found that “230 kV or 500 kV lines placed on steel towers are highly unlikely to ignite
5 fires[.]”²² Additionally, in Appendix C of that ruling, the CPUC stated “The only 500 kV-
6 related ignition we have found reported in the United States was caused not by an
7 equipment failure, but by a large tree falling on the transmission line – an event that could
8 be mitigated through proper vegetation management.”²³

9 **Q. Are you aware of any other fire ignitions associated, or alleged to have been**
10 **associated, with 500 kV transmission lines that have occurred since the 2008 CPUC**
11 **ruling discussed above?**

12 A. Yes. I am aware of seven other more recent fires in the U.S. that may have been caused,
13 or are alleged to have been caused, by 500 kV transmission lines:

- 14 • The 2015 Snow Creek Fire, which was ignited when a skyline from a Southern
15 California Edison (“SCE”) 500 kV line broke and fell to the ground south of Highway
16 111 near Palm Springs. Aerial and ground resources were dispatched and the fire
17 was contained at approximately 25 acres.²⁴
- 18 • The 2018 Ramsey Canyon Fire, which was ignited near the base of a PacifiCorp 500
19 kV line northwest of Eagle Point, Oregon. The fire burned approximately 1,888 acres
20 of federal, state, and local land. Investigators contended that the fire was caused by
21 the failure of a connector on a transmission structure that PacifiCorp failed to properly

²⁰ Idaho Power/1303, Lautenberger/218 (*In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058 (California PUC, Dec. 18, 2008)).

²¹ Idaho Power/1303, Lautenberger/218 (*In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058 (California PUC, Dec. 18, 2008)).

²² Idaho Power/1303, Lautenberger/225, (*In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058 (California PUC, Dec. 18, 2008)).

²³ Idaho Power/1304, Lautenberger/5, (*In re Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, A.06-08-010, D. 08-12-058, Appendix C (Dec. 24, 2008)).

²⁴ Idaho Power/1305 (Snow Fire Incident Information Fact Sheet (June 5, 2015)).

1 install, inspect and maintain. PacifiCorp denied the contentions but agreed to a
2 settlement.²⁵

3 • An unnamed fire ignited by a PG&E 500 kV transmission line in May 2019. The fire did
4 not spread beyond the area of ignition.²⁶

5 • Three unnamed fires ignited by PG&E 500 kV transmission lines in 2020 on June 4,
6 August 10, and September 11 and reported in PG&E's 2020 CPUC Fire Incident
7 Report discussed below.

8 • An unnamed fire ignited by a PG&E 500 kV transmission line in April 2021 and
9 reported in PG&E's 2021 CPUC Fire Incident Report. The fire did not spread beyond
10 the area of ignition.

11 **Q. What are the 2020 and 2021 CPUC Fire Incident Reports and how are they relevant?**

12 A. CPUC Fire Incident Reports are a summary of electrical events that led to an ignition in a
13 utility's service territory in a calendar year. They contain information on the location of the
14 electrical event in degrees latitude and longitude, specific circuit, voltage, outage cause,
15 resulting fire size, and responding fire suppression units. Because voltage is included in
16 the description of each electrical event, the Fire Incident Reports can be searched for 500
17 kV ignitions.

18 **Q. How are reportable ignitions defined for purposes of the CPUC Fire Incident
19 Reports?**

20 A. A reportable event is any event where utility facilities are associated with the following
21 conditions: (a) A self-propagating fire of material other than electrical and/or
22 communication facilities, and (b) The resulting fire traveled greater than one linear meter
23 from the ignition point, and (c) The utility has knowledge that the fire occurred.²⁷

24 **Q. What information is available about the 2020 and 2021 PG&E 500 kV fires?**

²⁵ Idaho Power/1306 (U.S. Attorney's Office, Dist. Of Or., PacifiCorp to Pay \$3.4 Million in Civil Settlement for Ramsey Canyon Fire (June 9, 2020)).

²⁶ Idaho Power/1307 (PG&E Fire Incident Report Data Compiled from 2014-2021).

²⁷ *Order Instituting Rulemaking to Revise and Clarify Commission Regulations Relating to the Safety of Electric Utility and Communications Infrastructure Provider Facilities*, California Public Utilities Commission, Rulemaking 08-11-005, Decision 14-0-015 at C-3 (Feb. 5, 2014) (available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M087/K892/87892306.PDF>) (last visited) .

1 A. An overview of each of the 2020 and 2021 500 kV ignitions is shown in Table 1. The June
2 4, 2020, fire was caused when a balloon contacted energized lines. The remaining three
3 fires were caused by PG&E equipment and attributed to “induction caused ignition”.

4 **Table 1. Summary of PG&E 500 kV ignitions in 2020 and 2021²⁸**

Date	Fire Size	Initiating Event	Notes/Field observations
June 4, 2020	10-100 acres	Contact from Object	Balloon
August 10, 2020	10-100 acres	Equipment PG&E	Induction caused ignition
November 11, 2020	0.25-10 acres	Equipment PG&E	Induction caused ignition
April 10, 2021	< 0.25 ac	Equipment PG&E	Induction caused ignition

5 **Q. How does this information affect the probability that the B2H line could start a fire?**

6 A. It is my understanding that the three induction-caused ignition fires caused by PG&E
7 equipment occurred in 500 kV transmission corridors that contained two or more adjacent
8 transmission lines sited in close proximity. It is also my understanding that induction-
9 caused ignition is not possible on the B2H line because it does not parallel another
10 transmission line sufficiently closely for this phenomenon to occur.

11 **Q. Have you analyzed ignition data associated with utility infrastructure?**

12 A. Yes, however, collection of ignition data from utilities is a relatively new development and
13 has been pioneered by the CPUC. Currently, no analogous data exist for either Oregon
14 or Idaho, making the CPUC data the most complete dataset available for analysis. The
15 CPUC’s Fire Incident Data Collection (“FIDC”) program requires PG&E, SCE, and SDG&E
16 to report, on an annual basis, fire ignitions that were caused by their equipment.²⁹ The
17 most current data, from 2014-2021, were analyzed and are summarized in Tables 2-4. Of

²⁸ Idaho Power/1307 (PG&E Fire Incident Data 2014-2021).

²⁹ Idaho Power/1307 (PG&E Fire Incident Report Data Compiled from 2014-2021); Idaho Power/1308 (SCE Fire Incident Report Data Compiled from 2014-2021); Idaho Power/1309 (SDG&E Fire Incident Report Data Compiled from 2014-2021).

1 the 4,462 total ignitions, four were associated with 500 kV transmission and have been
2 discussed in response to previous questions.

3 **Table 2. PG&E ignitions (2014-2021)³⁰ per hundred line miles**

Voltage (kV)	2014	2015	2016	2017	2018	2019	2020	2021	Average
Distribution	0.223	0.396	0.324	0.447	0.385	0.413	0.477	0.370	0.381
Subtransmission	0.205	0.130	0.149	0.261	0.261	0.149	0.000	0.149	0.165
High Voltage	0.065	0.078	0.104	0.130	0.117	0.168	0.000	0.065	0.094
Extra High Voltage	0.000	0.000	0.000	0.000	0.000	0.076	0.227	0.076	0.043

4 **Table 3. SCE ignitions (2014-2021)³¹ per hundred line miles**

Voltage (kV)	2014	2015	2016	2017	2018	2019	2020	2021	Average
Distribution	0.040	0.112	0.089	0.095	0.117	0.136	0.151	0.181	0.106
Subtransmission	0.049	0.123	0.197	0.099	0.025	0.148	0.099	0.123	0.106
High Voltage	0.000	0.049	0.000	0.074	0.049	0.025	0.098	0.000	0.042
Extra High Voltage	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.010

5 **Table 4. SDG&E ignitions (2014-2021)³² per hundred line miles**

Voltage (kV)	2014	2015	2016	2017	2018	2019	2020	2021	Average
Distribution	0.276	0.299	0.276	0.253	0.241	0.172	0.149	0.207	0.245
Subtransmission	0.253	0.253	0.000	0.000	0.380	0.000	0.000	0.000	0.127
High Voltage	0.200	0.400	0.200	0.200	0.400	0.400	0.000	0.400	0.286
Extra High Voltage	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

6 **Q. What studies have you performed to consider the probability of ignition associated**
7 **with a 500 kV transmission line?**

8 A. To illustrate the improbability of a 500 kV line igniting a fire, the Fire Occurrence
9 Database("FOD")³³ was filtered to the same timeframe as the FIDC data for PG&E, SCE,
10 and SDG&E. The extensive verification and validation process required of data included
11 in the FOD means the most current edition of the database contains ignitions only through

³⁰ Idaho Power/1307 (PG&E Fire Incident Report Data Compiled from 2014-2021).

³¹ Idaho Power/1308 (SCE Fire Incident Report Data Compiled from 2014-2021).

³² Idaho Power/1309 (SDG&E Fire Incident Report Data Compiled from 2014-2021).

³³ Karen C. Short, *Spatial wildfire occurrence data for the United States, 1992-2020*, U.S. Forest Service Research Data Archive (2022) (available at <https://www.fs.usda.gov/rds/archive/catalog/RDS-2013-0009.6>) (last visited Feb. 16, 2023).

1 2020. For that reason, the FIDC data was also truncated to 2020. The total number of
2 ignitions within each utility's service territory is compared with the total number of 500 kV
3 ignitions for 2014-2020 in Table 5.

4 **Table 5. Comparison of 500 kV to total ignitions per service territory.**

Utility	Total Ignitions (FOD)	500 kV Ignitions (FIDC)	Percentage (%)
PG&E	31,748	4	0.013
SCE	12,505	1	0.008
SDG&E	2,027	0	0.000

5

6 **Q. What are the conclusions from your analysis?**

7 A. My analysis demonstrates that only an extremely small percentage of fire ignitions have
8 been caused by high voltage transmission lines, with an even smaller percentage of fires
9 associated with extra high voltage transmission lines such as B2H.

10 **Q. Have you considered any other factors associated with fire risk specific to the B2H
11 transmission line route?**

12 A. Yes. The proposed B2H 500 kV route parallels or closely follows the Quartz to La Grande
13 230 kV transmission line for approximately 34 miles. Notably, the existing Quartz to La
14 Grande line was installed in 1956, and in nearly 70 years of operation, Idaho Power's
15 records contain no evidence of the Quartz to La Grande line causing a fire.

16 **Q. Based on these facts, what conclusion do you make with respect to fire risk during
17 operation for B2H?**

18 A. As the 230 kV transmission line has never been determined to be the cause of a fire, and
19 the 230 kV line follows a similar path to the Project (including similar terrain and
20 vegetation), this suggests that there is not an elevated risk of fire in the Project area
21 attributed to the 500 kV B2H. Further, because the Project will include more protective

1 construction specifications than the 230 kV line,³⁴ the risk of fire associated with B2H
2 would be lower than for the 230 kV line.

3 **Q. Are there any other factors that further mitigate risk of fire during operation of the**
4 **Project?**

5 A. Yes. As described above, Idaho Power included measures to reduce risk of fire in its Fire
6 Prevention and Suppression Plan, Right of Way Clearing Assessment, and Vegetation
7 Management Plan as part of its ASC. Additionally, Idaho Power has developed a Wildfire
8 Mitigation Plan similar to those created by investor-owned utilities in California to mitigate
9 fire risk and address changing climatic conditions, which will likely reduce the potential for
10 future ignitions.

11 **IV. EFSC PLANS RELATED TO PREVENTING FIRE**

12 **Q. What measures will Idaho Power take to reduce the risk of fire ignition during**
13 **construction of the Project?**

14 A. To address construction-related risks, Idaho Power developed the draft Fire Prevention
15 and Suppression Plan, included as Attachment U-3 to the Final Order.³⁵ As detailed
16 below, that plan identifies the most serious fire risks during construction and operation,
17 discusses the applicable standards to address those risks, and outlines Idaho Power's
18 proposed methods to minimize the risk of fire ignition, and in the event of fire, provide for
19 immediate suppression.

20 Regarding risk of fire associated with B2H during operation of the Project, Idaho
21 Power identified specific aspects of the Project's design that will reduce fire risk.
22 Specifically, the Project's transmission towers will not burn because they will be made out

³⁴ As mentioned above, tower heights for 500 kV transmission lines are taller and rights-of-way are wider—usually between 150 feet and 250 feet—relative to high voltage transmission lines like the existing 230 kV transmission line. In addition, 500 kV lines are typically mounted on steel lattice towers which are stronger than the single-pole steel or wooden poles used for lower voltages.

³⁵ See *generally* Final Order, Attachment U-3 at 10517 of 10603.

1 of steel, the towers will be designed to dissipate lightning strikes to reduce the risk of
2 weather-related fires, Idaho Power will test the integrity of the grounding and other
3 hardware on a regular basis during scheduled maintenance, and the Project's
4 transmission line protection and control systems will be designed to detect faults (such as
5 arcing from debris contacting the line) and rapidly shut off power flow (in 1/60th to 3/60th of
6 a second) if arcing is detected.³⁶ Idaho Power further addresses the risk of debris
7 contacting the conductors with the detailed protocols in its Right-of-Way Clearing
8 Assessment³⁷ and its Vegetation Management Plan.³⁸ Additionally, the construction and
9 design for the Project will comply with applicable provisions of the provisions of the
10 National Electrical Safety Code.³⁹

11 **A. *Fire Prevention and Suppression Plan***

12 **1. Safety Measures During Construction**

13 **Q. Has Idaho Power proposed safety measures to be implemented during construction
14 to address those risks?**

15 A. Yes. Idaho Power's Fire Prevention and Suppression Plan includes specific construction-
16 related activities and safety measures that Idaho Power will implement during construction
17 of the transmission line to prevent fires and to ensure quick response and suppression if
18 a fire occurs. Those fire prevention measures will include posting a firewatch, stationing
19 a water truck at the job site to keep the ground and vegetation moist in extreme fire
20 conditions, enforcing red flag warnings, providing fire behavior training to all construction
21 personnel, keeping vehicles on or within designated roads or work areas, and providing
22 fire suppression equipment and emergency notification numbers at each construction

³⁶ Final Order, Attachment U-3 at 10531 of 10603.

³⁷ Final Order, Attachment K-2 at 9817-9818 of 10603..

³⁸ Idaho Power's Supplement to Petition for CPCN, Attachment 1 (Final Order, Attachment P1-4, Draft Vegetation Management Plan) at 9887 of 10603 (Oct. 7, 2022) [hereinafter "Final Order, Attachment P1-4"].

³⁹ Final Order, Attachment U-3 at 10478 of 10603.

1 site.⁴⁰

2 **Q. Will Idaho Power keep a person assigned to firewatch at the Project site?**

3 A. Yes. Consistent with OAR 629-043-0030, Idaho Power will keep a person assigned as a
4 firewatch posted at the Project site during fire season and when necessary during
5 construction.⁴¹ The person assigned to firewatch must constantly observe the
6 construction area during any breaks (up to three hours) in construction activity and for
7 three hours after power driven machinery used by an operator has been shut down for the
8 day; visually observe all portions of the area on which construction activity occurred during
9 the preceding period of activity; be qualified in the use of assigned firefighting equipment
10 and tools; be physically capable of performing assigned fire suppression activities; and,
11 when working alone, be advised of single employee assignment responsibilities under
12 OAR 437-007-1315.⁴²

13 Additionally, each person providing firewatch service for a construction area will
14 have adequate facilities for transportation and communication to be able to summon
15 firefighting assistance in a timely manner.⁴³ Upon discovery of a fire, firewatch personnel
16 will first report the fire, summon any necessary firefighting assistance, describe intended
17 fire suppression activities and agree on a checking system; then after determining a safety
18 zone and an escape route that will not be cut off if the fire increases or changes direction,
19 immediately proceed to control and extinguish the fire, consistent with firefighting training
20 and safety.⁴⁴

21 **Q. What fire-suppression equipment will Idaho Power keep on the Project site during**
22 **construction?**

⁴⁰ See Final Order, Attachment U-3 at 10528 of 10603.

⁴¹ Final Order, Attachment U-3 at 10527-28 of 10603.

⁴² Final Order, Attachment U-3 at 10528 of 10603.

⁴³ Final Order, Attachment U-3 at 10528 of 10603.

⁴⁴ Final Order, Attachment U-3 at 10528 of 10603.

1 A. All motor vehicles and equipment on the Project site will carry at least 1 long-handled (48-
2 inch minimum), round-point shovel with a blade no less than 8 inches wide; a double-bit
3 ax or Pulaski (3.5 pounds or larger) with a handle of not less than 26 inches long; one 16-
4 20 pound dry chemical fire extinguisher (with an Underwriters Laboratories rating of at
5 least 5B or C); and 20-50 gallons of water with a mechanism to effectively spray the
6 water.⁴⁵ All equipment will be kept in a serviceable condition, stored in a clearly identified
7 toolbox, and readily available.⁴⁶

8 All power saws will be equipped with an exhaust system which retains at least 90
9 percent of carbon particles as required by spark arrester guidance, be stopped while
10 fueling, and moved at least 20 feet from the place of fueling before being restarted.⁴⁷

11 **Q. Will Idaho Power keep additional water supplies on-site for fire-suppression?**

12 A. Yes. Along with the 20-50 gallons of water required for all motor vehicles and equipment
13 mentioned above, larger water supplies of at least 300 gallons (self-propelled) or 500
14 gallons (not self-propelled) with a pump capable of providing not less than 20 gallons-per-
15 minute at a pressure of at least 115 pounds per square inch at pump level will be made
16 available as conditions warrant.⁴⁸ A nozzle, and enough serviceable hose of not less than
17 ¾ inch inside diameter, to reach from the water supply to any location in the construction
18 area affected by power driven machinery, or 500 feet, whichever is greater, will be made
19 available.⁴⁹

20 **Q. How will Idaho Power alter its construction practices during red flag weather**
21 **events?**

22 A. Idaho Power will restrict or cease construction in specified locations during fire season at

⁴⁵ Final Order, Attachment U-3 at 10527 of 10603.

⁴⁶ Final Order, Attachment U-3 at 10527 of 10603.

⁴⁷ Final Order, Attachment U-3 at 10528 of 10603.

⁴⁸ Final Order, Attachment U-3 at 10527 of 10603.

⁴⁹ Final Order, Attachment U-3 at 10527 of 10603.

1 the direction of the applicable land-management agency's closure order.⁵⁰ Restrictions
2 may vary from stopping certain activities at a given time to stopping all construction within
3 the closure area.⁵¹ Idaho Power may obtain approval to continue some or all construction
4 if acceptable precautions are implemented, but in that case Idaho Power must obtain a
5 written waiver from the land-management agency.⁵²

6 **Q. What fire-behavior training will Idaho Power provide to its construction workers?**

7 A. Idaho Power will train all employees and contractors working on B2H on the measures to
8 take in the event of a fire during construction of the Project.⁵³ Idaho Power will also inform
9 employees and contractors during regular safety briefings of fire dangers, locations of
10 extinguishers and equipment, and individual responsibilities for fire prevention and
11 suppression.⁵⁴ Smoking and fire rules also will be discussed with all field personnel during
12 the Project's environmental training.⁵⁵

13 **Q. Are there specific construction-related actions that pose a more significant risk of**
14 **wildfires?**

15 A. Yes. The construction activities most likely to increase the risk of wildfire are smoking,
16 refueling activities, operating vehicles and other equipment off improved roadways,
17 welding activities, and the use of explosive materials and flammable liquids.⁵⁶

18 **Q. How did Idaho Power propose to address the smoking-related risk of fires in its**
19 **ASC?**

20 A. Under the draft Fire Prevention and Suppression Plan, smoking is prohibited throughout
21 the Project site except in designated smoking areas that have been cleared and graded

⁵⁰ Final Order, Attachment U-3 at 10530 of 10603.

⁵¹ Final Order, Attachment U-3 at 10530 of 10603.

⁵² Final Order, Attachment U-3 at 10530 of 10603.

⁵³ Final Order, Attachment U-3 at 10527 of 10603.

⁵⁴ Final Order, Attachment U-3 at 10527 of 10603.

⁵⁵ Final Order, Attachment U-3 at 10527 of 10603.

⁵⁶ Final Order, Attachment U-3 at 10523 of 10603.

1 to bare soil to prevent contact with flammable brush.⁵⁷ Those cleared areas must have a
2 diameter of at least ten feet.⁵⁸ Additionally, smoking is prohibited when operating
3 equipment or vehicles unless the individual is in an enclosed cab.⁵⁹ Finally, smoking is
4 prohibited in any areas marked with “Danger” or “No Smoking” signs.⁶⁰

5 **Q. How will Idaho Power address the risk of wildfires arising from refueling activities?**

6 A. To address refueling risks, all fuel trucks will be equipped with a large fire extinguisher
7 charged with the appropriate chemical to control electrical and gas fires.⁶¹ The
8 extinguisher will be a minimum size 35-pound capacity with a minimum 30 BC rating.⁶²
9 Power-saw refueling will be done in an area that has first been cleared of material that
10 could catch fire.⁶³

11 **Q. Does the Fire Prevention and Suppression Plan include measures to limit operating
12 vehicles and equipment off improved roadways?**

13 A. Yes. Motorized equipment, including worker transportation vehicles, can never be driven
14 or parked outside the designated and approved work limits.⁶⁴ Equipment parking areas,
15 the right-of-way, staging areas, designated vehicle-parking areas, and small stationary
16 engine sites—where permitted—will be cleared of all flammable material.⁶⁵ Clearing will
17 extend a minimum of 2 feet beyond the edge of the area to be occupied but not beyond
18 the boundaries of the approved right-of-way, extra workspace, or ancillary site.⁶⁶

19 **Q. How does Idaho Power propose to address fire risks related to welding activities?**

20 A. Along with the equipment requirements discussed above, Idaho Power will require

⁵⁷ Final Order, Attachment U-3 at 10527 of 10603.

⁵⁸ Final Order, Attachment U-3 at 10527 of 10603.

⁵⁹ Final Order, Attachment U-3 at 10527 of 10603.

⁶⁰ Final Order, Attachment U-3 at 10527 of 10603.

⁶¹ Final Order, Attachment U-3 at 10528 of 10603.

⁶² Final Order, Attachment U-3 at 10528 of 10603.

⁶³ Final Order, Attachment U-3 at 10528 of 10603.

⁶⁴ Final Order, Attachment U-3 at 10527 of 10603.

⁶⁵ Final Order, Attachment U-3 at 10527 of 10603.

⁶⁶ Final Order, Attachment U-3 at 10527 of 10603.

1 additional fire-suppression equipment for all welding units.⁶⁷ An additional 5-gallon back-
2 up pump will be required with each welding unit.⁶⁸ All equipment will be kept in a
3 serviceable condition and readily available.⁶⁹ Individuals using power saws and grinders
4 will have a shovel as described above, and an 8-pound capacity fire extinguisher
5 immediately available.⁷⁰ During fire season, a spotter equipped with a shovel and a fire
6 extinguisher will be required to be present if wildland fuels are present where work is being
7 performed.⁷¹

8 **Q. How will Idaho Power reduce the fire risks associated with flammable liquids and**
9 **explosives?**

10 A. The handling and use of explosives shall be conducted in strict conformance with all local,
11 state, and federal regulations.⁷²

12 **Q. Has Idaho Power identified a response protocol for any fire that occurs during**
13 **construction?**

14 A. Yes. Idaho Power will immediately proceed to control and extinguish any fire resulting
15 from construction activities.⁷³ The Fire Prevention and Suppression Plan includes
16 provisions detailing how Idaho Power employees and contractors will respond in the event
17 of a fire during construction.⁷⁴ Specifically, Idaho Power employees and contractors will
18 aid in extinguishing a fire ignition before it gets out of control and take action that a prudent
19 person would take to control the fire while still accounting for their own and others' safety;
20 immediately notify both the nearest fire-suppression agency and Idaho Power; and

⁶⁷ Final Order, Attachment U-3 at 10530 of 10603.

⁶⁸ Final Order, Attachment U-3 at 10530 of 10603.

⁶⁹ Final Order, Attachment U-3 at 10530 of 10603.

⁷⁰ Final Order, Attachment U-3 at 10530 of 10603.

⁷¹ Final Order, Attachment U-3 at 10530 of 10603.

⁷² Final Order, Attachment U-3 at 10529 of 10603.

⁷³ Final Order, Attachment U-3 at 10527 of 10603.

⁷⁴ Final Order, Attachment U-3 at 10530 of 10603.

1 relinquish fire-suppression activities to the fire-suppression officers upon their arrival.⁷⁵ If
2 a reported fire is controlled, Idaho Power will note the location and monitor the progress
3 in extinguishing the fire.⁷⁶ An Idaho Power employee or contractor will remain at the fire
4 scene until it is fully extinguished.⁷⁷

5 **2. Safety Measures During Operation**

6 **Q. Does the Fire Prevention and Suppression Plan address safety measures that will**
7 **be implemented during operation of the Project?**

8 A. Yes. Although Idaho Power intended for the Fire Prevention and Suppression Plan to
9 primarily address the safety measures that will be implemented during the construction
10 phase of the Project, Idaho Power also discussed the more limited nature of the risk of fire
11 during operation and described measures that will be implemented to address those
12 risks.⁷⁸

13 **Q. You mentioned that the Project faces different fire risks during operation. What are**
14 **those risks?**

15 A. During operation, the primary causes of fire in the right-of-way are likely to result from
16 unauthorized entry by individuals for recreational purposes or from fires that start outside
17 the right-of-way.⁷⁹ Additionally, though not likely in light of vegetation removal and
18 vegetation management practices, it is possible that vegetation could contact the
19 conductors and cause a fire.⁸⁰

20 **Q. How will Idaho Power address unauthorized entry?**

21 A. Idaho Power will address the fire risk from unauthorized entry through the strategic
22 placement of access controls (e.g., gates) on roads accessing the site in accordance with

⁷⁵ Final Order, Attachment U-3 at 10530 of 10603.

⁷⁶ Final Order, Attachment U-3 at 10530 of 10603.

⁷⁷ Final Order, Attachment U-3 at 10530 of 10603.

⁷⁸ Final Order, Attachment U-3 at 10531 of 10603.

⁷⁹ Final Order, Attachment U-3 at 10531 of 10603.

⁸⁰ Final Order, Attachment U-3 at 10532 of 10603.

1 the Road Classification Guide and Access Control Plan as required under Public Services
2 Condition 2 in the Final Order.⁸¹

3 **Q. How will Idaho Power address fires that start outside the right-of-way?**

4 A. Idaho Power cannot prevent fires that start outside the right-of-way, as they may be from
5 a variety of sources that are outside the Company's control. However, in the event of a
6 fire that started outside the right-of-way, the right-of-way and access roads may provide
7 authorities a potential point of attack for fighting a fire and the additional access roads
8 constructed for the Project could reduce response times by allowing improved access.⁸²
9 Additionally, the access roads and the right-of-way could also serve as potential fuel
10 breaks to assist in controlling the fire.⁸³

11 **Q. How will Idaho Power reduce the risk of fire associated with vegetation contact with
12 conductors?**

13 A. Idaho Power will initially remove trees and tall shrubs that could potentially come into
14 contact with conductors as part of the right-of-way clearing described in greater detail
15 below. Additionally, Idaho Power will conduct vegetation management within the Project
16 right-of-way to reduce the potential for vegetation to come into contact with the
17 transmission line.⁸⁴ Vegetation management will be conducted in accordance with the
18 Project's Vegetation Management Plan (Final Order, Attachment P1-4),⁸⁵ and described
19 in greater detail below.

20 **Q. Will the Project include methods to detect vegetation contacting power lines?**

21 A. Yes. The Project will include protection and control systems designed to detect faults,
22 such as arcing from vegetation contacting the line, and rapidly shut off power flow—in

⁸¹ Final Order at 602 of 10603.

⁸² Final Order, Attachment U-3 at 10531 of 10603.

⁸³ Final Order, Attachment U-3 at 10531 of 10603.

⁸⁴ Final Order, Attachment U-3 at 10532 of 10603.

⁸⁵ Final Order, Attachment U-3 at 9877 of 10603.

1 1/60th to 3/60th of a second—if arcing is detected.⁸⁶

2 **Q. Has Idaho Power proposed other methods to address the risk of vegetation**
3 **contacting the transmission line and sparking a fire beyond those described in the**
4 **Fire Prevention and Suppression Plan?**

5 A. Yes. Idaho Power addresses this risk through the impact-minimization measures included
6 in the Right of Way Clearing Assessment and the Vegetation Management Plan.

7 **B. *Right of Way Clearing Assessment***

8 **Q. What is the Right-of-Way Clearing Assessment?**

9 A. The Right-of-Way Clearing Assessment provides an assessment of forested lands in the
10 Project area, including existing farm and forestry practices adjacent to forested lands and
11 any impacts to those practices that may occur as a result of the construction and operation
12 of the Project. It describes the timber and vegetation removal and associated activities
13 that Idaho Power must perform to prepare the rights-of-way to construct the Project and
14 to subsequently maintain those rights-of-way during operation of the Project.⁸⁷

15 **Q. Will Idaho Power clear the entire right-of-way of all vegetation that could potentially**
16 **impact the transmission line?**

17 A. Yes. In the Right-of-Way Clearing Assessment, Idaho Power explained that it will initially
18 clear the entire right-of-way of all trees and tall shrubs.⁸⁸ After the initial clearance, Idaho
19 Power will maintain the right-of-way by limiting vegetation height to no more than five feet,
20 consistent with the Vegetation Management Plan as discussed in further detail below.⁸⁹

21 **Q. Does the Right-of-Way Clearing Assessment comply with all applicable fire-**
22 **prevention requirements?**

23 A. Yes. All operations, methods, and procedures outlined in the Right-of-Way Clearing

⁸⁶ Final Order, Attachment U-3 at 10533 of 10603.

⁸⁷ Final Order, Attachment K-2 at 9805 of 10603.

⁸⁸ Final Order, Attachment K-2 at 9817 of 10603.

⁸⁹ Final Order, Attachment K-2 at 9817-18 of 10603.

1 Assessment follow guidance in ODF's Fire Prevention Rules, such as fire equipment
2 requirements, treatment of slash for protection of adjacent lands, filing of a "smoke
3 management plan,"⁹⁰ and obtaining a burn permit.⁹¹

4 **C. *Vegetation Management Plan***

5 **Q. You mentioned additional impact-minimization measures in the Vegetation
6 Management Plan. What is the Vegetation Management Plan?**

7 A. Idaho Power developed the Vegetation Management Plan to establish a framework to
8 describe the methods that the Company will use to manage vegetation along the
9 transmission line during operation.⁹² In the Vegetation Management Plan, Idaho Power
10 details its plan to maintain the right-of-way consistent with the Standard Operating
11 Procedures contained in PacifiCorp's Transmission Vegetation Management Plan, which
12 is attached to the B2H Vegetation Management Plan as Appendix A.⁹³

13 **Q. What are the goals of the Vegetation Management Plan?**

14 A. The Vegetation Management Plan is meant to ensure access to the right-of-way and to
15 maintain the safety of the transmission line by preventing tall vegetation from coming into
16 contact with the conductors.⁹⁴

17 **Q. How will the Vegetation Management Plan prevent tall vegetation from contacting
18 the conductors?**

19 A. The Vegetation Management Plan requires Idaho Power to perform vegetation
20 management work in accordance with annual work plans that detail segments of the
21 Project to be managed during a calendar year.⁹⁵ In accordance with those annual work
22 plans, Idaho Power will trim trees and tall shrubs sufficiently to ensure that the vegetation

⁹⁰ OAR 629-048-0010.

⁹¹ Final Order at 622 of 10603.

⁹² Final Order, Attachment P1-4 at 9883 of 10603.

⁹³ Final Order, Attachment P1-4 at 9885 of 10603.

⁹⁴ Final Order, Attachment P1-4 at 9884 of 10603.

⁹⁵ Final Order, Attachment P1-4, Appendix A at 9985 of 10603.

1 will not become a clearance violation before the next maintenance cycle.⁹⁶

2 **Q. Apart from the management that is scheduled for the annual work plans, will Idaho**
3 **Power perform additional vegetation management?**

4 A. Yes. Idaho Power will also patrol the Project at least annually to identify hazardous
5 vegetation.⁹⁷ On those patrols, trees that may violate the clearance requirements in the
6 Vegetation Management Plan prior to the next scheduled maintenance cycle will be
7 evaluated and trimmed or removed.⁹⁸ The patrolmen will also identify any trees and tall
8 shrubs posing a threat of causing a transmission outage at any moment and shall
9 communicate those vegetation conditions to vegetation management for urgent
10 attention.⁹⁹

11 **Q. What standards govern the vegetation that patrolmen will identify for out-of-cycle**
12 **management?**

13 A. There are two standards that would require such maintenance activities: the Minimum
14 Vegetation Clearance Distance (“MVCD”) and “action threshold.”¹⁰⁰

15 **Q. What is the MVCD?**

16 A. MVCD is the minimum clearance that should be maintained from conductors at all
17 times.¹⁰¹ The MVCD represents a radial distance from the conductors inside of which
18 trees should not encroach.¹⁰² For 500 kV lines, the MVCD is 8.5 feet.¹⁰³ If Idaho Power
19 discovers any tree violating the MVCD, Idaho Power must correct that tree within twenty-
20 four hours.¹⁰⁴

⁹⁶ Final Order, Attachment P1-4, Appendix A at 9985-9987 of 10603.

⁹⁷ Final Order, Attachment P1-4 at 9886 of 10603.

⁹⁸ Final Order, Attachment P1-4 at 9886 of 10603.

⁹⁹ Final Order, Attachment P1-4, Appendix A at 9984 of 10603.

¹⁰⁰ Final Order, Attachment P1-4, Appendix A at 9984-9985 of 10603.

¹⁰¹ Final Order, Attachment P1-4, Appendix A at 9986 of 10603.

¹⁰² Final Order, Attachment P1-4, Appendix A at 9987 of 10603.

¹⁰³ Final Order, Attachment P1-4, Appendix A at 9986 of 10603.

¹⁰⁴ Final Order, Attachment P1-4, Appendix A at 9987 of 10603.

1 **Q. What are the “action thresholds”?**

2 A. Action thresholds are ten-foot buffers beyond the MVCD.¹⁰⁵ For example, a 500 kV
3 transmission line has an action threshold of 18.5 feet.¹⁰⁶ When Idaho Power discovers
4 trees that have grown to such a height that they encroach within the action thresholds,
5 Idaho Power would schedule those trees for correction within the next twelve months.¹⁰⁷

6 **Q. Apart from removing vegetation that violates those clearance thresholds and the**
7 **annual work plans, what other methods will Idaho Power use to manage vegetation**
8 **in the Project site?**

9 A. Along with the removal of hazardous vegetation, Idaho Power will manage the vegetation
10 within the right-of-way to consist of vegetation that will not grow to a height that it could
11 interfere with the transmission line.¹⁰⁸

12 **Q. What types of plants will Idaho Power use to revegetate the right-of-way?**

13 A. After initially clearing all vegetation within the right-of-way, Idaho Power will manage the
14 new vegetation to consist of two zones: The wire zone and the border zone.¹⁰⁹ The wire
15 zone includes the linear area along the right-of-way located under the wires as well as the
16 area extending 10 feet outside of the outermost phase-conductor.¹¹⁰ Vegetation in the
17 wire zone will be maintained to consist of native grasses, legumes, herbs, ferns, shrubs,
18 and other low-growing vegetation that remain under approximately 5 feet tall at maturity.¹¹¹

19 The border zone is the linear area along each side of the right-of-way extending
20 from the edge of the wire zone to the edge of the right-of-way.¹¹² Vegetation in the border
21 zone will be maintained to consist of tall shrubs or short trees (up to 25 feet high at

¹⁰⁵ Final Order, Attachment P1-4, Appendix A at 9985 of 10603.

¹⁰⁶ Final Order, Attachment P1-4, Appendix A at 9986 of 10603.

¹⁰⁷ Final Order, Attachment P1-4, Appendix A at 9985 of 10603.

¹⁰⁸ Final Order, Attachment P1-4 at 9887 of 10603.

¹⁰⁹ Final Order, Attachment P1-4 at 9887 of 10603.

¹¹⁰ Final Order, Attachment P1-4 at 9887 of 10603.

¹¹¹ Final Order, Attachment P1-4 at 9887 of 10603.

¹¹² Final Order, Attachment P1-4 at 9887 of 10603.

1 maturity), grasses, and forbs.¹¹³ These cover plants along the border zone benefit the
2 right-of-way by competing with and excluding undesirable plants.¹¹⁴ No clearing will be
3 conducted in areas where the height of mature trees will not come within 50 feet of the
4 wires (e.g., a canyon or ravine crossing with high ground clearance at mid-span).¹¹⁵

5 **Q. How will Idaho Power control the species growing within the wire zone and the**
6 **border zone?**

7 A. Idaho Power will conduct cover type conversion to cultivate stable, low-growing plant
8 communities comprised of plants that will never grow tall enough to interfere with the
9 conductors in their lifetime.¹¹⁶

10 **Q. What is cover type conversion?**

11 A. Cover type conversion is a method of biological control that uses natural processes to
12 control undesirable vegetation, which provides a competitive advantage to short-growing,
13 early successional plants, allowing them to thrive and eventually out-compete unwanted
14 tree species for sunlight, essential elements, and water.¹¹⁷ Cover type conversion occurs
15 in two stages: First, Idaho Power will clear the right-of-way of undesirable tree species;
16 second, Idaho Power will develop a tree-resistant plant community by replanting certain
17 species and selectively removing undesired vegetation.¹¹⁸

18 Through cover type conversion, Idaho Power will replace the vegetation cleared
19 from the right-of-way with species that are compatible with the presence of a transmission
20 line. This tree-resistant community will further reduce the likelihood that vegetation grows
21 to a height where it could contact the transmission line.

22 **Q. Will the entire length of the right-of-way require vegetation management?**

¹¹³ Final Order, Attachment P1-4 at 9887 of 10603.

¹¹⁴ Final Order, Attachment P1-4 at 9987 of 10603.

¹¹⁵ Final Order, Attachment P1-4 at 9887 of 10603.

¹¹⁶ Final Order, Attachment P1-4, Appendix A at 9983 of 10603.

¹¹⁷ Final Order, Attachment P1-4, Appendix A at 9988 of 10603.

¹¹⁸ Final Order, Attachment P1-4, Appendix A at 9988 of 10603.

1 A. Apart from the initial removal of vegetation in the right-of-way, most of the right-of-way will
2 require minimal vegetation management because the vast majority of the Project crosses
3 through areas that already contain low-growing vegetation cover types (e.g., grasslands
4 and shrublands) which will not grow to heights that could interfere with the transmission
5 line and therefore will not require significant maintenance during operation of the
6 Project.¹¹⁹

7 However, approximately 14 percent of the right-of-way includes forest and
8 woodland areas and forested riparian and forested wetlands where tall shrubs and trees
9 may grow to a height that could impact conductors and structures.¹²⁰ Most vegetation
10 management during operation of the Project will occur in those forest and woodland areas
11 and forested wetlands.¹²¹

12 **Q. Will Idaho Power's vegetation management be limited to the Project right-of-way?**

13 A. No. Although most vegetation management will occur within the Project right-of-way,
14 Idaho Power will identify hazardous trees outside the right-of-way and take action to avoid
15 the risk from those trees.¹²²

16 **Q. Is the Vegetation Management Plan consistent with published best practices
17 regarding vegetation management?**

18 A. Yes. By following the Vegetation Management Plan, Idaho Power will conduct its
19 vegetation management in compliance with the American National Standards Institute
20 Pruning Standards Best Management Practices for Utilities, Oregon Forest Products Act,
21 the U.S. Department of Labor Occupational Safety and Health Administration, and North
22 American Electric Reliability Council's Standard FAC-003-3 Transmission Vegetation

¹¹⁹ Final Order, Attachment P1-4 at 9886 of 10603.

¹²⁰ Final Order, Attachment P1-4 at 9885 of 10603.

¹²¹ Final Order, Attachment P1-4, Appendix A at 9996 of 10603.

¹²² Final Order, Attachment P1-4 at 9886 of 10603.

1 Management Program.¹²³

2 **D. Coordination with Fire Response Organizations**

3 **Q. What agencies govern fire protection in the Project site?**

4 A. Because the Project traverses private, state, and federal land, various agencies have
5 jurisdiction for fire protection throughout the length of the Project's right-of-way.¹²⁴ Federal
6 agencies are responsible for fire suppression efforts on federal lands in the analysis area,
7 including BLM-administered and National Forest lands.¹²⁵ For private and state forested—
8 and much of the non-forested—lands, ODF in conjunction with the Rangeland Fire
9 Protection Associations, Rural Fire Protection Districts, and local fire districts and
10 agencies are the primary wildfire protection agencies.¹²⁶

11 **Q. How will Idaho Power coordinate with those agencies to reduce the risk of wildfires
12 during construction?**

13 A. Prior to construction, Idaho Power will contact the appropriate fire-control authorities and
14 emergency response providers to establish communications, obtain any required permits
15 (such as burning or fire waiver permits prior to conducting any heavy equipment or burning
16 activities), and fulfill other obligations as directed by fire-control authorities.¹²⁷ During
17 construction, Idaho Power will provide its employees and contractors with an up-to-date
18 list of land management and fire control agency contacts along the right-of-way for the
19 project.¹²⁸

20 **Q. How will Idaho Power coordinate with the relevant agencies during operation of the
21 Project?**

22 A. Idaho Power will provide contact information for Idaho Power's dispatch to relevant

¹²³ Final Order, Attachment P1-4 at 9886 of 10603.

¹²⁴ Final Order, Attachment U-3 at 10523 of 10603.

¹²⁵ Final Order, Attachment U-3 at 10524, Table 1 of 10603.

¹²⁶ Final Order at 610 of 10603.

¹²⁷ Final Order, Attachment U-3 at 10524 of 10603.

¹²⁸ Final Order, Attachment U-3 at 10531 of 10603.

1 emergency responders to ensure that the responders can contact Idaho Power in the
2 event of a fire near the B2H right-of-way or if de-energization of the Project may be
3 needed.¹²⁹ At a minimum, Idaho Power will provide that information to the Sheriff's Office,
4 Police Department, Emergency Service Office, Public Works Department, Forest Service,
5 and Ranger Station Interagency Dispatch Centers, as applicable per county.¹³⁰

6 **Q. How will Idaho Power ensure an adequate response to any fire that could occur**
7 **during construction of the Project?**

8 A. During construction, in those areas covered by a fire response organization or located on
9 federal land, Idaho Power will attempt to negotiate an agreement with all governing fire-
10 response organizations or federal agencies outlining communication and response
11 procedures for potential fires within their boundaries.¹³¹

12 In areas not covered by a fire response organization and not located on federal
13 land, Idaho Power will attempt to negotiate an agreement with the nearby fire response
14 organizations or the federal agencies to provide fire response.¹³² If no such agreements
15 can be reached, Idaho Power will propose alternatives such as contracting with a private
16 fire response company or providing additional firefighting equipment at those sites during
17 construction.¹³³

18 **Q. Did the fire response agencies identify how long it would take to respond to a fire**
19 **in the Project site?**

20 A. Yes. Idaho Power asked each fire response agency about their estimated response times
21 to reach a fire in the Project area. Several agencies stated that they could respond to a
22 fire within fifteen minutes; the longest reported response time was one hour.¹³⁴

¹²⁹ Final Order, Attachment U-3 at 10525 of 10603.

¹³⁰ Final Order, Attachment U-3 at 10525 of 10603.

¹³¹ Final Order at 616 of 10603.

¹³² Final Order, Attachment U-3 at 10526 of 10603.

¹³³ Final Order, Attachment U-3 at 10526 of 10603.

¹³⁴ Final Order at 611-13 of 10603.

1 **Q. Has Idaho Power coordinated with local fire response agencies regarding their**
2 **ability to respond to a potential wildfire in the Project site?**

3 A. Yes. Idaho Power contacted local fire protection agencies to solicit their input regarding
4 the potential impact of the Project on their ability to serve their communities.¹³⁵ Public
5 Services Condition 6 in EFSC's Final Order requires the Company to coordinate with local
6 fire protection agencies, enter into agreements with fire districts and rural fire protection
7 districts to provide fire protection, and submit the Fire Prevention and Suppression Plan
8 to the Council.¹³⁶

9 **Q. Did fire response organizations identify any specific concerns regarding wildfire**
10 **response during operation of the Project?**

11 A. Yes. Most of these agencies indicated that the Project will not adversely impact their
12 districts.¹³⁷ However, some agencies, including ODF, raised concerns regarding fighting
13 fires near energized transmission lines and that new access roads could potentially
14 increase fire starts.¹³⁸

15 **Q. How does Idaho Power respond to the agencies' concerns?**

16 A. As discussed above, Idaho Power addresses the potential increased fire risk from
17 unauthorized access through the strategic placement of access controls on the roads
18 leading to the Project.¹³⁹

19 Regarding ODF's de-energization concerns, Idaho Power will provide fire
20 departments and agencies contact information for Idaho Power's emergency 24/7
21 dispatch center, which those agencies can contact to request de-energization of the
22 Project.¹⁴⁰ Once contacted, Idaho Power's dispatch operator can de-energize the Project

¹³⁵ See Final Order at 616-17 of 10603.

¹³⁶ Final Order at 619-20 of 10603.

¹³⁷ Final Order at 616-17 of 10603.

¹³⁸ Final Order at 620 of 10603.

¹³⁹ Final Order at 609 of 10603.

¹⁴⁰ Final Order, Attachment U-3 at 10531 of 10603.

1 in a matter of seconds. After being de-energized, the Project would then be considered
2 unavailable to return to service until onsite employees or contractors are able to verify with
3 onsite emergency agencies that all personnel and equipment are no longer in danger of
4 electrical contact.¹⁴¹

5 In addition, Idaho Power offers a free training course for emergency responders to
6 teach them necessary guidelines that help ensure the safety of responders and the
7 general public.¹⁴²

8 **E. Wildfire Mitigation Plan**

9 **Q. What is the regulatory context for Idaho Power's Wildfire Mitigation Plan?**

10 A. In August 2020, the Commission opened an informal rulemaking related to mitigating
11 wildfire risks to utilities, utility customers, and the public. The scope of this docket (AR
12 638) shifted following the 2020 wildfire season, splitting into two tracks—a temporary
13 wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish
14 replacement permanent rules for the 2022 fire season.¹⁴³ On July 19, 2021, Oregon
15 Governor Kate Brown signed into law Senate Bill 762 ("SB 762"), a wildfire bill that, among
16 other actions, established minimum requirements for utility wildfire protection (or
17 mitigation) plans.¹⁴⁴ The bill required that utilities file inaugural plans no later than
18 December 31, 2021.¹⁴⁵ In response to the passage of SB 762, the Commission halted the
19 permanent wildfire rulemaking in AR 638 and opened docket AR 648 to develop interim
20 permanent rules adhering to the requirements and timing of the new law. On
21 September 8, 2022, the OPUC issued Order No. 22-335 in AR 638 finalizing requirements
22 for utility Wildfire Mitigation Plans. In accordance with SB 762 and OAR 860, Chapter

¹⁴¹ Final Order, Attachment U-3 at 10531 of 10603.

¹⁴² Final Order, Attachment U-3 at 10531 of 10603.

¹⁴³ *In re Rulemaking for Risk-Based Wildfire Protection Plans and Planned Activities Consistent with Executive Order 20-04*, AR 638, Scope and Schedule Announcement at 2 (Mar. 24, 2021).

¹⁴⁴ Codified at ORS 757.963.

¹⁴⁵ Or. Laws 2021, Ch. 592, § 5.

1 300, Idaho Power must prepare and file a Wildfire Mitigation Plan with the Commission.

2 **Q. Does Idaho Power also submit a Wildfire Mitigation Plan to the Idaho Public Utilities**
3 **Commission?**

4 A. Yes—to ensure consistency across its service territory, Idaho Power uses the same plan
5 in both states, and Idaho Power filed its Wildfire Mitigation Plan with the Idaho Commission
6 in connection with a deferral filing.

7 **Q. Can you please describe the key elements of the Wildfire Mitigation Plan?**

8 A. The key elements included in the Company's 2023 plan¹⁴⁶ are described below.

- 9 • Quantifying Wildland Fire Risk (Section 3). Idaho Power's approach to quantifying
10 wildland fire risk is to identify those geographic areas that are at an elevated risk of
11 wildfire should there be an ignition near a power line. Once elevated wildfire risk areas
12 are identified, mitigation actions and programs can be prioritized in those areas.
- 13 • Costs and Benefits of Wildfire Mitigation (Section 4). This assessment details Idaho
14 Power's assessment of high-level risk with respect to undertaking wildfire mitigation
15 activities and provides a framework for understanding the potential consequences of
16 wildfire damage and the possibility of diminishing those consequences through
17 targeted mitigation activities.
- 18 • Situational Awareness (Section 5). Visibility and readily available access to current
19 and forecasted meteorological conditions and fuel conditions is a key aspect of Idaho
20 Power's wildfire mitigation strategy. Meteorological and fuel conditions can vary
21 significantly across Idaho Power's service territory. Idaho Power leverages its internal
22 meteorology department's modeling/forecasting capabilities, its existing field weather
23 stations, and publicly available weather/fuel data to develop projections of current and
24 future wildfire potential across Idaho Power's service territory. This wildfire potential
25 information is then available to operations personnel to factor into their operational
26 decision-making.
- 27 • Mitigation—Field Personnel Practices (Section 6). A component of Idaho Power's
28 wildfire mitigation strategy is to prevent the accidental ignition and spread of wildfires
29 due to employee work activities. Idaho Power has developed the *Wildland Fire*
30 *Preparedness and Prevention Plan* (included as Appendix A to the Wildfire Mitigation
31 Plan) to provide guidance to Idaho Power employees and contractors to help prevent
32 the accidental ignition and spread of wildfires due to company work activities in
33 locations and under conditions where wildfire risk is heightened. All Idaho Power crews
34 and certain field personnel performing work on or near Idaho Power's facilities will be
35 expected to operate in accordance with the Wildland Fire Preparedness and
36 Prevention Plan and continue to conduct themselves in a fire-safe manner.

¹⁴⁶ Idaho Power/1310 (Docket UM 2209, Idaho Power Company's 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

- 1 • Mitigation—Operations (Section 7). A component of Idaho Power’s wildfire mitigation
2 strategy is to continue safe and reliable operation of its transmission and distribution
3 (“T&D”) lines while also reducing wildfire risk. These operational practices primarily
4 center around the following:
- 5 ○ Temporary operating procedures for transmission lines during the fire season.
6 ○ An operational strategy for transmission and distribution lines during time
7 periods of elevated wildfire risk during the fire season.
8 ○ If applicable, a Public Safety Power Shutoff (“PSPS”) strategy for Idaho
9 Power’s service area and transmission corridors.
- 10 • Mitigation—T&D Programs (Section 8). Idaho Power’s wildfire mitigation strategy
11 includes managing certain conditions related to its T&D lines such that they continue
12 to operate in a safe and reliable manner thus reducing the risk of igniting a fire. This is
13 accomplished through a portfolio of T&D asset management programs and Idaho
14 Power’s vegetation management program.
- 15 • Wildfire Response (Section 9). Idaho Power responds to wildfire events that have
16 resulted in an outage and, depending upon the situation, to wildfire events that
17 potentially may result in an outage. The response, as used in this wildfire context,
18 refers to Idaho Power’s actions (which are taken on a 24-hour basis) in:
- 19 ○ Responding to active fire situations
20 ○ Taking appropriate steps, where safe to do so, to protect Idaho Power-owned
21 facilities from experiencing fire damage
22 ○ Restoring electrical service following wildfire caused outages
23 ○ Communicating and informing customers.
- 24 • Communicating about Wildfire (Section 10). Idaho Power communicates information
25 about this Wildfire Mitigation Plan, including PSPS, and wildfire issues in general, to
26 employees, customers, government officials, the public and other stakeholders. Topics
27 of these communications vary due to timing and audience. For example, all customers
28 can benefit from outage preparedness tips and information about how we are
29 hardening the grid. The Company discusses PSPS plans in greater detail with Public
30 Safety Partners and operators of critical facilities, as well as customers who live in
31 PSPS zones. The following core messages are the foundation for all wildfire-related
32 communications:
- 33 ○ How customers can prepare for wildfire-related outages, including where to
34 find outage and PSPS information and how to sign up for alerts and update
35 contact information;
36 ○ Ways customers can reduce wildfire risk; and
37 ○ Idaho Power’s work to protect the grid from wildfire and reduce wildfire risk;

- 1 • Performance Monitoring and Metrics (Section 11). Idaho Power included measures
2 and metrics for evaluating the Wildfire Mitigation Plan to assess compliance with
3 policies and procedures and evaluate achievement of the Plan’s objectives.

4 **Q. Are there any related documents submitted with the Wildfire Mitigation Plan?**

5 A. Yes. The Wildfire Mitigation Plan includes three Appendices—the Wildland Fire
6 Preparedness and Prevention Plan,¹⁴⁷ the PSPS Plan, which outlines the process for
7 assessing when it may be necessary for the Company to de-energize a specific section of
8 line in response to weather events,¹⁴⁸ and a summary of Oregon’s regulatory and statutory
9 requirements and recommendations and where those elements may be found in the
10 Plan.¹⁴⁹

11 **Q. Was the Wildfire Mitigation Plan developed specifically for B2H?**

12 A. No. The Company engaged in a multi-year process to develop a comprehensive Wildfire
13 Mitigation Plan that will be used Company-wide for the facilities located in both Oregon
14 and Idaho. That said, the Wildfire Mitigation Plan analyzed risk zones in the Project area.
15 The proposed route was included in the wildfire risk assessment and associated map
16 analysis. Two locations along the route are identified as having elevated wildfire risk
17 (Yellow Risk Zones).¹⁵⁰ Idaho Power plans to address these locations consistent with the
18 mitigation strategy for transmission lines as described in the Wildfire Mitigation Plan.

19 **Q. Has the Wildfire Mitigation Plan been submitted to the Commission?**

20 A. Yes. The Wildfire Mitigation Plan was first submitted to the Commission on June 8, 2021,
21 as an attachment to the Company’s request for waiver for the temporary rules adopted in

¹⁴⁷ Idaho Power/1310, Lautenberger/99 (Docket UM 2209, Idaho Power Company’s 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

¹⁴⁸ Idaho Power/1310, Lautenberger/115 (Docket UM 2209, Idaho Power Company’s 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

¹⁴⁹ Idaho Power/1310, Lautenberger/147(Docket UM 2209, Idaho Power Company’s 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

¹⁵⁰ Idaho Power/1310, Lautenberger/43 (Docket UM 2209, Idaho Power Company’s 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

1 docket AR 638.¹⁵¹ Thereafter, the Company submitted its 2022 Wildfire Mitigation Plan in
2 December 2021,¹⁵² and its 2023 Wildfire Mitigation Plan in December 2022.¹⁵³

3 **Q. Has the Commission reviewed the Company's Wildfire Mitigation Plan?**

4 A. Yes. In Docket UM 2209, OPUC reviewed and approved Idaho Power's 2022
5 Supplemental Wildfire Mitigation Plan.¹⁵⁴ The Company filed its 2023 Wildfire Mitigation
6 Plan only two months ago, and expects that the Commission will review the plan within
7 180 days of filing.¹⁵⁵

8 **V. RESPONSE TO INTERVENOR TESTIMONY**

9 **Q. Have you reviewed the testimony submitted by intervenors to this proceeding as it**
10 **relates to fire risk from the B2H facility?**

11 A. Yes.

12 **Q. Which parties provided testimony regarding fire risk and mitigation?**

13 A. The Stop B2H Coalition ("STOP B2H"), Greg Larkin, Sam Myers, Wendy King, and
14 Timothy Proesch and Miranda Aston-Proesch provided testimony and exhibits addressing
15 fire risk and mitigation.

16 **Q. Please summarize the comments provided by intervenors concerning wildfire risk.**

17 A. The intervenors to this proceeding have expressed various concerns regarding Idaho
18 Power's assessment of fire risk along B2H and mitigation measures. Generally, the
19 intervenors assert that Idaho Power did not adequately address concerns about wildfire
20 risk and has not provided sufficient mitigation plans or fire protection measures to minimize
21 such risk. As I have previously testified, the probability of ignition from the 500 kV

¹⁵¹ *In re Idaho Power Company Application for Waiver of OAR 860-024-0050 and OAR 860-024-0060 through OAR 860-024-0160 Wildfire Rules*, Docket UM 2179, Idaho Power Company's Application for Waiver of Wildfire Rules, Attachment A (June 8, 2021).

¹⁵² Docket UM 2209, Idaho Power Company's 2022 Wildfire Mitigation Plan (Dec. 30, 2021).

¹⁵³ Idaho Power/1310 (Docket UM 2209, Idaho Power Company's 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

¹⁵⁴ Docket UM 2209, Order No. 22-312.

¹⁵⁵ OAR 860-320-0020(3).

1 transmission lines in B2H is low, and any such risk is addressed by the Company's
2 proposed mitigation plans which provide measures to reduce such risks during both
3 construction and operation of the Project.

4 **A. *Assertions Regarding the EFSC Process***

5 **Q. What concerns did STOP B2H raise regarding the sufficiency of the EFSC process
6 for addressing fire risk?**

7 A. The witness for STOP B2H, Jim Kreider, argues that the EFSC process was ineffective in
8 assessing the risks and mitigation plans for the transmission line. The witness notes that
9 the Commission was still promulgating rules for assessing Wildfire Mitigation Plans at the
10 time of the EFSC proceeding, and thus EFSC could not fully assess the plan without
11 finalized standards.¹⁵⁶

12 **Q. What is your response to these concerns?**

13 A. As discussed above, EFSC engaged in a detailed review of Idaho Power's wildfire
14 mitigation strategies. Additionally, EFSC evaluated the arguments raised by the limited
15 parties in the contested case proceeding, which also addressed various concerns related
16 to fire risk and mitigation. EFSC determined that Idaho Power's plans complied with all
17 relevant standards. While it is true that at the time of the EFSC proceeding the OPUC
18 had not finalized its rules regarding wildfire mitigation, by the time EFSC approved the Site
19 Certificate, the Commission had finalized its rules and approved Idaho Power's 2022
20 Wildfire Mitigation Plan.

21 **B. *Assertions Regarding Idaho Power's Analysis of Fire Risk***

22 **Q. What concerns were raised regarding Idaho Power's analysis of high-risk areas
23 along the proposed B2H route?**

¹⁵⁶ Stop B2H's Amended Testimony and Exhibits of Jim Kreider (Stop B2H/100, Kreider/14) (Feb. 1, 2023).

1 A. Sam Myers expresses concern that the route did not recognize a particular area in Morrow
2 County as a high risk fire zone.¹⁵⁷ STOP B2H argues that Idaho Power “missed” some
3 high risk areas along the line in Union County and Morrow County, including around
4 Morgan Lake.¹⁵⁸

5 **Q. What is your response to these concerns?**

6 A. As part of Idaho Power’s Wildfire Mitigation Plan, the Company analyzed fire risk along
7 the entire B2H corridor by quantifying risk from fires starting in close proximity to the B2H
8 corridor to other assets at risk. Risk is assessed by considering both the probability of fire
9 and its potential consequence. As I explained above, it is unlikely that a 500 kV
10 transmission line would cause a fire. On the consequence side of the equation, Idaho
11 Power considers potential fire size and structure impacts from fires starting under
12 powerlines. Accordingly, considering both probability and consequence, constructing and
13 operating B2H in Union County and Morrow County would not significantly increase fire
14 risk.

15 **Q. Did you specifically investigate Mr. Myers’ claims regarding fire risk in Morrow
16 County as part of the contested case proceeding at EFSC?**

17 A. Yes. In response to concerns raised by Mr. Myers in the EFSC proceeding, I investigated
18 his claims about the elevated fire risk in Morrow County, and also investigated his claims
19 that there may be “dust devils” that make contact with conductors and have the potential
20 to ignite a fire—similar to claims Mr. Myers is raising in this proceeding.¹⁵⁹ I analyzed data
21 from the Homeland Infrastructure Foundation Level Dataset and determined that at the
22 time of my analysis—in December 2021—there were 400 miles of transmission lines—
23 meaning lines with voltages of 69 kV or greater—in Morrow County, including about 90

¹⁵⁷ Sam Myers' Opening Testimony (Sam Myers/100, Myers/2) (Jan. 17, 2023)

¹⁵⁸ StopB2H/100, Kreider/15 (Feb. 1, 2023).

¹⁵⁹ Sam Myers/100, Myers/3 (Jan. 17, 2023).

1 miles of 500 kV transmission lines. I then cross-referenced the location of these lines with
2 ignition locations from the fire-occurrence database and determined that none of the
3 power line caused fires in Morrow County could have been caused by these transmission
4 lines. My conclusion was that if dust devils do occur in Morrow County in the vicinity of
5 transmission lines, they have not led to any fire ignitions. Mr. Myers filed an amended
6 exhibit, including a letter from Heppner Fire and Rescue Chief Steven Rhea. In the letter,
7 Chief Rhea cites two examples of electrical discharges from powerline-to-ground that he
8 has witnessed.¹⁶⁰ Due to the late filing of Mr. Myers' exhibit—17 days after the deadline
9 for Opening Testimony and Exhibits—our investigation of these fires is still ongoing at the
10 time of filing this Reply Testimony. I have requested information on both these fires based
11 on Chief Rhea's descriptions from the Oregon Office of the State Fire Marshall's Analytics
12 and Intelligence Department but have yet to receive a response. From the description
13 Chief Rhea provided, the 1994 fire may be the Smith Canyon Fire, which started July 9,
14 1994, and was contained the 15th of the same month after having grown to 10,400
15 acres.¹⁶¹ The original fire was caused by lightning.¹⁶² The second fire, having occurred
16 in 2022, could not be identified using the FOD so the National Interagency Fire Center's
17 ("NIFC") wildland fire perimeter dataset¹⁶³ was used. No perimeters in 2022 were found
18 that matched the geographic identifiers (i.e., "Gilliam County", "Heritage Lane", etc.).
19 However, the NIFC website explicitly states the dataset is an ongoing project and
20 perimeters are not available for every incident.¹⁶⁴ Furthermore, no local news publications

¹⁶⁰ Amended Opening Testimony of Sam Myers at 1-2 of 3 (Statement of Steven C. Rhea) (Feb. 3, 2023).

¹⁶¹ Karen C. Short, *Spatial wildfire occurrence data for the United States, 1992-2020*, U.S. Forest Service Research Data Archive (2022) <https://doi.org/10.2737/RDS-2013-0009.6are>.

¹⁶² Karen C. Short, *Spatial wildfire occurrence data for the United States, 1992-2020*, U.S. Forest Service Research Data Archive (2022)

¹⁶³ Wildland Fire Perimeters Full History, National Interagency Fire Center, <https://data-nifc.opendata.arcgis.com/datasets/nifc::wfigs-wildland-fire-perimeters-full-history/about> (last accessed Feb. 15, 2023).

¹⁶⁴ Wildland Fire Perimeters Full History, National Interagency Fire Center,

1 could be found discussing any 2022 Gilliam County fire caused by high voltage
2 transmission lines.

3 **Q. What concerns does Mr. Myers raise in connection with these two fires?**

4 A. Mr. Myers suggests that heavy smoke or dust/chaff could make contact with the
5 transmission line and cause a fire.¹⁶⁵

6 **Q How do you respond to Mr. Myers' concern about the possibility of an ignition
7 associated with heavy smoke or dust/chaff clouds?**

8 A. My analysis of the B2H design, including the type of soil in the Project area and the
9 distance between the towers, indicates that the probability of arcing or flashover on the
10 transmission line as a result of dust clouds or heavy smoke is low. However, in the unlikely
11 event of such an occurrence, the Project will include technology to minimize the risk of
12 fire.

13 **Q. What was EFSC's conclusion regarding this issue?**

14 A. In the Final Contested Case Order, EFSC and the Hearing Officer concluded (internal
15 citations omitted):

16 The risk of fire in the area in proximity to Mr. Myers' agricultural
17 operations in Morrow County is also low, given the irrigation, fallow
18 fields, and discontinuous fuels. In addition, the slopes adjacent to
19 the property are predominantly less than 15 degrees. The lack of
20 fires occurring in the area historically indicates the area is of lower
21 fire risk than areas that have burned previously. Consequently,
22 considering the distance between phases on the project's
23 structures, the height of the structures, and the soil type along the
24 site boundary, the probability that a whirlwind or dust devil would
25 ignite a fire along the transmission line is very small.¹⁶⁶

26 **Q. Please describe the protective measures that are designed to address the
27 possibility of arcing or flashover.**

¹⁶⁵ Amended Opening Testimony of Sam Myers at 1-2 of 3 (Statement of Steven C. Rhea).

¹⁶⁶ Idaho Power's Supplement to Petition for CPCN, Attachment 1 (Final Order, Attachment 6, Contested Case Order, As Amended and Adopted by Council) at 8754 of 10603 (Oct. 7, 2022) [hereinafter, "Contested Case Order"].

1 A. The Project will be equipped with protective devices to ensure safe operations of the
2 transmission line. This includes high-speed, low latency communications. If arcing or
3 flashover occurs, it looks like a fault to the protective equipment. Arcing/flashover can
4 occur during wildfire events as the smoke particles can be conductive, and if the smoke is
5 thick enough and wind blows it into the power lines it can cause arcing/flashover. There
6 are two types of faults that could occur from flashover/arcing due to wildfire, the first is a
7 phase-to-phase fault and the second is a single phase-to-ground fault. When phase-to-
8 phase faults occur, the protective equipment will detect the fault and clear it, de-energizing
9 all three phases of the circuit. This happens in 4-5 cycles (60 Hz), or between 66.7-83.3
10 milliseconds. It will remain de-energized until a dispatch operator re-energizes the line,
11 which is done remotely. If a single phase-to-ground fault occurs, protective equipment will
12 open (de-energize) the single phase, wait for a period of time, then reclose and re-
13 energize that phase. If the phase continues to fault after reclose happens, the fault is
14 treated the same way as a phase-to-phase fault. During wildfire season, if conditions meet
15 the criteria described in Idaho Power's Wildfire Mitigation Plan, this reclose option can be
16 shut off, and the single phase-to-ground fault will be cleared the same way as a phase-to-
17 phase fault.

18 **Q. Did you also specifically investigate the vegetation, topography, weather patterns,**
19 **and fire history in Union County as part of the contested case proceeding at EFSC?**

20 A. Yes. In the EFSC proceeding, numerous stakeholders raised concerns regarding the fire
21 risk in the Union County area in the vicinity of La Grande. In that proceeding, I provided
22 substantial analysis addressing those stakeholders' concerns and EFSC concluded that,
23 taking into account the Company's plans to address potential fire risk, the Project is not

1 likely to result in significant adverse impacts to the ability of public and private fire
2 protection providers to provide fire response services within the analysis area.¹⁶⁷

3 **Q. What analysis did you provide regarding the vegetation near La Grande?**

4 A. At the EFSC proceedings, stakeholders raised concerns that the vegetation near La
5 Grande is characteristic of a medium rate of fire spread. I explained that none of the
6 problematic fuels that have been involved in several of the large-loss fires in California, in
7 particular, the high-load chaparral vegetation, were present near La Grande.

8 **Q. What was your conclusion regarding the topography near La Grande?**

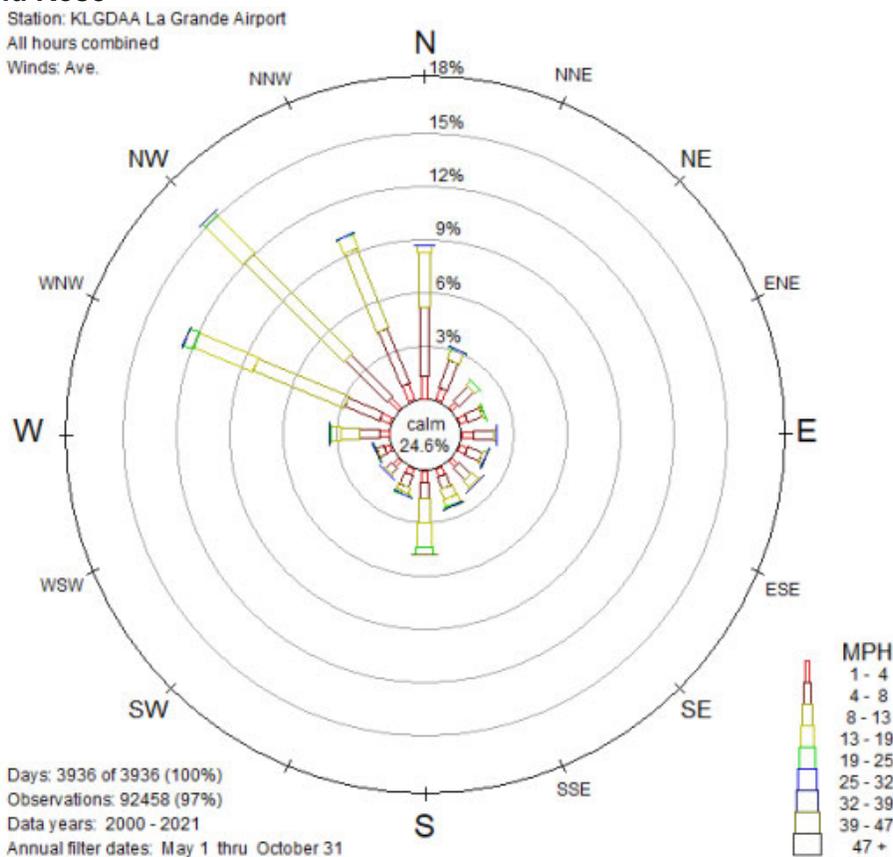
9 A. The stakeholders in the EFSC proceedings were concerned that the steep slopes near La
10 Grande, in particular near Morgan Lake Park, would increase the risk of fire spread. I
11 responded that, although the average slope in that area is about 9 to 11 degrees, these
12 steeper slopes would not increase the fire risk to La Grande because the Project is sited
13 uphill from the city. Since fire travels faster uphill than downhill and Morgan Lake is higher
14 than La Grande, if a fire were ignited in proximity to the B2H line near Morgan Lake, this
15 downhill slope would actually reduce the fire spread rate as it moves toward La Grande.

16 **Q. What was your analysis regarding the weather patterns in La Grande?**

17 A. In response to a concern from a stakeholder regarding wind speeds near La Grande, I
18 created a graph called a “wind rose,” which indicated that the predominant winds near the
19 Project would actually push a fire away from La Grande. I have copied that wind rose
20 below as Figure 9.

¹⁶⁷ Final Order at 624 of 10603.

1 **Figure 9. Wind Rose**



2

3 **Q. Finally, how did you analyze fire history near La Grande?**

4 A. Similar to my testimony in this proceeding, I provided a detailed analysis of the fire history
5 along the entire Project route using the FOD and the Wildland Fire Decision Support
6 System. In La Grande, similar to other areas near the Project, my analysis demonstrated
7 that fires that ignite in the area are often contained while they are still small.

8 **Q. What does Greg Larkin say about the risk of fire in the vicinity of Morgan Lake Park?**

9 A. Mr. Larkin comments that the Project will pass through the Morgan Lake area, which he
10 alleges has the highest risk of fire in Union County and further argues that the Company
11 was not providing sufficient location-specific fire management programs to address this
12 risk.¹⁶⁸

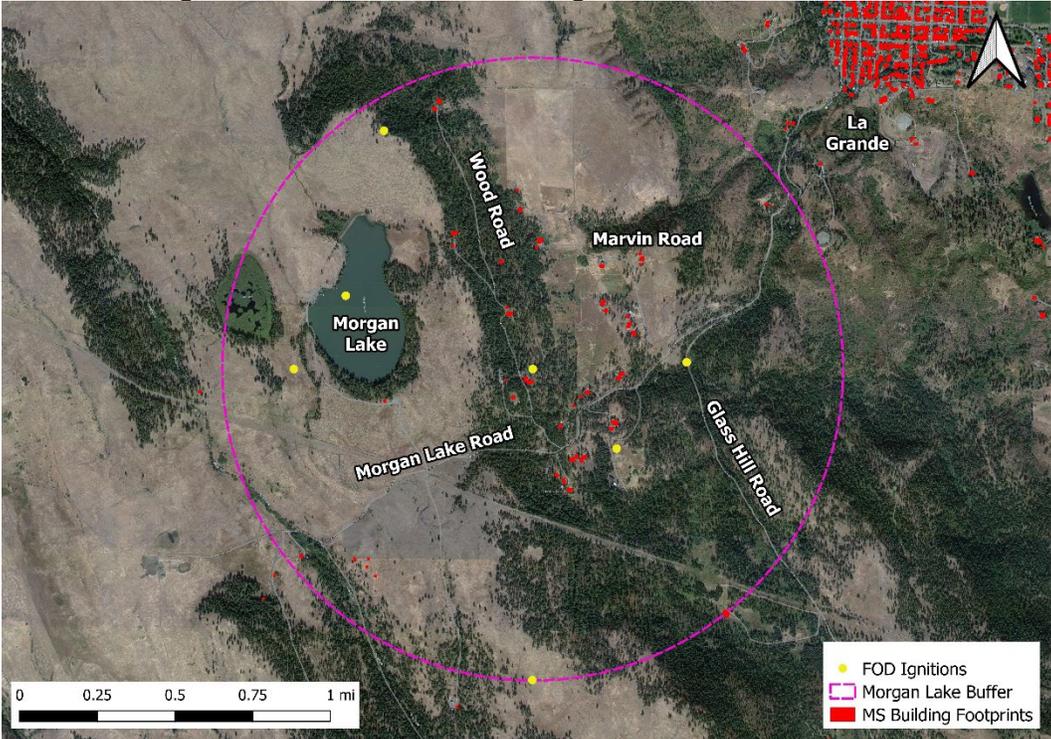
¹⁶⁸ Greg Larkin's Amended Opening Testimony and Exhibits of Greg Larkin (Greg Larkin/100, Larkin/22-23) (Feb. 1, 2023).

1 **Q. What is your response to this concern?**

2 A. Idaho Power analyzed risk from fires starting under the B2H line along its possible routes,
3 including in the vicinity of Morgan Lake. Due to the combined influence of topography,
4 fuel, wind speed and direction, structure locations relative to the B2H line, and defensible
5 space, Morgan Lake was not identified as being at high risk from fires caused by B2H.
6 This analysis only addressed risk from fires caused by B2H, not fires of all causes, and
7 did not quantify risk from all-cause fires to the Morgan Lake area. Idaho Power also
8 considered the existing Oregon Trail Electric Cooperative (“OTEC”) distribution lines that
9 serve the Morgan Lake area and reviewed ignition data from the FOD and it appears that
10 OTEC’s distribution lines have never caused a fire in that area, and those distribution lines
11 have a statistically higher ignition rate than 500 kV lines. These less-resilient power lines
12 have been in place for many years, and to the Company’s knowledge have never started
13 a fire.

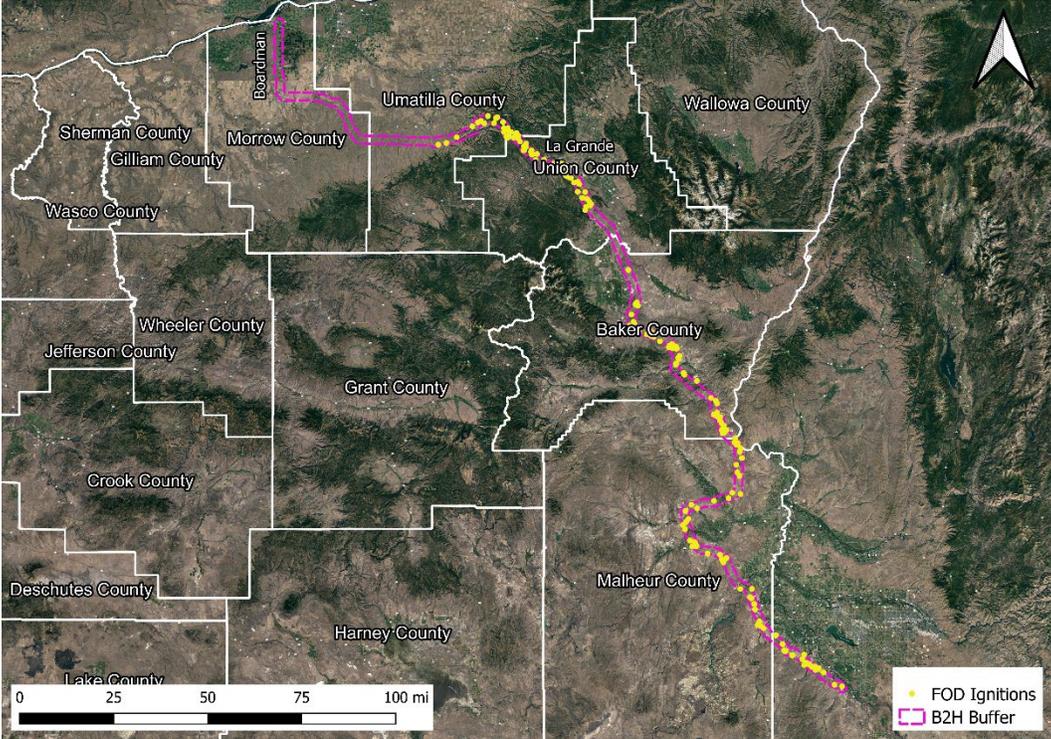
14 I analyzed historical ignitions within a one-mile buffer around the B2H route(s) and
15 a one-mile buffer centered around structures in Morgan Lake. Between 1992 and 2020
16 there were seven ignitions within the Morgan Lake buffer (Figure 10) and 211 ignitions
17 within the B2H buffer (Figure 11). As Figure 11 shows, there have been no ignitions within
18 one mile of the B2H route in Morrow County. Over the same time period and in the same
19 areas, there were no known powerline ignitions. Any increase in ignition probability
20 associated with the B2H line is small in comparison to the background rate of fire ignition.
21 In addition, as discussed previously, the existing 230 kV line has had no known ignitions
22 in its 70-year service history.

1 **Figure 10. Historic Ignitions within 1 Mile of Morgan Lake**



2

3 **Figure 11. Historic Ignitions within 1 mile of B2H Routes**



1 **Q. What criteria did Idaho Power assess when determining areas of heightened wildfire**
2 **risk?**

3 A. As mentioned above, Idaho Power considered several factors, including: fuel, weather,
4 and topography; resistance to fire control; means of ingress and egress;
5 presence/absence of defensible space; vulnerable populations; cell phone coverage; and
6 non-burnable land cover such as built-up urban areas.¹⁶⁹

7 **Q. Why did Idaho Power conclude that the Morgan Lake area does not have a**
8 **heightened risk from wildfire?**

9 A. There are two basic categories of wildfire risk maps. The first, which is what most people
10 envision, quantifies a particular location's risk from fire regardless of how or where a fire
11 is ignited. The second type of risk map is the inverse of the first. It quantifies risk
12 associated with fires starting at a given location to other assets at risk such as structures.
13 Idaho Power conducted the second type of risk map by quantifying risk from fires igniting
14 in proximity to powerlines. This analysis did not quantify risk to the Morgan Lake area from
15 fires of all causes, only from fires starting in proximity to the B2H line. This analysis showed
16 the relative risk from fire starting near the B2H line in the Morgan Lake area to be lower
17 than relative risk from fires starting near powerlines in other parts of its service territory.

18 **C. *Assertions Regarding Soil Impact***

19 **Q. Mr. Myers expresses concern about the impacts of the B2H facility on agricultural**
20 **soils and recommends that Idaho Power develop soil damage mitigation policies to**
21 **address the risk of fire.¹⁷⁰ What is your response?**

22 A. My understanding is that Mr. Myers made a similar proposal in the EFSC contested case
23 proceeding, and the Hearing Officer and Council concluded that no such plan is warranted

¹⁶⁹ Idaho Power/1310, Lautenberger/1 (Docket UM 2209, Idaho Power Company's 2023 Wildfire Mitigation Plan (Dec. 29, 2022)).

¹⁷⁰ Sam Myers' Amended Opening Testimony at 8 of 9 (Feb. 3, 2023).

1 in these circumstances.¹⁷¹ The Hearing Officer and Council found that Idaho Power
2 adequately addressed these concerns in its Agricultural Lands Assessment, Fire
3 Prevention and Suppression Plan, Wildfire Mitigation Plan, and PSPS Plan and that the
4 risk of soil damage from B2H was minimal.¹⁷²

5 **D. Assertions Regarding Local Fire Departments**

6 **Q. What concerns did intervenors express regarding the ability of local fire**
7 **departments to respond to potential fires associated with Idaho Power’s**
8 **transmission line?**

9 A. Mr. Larkin expresses concern that Idaho Power is relying on underprepared volunteer fire
10 departments to fight potential powerline fires, and further claims that these fire
11 departments lack the equipment and manpower to address potential fires which could
12 result from the B2H facility.¹⁷³ Timothy Proesch and Miranda Aston-Proesch note their
13 concern that the local volunteer firefighters near their property lack the training and
14 resources necessary to respond to electric fires.¹⁷⁴ Mr. Myers states that Idaho Power is
15 “dodging the responsibility” to provide resources to local fire departments.¹⁷⁵

16 **Q. What is your response to these concerns?**

17 A. Idaho Power will coordinate with local fire departments to provide a free training course
18 for responding to potential fires along the transmission line and engage in ongoing

¹⁷¹ See Contested Case Order at 8843 of 10603 (“*Fire impact on soils*. Mr. Myers also raised the concern that a project-related catastrophic fire could cause significant damage to his soil. He asserts that Idaho Power should have “a plan in place for immediate soil rehabilitation and compensation.” As discussed above (and in more detail below in the context of Issues PS-4 and PS10), the likelihood of a catastrophic project-related wildfire during operation is very low. Fires caused by 500kV transmission lines are exceedingly rare. Moreover, historically, wildfires in the area near Mr. Myers’ agricultural operations have been relatively small and quickly contained. Given the improbability of a project-related wildfire disrupting Mr. Myers’ agricultural operations, there is no need for Idaho Power have a soil rehabilitation plan in place for Mr. Myers’ agricultural land.”) (internal citations omitted).

¹⁷² Contested Case Order at 8725 of 10603.

¹⁷³ Greg Larkin/100, Larkin/22-23 (Feb. 1, 2023).

¹⁷⁴ Timothy Proesch & Miranda Aston-Proesch Opening Testimony and Exhibits at 5 of 19 (Exhibit 3) (Jan. 17, 2023).

¹⁷⁵ Sam Myers/100, Myers/4 (Jan. 17, 2023).

1 communication to address fires. The Company consulted with local fire response
2 organizations who indicated that B2H would create minimal impact on their department.¹⁷⁶
3 As the Project is developed, if Idaho Power cannot reach an agreement with fire response
4 organizations or federal agencies to provide fire response, the Company will explore
5 alternatives as described previously. Thus, based on my review of Idaho Power’s wildfire
6 management plans, local fire departments will have sufficient resources to respond to
7 potential fires.

8 In addition to these agreements between the Company and fire response
9 organizations, mutual aid agreements have been established between local fire districts
10 and other organizations to respond to fires. For example, the fire response to the Morgan
11 Lake Area was thoroughly discussed in the EFSC proceedings.¹⁷⁷ Although the volunteer
12 La Grande Rural Fire Protection District (“LGRFPD”) has jurisdiction to respond to fires in
13 the Morgan Lake Area,¹⁷⁸ the LGRFPD has mutual aid agreements with two fully staffed
14 professional fire response agencies—the City of La Grande and the Oregon Department
15 of Forestry.¹⁷⁹

16 **Q. Mr. Larkin further states that counties submitted comments to EFSC noting concern**
17 **about their ability to deal with the increased risk of fire associated with the**
18 **development.¹⁸⁰ What is your response?**

19 A. Officials from Baker County submitted comments on the final ASC noting concern about
20 the initial Fire Prevention and Suppression Plan’s conclusions regarding the local fire

¹⁷⁶ Final Order at 616-17 of 10603.

¹⁷⁷ Final Order at 45 of 10603 (discussing disposition of Issue PS-4, which concluded that Idaho Power “adequately analyzed . . . the ability of local firefighting service providers to respond to fires in the project area”).

¹⁷⁸ Idaho Power/1311, Lautenberger/16 (EFSC Contested Case, Deposition of Craig Kretschmer).

¹⁷⁹ Idaho Power/1311, Lautenberger/8 (EFSC Contested Case, Deposition of Craig Kretschmer).

¹⁸⁰ Greg Larkin/100, Larkin/23 (Feb. 1, 2023).

1 departments' capacity to respond to a fire on the transmission line.¹⁸¹ In response to these
2 concerns, EFSC required Idaho Power to consult with affected counties in development
3 of the final Fire Prevention and Suppression Plan.¹⁸² Mr. Larkin's assertion that requests
4 from county fire departments for additional assistance were not addressed is thus contrary
5 to the record in the EFSC proceeding.

6 ***E. Assertions Regarding Other Powerline-Related Fires***

7 **Q. What concerns did Mr. Proesch and Ms. Aston-Proesch express regarding other**
8 **powerline-related fires?**

9 A. Mr. Proesch and Ms. Aston-Proesch note two previous fires in Baker County, the Lime Hill
10 Fire and Powerline Fire, which occurred near Idaho Power's transmission corridors. The
11 witnesses express concern with the Company's settlement of the Department of Justice
12 investigation into these fires. Their testimony indicates that because B2H will be larger
13 than either of the lines which were affected by those fires, the risk is much higher.¹⁸³

14 **Q. What is your response to these concerns?**

15 A. As an initial matter, as I have explained above, the probability of the B2H transmission line
16 igniting a fire is low. That said, Mr. Proesch's and Ms. Aston-Proesch's testimony refers
17 to a settlement between Idaho Power and the U.S. Department of Justice. From my
18 understanding, in agreeing to this settlement, the Company did not admit any fault in those
19 fires. Moreover, the premise of their assertion is incorrect—the risk of ignition is actually
20 reduced with a higher voltage line due to the wider right-of-way widths, stricter vegetation
21 clearing requirements, and tower taller structures, etc., as I detailed earlier in my
22 testimony. As I have testified above, it is incorrect to state that a larger transmission line

¹⁸¹ See Idaho Power's Supplement to Petition for CPCN, Attachment 1 (Final Order, Attachment 5 – Referenced Reviewing Agency Comment Letters and Documents Referenced) at 8479-8481 of 10603.

¹⁸² Final Order at 578 of 10603.

¹⁸³ Timothy Proesch & Miranda Aston-Proesch Opening Testimony and Exhibits at 4 of 19 (Exhibit 3) (Jan. 17, 2023).

1 presents a greater risk of fire than a smaller line. The 500 kV transmission lines which will
2 be built for B2H present very little risk when compared to smaller transmission lines. As
3 such, the witnesses' assertion is inaccurate.

4 **Q. Please summarize Wendy King's testimony.**

5 A. Ms. King provided testimony regarding her experience associated with the Holiday Farm
6 Fire that occurred on September 7, 2020, and detailing the long-term impacts to the
7 community associated with that event.¹⁸⁴

8 **Q. Does Ms. King specifically address fire concerns associated with B2H?**

9 A. She states that her testimony is "presented to provide insight to the potential
10 consequences of a negligence of facts pertaining to fire prevention and safety for
11 Oregonians and their properties."¹⁸⁵ Although she does not make any specific claims
12 associated with B2H, she references the testimony offered by Sam Myers.

13 **Q. How do you respond to Ms. King's testimony?**

14 A. As detailed above, Idaho Power maintains that 500 kV transmission lines have a low
15 probability of fire ignition. Additionally, Idaho Power takes its commitments to reduce the
16 risk of fires seriously by adhering to the measures included in its Wildfire Mitigation Plan
17 and other related plans. Idaho Power engaged with stakeholders on wildfire mitigation
18 during the EFSC proceeding, and the final Public Services Condition 6 which required
19 submittal of the Fire Prevention and Suppression Plan was amended in response to
20 stakeholder input.¹⁸⁶ Idaho Power is sympathetic to the impacts felt by the affected
21 communities that are still recovering from the 2020 Labor Day Fires, however, to the extent
22 Ms. King is implying that the Project is likely to ignite a fire of comparable scale, I would
23 disagree with that implication.

¹⁸⁴ Wendy King's Opening Testimony at 2-4 of 5 (Feb. 1, 2023).

¹⁸⁵ Wendy King's Opening Testimony at 4 of 5 (Feb. 1, 2023).

¹⁸⁶ See Contested Case Order at 8747-8748 of 10603.

1 **Q. What were the 2020 Labor Day Fires?**

2 A. The 2020 Labor Day Fires were newly-ignited and pre-existing fires that were rapidly
3 exacerbated by a historic east wind event on September 7, 2020.

4 **Q. Were any of the Labor Day Fires allegedly caused by powerlines caused by 500 kV
5 lines?**

6 A. No, not to my knowledge. None of the powerlines alleged to be involved in the Labor Day
7 Fires were 500 kV. They were either distribution level voltage, 115 kV, or 230 kV.

8 **F. Other Assertions**

9 **Q. In Staff's testimony, Yassir Rashid comments that "[a]ssuming the Project could
10 potentially result in an increased risk of wildfire," Idaho Power has addressed this
11 topic.¹⁸⁷ Do you agree with this assumption?**

12 A. No. While Idaho Power appreciates that Staff views Idaho Power's Wildfire Mitigation
13 Plan and other related plans and discussion as addressing the topic of wildfire, Idaho
14 Power seeks to address the assumption included in Mr. Rashid's testimony. As I have
15 previously testified, the risk of wildfire from the high voltage transmission lines that will be
16 installed as part of the Project is minimal. Any risk of fire which will occur during the
17 construction phase has been sufficiently addressed by Idaho Power's Fire Prevention and
18 Suppression Plan as described above. Thus, the Project will not result in a significant
19 increase in the risk of wildfire.

20 **Q. Does this conclude your testimony?**

21 A. Yes, it does.

¹⁸⁷ Staff's Opening Testimony and Exhibits of Yassir Rashid (Staff/200, Rashid/17) (Jan. 17, 2023).

Idaho Power/1301
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

Curriculum Vitae of Christopher W. Lautenberger

February 21, 2023

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Professional Profile

Chris Lautenberger is a co-founder of Reax Engineering, a fire protection engineering and fire science firm with offices in Berkeley and Auburn, CA. He is a licensed Fire Protection Engineer with expertise in fire science, fire dynamics, fire modelling, and forensic fire reconstruction. Lautenberger's professional activities involve applying fire dynamics and combustion principles to analyze various aspects of fire and combustion processes, ranging from small-scale smoldering combustion to large-scale wildland fire dynamics. He has published on several aspects of combustion and fire, including flammability, pyrolysis, ignition, fire spread, and fire modeling. Lautenberger has over 20 years of experience applying fire dynamics calculations and fire models in support of scientific research, fire protection engineering design, and forensic fire reconstruction. Chris has developed computer models to analyze trajectories and ignition potential of metallic and woody particles generated by conductor clashing and interactions between vegetation and overhead electrical utilities, wildland fire propagation, and wildland fire risk. Lautenberger has provided expert testimony at deposition and trial on more than 25 occasions on litigation matters related to both wildland and structure fires, including several fires with losses in excess of \$100M. Dr. Lautenberger has co-taught Masters-level courses in Fire Dynamics and Fire Modeling in the Department of Fire Protection Engineering at California Polytechnic State University, San Luis Obispo.

Education

PhD – Mechanical Engineering, University of California at Berkeley, 2003 - 2007

- Dissertation title: “A Generalized Pyrolysis Model for Combustible Solids”
- Major field: Combustion
- Minor fields: Wildland Fire Science and Fluid Dynamics

MS – Fire Protection Engineering, Worcester Polytechnic Institute, 2000 - 2001

- Thesis title: “CFD Simulation of Soot Formation and Flame Radiation”

BS – Mechanical Engineering, Worcester Polytechnic Institute, 1995 - 1999

Professional Licensure

Licensed Professional Engineer, State of California, # FP1676 (Fire Protection Engineering)

Professional Experience

2008 – current **Reax Engineering Inc.** Berkeley, CA and Auburn, CA *Founding Partner and Principal Engineer*

Representative projects:

- *Next Generation Open Source Wildfire Models for Grid Resiliency:* Currently leading the real-time wildfire spread and risk forecasting component of this \$5M project recently funded by the California Energy Commission. This project provides utilities and other stakeholders with real-time forecasts of active wildland fires as well as landscape-scale burn probabilities up to one week in the future. It also models ignition probability, fire size, and impacts from utility-caused fires under forecasted wind and weather conditions to inform proactive de-energization decisions.
- *Urban wildfire spread modeling:* Under funding from the Gordon & Betty Moore Foundation, currently collaborating with UC Berkeley and University of Maryland researchers to develop and implement a model for structure to structure spread in WUI fires.
- *Hazard modeling for quantification of parcel-specific fire risk in the continental US:* Currently developing scalable operational fire spread modeling techniques to model hundreds of millions

of fires across the continental US and provide fire hazard outputs for use in quantifying parcel-level fire risk.

- *California Public Utilities Commission (CPUC) High Fire Threat District Mapping:* Co-led (along with Pacific Gas & Electric and San Diego Gas & Electric) the Peer Development Panel tasked by the CPUC with developing high fire threat districts that identify areas where overhead electrical utilities present elevated or extreme risks of igniting damaging wildland or wildland urban interface (WUI) fires. This map was adopted by the CPUC for regulatory purposes in 2018 and is currently used to promulgate regulations related to electrical utility fire safety in California.

Selected wildland fire hazard analysis and modeling project work:

- Determined maximum reasonably foreseeable Santa Ana wind speed in Malibu Canyon using wind modeling and pole-mounted anemometers installed specifically for this project
- High resolution smoke plume modeling to assess potential for Libby Amphibole Asbestos (LAA) to be transported by large-scale wildland fires
- Developed de-energization criteria and associated weather monitoring analytics for utilities in California and Nevada
- Analyzed fire hazard/risk associated with major housing developments in San Diego County including Otay Ranch and Newland Sierra
- Developed ELMFIRE (Eulerian Level Set Model of Fire Spread), a parallelized model for simulating wildland fire spread and quantifying wildland fire risk via Monte Carlo simulation
- Conducted high resolution wind/weather modeling to analyze historical fire weather in Southern California
- Assisted utility clients with data requests and analytics associated with preparation of Senate Bill 209 Wildfire Mitigation Plans

Selected wildland fire forensic reconstructions and analyses:

- Reconstruction of initial spread of the 2017 Starbuck Fire near Beaver, OK
- Reconstruction of initial spread of the 2011 Bastrop Complex Fire (Bastrop, TX)
- Analyzed ignition dynamics associated with the 2012 Sheep Fire near Lucille, ID
- Analysis of ignition, initial spread, and smoke transport from the 2009 Murrindindi Bushfire (Victoria, Australia)
- Simulation of smoke transport from the 2010 Crown Fire near Palmdale, CA
- Reconstruction of the spread of the 2008 Iron Complex Fire in Northern California and assessment of the impact of firing activities on timber loss in private inholdings
- Calculation of trajectory and temperature histories of metallic particles allegedly generated by clashing between aluminum and copper electrical conductors and analysis of grass-fire ignition potential, initial spread rate, and plume dynamics (Victoria, Australia)
- Analysis of wildland fires ignited by exhaust particles from a locomotive including analysis of particle trajectories and fuel ignitability (Victoria, Australia)

Selected structure and vehicle fire forensic reconstructions and analyses:

- Analysis of a methane generation, transport, and ignition from decomposing manure in a fatal pig barn fire
- Analysis of diesel fuel ignitability by hot surfaces in a fracking rig fire
- Reconstruction of fatal apartment fire where smoke alarms failed to activate (Long Beach, CA)
- Reconstruction of fatal fire in manufactured home including time to smoke alarm activation and analysis of available safe egress time (Castleberry, AL)
- Analysis of crude oil ignitability and time to incapacitation in a fatal fire where the cab of a truck was engulfed in flames from burning crude oil released during an accident.
- Analysis of ignitability of water/antifreeze mixture discharged from residential sprinkler system, analysis of initial fire spread, and assessment of burn injuries (Herriman, UT)
- Origin hypothesis testing for fatal alleged arson fire (Calcasieu Parish, Louisiana)
- Fire cause hypothesis testing and analysis of residential LPG explosion for alleged arson fire (Round Mountain, CA)

Selected Fire Protection Engineering project work:

- Calculation of Light Rail Vehicle heat release rates in the San Francisco Central Subway using fire growth modeling and fire testing (San Francisco, CA)
- Analysis of rail vehicle design fires, testing, and modeling for Los Angeles County Metropolitan Transit Authority (Los Angeles, CA)
- Development of automatic sprinkler protection criteria and analysis of flammable liquids processes at semiconductor plant (Santa Rosa, CA)
- Analysis of wildland urban interface fire and life safety concerns at proposed subdivisions in Oakland, CA, St. Helena, CA, and Encinitas, CA
- Sizing of atrium smoke exhaust rate in the new Student Union Building at San Jose State University (San Jose, CA)
- Development of a model for ignition of HEPA filters by embers at the Hanford nuclear waste treatment plant (Richland, WA)

2010 – 2021

California Polytechnic State University, San Luis Obispo *Instructor*

- Fire Protection Engineering Instructor in Cal Poly's Masters degree program
- Teaching responsibilities include FPE 502 Fire Dynamics and FPE 504 Fire Modeling

2007 – 2011

University of California at Berkeley *Post Doctoral Researcher*

- Conducted research on NSF Grant 0730556, "Tackling CFD Modeling of Flame Spread on Practical Solid Combustibles"
- Assessed predictive capabilities of Fire Dynamics Simulator (FDS) for simulating flame spread and fire growth
- Modified subroutines to improve predictive capabilities of FDS for flame spread modeling
- Developed pyrolysis model and material property estimation techniques needed to simulate the pyrolysis of real-world solid fuels
- Developed computer model for ignition of fuel beds by hot particles and fire brands to predict ignition of fuel beds and initiation of spot fires

2002 – 2008

Arup Fire San Francisco, CA *Fire Protection Engineer*

- Assisted clients with fire safety design and achieving code compliance or performance-based solutions for hospitals, casinos, malls, libraries, schools, museums, airports, and offices
- Assessed fire performance of buildings using fire modeling and egress analyses in support of alternate methods of design
- Developed and programmed a CFAST-based Monte-Carlo fire simulator
- Simulated fire development in a rail vehicle and calibrated the model with large-scale experimental fire test data
- Representative projects include Wynn Las Vegas, Hard Rock Hotel and Casino Las Vegas, Kaiser Permanente templates, New Los Angeles Federal Courthouse, San Mateo Public Library, California Academy of Sciences, Bay Area Rapid Transit (BART) Montgomery Street Station, and Seattle Public Library

2000 – 2001

FM Global Research (formerly Factory Mutual Research Corporation) Norwood, MA

- Examined existing soot formation and oxidation models in the literature and used this research to postulate a new engineering soot model that is compatible with FDS
- Worked with FM Global and NIST scientists to add this new model for soot formation and oxidation to FDS, and performed simulations of laminar and turbulent diffusion flames

Dissertation and Thesis

2003 – 2007

PhD Dissertation *University of California, Berkeley*

- Developed a generalized pyrolysis/material decomposition model (Gpyro) to simulate the gasification, pyrolysis, and combustion of condensed-phase fuels
- Developed an optimization technique that uses a genetic algorithm to extract material pyrolysis properties needed for simulation of solid-phase pyrolysis from bench-scale fire tests

- Performed FDS-based simulations of ignition, flame spread, and fire growth in normal and reduced gravity environments as part of a NASA-sponsored project

2000 – 2001 **MS Thesis Worcester Polytechnic Institute**

- Developed a model for soot formation/oxidation in non-premixed flames
- Implemented model in FDS to calculate soot formation and flame radiation

Peer Reviewed Publications

1. Lautenberger, C., de Ris, J., Dembsey, N.A., Barnett, J.R. & Baum, H.R., “A Simplified Model for Soot Formation and Oxidation in CFD Simulation of Non-premixed Hydrocarbon Flames,” *Fire Safety Journal* **40**: 141-176 (2005).
2. Lautenberger, C., Zhou, Y.Y. & Fernandez-Pello, A.C., “Numerical Modeling of Convective Effects on Piloted Ignition of Composite Materials,” *Combustion Science and Technology* **177**: 1231-1252 (2005).
3. Lautenberger, C. & Fernandez-Pello, A.C., “Approximate Analytical Solutions for the Transient Mass Loss Rate and Piloted Ignition Time of a Radiatively Heated Solid in the High Heat Flux Limit,” *Fire Safety Science* **8**: 445-456 (2005).
4. Lautenberger, C., Rein, G. & Fernandez-Pello, A.C., “Application of a Genetic Algorithm to Estimate Material Properties for Fire Modeling from Bench-Scale Fire Test Data,” *Fire Safety Journal* **41**: 204-214 (2006).
5. Rein, G., Lautenberger, C., Fernandez-Pello, A.C., Torero, J.L. & Urban, D.L., “Application of Genetic Algorithms and Thermogravimetry to Determine the Kinetics of Polyurethane Foam in Smoldering Combustion,” *Combustion and Flame* **146**: 95-108 (2006).
6. Rich, D., Lautenberger, C., Torero, J.L., Quintiere, J.G. & Fernandez-Pello, C., “Mass Flux of Combustible Solids at Piloted Ignition,” *Proceedings of the Combustion Institute* **31**: 2653-2660 (2007).
7. Kwon, J.-W., Dembsey, N.A., & Lautenberger, C.W., “Evaluation of FDS v4: Upward Flame Spread,” *Fire Technology* **43**: 255-284 (2007).
8. Avila, M.B., Dembsey, N.A., Kim, M.E., Lautenberger, C., & Dore, C., “Fire Characteristics of Polyester FRP composites with Different Glass Contents,” *Composites Research Journal* **2**: 1-14 (2008).
9. Lautenberger, C., Kim, E., Dembsey, N. & Fernandez-Pello, C., “The Role of Decomposition Kinetics in Pyrolysis Modeling – Application to a Fire Retardant Polyester Composite,” *Fire Safety Science* **9**: 1201-1212 (2008).
10. Dodd, A.B., Lautenberger, C. & Fernandez-Pello, A.C., “Numerical Examination of Two-Dimensional Smolder Structure in Polyurethane Foam,” *Proceedings of the Combustion Institute* **32**: 2497-2504 (2009).
11. Lautenberger, C. & Fernandez-Pello, A.C., “Generalized Pyrolysis Model for Combustible Solids,” *Fire Safety Journal* **44**: 819-839 (2009).
12. Lautenberger, C. & Fernandez-Pello, A.C., “A Model for the Oxidative Pyrolysis of Wood,” *Combustion and Flame* **156**: 1503-1513 (2009).
13. Hadden, R., Scott, S., Lautenberger, C., & Fernandez-Pello, A.C., “Ignition of Combustible Fuel Beds by Hot Particles: an Experimental and Theoretical Study,” *Fire Technology* **47**: 341-355 (2011).
14. Fereres, S., Lautenberger, C., Fernandez-Pello, C., Urban, D.L., & Ruff, G.A., “Mass Loss Rate at Ignition in Reduced Pressure Environments,” *Combustion and Flame* **158**: 1301-1306 (2011).
15. Lautenberger, C. & Fernandez-Pello, C., “Optimization Algorithms for Material Pyrolysis Property Estimation,” *Fire Safety Science* **10**: 751-764 (2011).
16. Dodd, A.B., Lautenberger, C., & Fernandez-Pello, A.C., “Computational Modeling of Smolder Combustion and Spontaneous Transition to Flaming,” *Combustion and Flame* **159**: 448–461 (2012).
17. Matala, A., Lautenberger, C., & Hostikka, S., “Generalized direct method for pyrolysis kinetics parameter estimation and comparison to existing methods,” *Journal of Fire Sciences* **30**: 339-356 (2012).
18. Fereres, S., Lautenberger, C., Fernandez-Pello, A.C., Urban, D.L., and Ruff, G.A., “Understanding ambient pressure effects on piloted ignition through numerical modeling,” *Combustion and Flame* **159**: 3544–3553 (2012).
19. Wong, W., Alston, J., Lautenberger, C., and Dembsey, N., “CFD Flame Spread Model Validation: Multi-component Data Set Framework,” *Journal of Fire Protection Engineering* **23**: 85-134 (2013).
20. Lautenberger, C., “Wildland Fire Modeling with an Eulerian Level Set Method and Automated Calibration,” *Fire Safety Journal* **62**: 289-298 (2013).
21. Lautenberger, C., “Gpyro3D: A Three Dimensional Generalized Pyrolysis Model,” *Fire Safety Science* **11**: 193-207 (2014).
22. Fernandez-Pello, A.C., Lautenberger, C., Rich, D., Zak, C., Urban, J., Hadden, R., Scott, S., and Fereres, S., “Spot fire ignition of natural fuel beds by hot metal particles, embers, and sparks,” *Combustion Science and Technology* **187**: 269-295 (2015).

23. Yashwanth, B.L., Shotorban, B., Mahalingam, S., Lautenberger, C.W., and Weise, D.R., "A numerical investigation of the influence of radiation and moisture content on pyrolysis and ignition of a leaf-like fuel element," *Combustion and Flame* **163**: 301–316 (2016).
24. Lautenberger, C., "Mapping Areas at Elevated Risk of Large-Scale Structure Loss Using Monte Carlo Simulation and Wildland Fire Modeling," *Fire Safety Journal* **91**: 768-775 (2017).
25. Fawaz, M., Lautenberger, C., and Bond, T., "Prediction of organic aerosol precursor emission from the pyrolysis of thermally thick wood," *Fuel* **269**: 117333 (2020).
26. Kearns, E.J., Saah, D., Levine, C.R., Lautenberger, C., *et al.*, "The Construction of Probabilistic Wildfire Risk Estimates for Individual Real Estate Parcels for the Contiguous United States. *Fire* **5**: 117 (2022).
27. Stephens, S.L., Bernal, A.A., Collins, B.M., Finney, M.A., Lautenberger, C., and Saah, D., "Mass fire behavior created by extensive tree mortality and high tree density not predicted by operational fire behavior models in the southern Sierra Nevada," *Forest Ecology and Management* **518**: 120258 (2022).

Book Chapters

1. Lautenberger, C., Torero, J.L. & Fernandez-Pello, A.C., "Understanding Materials Flammability," in *Flammability Testing of Materials Used in Construction, Transport and Mining*, Edited by V. Apte, Woodhead Publishing, Cambridge, UK pp. 1-21, 2006.
2. Lautenberger, C. & Fernandez-Pello, A.C., "Pyrolysis Modeling, Thermal Decomposition, and Transport Processes in Combustible Solids," in *Transport Phenomena in Fires*, Edited by M. Faghri and B. Sunden, WIT Press, Billerica, MA pp. 209-248, 2008.
3. Lautenberger, C. & Fernandez-Pello, A.C., "Spotting Ignition of fuel beds by firebrands," in *Computational Methods and Experimental Measurements XIV*, Edited by C.A. Brebbia and G.M. Carlomango, WIT Press, Billerica, MA pp. 603-612, 2009.
4. Lautenberger, C. & Hostikka, S., "Large Scale Fire Modeling," in *Flame Retardancy of Polymeric Materials*, Second Edition, Edited by C.A. Wilkie and A.B. Morgan, Marcel Dekker pp. 551 – 585, 2010.
5. Lautenberger, C., Tien, C.L., Lee, K.Y., and Stretton, A.J., "Radiation Heat Transfer," in *SFPE Handbook of Fire Protection Engineering*, 5th Edition, Springer, pp. 102-137 (2016).
6. Lautenberger, C., "Pyrolysis," in *Encyclopedia of Wildfires and Wildland-Urban Interface (WUI) Fires*, Ed. Manzello, S.L., Springer (2018).
7. Lautenberger, C., Theodori, M., and Seeburger, D., "Modeling Wildland Fires and WUI Fires," in *SFPE Handbook of Fire Protection Engineering*, 6th Edition, Springer (in press, 2023).

Selected Conference Publications and Technical Reports

1. Beyler, C., Hunt, S., Lattimer, B., Iqbal, N., Lautenberger, C., Dembsey, N., Barnett, J., Janssens, M., & Dillon, S. "Prediction of ISO 9705 Room/Corner Test Results". United States Department of Transportation. United States Coast Guard Research and Development Center. Washington, DC. 1999.
2. Lautenberger, C., Stevanovic, A., Rich, D., & Torero, J., "Effect of Material Composition on Ignition Delay of Composites," *Composites 2003*, Anaheim CA, October 2003.
3. Lautenberger, C., Stevanovic, A., Rich, D., Torero, J. & Fernandez-Pello, A.C., "An Experimental and Theoretical Study on the Ignition Delay Time of Composite Materials," *Western States Section/The Combustion Institute*, Los Angeles CA, October 2003.
4. Rein, G., Lautenberger, C. & Fernandez-Pello, A.C., "On the Derivation of Polyurethane Kinetics Parameters Using Genetic Algorithms and its Application to Smoldering Combustion," *Fourth International Conference on Computational Heat and Mass Transfer*, Paris France, Vol. 1 pp. 578-584, May 2005.
5. Rein, G., Lautenberger, C. & Fernandez-Pello, A.C., "Using Genetic Algorithms to Derive the Parameters of Solid-Phase Combustion from Experiments," *20th International Colloquium on the Dynamics of Explosions and Reactive Systems*, Montreal, Canada, August 2005.
6. Rich, D., Lautenberger, C., McAllister, S. & Fernandez-Pello, A.C., "Microgravity Flame Spread Rates Over Samples of Polymer and Polymer/Glass Composites," *Western States Section/The Combustion Institute*, Boise ID, March 2006.
7. Coles, A., Wolski, A., Lautenberger, C.W., & Dembsey, N.A., "Building Code Requirements for Performance Based Designs and Fire Modeling", *Composites 2006*, St. Louis, MO, October 2006.
8. Lautenberger, C., McAllister, S., Rich, D., & Fernandez-Pello, C., "Modeling the Effect of Environmental Variables on Opposed-Flow Flame Spread Rates with FDS," *International Congress on Fire Safety in Tall Buildings*, Santander, Spain, October 2006.

9. McAllister, S., Rich, D., Lautenberger, C., & Fernandez-Pello, C., "Modeling Microgravity and Normal Gravity Opposed Flame Spread over Polymer/Glass Composites," *45th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 2007, AIAA Paper 2007-740.
10. Lautenberger, C., McAllister, S., Rich, D., & Fernandez-Pello, C., "Effect of Environmental Variables on Flame Spread Rates in Microgravity," *45th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 2007, AIAA Paper 2007-383.
11. Chatterjee, P., de Ris, J.L., & Lautenberger, C.W., "A General Combustion Model for Radiation Dominated Non-premixed Flames," *Fifth International Seminar on Fire and Explosion Hazards*, Edinburgh, UK, 2007.
12. McAllister, S., Rich, D., Lautenberger, C., Fernandez-Pello, C. & Yuan, Z.G., "Modeling Microgravity and Normal Gravity Flame Spread Rates over Samples of Polymer and Polymer/Glass Composites," *Fifth International Seminar on Fire and Explosion Hazards*, Edinburgh, UK, April 2007.
13. Dembsey, N., Avila, M., Kim, E., Lautenberger, C., & Dore, C., "Fire Characteristics of Polyester FRP Composites with Different Glass Contents," *Composites & Polycon 2007* Tampa, FL, October 2007.
14. Lautenberger, C. & Fernandez-Pello, A.C., "Modeling Ignition of Combustible Fuel Beds by Embers and Heated Particles," *Forest Fires 2008*, 2008.
15. Lautenberger, C., Wong, W., Dembsey, N., Coles, A., & Fernandez-Pello, C., "Large-Scale Turbulent Flame Spread Modeling with FDS5 on Charring and Noncharring Materials," *Fire and Materials 2009*, 2009.
16. Coles, A., Wolski, A., & Lautenberger, C., "Predicting Design Fires in Rail Vehicles," *13th International Symposium on Aerodynamics and Ventilation of Vehicle Tunnels (ISAVVT 13)*, 2009.
17. Dodd, A.B., Lautenberger, C., & Fernandez-Pello, A.C. "Numerical Modeling of Smoldering Combustion and Transition to Flaming," *Sixth US National Combustion Meeting*, University of Michigan, Ann Arbor, MI, 2009.
18. Scott, S, Hadden, R., Fereres, S., Lautenberger, C., & Fernandez-Pello, A.C., "Ignition of Combustible Fuel Beds by Embers and Heated Particles," *Western States Section/The Combustion Institute*, Irvine, CA, October 2009.
19. Fereres, S., Lautenberger, C., Fernandez-Pello, C., Urban, D., & Ruff, G., "Effect of Ambient Pressure on Mass Loss Rate at Piloted Ignition," *Western States Section/The Combustion Institute*, Boulder, CO, March 2010.
20. Lautenberger, C., Rich, D., Kramer, M., Fernandez-Pello, C., and Stephens, S., "Communication Infrastructure Provider Assets in the Wildland Setting: CIP Fire Threat Map," June 9, 2010.
21. Lautenberger, C., Wong, W.C., Coles, A., Dembsey, N., & Fernandez-Pello, C., "Comprehensive Data Set for Validation of Fire Growth Models: Experiments and Modeling," *Interflam 2010*, Nottingham, UK, July 2010.
22. Dodd, A., Lautenberger, C., Fernandez-Pello, C., & Putzeys, O., "Examination of the Spontaneous Transition from Smoldering to Flaming: Comparison of Simulations and Experiments," *Interflam 2010*, Nottingham, UK, July 2010.
23. Lautenberger, C., "Modeling Wildland Fire Spread Using an Eulerian Level Set Method and High Resolution Numerical Weather Prediction," *International Congress on Fire Computer Modeling*, October 2012, Santander, Spain.
24. Lautenberger, C., Sexton, S., & Rich, D., "Understanding Long Term Low Temperature Ignition of Wood," *International Symposium on Fire Investigation Science and Technology*, College Park, MD, September 22-24, 2014, p. 361.
25. Zicherman, J., Lautenberger, C., & Wolski, A., "Challenges in Establishing Design Fires for Passenger Rail Vehicles," *Proceedings of Fire and Materials 2015*, Interscience Communications, February 2-4 2015, San Francisco, CA, pp. 749 – 764.

Short Courses

1. *Lawrence Livermore National Laboratories Fire Modeling Short Course – A Short Course Presented to Fire Protection Engineers*. Co-taught, with Professor James Milke (University of Maryland) and Professor Frederick Mowrer (California Polytechnic State University), a 3-day short course on fire dynamics and fire modeling for Lawrence Livermore and Lawrence Berkeley National Laboratories employees (March 20 – 22, 2012).
2. *First Asia-Pacific Combustion Institute Summer School – Fundamental Combustion Problems in Fire*. Co-taught sessions related to fire science and pyrolysis modelling in Valparaiso, Chile (November 11 – 15, 2019).

Publication and Presentation Awards

- Best Paper Overall at *Composites & Polycon 2007*, Tampa, FL, October 2007 for Dembsey, N. *et al.*, "Fire Characteristics of Polyester FRP Composites with Different Glass Contents," presented by N. Dembsey.
- Best paper (second prize) at the *Fifth International Seminar on Fire and Explosion Hazards*, Edinburgh, UK, April 2007 for Lautenberger, C. & Fernandez-Pello, C., "Generalized Pyrolysis Model for Simulating Charring, Intumescent, Smoldering, and Noncharring Gasification," presented by C. Lautenberger.

- 2011 International Association for Fire Safety Science Best Thesis Award (Americas Region) for 2007 PhD Dissertation entitled “Generalized Pyrolysis Model for Combustible Solids”. This IAFSS award recognizes the best research dissertation at the PhD and Masters levels in the field of fire safety science and engineering that was completed between 2007 and 2010.
- International Association for Fire Safety Science Best Paper Award (honorable mention) for 2008 paper entitled “The Role of Decomposition Kinetics in Pyrolysis Modeling – Application to a Fire Retardant Polyester Composite,” by Lautenberger, C., Kim, E., Dembsey, N. & Fernandez-Pello, C. [*Fire Safety Science* **9**: 1201-1212 (2008)].
- 2014 Society of Fire Protection Engineer’s Jack Bono Award for the paper from Volume 23 of the *Journal of Fire Protection Engineering* that has most contributed to the advancement and application of professional Fire Protection Engineering for the paper entitled “CFD Flame Spread Model Validation: Multi-component Data Set Framework,” by Wong, W., Alston, J., Lautenberger, C., and Dembsey, N., [*Journal of Fire Protection Engineering* **23**: 85-134 (2013)].
- 2017 Philip Thomas Medal of Excellence. This is awarded to the author(s) of the best paper presented at the previous International Association for Fire Safety Science (IAFSS) Symposium. It is based on five criteria that are used to identify the best paper: pertinence, utility, significance, rationality, and eloquence.

Journal Referee / Peer Review

- *Advances in Engineering Software*
- *Advances in Materials Science and Engineering*
- *Applied Thermal Engineering*
- *Artificial Intelligence Review*
- *Asia-Oceania Symposium on Fire Science and Technology*
- *Brazilian Journal of Chemical Engineering*
- *Chemical Engineering Science*
- *Combustion and Flame*
- *Combustion Science and Technology*
- *Construction and Building Materials*
- *Earth and Space Science*
- *Ecological Modeling*
- *Energy & Fuels*
- *Engineering Science and Technology*
- *Experimental Thermal and Fluid Science*
- *Express Polymer Letters*
- *Fire and Materials*
- *Fire Safety Journal*
- *Fire Safety Science (IAFSS Symposia)*
- *Fire Technology (including Associate Editor role)*
- *Frontiers Mechanical Engineering*
- *Fuel Processing Technology*
- *Industrial & Engineering Chemistry Research*
- *International Colloquium on the Dynamics of Explosions and Reactive Systems*
- *International Journal of Computational Fluid Dynamics*
- *International Journal of Heat and Mass Transfer*
- *International Journal of Thermal Sciences*
- *International Journal of Wildland Fire*
- *Journal of Advances in Modeling Earth Systems*
- *Journal of Computational Science*
- *Journal of Fire Protection Engineering*
- *Journal of Fire Sciences*
- *Proceedings of the Combustion Institute*
- *Science of the Total Environment*
- *Thermochimica Acta*

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

Idaho Power's Response to Staff Data Request No. 26
Attachment 1, Application for Site Certificate, Exhibit B

February 21, 2023

Exhibit B Project Description

Boardman to Hemingway Transmission Line Project



1221 West Idaho Street
Boise, Idaho 83702

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Application for Site Certificate

September 2018

TABLE OF CONTENTS

1.0	INTRODUCTION	B-1
1.1	Project Overview	B-1
1.2	Overview of the Need for the Project	B-5
2.0	APPLICABLE RULES AND SECOND AMENDED PROJECT ORDER PROVISIONS.....	B-6
2.1	Site Certificate Application Requirements	B-6
2.2	Second Amended Project Order Provisions.....	B-8
3.0	ANALYSIS	B-9
3.1	Corridor Selection Assessment.....	B-9
3.1.1	Initial Study Area: Constraints and Opportunities.....	B-9
3.1.2	Corridor Selection Process – Phase One (2008–2010)	B-24
3.1.3	Corridor Selection Process Phase Two – September 2010 to February 2013	B-34
3.1.4	Corridor Selection Process Phase Three – February 2013 to May 2016.....	B-39
3.1.5	Corridor Selection Process Phase Four – May 2016 to Present.....	B-41
3.1.6	Analysis of Factors from OAR 345-021-0010(1)(b)(D)(i)-(viii)	B-42
3.2	Description of Proposed Facility.....	B-48
3.2.1	Electrical Generating Capacity	B-48
3.2.2	Major Components	B-48
3.2.3	Site Plan and General Arrangement.....	B-68
3.2.4	Fuel and Chemical Storage Facilities	B-69
3.2.5	Equipment and Systems for Fire	B-69
3.3	Related and Supporting Facilities.....	B-71
3.3.1	Access Roads.....	B-71
3.3.2	Multi-use Areas.....	B-74
3.3.3	Pulling and Tensioning Sites	B-77
3.3.4	Communication Station Distribution Lines.....	B-78
3.4	Approximate Dimensions	B-78
3.5	Information Required for Transmission Line Projects	B-83
3.5.1	Transmission Line Length	B-83
3.5.2	Proposed ROW Width	B-83
3.5.3	Where Following Public ROW	B-84
3.5.4	Pipeline Operating Pressure and Delivery Capacity.....	B-84
3.5.5	Rated Voltage, Load Carrying Capacity Current and Structures.....	B-84
3.6	Construction Schedule	B-85
3.7	Limitations on Use of the Right-of-Way (Second Amended Project Order Comments).....	B-85
3.8	Areas of the Site Boundary Where Surveys Have Been Completed.....	B-86
4.0	CONCLUSIONS.....	B-86
5.0	COMPLIANCE CROSS-REFERENCES.....	B-86
6.0	RESPONSE TO NOTICE OF INTENT AND SCOPING MEETING COMMENTS	B-89
7.0	REFERENCES	B-89

LIST OF TABLES

Table B-1. Counties in the Study Area..... B-10
 Table B-2. 2008–2010 Siting Constraints Table B-14
 Table B-3. Siting Opportunities B-20
 Table B-4. Comparison of OAR 345-021-0010(1)(b)(D) Factors by Corridor B-33
 Table B-5. Proposed and Alternative Corridor Adjustments since Informational Meetings
 (August 2010)..... B-34
 Table B-6. Proposed and Alternative Corridor Adjustments (macro changes) since
 Preliminary Application for Site Certificate (February 2013) B-39
 Table B-7. Miles of Route Modifications as a Result of BLM Agency Preferred Alternative ... B-42
 Table B-8. Proposed Route Structure Characteristics B-50
 Table B-9. Alternative Routes Structure Characteristics..... B-51
 Table B-10. Foundation Excavation Dimensions B-63
 Table B-11. Fire Suppression Responsibilities in Oregon B-70
 Table B-12. Summary of Access Road Classifications..... B-72
 Table B-13. Project Structures and Visible Feature Dimensions B-78
 Table B-14. Compliance Requirements and Relevant Cross-References..... B-86
 Table B-15. Responses to Comment Summaries..... B-89

LIST OF FIGURES

Figure B-1. Location Map..... B-3
 Figure B-2. Detail of Alternatives and 230-kV and 138-kV Rebuilds B-4
 Figure B-3. Study Area B-11
 Figure B-4. Selected Key Constraints..... B-13
 Figure B-5. Goal 3 and Goal 4 Resource Land within the Study Area..... B-19
 Figure B-6. Existing Extra High Voltage Lines in the Study Area B-23
 Figure B-7. Community Advisory Process B-24
 Figure B-8. Initial CAP Identified Corridors B-26
 Figure B-9. Revised CAP Corridors B-27
 Figure B-10. Regional Analyses B-29
 Figure B-11. Southwest Region Analysis..... B-30
 Figure B-12. Permitting, Construction, and Mitigation Analysis (Southwest Region) B-31
 Figure B-13. Alternative Corridors B-32
 Figure B-14. Illustration of Transmission Line Components B-49
 Figure B-15. Proposed 500-kV Single-Circuit Lattice Steel Structure..... B-52
 Figure B-16. Alternative 500-kV Single-Circuit Tubular Steel Pole Y-Frame Structure B-53
 Figure B-17. Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame
 Structure..... B-54
 Figure B-18. Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame
 Structure..... B-55
 Figure B-19. Proposed Route Rebuild Single-Circuit 230-kV Steel H-Frame Structure B-56
 Figure B-20. Proposed Route Rebuild Single-Circuit 138-kV Wood H-Frame Structure B-57
 Figure B-21. 500-kV ROW Designs B-60
 Figure B-22. Proposed/Alternative 500-kV ROW Designs..... B-61
 Figure B-23. Alternative 500-kV ROW Designs B-61
 Figure B-24. 230-kV and 138-kV ROW Designs..... B-62
 Figure B-25. Typical 500-kV Station B-67
 Figure B-26. Typical Communication Station Site Layout..... B-68
 Figure B-27. Multi-use Area Layout B-76
 Figure B-28. Light-Duty Fly Yard on Pulling and Tensioning Site Layout B-77

LIST OF ATTACHMENTS

- Attachment B-1. 2010 Siting Study
- Attachment B-2. 2012 Supplemental Siting Study
- Attachment B-3. Comparison of Western, Central, and Eastern Corridors
- Attachment B-4. 2015 Supplemental Siting Study
- Attachment B-5. Road Classification Guide and Access Control Plan
- Attachment B-6. 2017 Supplemental Siting Study
- Attachment B-7a. Wetlands and Waters of the State Areas of the Site Boundary with Completed Surveys
- Attachment B-7b. Cultural Resources Areas of the Site Boundary with Completed Surveys

ACRONYMS AND ABBREVIATIONS

AC	alternating current
ACEC	Area of Critical Environmental Concern
Amended pASC	Amended Preliminary Application for Site Certificate (July 19, 2017)
ANSI	American National Standards Institute
ASC	Application for Site Certificate
B2H	Boardman to Hemingway Transmission Line Project
BLM	Bureau of Land Management
BPA	Bonneville Power Administration
CAP	Community Advisory Process
DOE	United States Department of Energy
EFSC or Council	Energy Facility Siting Council
EFU	exclusive farm use
EHV	extra high voltage
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
GIS	geographic information system
I-84	Interstate 84
ICCP	impressed current cathodic protection
IPC	Idaho Power Company
IRP	integrated resource plan
kV	kilovolt
MW	megawatt
NEPA	National Environmental Policy Act of 1969
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NHOTIC	National Historic Oregon Trail Interpretive Center
NOI	Notice of Intent
NWSTF Boardman	Naval Weapons Systems Training Facility Boardman
OAR	Oregon Administrative Rule
OATT	Open Access Transmission Tariff
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OPGW	optical ground wire
ORS	Oregon Revised Statutes
pASC	Preliminary Application for Site Certificate (February 27, 2013)
PAT	Project Advisory Team
PEIS	Programmatic Environmental Impact Statement
PGE	Portland General Electric
Project	Boardman to Hemingway Transmission Line Project
ROW	right-of-way
Second Amended	Second Amended Project Order, Regarding Statutes, Administrative

Project Order	Rules, and Other Requirements Applicable to the Proposed BOARDMAN TO HEMINGWAY TRANSMISSION LINE (July 26, 2018)
USFS	United States Forest Service
WAGS	Washington ground squirrel
WECC	Western Electricity Coordinating Council
WWE	West-wide Energy

Exhibit B Project Description

1.0 INTRODUCTION

Exhibit B provides information about the Boardman to Hemingway Transmission Line Project (Project or B2H), the Project construction schedule, and temporary disturbances of the Project site.

1.1 Project Overview

Idaho Power Company (IPC) is proposing to construct, operate, and maintain a high-voltage electric transmission line between Boardman, Oregon, and the Hemingway Substation in southwestern Idaho as an extension of IPC's electric transmission system. This Application for Site Certificate (ASC) seeks authorization for the Project features within the Site Boundary located in Oregon and not Idaho.¹ The Site Boundary for the 500-kilovolt (kV) transmission line is a 500-foot-wide area within which IPC will locate the transmission line and is described in Exhibit C, Section 3.5, Site Boundary. The Site Boundary for the remaining Project features varies by the type of feature (see Exhibit C, Section 3.5, Table C-24).

The Project consists of approximately 296.6 miles of electric transmission line, with 272.8 miles located in Oregon and 23.8 miles in Idaho. The Project includes 270.8 miles of single-circuit 500-kV transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line into a new right-of-way (ROW). Proposed ROW widths are discussed in Section 3.5.2.

The Site Certificate will authorize the following Project features in Oregon:

- **Transmission Lines.** The Proposed Corridor consists of an approximately 270.8-mile-long single-circuit 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line into a new ROW.² The ASC includes four alternative routes of the Proposed Corridor, totaling approximately 33.3 miles of transmission line.
- **Station.** IPC proposes to build a 20-acre switching station (station) located near the Port of Morrow, Oregon. A switching station provides a combination of switching, protection, and control equipment arranged to provide circuit protection and system switching flexibility for the transfer of electric power, but does not incorporate step-down or step-up voltage equipment.³ The proposed station will serve to connect the Project to other 500-kV transmission lines and the Pacific Northwest power market. For ease of reference, both the proposed switching station and the Hemingway Substation are referred to simply as "stations" throughout this ASC.
- **Communication Station Sites.** Communication station sites will consist of a communication shelter and related facilities. The Project will include 10 communication station sites of less than 1/4-acre in size and 2 alternative communication station sites.

¹ ODOE has jurisdiction over the features located in Oregon and not Idaho. While the ASC discusses the Project features located in Idaho, it does so only to provide context for the analysis related to the Oregon Project features.

² The Project features located in Idaho would include an additional 23.8 miles of transmission line leading to the Hemingway Substation.

³ A switching station is not a substation, which provides the additional function of stepping voltage up and down to allow for distribution to customers. The Project does not include a substation.

- ***Related and Supporting Facilities.*** The Project will include permanent access roads for the Proposed Route, including 206.3 miles of new roads and 223.2 miles of existing roads requiring substantial modification, and for the alternative routes including 30.2 miles of new roads and 22.7 miles of existing roads requiring substantial modification (see Attachment B-5 – Road Classification Guide and Access Control Plan).
- ***Temporary Features.*** The Project will include 30 temporary multi-use areas and 299 temporary pulling and tensioning sites, of which four will have light-duty fly yards within the pulling and tensioning sites.

A map of the Project location is set forth in Figure B-1 and details of the alternatives and rebuild routes are shown in Figure B-2. Additional information regarding the location of the Project features is set forth in Exhibit C.

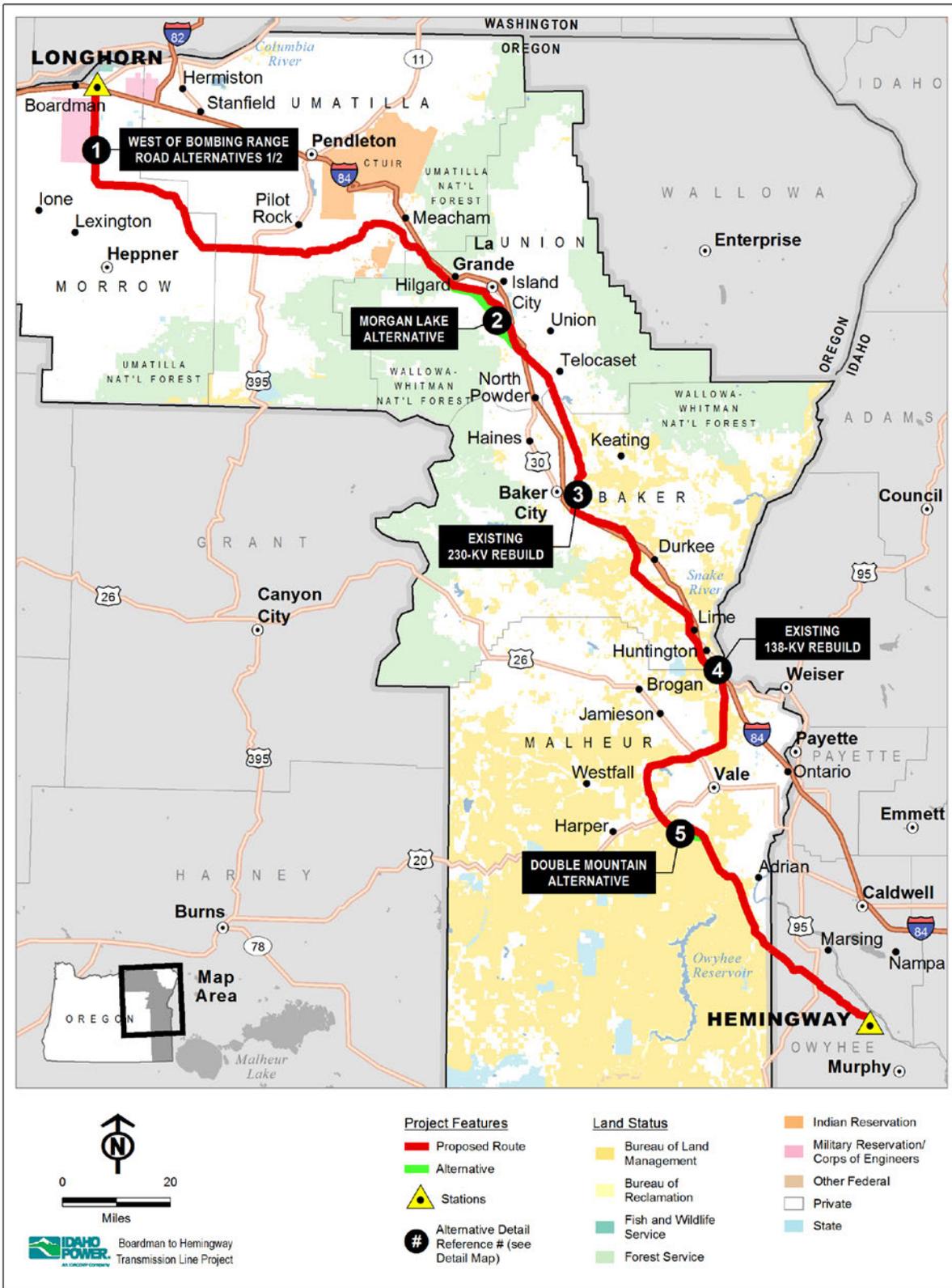


Figure B-1. Location Map

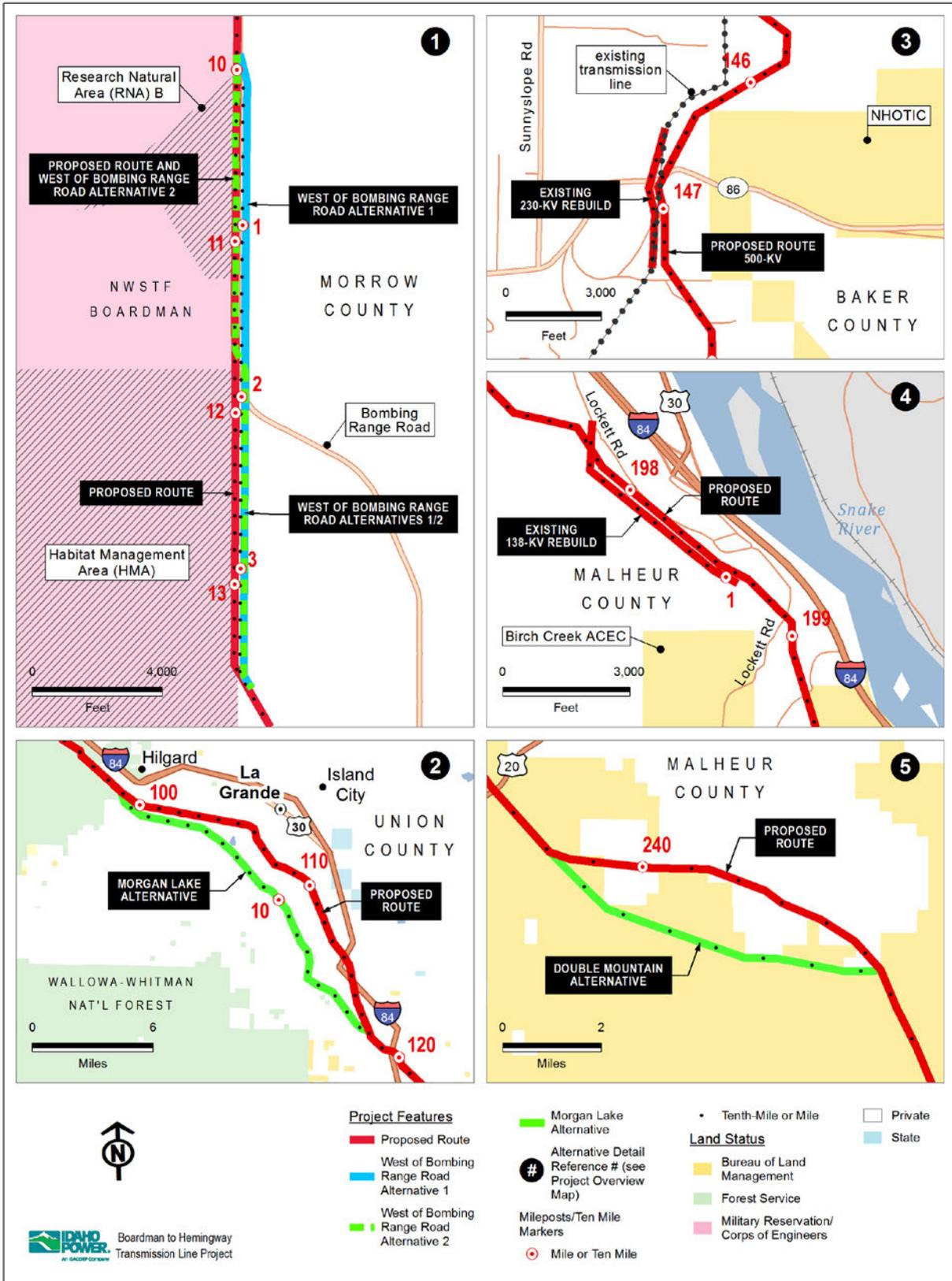


Figure B-2. Detail of Alternatives and 230-kV and 138-kV Rebuilds

1.2 Overview of the Need for the Project

As described in greater detail in Section 3.1 (Corridor Selection Assessment), the location of the Proposed Corridor for the Project has been both driven and limited by the nature of IPC's need for the Project. In order to provide enough background and context to support the Corridor Selection Assessment in Section 3.1, this section provides a high-level summary of IPC's need for the Project. For a detailed technical analysis of how the Project complies with the Energy Facility Siting Council's (EFSC or Council) "need" standard, see Exhibit N.

IPC is required, by both federal and state laws, to plan for and meet load and transmission requirements. Through those planning efforts, IPC identified a 500-kV transmission line between southwest Idaho and the Boardman area in north-central Oregon as a least-cost resource that would enable IPC to meet forecasted load and transmission obligations. Accordingly, IPC has identified a transmission line (now known as the B2H Project) as a critical component of an overall resource portfolio that best balances both cost and risk for more than a decade. As explained in detail in Exhibit N, Section 3.2.2, both the Idaho and Oregon public utility commissions have repeatedly acknowledged resource portfolios that identify the Project as a key resource.

The Project will enable IPC to accomplish the following three critical objectives:

- **Serve Native Loads.** The primary objective of the Project is to create additional transmission capacity that would allow IPC to import power from the Pacific Northwest market to serve its retail customers located in the states of Idaho and Oregon. Historically, IPC has been a "summer peaking" utility, while most other utilities in the Pacific Northwest experience system peak loads during the winter. Currently, however, IPC does not have adequate transmission capacity to increase its on-peak power purchases on the western side of its system. As described in the Company's 2013 and 2015 Integrated Resource Plans (IRP), the Project will remedy this transmission constraint by allowing IPC to import an average of 350 megawatts (MW) (500 MW in the summer, 200 MW in the winter) of market purchases to serve its native load (IPC 2013, 2015). In this way, the Project is properly viewed as a supply-side resource, similar to a generation plant, which will allow IPC to meet its expected loads. Further, better access to the Pacific Northwest power market is critical because that market is very liquid with a high number of participants and transactions. On the other hand, the accessible power markets south and east of IPC's system tend to be smaller, less liquid, and have greater transmission distances. Historically, during IPC's peak-hour load periods, off-system market purchases from the south and east have proven to be unavailable or very expensive. Many of the utilities to the south and east of IPC also experience a summer peak, and the weather conditions that drive IPC's summer peak-hour load are often similar across the Intermountain Region. Therefore, IPC imports from the Intermountain Region are not a viable alternative to the Project.
- **Meet Transmission Reliability Standards.** The Project is an integral component of regional transmission planning because it will serve as a crucial high-capacity connection between two key points in the existing bulk electric system that currently lack sufficient transmission capacity. The Project will relieve congestion of the existing transmission system and enhance the reliable, efficient, and cost-effective energy transfer capability between the Pacific Northwest and Intermountain regions. The addition of B2H to the regional grid would create additional redundancy in pathways that will enable IPC and other transmission providers to maintain reliable electric service pursuant to the standards set forth by the North American Electric Reliability Corporation (NERC) and implemented by the Western Electricity Coordinating Council (WECC).

- **Provide Transmission Service to Wholesale Customers.** The Project allows IPC to comply with the requirements of the Federal Energy Regulatory Commission (FERC), which require IPC to construct adequate transmission infrastructure to provide service to wholesale customers in accordance with IPC's Open Access Transmission Tariff. IPC expects interconnection and transmission requests to continue as renewable resources are developed throughout the region.

Through study and planning, IPC concluded that the three Project objectives—to provide additional capacity for the delivery of up to 500 MW of needed energy to IPC's service area, alleviate reliability constraints, and relieve existing transmission congestion in the region—would best be met by connecting IPC's existing transmission system to the existing Pacific Northwest 500-kV transmission grid. These three Project objectives led directly to the identification of the Project's north and south endpoints. IPC identified one endpoint in the Boardman, Oregon, area because it is the easternmost point at which IPC can feasibly interconnect to the Pacific Northwest market. Through system modeling and coordination with other transmission providers, IPC identified two possible interconnection points in the Boardman area (the Boardman–Slatt 500-kV transmission line or the McNary-Coyote Springs 500-kV transmission line). IPC identified the other endpoint as IPC's existing Hemingway Substation because it is the westernmost point in IPC's existing transmission system that could accommodate termination of a 500-kV transmission line.

With these two key endpoints in mind, IPC's corridor selection process involved evaluation of an 11-county study area as shown in Figure B-3 (in Section 3.1.1) and a virtually unlimited number of possible corridors that could connect the identified endpoints. As illustrated in a broad sense in Figure B-4 (in Section 3.1.1.1), which shows selected key constraints, the study area identified by IPC includes an extremely complex assortment of siting constraints, including the following:

- Extensive areas of agricultural land and land zoned exclusive farm use (EFU);
- Areas of the National System of Public Lands administered by the Bureau of Land Management (BLM), United States Forest Service (USFS), and other federal agencies charged with managing the numerous resources in the mountains and high desert; and
- The presence of many sensitive resources, including key wildlife habitat, protected areas, and cultural resources.

The Proposed Corridor described in this ASC is the result of an extensive corridor selection process that has occurred over 9 years and three phases, described more fully in Section 3.1.

2.0 APPLICABLE RULES AND SECOND AMENDED PROJECT ORDER PROVISIONS

2.1 Site Certificate Application Requirements

Oregon Administrative Rule (OAR) 345-021-0010(1)(b) provides Exhibit B must include the following information about the proposed facility, construction schedule, and temporary disturbances of the site:

(A) A description of the proposed energy facility, including as applicable:

...

(ii) Major components, structures, and system, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy;

- (iii) A site plan and general arrangements of buildings, equipment and structures;*
- (iv) Fuel and chemical storage facilities, including structures and systems for spill containment;*
- (v) Equipment and systems for fire prevention and control.*

...

(B) A description of major components, structures, and systems of each related or supporting facility.

(C) The approximate dimensions of major facility structures and visible features.

(D) If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline that, by itself, is an energy facility under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridor(s) for analysis in the application. In the assessment, the applicant shall evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant shall discuss the reasons for selecting the corridor(s), based upon evaluation of the following factors:

- (i) Least disturbance to streams, rivers and wetlands during construction.*
- (ii) Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife.*
- (iii) Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads and existing pipeline or transmission line rights-of-way.*
- (iv) Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions.*
- (v) Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040.*
- (vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist.*
- (vii) Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards.*
- (viii) Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use.*

(E) If the proposed energy facility is a pipeline or transmission line or has, as a related or supporting facility, a transmission line or pipeline of any size:

- (i) The length of the pipeline or transmission line.*
- (ii) The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.*

- (iii) *If the proposed transmission line or pipeline corridor follows or includes public right-of-way, a description of where the transmission line or pipeline would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a transmission line or pipeline adjacent to but not within the public right-of-way, describe the reasons for locating the transmission line or pipeline outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of evidence that would support locating the transmission line or pipeline outside the public right-of-way, based on those criteria.*
- (iv) *For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.*
- (v) *For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and their dimensions.*
- (F) *A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant shall describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant shall include an estimate of the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.*

2.2 Second Amended Project Order Provisions

The Second Amended Project Order states that all paragraphs of OAR 345-021-0010(1)(b) apply to the Project, except paragraphs (A)(i), (vi), (vii), and (viii). The Second Amended Project Order also includes the following discussion:

The description of the proposed facility in the application will form the basis for the description of the facility in the site certificate. The site certificate will require that IPC build the facility "substantially as described." Exhibit B will also provide the basis for the facility description in the notice of application that ODOE will issue to reviewing agencies and public. Therefore, Exhibit B shall describe the facility in enough detail for members of the public and reviewing agencies to make informed comments. Exhibit B shall describe the facility sufficiently for ODOE staff to verify that the constructed project will meet any representations that are the basis for findings of compliance with applicable regulations for standards. It is recommended IPC not include descriptive material that IPC would not want to be held to in a site certificate condition.

The application must clearly describe the width of the corridor in which the micro-siting corridor right-of-way would be sited along the length of the proposed line. The application must specify the width of the permanent right-of-way IPC will request, and must justify that width.

The application shall describe all related or supporting facilities that the applicant proposes to be included in and governed by the site certificate, including proposed multiple use areas, fly yards, and access roads. For existing roads or road segments that will be included as related or supporting facilities, include a general description of the proposed modifications and improvements. For multiple use areas and fly yards, include a description of the activities that are expected to occur at these areas.

The alternatives analysis described in section OAR 345-021-0010(1)(b)(D) must be consistent with the analysis required by ORS 215.275 and the required information in this rule. The Council recognizes that some of the factors in this rule compete with one another (for example, the requirements to both avoid habitat and avoid agricultural land), but expects the application to demonstrate that all required factors were considered.

(Second Amended Project Order, Section III(b)).

3.0 ANALYSIS

Exhibit B describes how and why IPC selected the Project and its Proposed Corridor, and provides information regarding the Project facilities (major components, structures, and systems).⁴ Section 3.0 provides the information required by OAR 345-021-0010(1)(b) in the following order:

- Section 3.1 Corridor Selection Assessment
- Section 3.2 Description of the Proposed Facility
- Section 3.3 Related and Supporting Facilities
- Section 3.4 Approximate Dimensions
- Section 3.5 Information Required for Transmission Line Projects
- Section 3.6 Construction Schedule
- Section 3.7 Limitations on Use of the Right-of-Way

3.1 Corridor Selection Assessment

OAR 345-021-0010(1)(b)(D): If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline that, by itself, is an energy facility under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridor(s) for analysis in the application. . .

IPC's corridor selection process occurred primarily in four phases: Phase One between 2008 and 2010, Phase Two between 2010 and 2012, Phase Three between 2012 and 2015, and Phase Four in 2016. In 2010, IPC developed the original Siting Study detailing the company's siting process for the Project (see Attachment B-1, 2010 Siting Study). IPC developed three supplements to the Siting Study, describing changes to the Project corridor and location of the Project features (see Attachment B-2, 2012 Supplemental Siting Study; Attachment B-4, 2015 Supplemental Siting Study; and Attachment B-6, 2017 Supplemental Siting Study).⁵ The following discussion summarizes IPC's general approach to siting, each phase of IPC's corridor selection process, and how IPC selected its Proposed Corridor based on careful consideration of numerous siting criteria, including the eight factors set forth in OAR 345-021-0010(1)(b)(D) and the six factors in Oregon Revised Statutes (ORS) 215.275.

3.1.1 Initial Study Area: Constraints and Opportunities

Initially, IPC studied an area extending from Morrow County, Oregon, to the Hemingway Substation in Owyhee County, Idaho. The area included much of eastern Oregon and southwest Idaho as shown in Figure B-3. The study area comprised all or portions of the 11

⁴ The specific details regarding the location of the Project and the Project Site Boundary are discussed in Exhibit C.

⁵ In the siting studies, the term "route" is used in instead of "corridor." The use of the term "route" in those studies should be considered synonymous with "corridor" for the purposes of this Exhibit.

counties listed in Table B-1 and covered approximately 31,422 square miles, of which 43 percent is privately owned and 57 percent is government-owned.

Table B-1. Counties in the Study Area

Oregon Counties	Idaho Counties
Morrow County	Washington County
Umatilla County	Canyon County
Union County	Payette County
Baker County	Owyhee County
Malheur County (portion)	
Grant County	
Harney County (portion)	

The study area included the agricultural area south of the Columbia River, Blue Mountains, high desert, Owyhee Canyon country, and large areas of irrigated farmland on both sides of the Snake River. Urban development is greatest in the Snake River Valley, especially on the Idaho side of the river, and along Interstate 84 (I-84) around Baker City, La Grande, Pendleton, Hermiston, and Boardman. There are four national forests covering large portions of the central mountainous area that are managed by the USFS for a large number of biological, scenic, recreation, and other resources. BLM manages a variety of resources on a large portion of the high desert areas in the southern half of the study area.

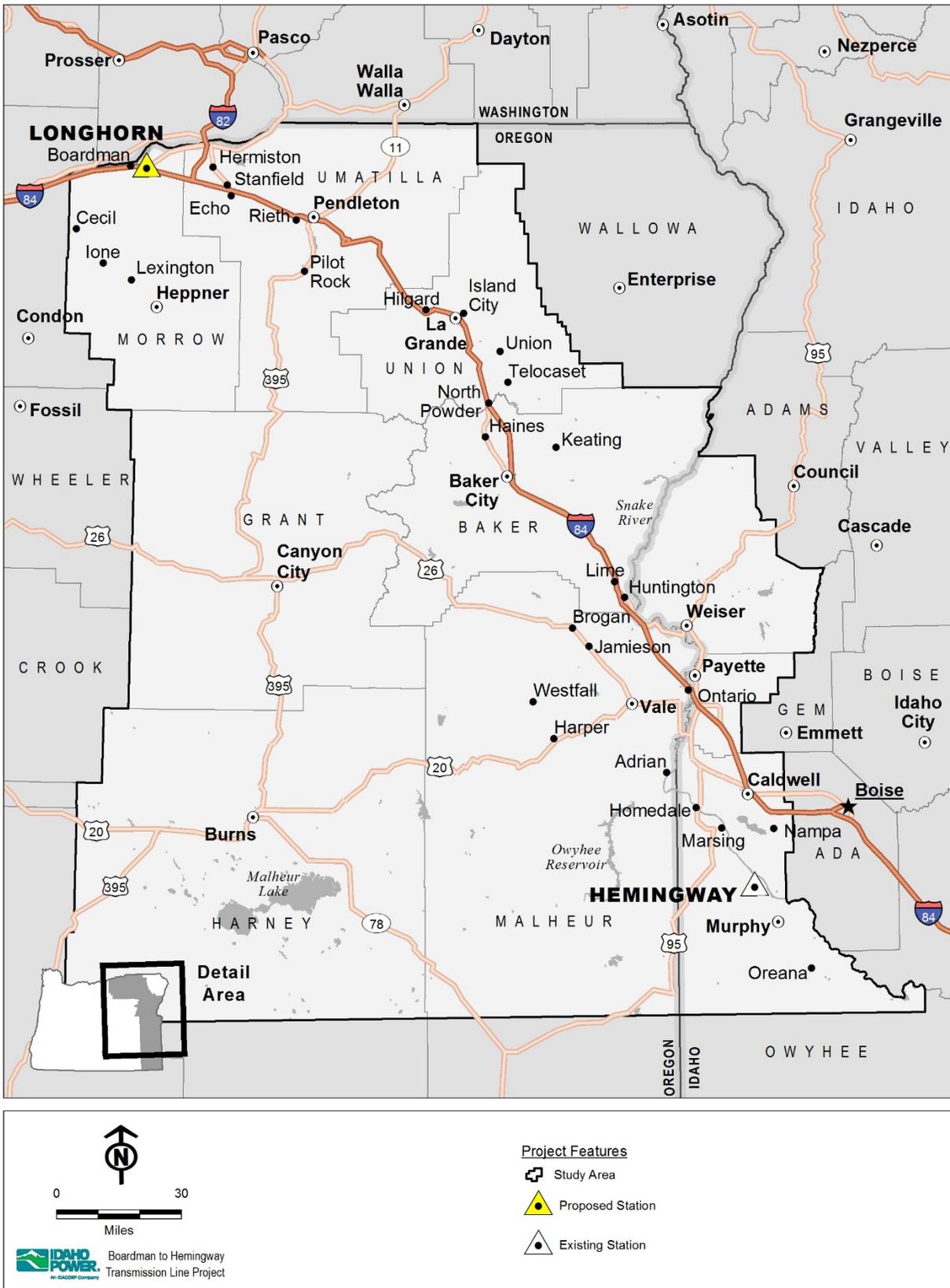


Figure B-3. Study Area

3.1.1.1 Constraints

IPC considered certain constraints to identify and evaluate feasible corridors for the development of a new transmission line. IPC defined “constraints” as resources or conditions that potentially limit transmission line siting because of relative sensitivity to facility construction or operation and/or regulatory restrictions. Data collection and meetings with stakeholders resulted in over 200 data sets and helped establish the level of permitting importance from the stakeholder perspective of each constraint for siting alternative corridors. The following is a summary description of the constraints:

Agricultural Areas – There are large agricultural areas in the north, in the south, and in Union, Baker and Malheur counties. Northern Morrow and Umatilla counties include many farms with pivot irrigation as well as extensive areas of dryland farming. Union, Baker, and Malheur counties have substantial irrigated agricultural areas in the valley bottoms near the communities of La Grande, Baker City, and Vale. In the south, conditions are similar except that there is more development especially in the Idaho portion of the study area.

High Desert – Areas of high desert extend across much of the southern half of the study area up into Baker and Grant counties. Much of the land is managed by BLM and is designated as Areas of Critical Environmental Concern (ACECs), wilderness study areas, and other special resource management areas; there are also large areas of sage-grouse habitat. There are a number of small cities and towns but overall development occupies a small percentage of the high desert.

Mountainous Area – The mountainous areas such as the Blue Mountains present very challenging topography with many areas of steep slopes in excess of 35 percent and other areas of unstable slopes presenting design and construction challenges. National forests including the Wallowa-Whitman, Malheur, Umatilla, and Ochoco occupy much of the forested mountainous area (see Figure B-4). Some examples of the most challenging constraints in this area include wilderness areas, wilderness study areas, wild and scenic rivers, special status streams, inventoried roadless areas, and USFS visual quality objectives.

Land Use Zones – Under Oregon law, counties are required to zone agricultural lands to achieve compliance with Statewide Planning Goal 3 (Agriculture). Similarly, counties are required to zone forest lands to achieve compliance with Statewide Planning Goal 4 (Forest Lands). The land in the study area is zoned primarily for agricultural and forest uses; urban and non-resource lands are scarce (see Figure B-5). As shown in Figure B-5, Goal 3 resource lands include all lands designated by counties as either a qualifying exclusive farm use zone or a hybrid agriculture/forest zone. Accordingly, the terms “exclusive farm use” or “EFU” are used in this Exhibit to refer to all Goal 3 resource lands (including hybrid zones). Avoidance of EFU land, and particularly irrigated agricultural lands, was a key siting objective. However, because EFU lands cover approximately 77 percent of the study area in Oregon, avoidance of EFU lands was not possible (see Exhibit K, Section 6.3).

Site-specific Constraints – Many other more site-specific constraints were considered such as the growing number of wind energy facilities, government-managed lands such as the Naval Weapons System Training Facility Boardman (NWSTF Boardman), historic resources such as the Oregon National Historic Trail, and habitat for protected species such as the Oregon-listed Washington ground squirrel.

Figure B-4 provides an overview of certain key constraints in the Project study area. Table B-2 includes a list of each constraint considered. Figure B-5 identifies the location of Goal 3 or Goal 4 resources in the study area.

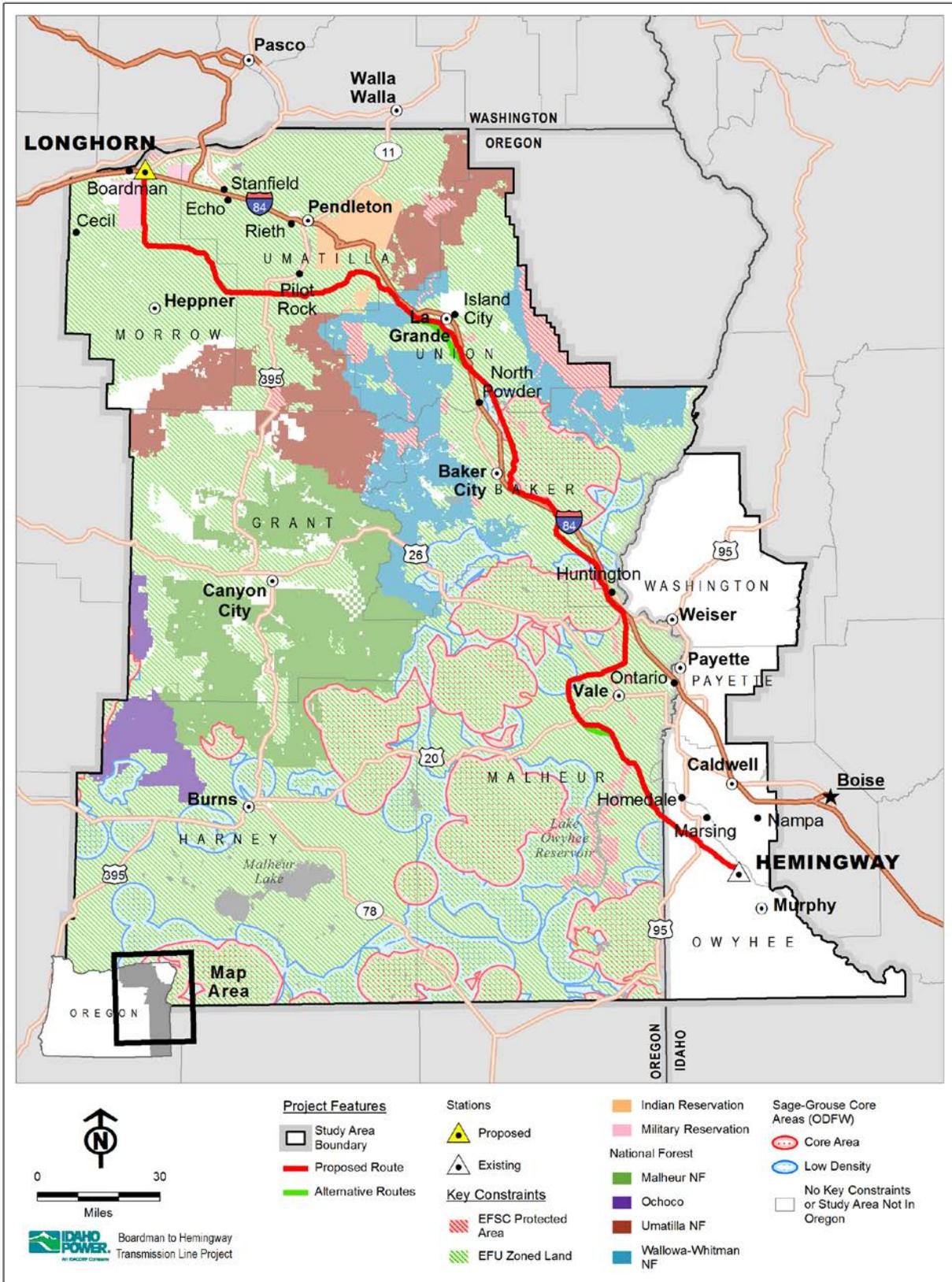


Figure B-4. Selected Key Constraints

Table B-2. 2008–2010 Siting Constraints Table

Constraint	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Cultural Resources	
Burns District Archaeological Site	vi
Burns District Traditional Use Areas	vi
Cemetery	vi
Intact Oregon Trail Segment (Oregon BLM)	vi
National Historic Oregon Trail Interpretive Center	vi
National Register Historic Point Site	vi
Oregon Trail	vi
Oregon Trail Brochure – Trail rut	vi
Vale District Archaeological Site	vi
Within 0.5 mile of National Register Historic Place Buffer	vi
Within 1,200 foot Historic Trail Buffer	vi
Within 500 feet of Cemetery	vi
Fish and Wildlife	
Burns District Bald Eagle Site	ii
Burns District Raptor Site	ii
ODFW Big Game Deer Winter Range	ii
ODFW Big Game Elk Winter Range	ii
ODFW Bighorn Sheep Range	ii
ODFW Conservation Opportunity Area	ii
ODFW Sage-grouse Lek	ii
Prineville District Fish Restoration Area	ii
Prineville District Wildlife Habitat Seasonal Closure Area	ii
Sage-grouse Core Area 1: Sagebrush Habitat (Oregon)	ii
Sage-grouse Core Area 2: Potential Habitat (Oregon)	ii
Sage-grouse Core Area 3: Non-Sagebrush Shrublands and Grasslands (Oregon)	ii
Washington Ground Squirrel 785ft Buffer	ii
Within 2-mile Oregon Sage-grouse Lek Buffer (Occupied but able to be Permitted)	ii
Within 2-mile Oregon Sage-grouse Lek Buffer (Occupied)	ii
Within 2-mile Oregon Sage-grouse Lek Buffer (Unoccupied)	ii
Within 300ft Special Status Stream/Lake: Bull Trout	i
Within 300ft Special Status Stream: Chinook Salmon	i
Within 300ft Special Status Stream: Coho Salmon	i
Within 300ft Special Status Stream: Cutthroat Trout	i
Within 300ft Special Status Stream: Red Band Trout	i
Within 300ft Special Status Stream: Sockeye Salmon	i
Within 300ft Special Status Stream: Steelhead	i

Constraint	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Geology and Soils	
Erosion Hazard: High (Natural Resources Conservation Service Soil Data – Grant Co, Oregon data NA)	vii
Erosion Hazard: High (Prineville District, Oregon)	vii
Erosion Hazard: Low (NRCS Soil Data – Grant Co., Oregon data NA)	vii
Erosion Hazard: Moderate (NRCS Soil Data – Grant Co, Oregon data NA)	vii
Fault Line	vii
Oregon Landslide Feature: Fan	vii
Oregon Landslide Feature: Landslide	vii
Oregon Landslide Feature: Talus-Colluvium	vii
Prime Farmland/Arable Land: Soils Class 1-4	vii
U.S. Geological Survey Active Mining Area	vii
Within 500ft of Fault Line	vii
Slope	
Slope 0-15%	vii
Slope 15-25%	vii
Slope 25-35%	vii
Slope >35%	vii
Land Use	
Area of Critical Environmental Concern	v
Birch Creek Interpretive Site	v
BLM Recreation Site (Oregon and Idaho)	v
BLM Wild and Scenic River: Recreation	v
BLM Wild and Scenic River: Scenic	v
BLM Wild and Scenic River: Suitable Lands (Prineville District, Oregon)	v
BLM Wild and Scenic River: Wild	v
BLM Wilderness Study Area (Oregon/Idaho)	v
Burns District Off-Highway Vehicle: Limited	O ¹
Burns District Off-Highway Vehicle: Seasonal Closure	O
Burns District ROW Avoidance Corridor	O
Confederated Tribes of the Umatilla Indian Reservation	O
Cropland/Irrigated Agriculture	O
CTWSR Forrest Conservation Area	O
CTWSR Oxbow Conservation Area	O
Forested Land: Private	iv
Forested Land: Public	iv
Grazing/Pasture – Oregon	O
Hells Canyon National Recreation Area	v
Hospitals	O
Howard Meadows	O

Constraint	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Irrigated Agriculture/Cropland	O
Lands with Wilderness Characteristics (Oregon BLM)	O
Lower Powder River Valley	O
Morrow County Park	v
National Forest Inventoried Roadless Area	v
National Forest Military Operations Area	O
National Forest Old Growth Forest Stand	ii
National Forest Recreation Site	v
National Forest Special Use Areas	v
National Forest Wilderness Area	v
National Forest: Special Interest Area	v
National Wildlife Refuge	v
Naval Weapons System Training Facility	O
North Powder Valley	O
Noxious Weeds (Oregon BLM)	O
ODFW Wildlife Management Area	v
Oregon Fish Hatcheries	v
Oregon State Park	v
Oregon/Idaho Trails	O
Prineville District Lands Proposed for Acquisition by BLM	O
Prineville District Noxious Weeds	O
Prineville District Off-Highway Vehicle: Closed	O
Prineville District Off-Highway Vehicle: Limited Use	O
Prineville District Old Growth Forest	ii
Prineville District Proposed Area of Critical Environmental Concern	v
Prineville District Special Recreation Management Area	O
Proposed Wilderness Study Area Oregon Natural Desert Association	O
Proposed Wind Farm Boundary (Burns District, Oregon)	O
Restricted Airspace – Airport	O
Special Recreation Management Area (Malheur Resource Management Area, Vale District, Oregon)	v
Starkey Game Management Area	v
The Nature Conservancy: Portfolio	O
The Nature Conservancy: Preserve	O
Thief Valley Reservoir	O
Urban Area	O
Urban Growth Boundary – Oregon	O
Vale District Off-Highway Vehicle: Closed	O
Vale District Off-Highway Vehicle: Limited to Designated Routes	O
Vale District Off-Highway Vehicle: Limited to Existing Routes	O
Virtue Flat OHV Park	O

Constraint	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Wild Horse and Burro Area (Oregon BLM)	O
Wind Farm Boundary	O
Land Ownership/Management	
Bureau of Land Management	O
Bureau of Reclamation	O
Indian Reservation	O
Military Land	O
National Forest Land	O
National Park Service	v
Other Federal Land	O
Private Land	O
State Land	O
US Fish and Wildlife Service Land	O
Visual Resources	
BLM Visual Resource Management Class 1	O
BLM Visual Resource Management Class 2	O
BLM Visual Resource Management Class 3	O
BLM Visual Resource Management Class 4	O
Devine Scenic Corridor (Burns District)	O
National Forest Scenic Visual Corridor	O
National Forest Visual Quality Objective: Maximum Modification	O
National Forest Visual Quality Objective: Modification	O
National Forest Visual Quality Objective: Partial Retention	O
National Forest Visual Quality Objective: Preservation	O
National Forest Visual Quality Objective: Retention	O
Scenic Byway	O
Viewshed Area (Baker County)	O
Within 1200ft Nationally Designated Scenic Byway	O
Water and Wetlands	
303d Lakes	i
303d Streams	i
Floodplain: 500-yr Flood Zone	i
Floodplain: Area Not Mapped	i
Floodplain: Not in Flood Zone	i
Floodplain: Zone A	i
Floodplain: Zone AE	i
Floodplain: Zone ANI	i
Floodplain: Zone AO	i
National Wetland Inventory	i
Oregon State Scenic Waterway	v
Oregon Watershed Restoration Inventory Facility	i

Constraint	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
(within 500ft Buffer of linear feature)	
Oregon Watershed Restoration Inventory Facility (within 500ft of site location)	i
Oregon Watershed Restoration Inventory Facility Area	i
Snake River	i
Zoning	
Airport	iv
Exclusive Farm Use Zone	viii
Forest	iv
Mineral & Aggregate	iv
Natural Resource	iv
Park	iv
Reserve	iv
Rural Commercial	iv
Rural Industrial	iv
Rural Residential	iv
Rural Service Center	iv
Urban	iv

¹ O – Other than one of the eight factors under OAR 345-021-0010(1)(b)(D).

BLM – Bureau of Land Management; ft – feet; NA – not applicable/available; NRCS – Natural Resources Conservation Service

3.1.1.2 Opportunities

In addition to constraints, IPC identified and considered siting “opportunities,” which were defined as resources or conditions that could accommodate transmission line construction and operation because of their physical characteristics or regulatory designations. In the study area, existing transportation corridors (I-84), pipelines, electric transmission lines, and agency-designated energy corridors were considered as potential siting opportunities (see Table B-3). The Proposed Corridor parallels existing transmission lines where possible but maintains an approximate 250-foot separation distance,⁶ when possible. In evaluating corridor locations, consideration was also given to paralleling the Hemingway to Summer Lake 500-kV line as well as to the location of the West-wide Energy (WWE) corridor and BLM- and USFS-designated utility corridors.

Table B-3. Siting Opportunities

Opportunity	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Existing Corridors	
Vale District Utility Corridor	iii
West-wide Energy Corridor	iii
National Forest Utility Corridor	iii
Interstate 84	iii
500-kV Transmission Lines	iii
138/230-kV Transmission Lines	iii
Large Diameter Pipeline	iii

Vale District Utility Corridor

The BLM Vale District Resource Management Plan (BLM 2002) designated two utility corridors in the vicinity of the Owyhee River below the Owyhee Dam. IPC considered these utility corridors as an opportunity for siting the transmission line across the Owyhee River on public lands. The Proposed Route is sited within the Vale District Utility Corridor for approximately 16.8 miles as shown in Exhibit C, Attachment C-2, maps 92 through 95, map 110, maps 117 through 119, and maps 121 through 124.

West-wide Energy Corridor

The BLM, in response to Section 368 of the Energy Policy Act of 2005, participated in a programmatic Environmental Impact Statement (PEIS) for the designation of energy corridors on federal land in the 11 western states (DOE/EIS-0386 [DOE and BLM 2008]), commonly known as Section 368 Corridors, in which the U.S. Department of Energy (DOE) and BLM were the lead federal agencies, and the USFS and other agencies were cooperators. The PEIS designated energy corridors and provided guidance, best management practices, and mitigation measures to be used where linear facilities are proposed crossing BLM-managed and National Forest System lands. Notwithstanding the uncertain legal status of the Section 368 Corridors,⁷ IPC considered

⁶ As discussed below under “500-kV Transmission Lines,” IPC’s preferred separation distance is 1,500 feet. However, the Proposed Route includes a 250-foot, and not a 1,500-foot, separation distance to bring it in line with BLM’s revised Agency Preferred Alternative.

⁷ On July 7, 2009, multiple organizations filed a complaint challenging the PEIS. *Wilderness Society, et al. v. United States Department of the Interior, et al.*, No. 3:09-cv-03048-JW (N.D. Cal.). BLM, USFS, DOE, and the Department of Justice worked collaboratively with the plaintiffs to develop a settlement with specific actions to mutually resolve the challenges in the complaint. The four principal components of the July 3, 2012, Settlement Agreement require the

the Section 368 corridors as siting opportunities on public lands. The Proposed Route is sited within the WWE corridor for approximately 3.9 miles in Baker and Malheur counties as shown in Exhibit C, Attachment C-2, maps 92 through 95, and maps 124 through 125.

National Forest Utility Corridor

The Wallowa-Whitman National Forest includes a designated utility corridor along I-84 west of La Grande, Oregon, through the Blue Mountains. The utility corridor is designated in order to facilitate authorization of future utility (including transmission) ROWs (USFS 1990) on the Wallowa-Whitman National Forest. The utility corridor currently includes several existing facilities including a 230-kV transmission line, a natural gas pipeline, and a refined petroleum product pipeline. In addition, I-84, segments of old US Route 30, and a Union Pacific railway are also located within this utility corridor. IPC considered the Wallowa-Whitman National Forest utility corridor to provide a key opportunity for siting the transmission line across National Forest System public lands. The Proposed Route is sited within 6.8 miles of the 7.4-mile-long Wallowa-Whitman National Forest utility corridor as shown in Exhibit C, Attachment C-2, maps 46 through 48.

Interstate 84

The I-84 corridor, in most cases, did not provide an opportunity for siting the transmission line. Several portions of I-84 within the study area are identified in local land use plans as scenic resources. Land use (population centers, occupied structures, irrigated agriculture, and airports), resources (wetlands, floodplains), and topography adjacent to I-84 prevented siting the transmission line in other areas.

Transmission lines and other utilities can be sited along public roads in Oregon as long as they do not obstruct any public road or navigable stream. However, the rights of utilities to construct facilities along public roads are subject to the needs of the public road system (ORS 758.010). If roadway improvements become necessary, relocation of the utility (transmission line) would be subject to the order of the county governing body and the Department of Transportation, and the utility would incur the cost of the relocation.

Extra High Voltage Transmission Lines

IPC's position throughout the siting of the Project has been that a 1,500-foot minimum separation distance between adjacent extra high voltage (EHV, 230-kV or higher) transmission lines is required to minimize the probability of losing two EHV transmission lines that are a part of the same WECC path in quick succession. The simultaneous loss (N-2 contingency) of the 500-kV B2H Project and another EHV line connecting Idaho to Oregon/Washington possibly would result in significant power outages to customers across Idaho, Wyoming, and Utah, and possibly cascading outages throughout the West (blackouts). Accordingly, throughout the first three siting phases, the proposed transmission line route generally was developed with an approximate 1,500-foot separation distance between adjacent EHV transmission lines.

However, in 2016, the BLM's revised Agency Preferred Alternative included a 250-foot, and not a 1,500-foot, EHV minimum separated distance. Because the Proposed Route follows the revised Agency Preferred Alternative. The Proposed Route now conforms with BLM's directive that the Project use a 250-foot EHV minimum separation distance, which is based on a WECC 2012 whitepaper found at https://www.wecc.biz/Reliability/FAC-010_White%20Paper_2-6-13.pdf.

federal agencies to complete an interagency Memorandum of Understanding addressing periodic corridor reviews; update agency guidance; update agency training; and complete a corridor study.

There are many EHV transmission lines in Oregon that are along the Columbia River or in the vicinity of the Interstate 84 corridor along the very northern portion of the Study Area (Figure B-6). Those lines run east-west and not south toward the Hemingway Substation. Because the lines in the north do not trend on a path connecting the two Project endpoints, the lines do not provide a siting opportunity that meets the objectives of the Project.

The existing PacifiCorp Hemingway to Summer Lake line is the only EHV transmission line traversing the southern portion of the Study Area (Figure B-6). It too does not trend on a path connecting the Longhorn Station and Hemingway Substation, so the Hemingway to Summer Lake line did not provide an opportunity for siting the majority of the Project. However, the Hemingway to Summer Lake line did provide an opportunity for siting from just inside the eastern edge of Oregon into the Hemingway Substation in southwestern Idaho.

230/138/69-kV Transmission Lines

The Proposed Route is sited within approximately 250 feet of existing 69-kV, 138-kV, or 230-kV transmission lines for 73.6 miles as shown in Exhibit C, Attachment C-2.

Large-Diameter Pipeline

Siting a high-voltage transmission line in close proximity and parallel to a metallic underground pipeline may require the installation or upgrade of protective equipment to mitigate potential corrosion of the pipeline from induced voltage caused by the transmission line. Installation of the protective equipment would require additional infrastructure and ground disturbance associated with the Project.⁸ As a general siting principle, IPC carefully scrutinized siting the Project parallel to existing buried pipelines. The cost savings and potential for reduced construction impact of siting adjacent to existing pipelines is weighed against the impact to the underground pipelines and potential mitigation to address the impacts. This has been done to minimize disruption or required modifications to existing protective systems and their supporting infrastructures. As the Project continues to consider new constraint information, IPC will continue to work to avoid interference with underground pipelines as well as other types of existing infrastructure to the maximum extent possible. Where it was not possible to move the Project away from the pipeline, IPC will work with the owner/operator of the pipeline to evaluate the interference from the B2H Project and see that the necessary protection system is put in place to protect the pipeline.

Large-diameter pipelines did not provide a significant opportunity for siting the transmission line. However, the Proposed Route is sited within 250 feet of existing large-diameter gas pipelines for 15.6 miles as shown in Exhibit C, Attachment C-2.

⁸ Where buried pipelines run parallel to a transmission lines, they are typically protected by an impressed current cathodic protection (ICCP) system, which requires buried anodes connected to a DC-power source, if not already installed by the pipeline owner/operator will generally require construction of a new distribution line to serve the ICCP.

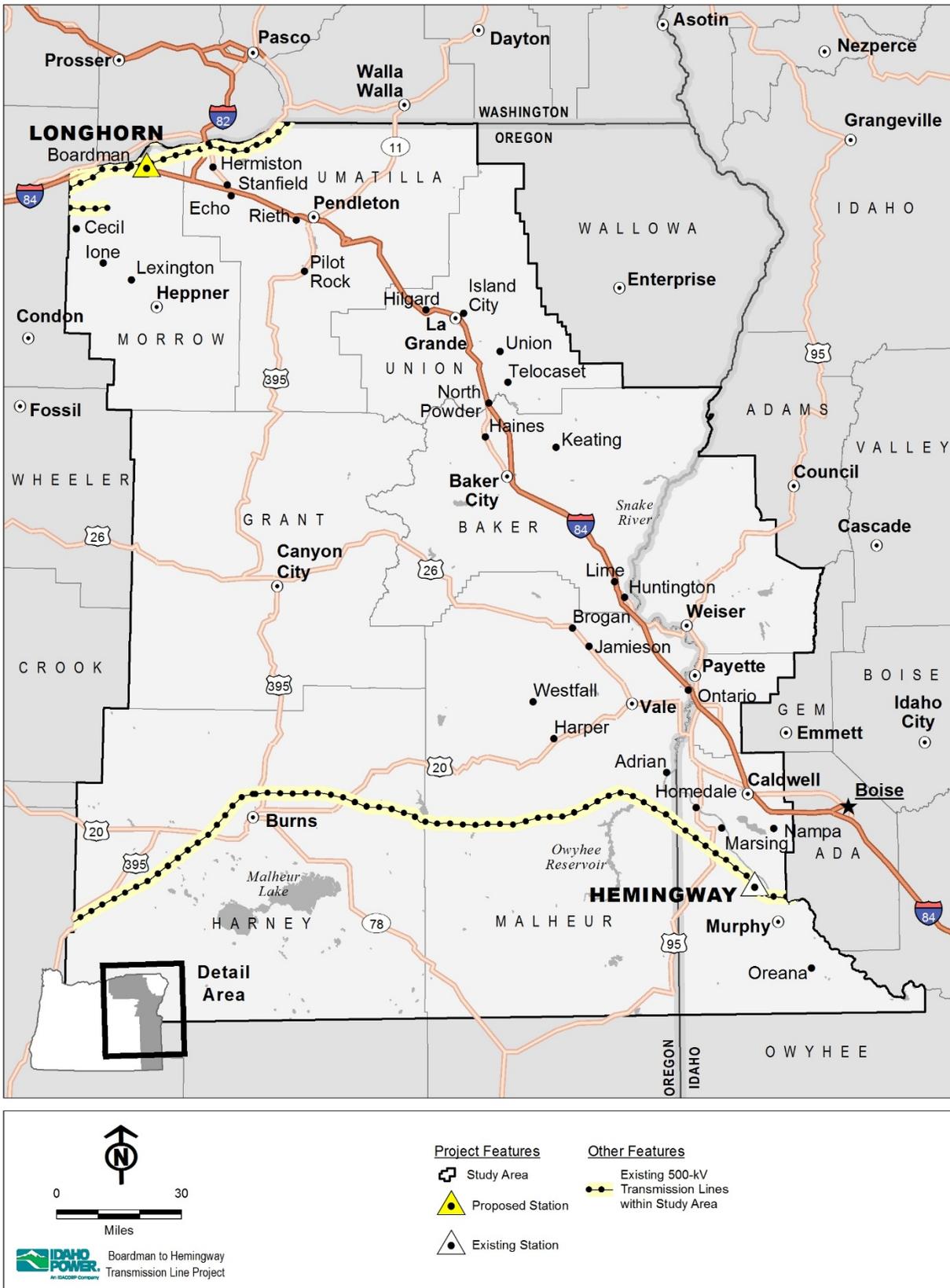


Figure B-6. Existing Extra High Voltage Lines in the Study Area

3.1.2 Corridor Selection Process – Phase One (2008–2010)

Phase One of IPC's identification and analysis of potential alternative corridors was accomplished primarily between 2008 and 2010 and involved input from many local citizens residing throughout the 11-county, two-state study area. IPC's originally proposed corridor was presented to the public during scoping meetings conducted by BLM and Oregon Department of Energy (ODOE) in October 2008.⁹ Because of the level of public interest, corridor suggestions, and opposition to the originally proposed corridor, IPC initiated a process to engage residents, property owners, business leaders, and local officials in siting the Project. Through this Community Advisory Process (CAP) described below, IPC partnered with communities and other stakeholders from northeast Oregon to southwest Idaho to identify proposed and alternative corridors and station locations for the Project.

IPC's CAP took place in 2009 and early 2010. Project Advisory Teams (PATs) representing five geographic areas were convened for the purpose of identifying, developing, and recommending proposed and alternative corridors for the Project. Figure B-7 shows the process graphically.

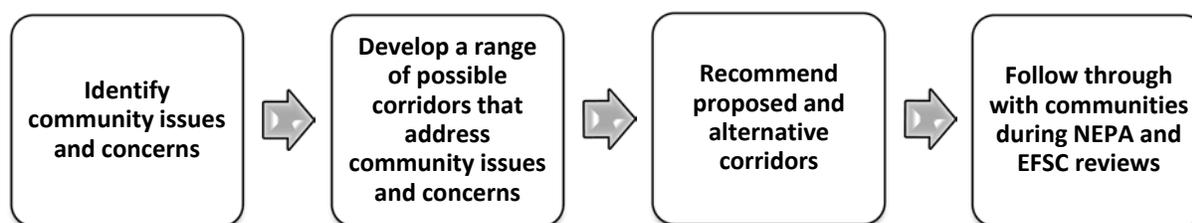


Figure B-7. Community Advisory Process

The process consisted of the following steps:

1. PATs identified issues and concerns. PATs developed community criteria for evaluating possible corridors and integrated these with regulatory requirements and IPC criteria relating to cost and feasibility.
2. PATs developed a range of possible corridors or corridor segments that addressed community issues and concerns. The PATs developed approximately 48 corridors and corridor segments. Corridors not meeting the community, regulatory or IPC cost/feasibility criteria were removed from further consideration.
3. PATs recommended proposed and alternative corridors were evaluated. IPC analyzed all 48 corridors and corridor segments proposed by the PATs using the processes described in Section 3.1.2.3, and identified three corridors as most constructible, least difficult to permit, and most likely to incur the lowest overall cost.
4. IPC evaluated the three possible corridors based on input received from PATs and selected a proposed corridor. IPC presented three corridors to the PATs for their comments. The resulting comments showed no clear preference for any one of the three corridors. IPC selected the Eastern Corridor as the proposed corridor as described in Section 3.1.2.4.

⁹ IPC first submitted a Notice of Intent (NOI) to apply for a site certificate to the ODOE – EFSC in 2008. IPC also submitted applications for the necessary federal ROWs to BLM and USFS, and the federal and state agencies held joint public scoping meetings in October 2008. Following those meetings, IPC initiated a process to re-evaluate the 2008 proposed route and engage residents, property owners, business leaders, and local officials in siting the transmission line. Through the CAP, IPC partnered with communities from northeast Oregon to southwest Idaho to identify potential routes for the Project. Based on input received in the CAP, IPC selected a new proposed route for the Project. Accordingly, IPC withdrew its original NOI and submitted a new NOI to ODOE-EFSC in July 2010, as well as revised applications to BLM, USFS, and Bureau of Reclamation requesting the necessary ROW grants. Both the federal and state application are still pending.

5. Follow through with communities during state and federal reviews. IPC continues communicating with the PATs and public throughout the National Environmental Policy Act of 1969 (NEPA) and ODOE processes. Toward this end, IPC will keep the public and PATs updated on corridor revisions and the rationale for them as well as the status of the regulatory actions, and will continue to receive and address public input.

In addition to PAT meetings, IPC held public meetings throughout the Project area to allow the public to review and comment on the PATs' work and further comment on the Project itself.

3.1.2.1 Initial Corridor Selection

IPC compiled a comprehensive geographic information system (GIS) database of constraints and opportunities for the study area. Constraints were then categorized by PATs as exclusion, high avoidance, moderate avoidance, or low avoidance; incorporating input from the PATs, corridor development began with a series of routing meetings and workshops at Baker City, Boardman, and Ontario, Oregon, each of which comprised one evening session followed by a full day of routing. At the evening sessions, IPC educated the participants on the siting process and confirmed community criteria. The next day, individuals and groups of local citizens returned to identify corridor segments or entire corridors between Boardman and Hemingway. Other than providing technical expertise, IPC staff and their contractors did not participate in development of the PAT-derived corridors.

Members of the CAP and other local residents and organizations brought their knowledge of local resources, conditions, and priorities and worked with IPC, GIS analysts and routing experts to identify potential corridors. The GIS analysts, using topographic maps, available aerial photography, and the many GIS layers of constraints and opportunities, worked with participants to identify corridors that avoided exclusion areas and as much as possible minimized crossings of high avoidance constraints and, where practical, moderate and low avoidance areas. In all instances the routing teams were looking for opportunities such as existing transmission lines and the West-wide Energy corridors to parallel or use.

After PATs identified corridors for study in Grant and Harney counties, IPC initiated a formal CAP process and routing sessions were soon held in Mt. Vernon and Hines. Every corridor developed in the five mapping sessions was documented in GIS format and with a form explaining the basis for each corridor or segment. Approximately 47 corridors and corridor segments totaling over 3,000 miles (as shown on Figure B-8) were developed through the CAP.

3.1.2.2 Corridor Refinement

Following the routing sessions, IPC reviewed each of the corridors to identify potential issues that could significantly impact the ability to permit a segment or corridor. Each alignment was reviewed using aerial photography, topographic maps, and constraint data. Using aerial photography, houses, barns, and other structures (i.e., wind turbines); irrigation pivots; and other land use constraints could be avoided where practical. Using topographic maps the corridors were adjusted to avoid or minimize distance across very steep slopes and other physical features less desirable for construction and operation of a transmission line. Finally, the corridors were checked against constraint maps to avoid exclusion areas and areas of high permitting difficulty like Oregon Department of Fish and Wildlife (ODFW) Category 1 habitat. In the large majority of instances, changes were made while maintaining the intent of the corridor or corridor segment.

At this time a number of corridors were dropped from further consideration because they did not meet the Project objectives and/or resulted in significantly more environmental impacts and cost. As a result, the miles of corridors for further consideration were reduced to about 2,000 miles. Figure B-9 shows those corridors carried forward as a result of the refinement process.

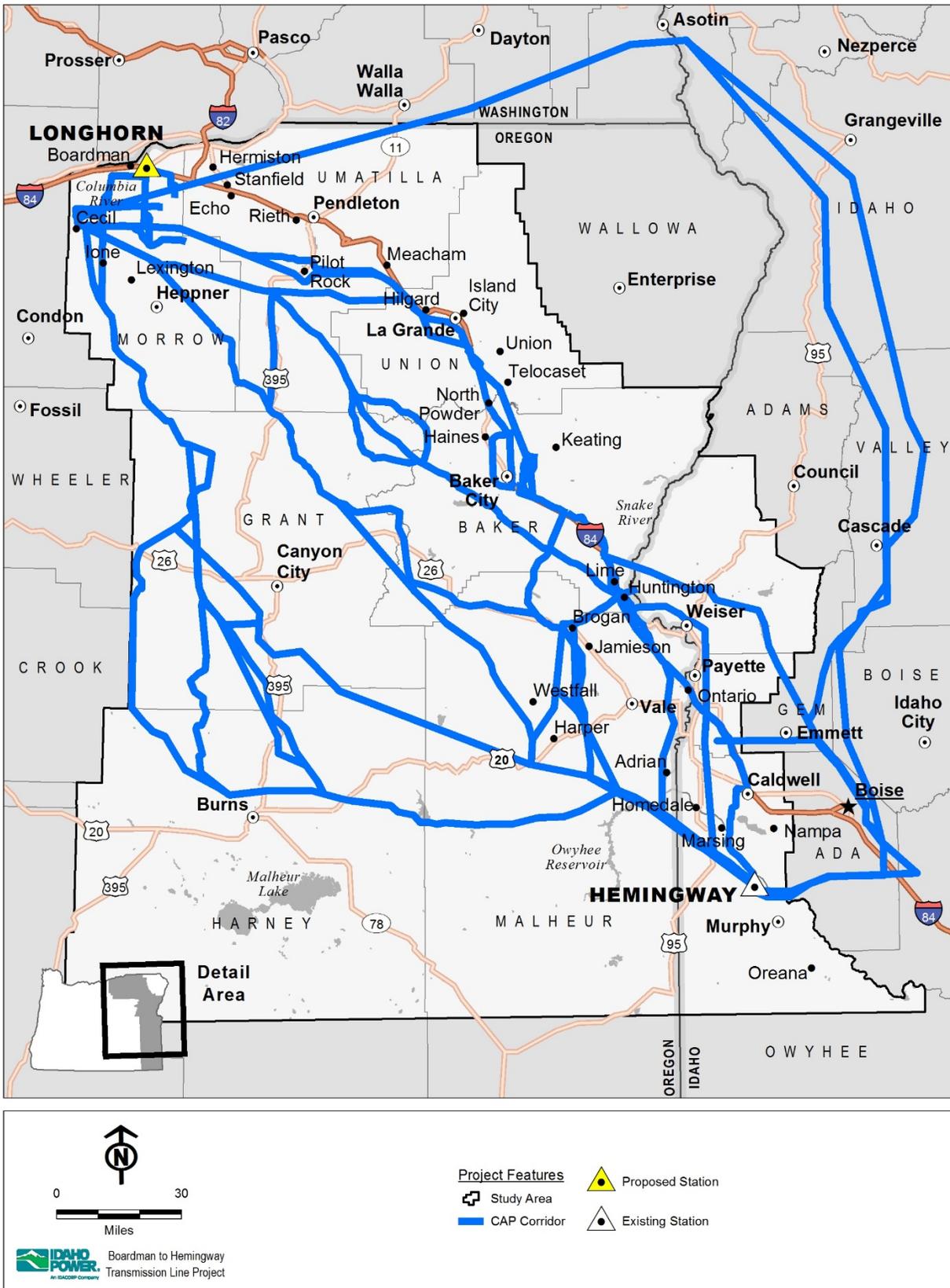


Figure B-8. Initial CAP Identified Corridors

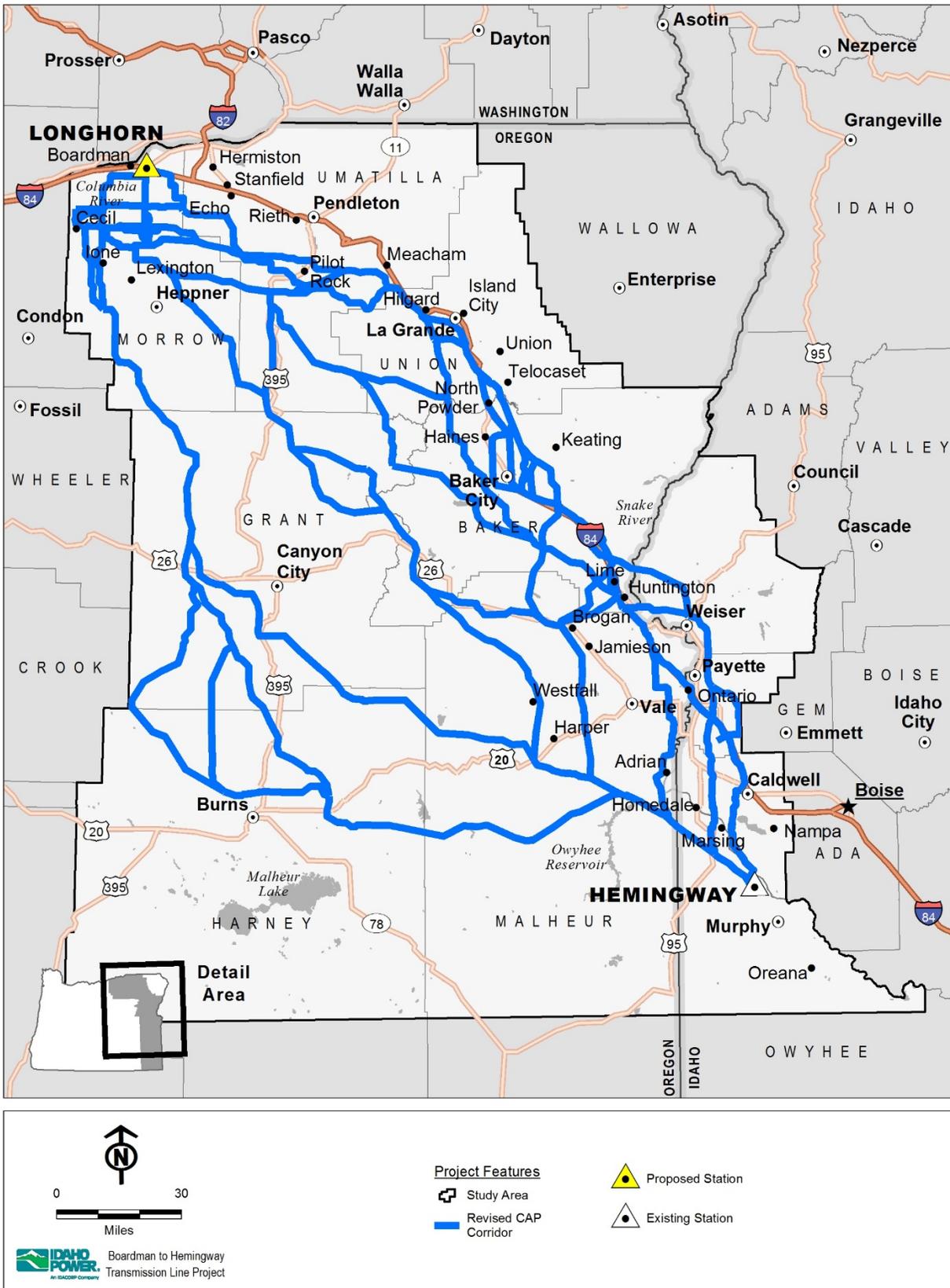


Figure B-9. Revised CAP Corridors

3.1.2.3 *Regional Analysis*

Next, the remaining corridors, where appropriate, were grouped into 14 regions as shown on Figure B-10. Regions were established where two or more corridors extended from one common point to a second common point. For example, in the southwest region, as shown on Figure B-11, four corridors were identified between points GR3 and MA6. Each corridor in this region was then analyzed for permitting difficulty, construction difficulty, and mitigation costs as shown in Figure B-12 for the southwest region (to see regional analysis for each of the 14 regions, see Attachment B-1, 2010 Siting Study, Section 3.3).

In evaluating permitting difficulty, constraints previously identified were categorized as low, moderate, or high permitting difficulty areas or as exclusion areas or opportunities. Next, the miles of each category were measured and totaled and used to compare pairs of corridors within a region. Also, each corridor was analyzed for specific constraints it crossed and these were documented in attribute tables. The tables were reviewed to identify more significant differences between corridors. These two analyses were used to determine the most reasonable corridor in each region.

In evaluating construction difficulty, accessibility, topography, road construction, equipment movement, and many other factors were used to determine low, moderate, and high construction difficulty. Again, these ratings were measured by mile and totaled and used to compare the corridors in a region. In those cases where the permitting analysis was not conclusive, the construction difficulty analysis was considered.

After the permitting and construction difficulty analyses were completed, potential biological mitigation costs were estimated (high, moderate, or low), measured in miles, and totaled for each alternative corridor. Using these three analyses, including the siting factors identified in OAR 345-021-0010(1)(b)(D), a more reasonable corridor was selected for each region and, combining the selected corridors with those unique segments between two points, three corridors were determined for further analysis as shown on Figure B-13.

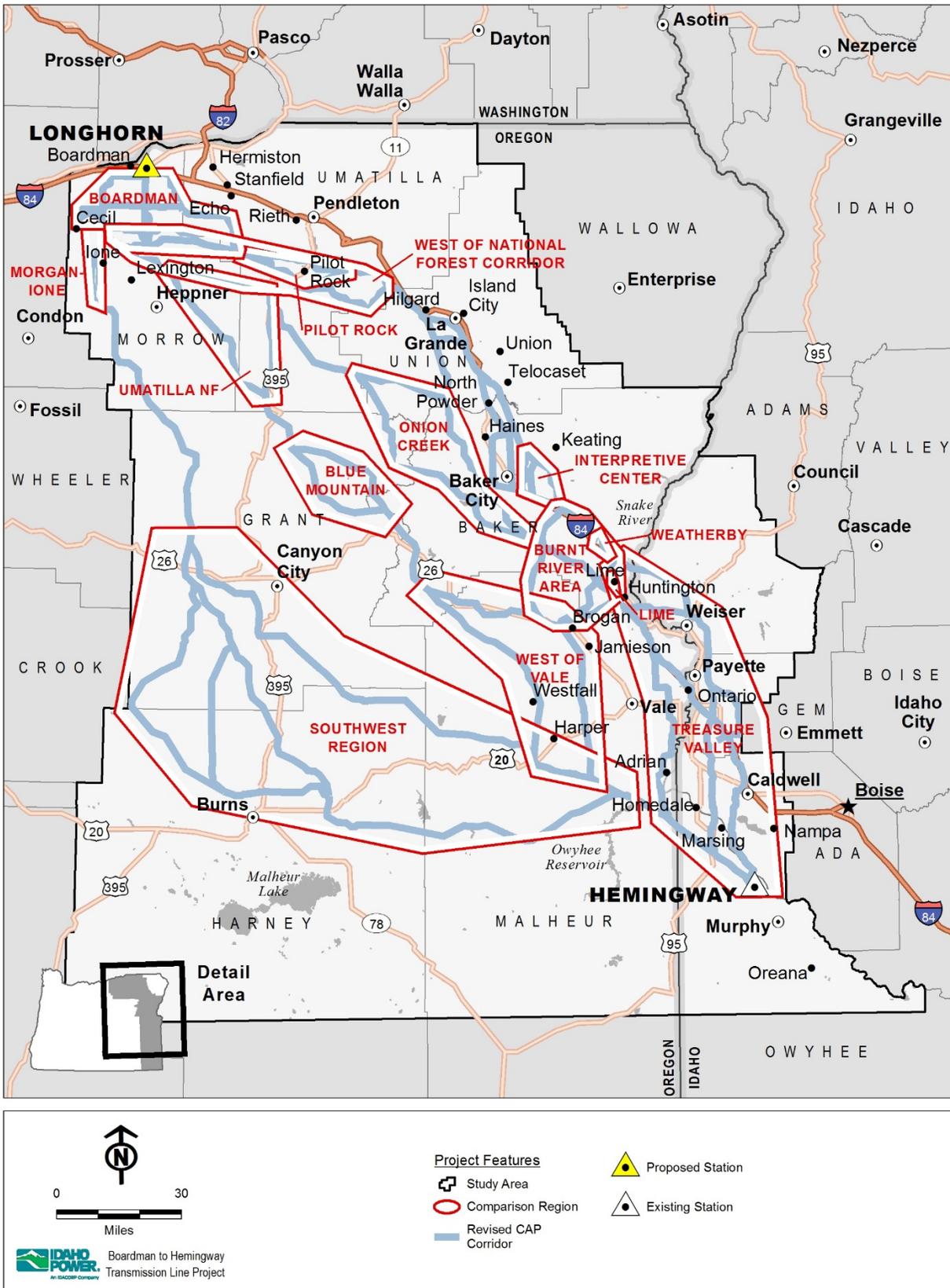


Figure B-10. Regional Analyses

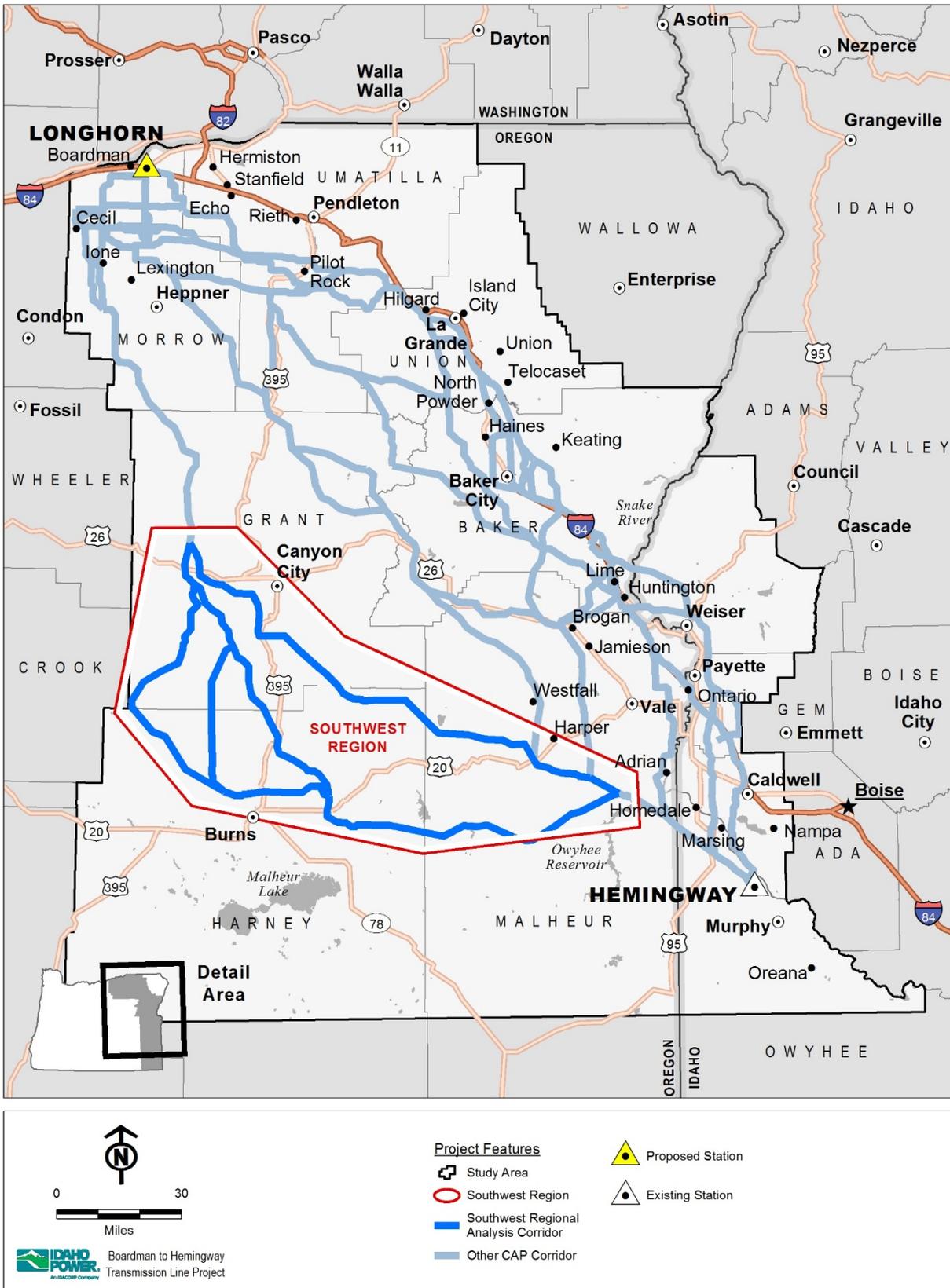
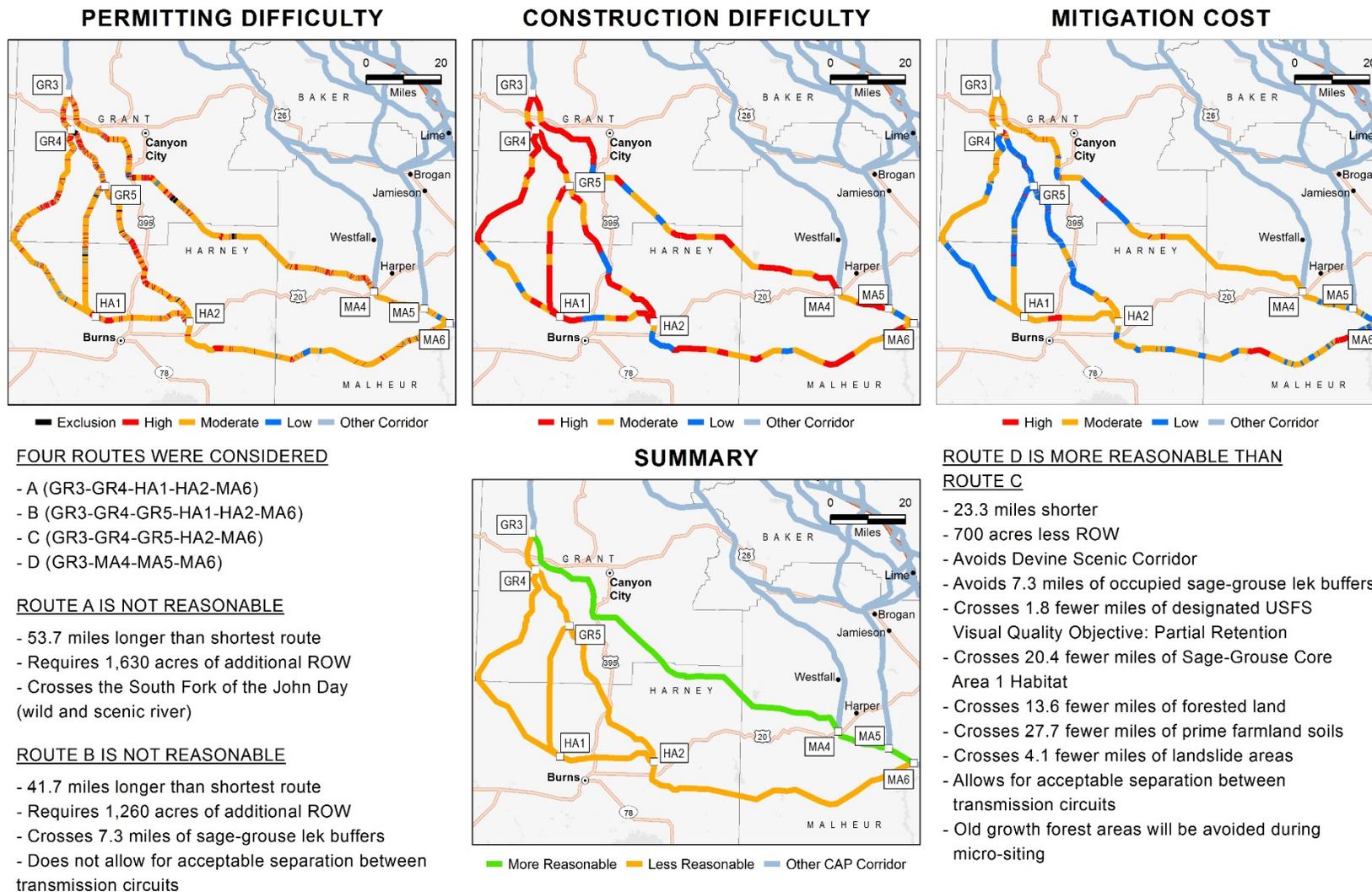


Figure B-11. Southwest Region Analysis



1 **Figure B-12. Permitting, Construction, and Mitigation Analysis (Southwest Region)**

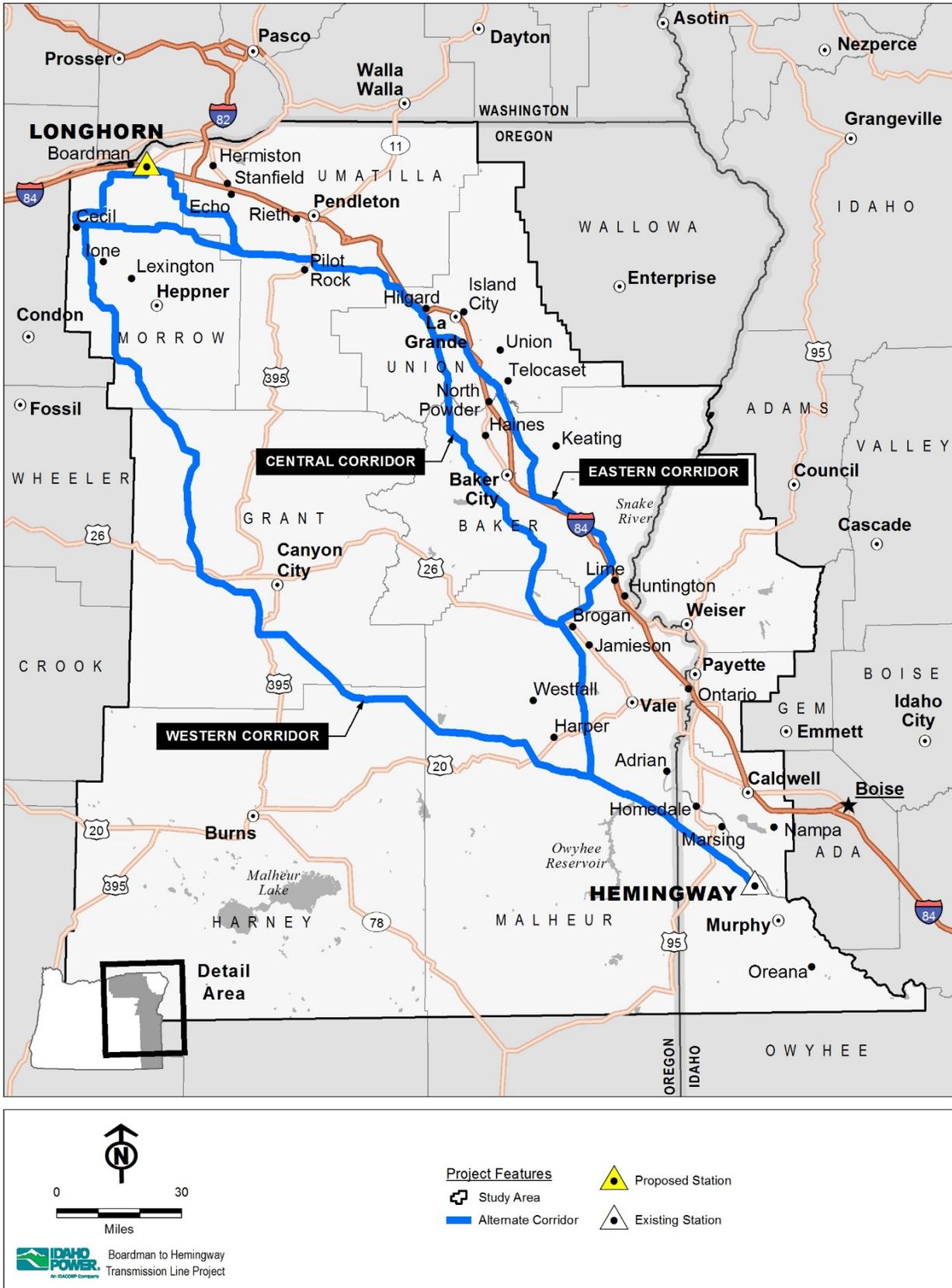


Figure B-13. Alternative Corridors

3.1.2.4 Analysis of Three Alternative Corridors

As shown on Figure B-13, IPC identified three alternative corridors—Eastern, Central, and Western. For detailed discussion of the analysis, see Attachment B-1.

As a result of the analysis of the three corridors, IPC selected the Eastern Corridor as the basis for its Proposed Corridor.¹⁰ When compared to the Central and Western corridors, the Eastern Corridor:

- Would require over 35 fewer miles of new corridor,
- Would parallel existing utility corridors for over 50 miles more,
- Would require over 1,000 fewer acres of clearing,
- Would be significantly less difficult to construct, and
- Would avoid creating a new 30- to 45-mile utility corridor through one or more National Forests.

While it would avoid new impacts on rugged forest lands, the Eastern Corridor would cross approximately 75.8 more miles of EFU-zoned land than the Western Corridor, and 18.4 more miles than the Central Corridor. Compared to the Central Corridor, the Eastern Corridor would cross 33.1 fewer miles designated as high construction difficulty and 21.1 fewer miles designated high permitting difficulty and it would not require plan amendment to designate a utility corridor in the Wallowa-Whitman National Forest. The Western Corridor would have a similar degree of permitting difficulty as the Eastern Corridor, but would have required plan amendments for utility corridors crossing the Malheur and Wallowa-Whitman National Forests. The Western Corridor would also traverse 55.1 more miles designated high construction difficulty.

Table B-4 compares each corridor across all resource factors listed in Attachment B-3. The total of OAR 345-021-0010(1)(b)(D) factors encountered are categorized as more, less, or least reasonable when the corridors are compared to each other. In other words, the Eastern Corridor was the best corridor for avoiding impacts to 38 resources, the second best for another 19 resources, and the least reasonable for 11 resources. The results indicate an overall lower potential for resource impact for the Eastern Corridor. The results also clearly indicate that there was no single corridor that was the best choice for *all* of the resources; as contemplated by OAR 345-021-0010(1)(b)(D), IPC carefully considered and evaluated each corridor against the eight factors and selected the Eastern Corridor as the basis for the Proposed Corridor.

Table B-4. Comparison of OAR 345-021-0010(1)(b)(D) Factors by Corridor

Resource Factor Encounters	Western Corridor	Central Corridor	Eastern Corridor
More Reasonable	32	25	38
Less Reasonable	32	26	19
Least reasonable	13	11	11
No encounter	12	27	21
Total Resource Factors	89	89	89

Using the factors presented Tables B-4 and B-5, the Eastern Corridor was selected as the Proposed Corridor with the understanding that additional micrositing would be necessary to avoid and reduce potential impacts. The additional siting work that has been done since 2010 is

¹⁰ Note that the Proposed Corridor differs from the Eastern Corridor in the Boardman area.

described in Section 3.1.3, 3.1.4, and 3.1.5 and in further detail in the 2012, 2015, and 2017 Supplemental Siting Studies (Attachments B-2, B-4, and B-6).

3.1.3 Corridor Selection Process Phase Two – September 2010 to February 2013

Having selected a Proposed Corridor for the Project, IPC submitted its Notice of Intent (NOI) to apply for a Site Certificate for the Project in July 2010. The ODOE held public informational meetings regarding IPC's Proposed Corridor in August 2010, and IPC prepared a Siting Study detailing the first phase of its Corridor Selection Process in August 2010 (Attachment B-1).

During the time between IPC's submittal of its July 2010 NOI and the 2010 Siting Study (Attachment B-1) and filing of the preliminary ASC (pASC) in February 2013, IPC engaged in extensive discussions with landowners and performed more detailed engineering and constructability analyses that suggested corridor adjustments and changes. In addition, IPC identified alternatives to the northern terminus of the Project. IPC proposed to remove approximately 4.8 miles of existing 138-kV line and build approximately 4.1 miles of 500-kV line on the ROW. In order to do this, IPC would have to rebuild approximately 5.0 miles of single-circuit 69-kV transmission line onto double-circuit 138/69-kV structures within the existing 69-kV ROW. An additional 0.3 mile of new 138-kV single-circuit transmission line would have to be built to tie the 138-kV part of the double-circuit line back to the existing 138-kV line.

These steps resulted in over 48 adjustments of the Proposed Corridor and alternative corridor segments, as well as identification of two alternative station locations. OAR 345-021-0010(1)(b)(D) required IPC to discuss reasons for selecting corridors not presented at the informational meetings described in OAR 345-015-0130. Table B-5 identifies changes and revised corridors developed after the informational meetings. Table B-5 also lists the reasons for the changes and their relationship to the eight siting factors identified in OAR 345-021-0010(1)(b)(D) (see additional discussion in Section 3.1.2 above, 3.1.4, and 3.1.5 and Attachment B-2, Appendix C for associated maps). The process leading to the selection of the 2012 Proposed Corridor and the alternative corridor segments for portions of the Proposed Corridor is described in Attachment B-2, 2012 Supplemental Siting Study.

Table B-5. Proposed and Alternative Corridor Adjustments since Informational Meetings (August 2010)

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
1	Map 1	Grassland Station – Proposed Corridor MP 8	Proposed Corridor shifted north to follow Boardman to Slatt Existing Line	Avoids crossing north edge of The Nature Conservancy Grassland Preserve with Washington ground squirrel (WAGS) colonies	ii
2	Map 1	Proposed Corridor MP 6.8	Added Horn Butte Station as potential Project termination and interconnection to Boardman to Slatt existing transmission line	Shortens overall length of transmission line and avoids WAGS colonies	ii

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
3	Map 1	Proposed Corridor MP 6.8-34.1	Added Horn Butte Alternative	Connect to Alternative Station	NA
4	Map 1	Proposed Corridor MP 12-18	Shifted Proposed Corridor to stay closer to Boardman Grasslands Preserve	Adjusted corridor per landowner discussion	ii
5	Map 1	Proposed Corridor MP 20-23	Shifted Proposed Corridor to stay on Property Boundary	Adjusted corridor per landowner discussion	NA
6	Map 1	Proposed Corridor MP 33.5-39	Proposed Corridor Centerline Adjustment	Landowner request to shift around proposed wind turbines	NA
7	Map 1-2	Proposed Corridor MP 39-43	Proposed Corridor Centerline Adjustment	Avoid pivot irrigation; property line offset adjustments; maximize structure offset distances, tower spotting analysis/engineering assessment to improve constructability	NA
8	Map 1-2	Grassland Substation – Proposed Corridor MP 56.5	Eliminated Segment of July 2010 NOI Proposed Corridor (Northern Approach to Grassland Station)	2011 surveys identified potential WAGS colonies (Category 1 habitat); alternative Longhorn Station would preclude need to have a northern corridor to the proposed Grassland Station	ii
9	Map 1	Longhorn Alternative MP 0	Added Longhorn Station as potential Project termination and interconnection to McNary to Coyote Springs existing transmission line	Alternative Longhorn Station would preclude need to have a northern corridor to the proposed Grassland Station	NA
10	Map 1	Longhorn Alternative MP 0-18.4	Added Longhorn Alternative	Connect to Alternative Station	NA
11	Map 2	Proposed Corridor MP 44-50	Proposed Corridor Centerline Adjustment	Engineering assessment to improve constructability	vii
12	Map 2	Proposed Corridor MP 51-56.5	Shifted Proposed Corridor to stay on north side of Slusher Canyon	Avoids crossing Slusher Canyon twice and stream crossings	i and vii

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
13	Map 2	Proposed Corridor MP 63-67	Proposed Corridor Centerline Adjustment	Engineering assessment to improve constructability	vii
14	Map 2	Proposed Corridor MP 68-70	Proposed Corridor Centerline Adjustment	Engineering assessment to improve constructability	vii
15	Map 2	Proposed Corridor MP 74-76	Proposed Corridor Centerline Adjustment	Engineering assessment to improve constructability	vii
16	Map 2-3	Proposed Corridor MP 78-85	Shifted Proposed Corridor South	Landowner request to avoid homes, avoids difficult terrain, less access roads, avoids access off of Indian Reservation	vii
17	Map 3	Proposed Corridor MP 86-91	Shifted Proposed Corridor North	Adjusted to avoid canyon crossings	vii
18	Map 3	Proposed Corridor MP 93-96.5	Proposed Corridor Centerline Adjustment	Better use of existing access roads, engineering assessment to improve constructability	vii
19	Map 3	Proposed Corridor MP 100-103	Proposed Corridor Centerline Adjustment	Avoid State Park, engineering assessment to improve tower locations	v
20	Map 3	Proposed Corridor MP 106-108.5	Proposed Corridor Centerline Adjustment	Adjust alignment to follow WECC offset criteria from existing lines	iii
21	Map 3	Proposed Corridor MP 109-116	Proposed Corridor shifted east ~3 miles	Adjusted line corridor to follow existing BPA line corridor and utilize existing access roads per landowner request, avoid adding access roads in timbered areas	iii
22	Map 3-4	Glass Hill MP 5 – Proposed MP 124	Eliminated portion of Glass Hill Alternative	Difficult terrain forced alternative to tie back into Proposed Corridor at earlier point	vii
23	Map 3-4	Proposed Corridor MP 116-126	Shifted Proposed Corridor Southwest	Avoid Oregon State University Research Forest, adjusted per landowner discussions, difficult terrain, engineering assessment to improve constructability	vii

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
24	Map 4	Proposed Corridor MP 126-130	Eliminated Clover Creek Valley Alternative	No environmental advantage to alternative which also requires two crossings of existing 230-kV line	NA
25	Map 4	Proposed Corridor MP 127-128	Proposed Corridor Centerline Adjustment	Avoid crossing ODOT gravel pit/blasting area	NA
26	Map 4	Proposed Corridor MP 130-134	Shifted Proposed Corridor North	landowner request to shift alignment to avoid potential new structure location	NA
27	Map 5	Proposed Corridor MP 151-152	Proposed Corridor Centerline Adjustment	Avoid crossing occupied Sage-grouse lek 2-mile buffers	ii
28	Map 5	Proposed Corridor MP 154-157	Shifted Proposed Corridor East	Adjusted corridor to reduce visibility from NHOTIC	vi
29	Map 5	Proposed Corridor MP 154-170	Eliminated Virtue Flat Alternative	Alternative could not be sited to avoid occupied Sage-grouse lek 2-mile buffers in effect at time of elimination	ii
30	Map 5	Proposed Corridor MP 158.5-164	Proposed Corridor Centerline Adjustment	Engineering assessment to improve constructability	vii
31	Map 5	Proposed Corridor MP 165-168	Proposed Corridor Centerline Adjustment	Improve crossing of 69kV and better utilize existing 138-kV corridor	iii
32	Map 5-6	Proposed Corridor MP 168-170	Shifted Proposed Corridor South	Landowner request to shift alignment farther from existing residence	NA
33	Map 6	Proposed Corridor MP 180-183	Proposed Corridor Centerline Adjustment	Adjusted per landowner discussion concerning avoidance of natural amphitheater	NA
34	Map 6	Proposed Corridor MP 186-187.5	Proposed Corridor Centerline Adjustment	Adjusted corridor per landowner discussion	NA
35	Map 6	Proposed Corridor MP 186-191	Eliminated Weatherby Alternative	Difficult terrain, Proposed 138/69-kV Rebuild a better option	iii and vii

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
36	Map 6	Proposed Corridor MP 188-193	Added Proposed Double-Circuit 138/69-kV Rebuild. 500-kV line to be built within existing 138-kV ROW; existing 138-kV and 69-kV lines to be rebuilt as double circuit structures in existing 69-kV ROW	Difficult terrain	vii
37	Map 7	Proposed Corridor MP 205.5-216	Shifted Proposed Corridor North and West	Avoid crossing occupied Sage-grouse lek 2-mile buffers, adjusted per landowner discussions, engineering assessment to improve constructability across canyon	ii and vii
38	Map 7-8	Proposed Corridor MP 216-229.5	Shifted Proposed Corridor West	Avoid crossing occupied sage-grouse lek 2-mile buffer identified in 2011 survey season	ii
39	Map 7-8	Proposed Corridor MP 199.5-229.5	Added Willow Creek Alternative	Avoid crossing occupied Trail Gulch sage-grouse lek 2-mile buffer	ii
40	Map 8	Proposed Corridor MP 233-238	Shifted Proposed Corridor West	Engineering assessment to improve constructability	vii
41	Map 8	Proposed Corridor MP 238-240	Proposed Corridor Realignment across Malheur River	Avoid cultural resources and golden eagle nest found during 2011 surveys	vi
42	Map 8-9	Proposed Corridor MP 240-273	Shifted Proposed Corridor East	Avoid areas inventoried as having wilderness characteristics, avoid ACEC, follow Vale District Utility Corridor	iii and v
43	Map 8-9	Proposed Corridor MP 243-272	Added Malheur S Alternative	Avoid areas inventoried as having wilderness characteristics, minimizes ACEC crossing	v
44	Map 8-9	Proposed MP 245-252	Added Double Mountain Alternative	Avoid private land/stay on BLM-managed land	NA
45	Map 9	South of Malheur S Alternative MP 18-23	Eliminated Owyhee River Below Dam Alternative	Relocation of Proposed Corridor – no need for alternative	NA
46	Map 10	Proposed Corridor MP 275-277	Shifted Proposed Corridor South	Avoid crossing EFU-zoned land	viii

Map Label ID	Map Number Reference from Attachment B-2, Appendix C	Approximate Milepost (MP) Location relative to June 2012 Proposed and Alternative Corridors	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
47	Map 10	Proposed Corridor MP 281-285	Shifted Proposed Corridor South	Avoid private land, follow WECC offset criteria from existing lines	iii
48	Map 10	Proposed Corridor MP 286-289.5	Shifted Proposed Corridor North	Idaho Department of Lands request to reduce offset to existing 500-kV line	iii

¹The adjustments that occurred in the state of Idaho are not included in this table.

ACEC – Area of Critical Environmental Concern; BPA – Bonneville Power Administration; EFU – Exclusive Farm Use; NA – Not Applicable; NHOTIC – National Historic Oregon Trail Interpretive Center; ODOT – Oregon Department of Transportation; WECC – Western Electricity Coordinating Council

3.1.4 Corridor Selection Process Phase Three – February 2013 to May 2016

After filing the pASC for the Project in 2013, IPC identified the need to perform additional analysis and revision to the Project, resulting in some macro (major) and micro (minor) route adjustments. The macro changes included the addition of alternatives and the determination not to carry some alternative and stations forward into the 2017 Amended pASC as shown in Table B-6. The micro changes included making minor line and road location adjustments to avoid sensitive resources, reduce redundancy of project features, and improve the preliminary engineering design.

Table B-6. Proposed and Alternative Corridor Adjustments (macro changes) since Preliminary Application for Site Certificate (February 2013)

Map Number Reference from Attachment B-4	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Figure 3.1-1 Morrow County	Proposed Station and Proposed Corridor changed due to cancellation of the Portland General Electric’s Cascade Crossing transmission line.	Longhorn Station is IPC’s proposed station because Grassland and Horn Butte do not provide an adequate electrical connection to meet the needs of the Project. The West of Bombing Range Road is the proposed corridor due to Longhorn Station being the proposed station. Minimizes impacts to agricultural and WAGS and other existing infrastructure.	ii
Figure 3.1-2 Union County	Glass Hill Alternative Corridor Segment not carried forward.	Glass Hill Alternative Corridor Segment was not carried forward by BLM as the agency preferred route.	ii
Figure 3.1-3 Baker County	Virtue Flat and Durkee Alternative not carried forward.	Virtue Flat and Durkee alternatives were not carried forward by BLM as the agency preferred routes due to sage-grouse issues.	ii

Map Number Reference from Attachment B-4	IPC Corridor Change Description	IPC Basis for Corridor Change	Potential OAR 345-021-0010(1)(b)(D) Siting Factor
Figure 3.1-4 Malheur County	Brogan 2012 Proposed Corridor, Willow Creek, Malheur A and Malheur S Alternatives not carried forward.	Brogan 2012, Willow Creek, Malheur A and Malheur S alternatives were not carried forward by BLM as the agency preferred route.	ii

¹ The adjustments that occurred in the state of Idaho are not included in this table.
WAGS – Washington ground squirrel

The 2015 Supplemental Siting Study (Attachment B-4) explains why IPC was required to modify the Project following filing of its 2013 pASC, as identified below:

- 1) **BLM’s identification of a preliminary preferred route that included several segments not analyzed in the pASC:** In May 2013, BLM identified the preliminary preferred alternative for the Project in advance of public release of the Draft Environmental Impact Statement (EIS). BLM selected a preliminary preferred alternative that resulted in the lowest impact on the natural, human, and cultural environment that best protects, preserves, and enhances historic, cultural, and natural resources.

BLM released the Draft EIS in December 2014 identifying the agency preferred alternative as the same as the environmentally preferred alternative alignment. BLM selected the agency preferred alternative that it believes would fulfill the statutory mission and responsibilities of the agencies while giving consideration to economic, environmental, technical, and other considerations. In addition to the key resources listed above in selecting the environmentally preferred alternative, BLM also identified the following criteria for consideration while identifying the recommended agency preferred alternative:

- Land Use (ACEC values, lands with wilderness characteristics, and wild and scenic suitable rivers)
- Agriculture
- Use of corridors (designated corridors including the WWE corridor, the BLM Vale District corridor, and USFS corridors; proximity to existing roads including I-84; parallel to and in proximity of existing transmission lines)
- Socioeconomics
- Technical and other considerations (military operations, constructability, and Resource Management Plan and USFS plan conformance)

- 2) **Formal guidance from ODFW regarding its interpretation of its Habitat Mitigation policy and sage-grouse guidance:** IPC received a letter from ODFW in August 2013 stating that the ODFW Habitat Mitigation Policy (OAR 635-415-0025) does not draw a distinction between direct and indirect impacts to Category 1 habitat. The letter also stated that ODFW understands that IPC may be faced with rerouting the Project based on their guidance. Without a change in both BLM and ODFW’s current positions on sage-grouse habitat, it is highly unlikely that either the federal or state agencies involved will authorize the Virtue Flats and Durkee Alternative Corridor Segments of the Proposed Corridor. These segments were therefore not analyzed in the Amended pASC.

- 3) **Further coordination with the Bonneville Power Administration (BPA), PacifiCorp, and other utilities in Boardman area:** In order for the Project to meet its objective of adding approximately 1,000 MW of bi-directional capacity between the Pacific Northwest

and Intermountain West regions, the point of interconnection at the northern terminus must provide sufficient capacity to: 1) transfer an additional 1,050 MW of power from the BPA 500-kV transmission system in the Pacific Northwest west-to-east across the Idaho-Northwest transmission path; 2) transfer an additional 1,000 MW of power east-to-west across the Idaho-Northwest transmission path; and 3) allow for actual power flows on the B2H line of up to approximately 1,500 MW, accounting for variations in actual power flows of the various transmission lines comprising the Idaho-Northwest transmission path.

When IPC began the federal permitting process for B2H in 2007, other transmission development projects were being proposed in the Pacific Northwest that influenced Idaho Power's northern terminus location options for the Project. Portland General Electric's (PGE) Cascade Crossing 500-kV project was of particular note. In fact, in 2008, IPC and PGE executed a Memorandum of Understanding concerning Boardman area transmission development, with the intent of sharing development plans and developing facilities collaboratively to assist each company in fulfilling their respective service and system reliability obligations. The proposed Grassland Station was contemplated as an interconnection point between the two projects that could help each company with their respective project objectives. In IPC's 2013 pASC, the proposed termination point in the Boardman area was the Grassland Station.

However, since the 2013 pASC, the transmission development landscape has changed. Several of the development projects under consideration during the time of original application have subsequently been cancelled. Notably, in 2013, PGE indefinitely suspended the Cascade Crossing project. Even though the Grassland Station has been developed in connection with PGE's Carty Generating station, with the cancellation of the Cascade Crossing project, additional 500-kV transmission infrastructure would have been required to provide connection into the transmission grid to meet the needs of the Project. Therefore, the Grassland Station will not be analyzed in the ASC as a termination point. Rather, IPC is proposing to terminate the Project at the Longhorn Station.

- 4) Continued engineering to minimize impacts and improve design:** Since submittal of the 2012 Supplemental Siting Study as part of the pASC, IPC has performed more detailed engineering analyses that resulted in corridor adjustments and changes to avoid sensitive resources as well as improve constructability (see Attachment B-4, 2015 Supplemental Siting Study).

3.1.5 Corridor Selection Process Phase Four – May 2016 to Present

In March 2016, the BLM requested additional input from stakeholders on the alternatives being considered in the NEPA process. BLM took the information provided by the stakeholders and developed a revised Agency Preferred Alternative. The revised BLM Agency Preferred Alternative resulted in 147.4 miles of route modifications in Oregon to the IPC Proposed Route as presented in the 2017 Amended pASC and this ASC (see Attachment B-6, 2017 Supplemental Siting Study). The majority of the route modifications occurred in Morrow, Umatilla, Union, and Baker counties (Table B-7).

Table B-7. Miles of Route Modifications as a Result of BLM Agency Preferred Alternative

County	Miles of Route Modifications
Morrow	31.4
Umatilla	30.5
Union	32.3
Baker	47.2
Malheur	6.0
Total	147.4

IPC made minor changes to the sections of the Proposed Route that were submitted in the 2017 Amended pASC and this ASC that were not eliminated by the new BLM Agency Preferred Alternative. These included minor line and road location adjustments as well as adjustments to avoid sensitive resources, reduce redundancy of project features, and improve the preliminary engineering design. In addition, in coordination with permitting partners PacifiCorp and BPA and other stakeholders, IPC also added two alternatives in Morrow County and one alternative in Union County.

3.1.6 Analysis of Factors from OAR 345-021-0010(1)(b)(D)(i)-(viii)

OAR 345-021-0010(1)(b)(D): In the assessment, the applicant shall evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant shall discuss the reasons for selecting the corridor(s), based upon evaluation of the following factors:

- (i) Least disturbance to streams, rivers and wetlands during construction.
- (ii) Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife;
- (iii) Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads and existing pipeline or transmission line rights-of-way.
- (iv) Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions.
- (v) Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040.
- (vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist.
- (vii) Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards.
- (viii) Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use.

The following section describes IPC’s reasons for selecting the Proposed Corridor, based upon evaluation of the factors identified in OAR 345-021-0010(1)(b)(D). It is important to note that these

factors do not comprise an EFSC siting standard and IPC is not required to satisfy these factors to meet any EFSC standard; rather, the rule simply requires that IPC discuss the factors in the application. In other words, consideration of the factors in a corridor selection assessment is best viewed as a process and informational requirement, not a substantive requirement or standard.

As described in earlier sections of this Exhibit, the corridor selection process to move from a two-state, 11-county study area comprising over 31,000 square miles to 3,000 miles of preliminary corridors in 2010, to selection of a Proposed Corridor in 2012, to modification of that Proposed Corridor based on input from the BLM and other new developments in 2015 and 2016, has been a complex process with extensive public and agency input. From the beginning of the process, IPC has employed the eight factors identified in OAR 345-021-0010(1)(b)(D) to filter through the various alternatives at an increasing level of detail. In the initial phase, more than 225 constraints to, and opportunities for, siting were identified including 124 that were directly related to the eight factors discussed below (see Tables B-2 and B-3). Using these constraints and opportunities and working with the local citizens, over 3,000 miles of alternative corridor were identified for further analysis.

Each alternative was again reviewed to improve the ability to permit and construct each corridor and corridor segment. Again the eight factors were applied to refine the corridors. In particular, IPC used aerial photography to identify and avoid, where practical, irrigation pivots, houses, barns, private runways, other structures (i.e., wind turbines), and land use features. The corridors were adjusted using topographic maps to avoid or minimize distance across very steep slopes and other physical features (factor vii) less desirable for transmission line construction and operation. Finally, the corridors were again checked against the constraint and opportunity GIS database to avoid, where possible, exclusion areas and areas of high permitting difficulty such as potential ODFW Category 1 habitats (factor ii). As a result of this analysis, the miles of alternative corridor still under consideration were reduced to about 2,000.

The alternative corridors were then grouped into 14 regions (see Figure B-10) and evaluated on the basis of permitting difficulty, construction difficulty and mitigation costs (see example, Figure B-12). Using the constraint database, which included the eight siting factors, the alternatives were reviewed to determine the most reasonable corridor within each region.

The most reasonable corridor segments from each region were combined to form three complete corridors spanning from the Boardman area to the Hemingway Substation. These three corridors were evaluated against the constraint database. This analysis resulted in a recommendation of the Eastern Corridor for reasons such as use of existing utility and transportation corridors for 50 additional miles (factor iii), crossing 20 fewer miles of 25 percent slopes (factor vii), and crossing 38 fewer special status streams (factor i).

After IPC submitted its 2010 NOI, it continued its siting process to further reduce potential impacts, eliminate some alternative corridor segments, and add several more substantial alternative corridor segments. These changes occurred as a result of extensive field studies, environmental analysis to better define areas of impact, and more detailed engineering studies to better define construction and operation requirements. The changes are documented in Attachment B-1, 2010 Siting Study, and Attachment B-2, 2012 Supplemental Siting Study. As a result, alignments have been shifted and access roads and structure sites have been moved to avoid or reduce impacts to the resources, including but not limited to those relevant to the eight factors.

Following IPC's submittal of a pASC in 2013, the third phase of Project siting occurred. Again during this phase, IPC undertook significant evaluation of resources and made many changes to the Project location, both macro and micro, to avoid and minimize impacts to resources

identified by one or more of the eight factors in OAR 345-021-0010(1)(b)(D). This third phase of siting is documented in Attachment B-4, 2015 Supplemental Siting Study.

In 2016, the fourth phase of Project siting occurred with the BLM's development of a revised Agency Preferred Alternative. The BLM refined the Agency Preferred Alternative based on input from public comments received on the Draft EIS, with IPC providing input on the eight factors in OAR 345-021-0010(1)(b)(D). This fourth phase of siting is documented in Attachment B-6, 2017 Supplemental Siting Study.

As described below, IPC has carefully considered and weighed the eight factors in OAR 345-021-0010(1)(b)(D) at both the macro- and the micro-siting levels.

(i) Least disturbance to streams, rivers and wetlands during construction. IPC has designed the Project to avoid impacts to streams, rivers, and wetlands to the maximum extent practicable. Streams, rivers, and wetlands have been considered in the siting and evaluation process since the initiation of siting at both the macro- and micro-siting level. As shown in Attachment B-3, six different categories of Special Status streams and National Wetland Inventory wetlands were used in the evaluation of the Eastern, Central, and Western corridors. In Phase One of siting the Project, IPC determined that the Eastern Corridor would cross 8 Special Status streams and 0.7 mile of wetland, compared to 13 crossings and 0.7 mile for the Central Corridor, and 46 crossings and 0.4 mile for the Western Corridor. Among those three corridors, the Eastern Corridor would result in the least disturbance to these resources.

During Phase Two of the siting process, in 2011 and 2012, IPC performed stream, river, and wetland mapping and delineation surveys of the proposed and alternative corridors. Based upon these data, adjustments were made to the proposed facilities to avoid or minimize project impacts to stream, river, and wetland resources.

During Phase Three and Phase Four of the siting process, in 2013, 2014, and 2016, IPC performed additional stream, river, and wetland mapping and delineation surveys of new alternative corridors. The results of these surveys were used to modify the location of proposed facilities to avoid or minimize impacts to stream, river, and wetland resources along these alternative corridors.

(ii) Least percentage of total length of pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife. Category 1 habitat has been an important factor in IPC's evaluation and siting of the Project, and IPC has avoided impacts to known Category 1 habitat to the maximum extent practicable. Nonetheless, the Project area includes potential Category 1 habitat for Washington ground squirrels (WAGS) and greater sage-grouse (sage-grouse).

Category 1 WAGS habitat occurs within the Project Site Boundary near NWSTF Boardman. The portion of the Project within WAGS Category 1 habitat consists of the removal of the existing 69-kV transmission line along the southeastern boundary of NWSTF Boardman. Ground-disturbing activities will be temporary and will result in the removal of the 69-kV H-frame structures. Removal of the 69-kV H-frame structures will eliminate an existing raptor perching opportunity from which WAGS hunting could occur. IPC will work with ODFW to determine appropriate timing and methods for the removal of the 69-kV transmission line that will result in the least potential impact to WAGS and WAGS Category 1 habitat.

Designing the Project to avoid impacts to Category 1 sage-grouse habitat has been extremely challenging, in large part because of the dynamic and evolving nature of Oregon's sage-grouse habitat protection policy. In selecting and finalizing its 2010 Proposed Corridor, IPC based its efforts to avoid Category 1 sage-grouse habitat on ODFW guidance that Category 1 sage-grouse habitat comprised all habitat within 2 miles of leks, unless site-specific habitat conditions,

terrain, or existing man-made features potentially would reduce the category level. Consequently, the 2010 Proposed Corridor avoided most of the many 2-mile lek buffers in the Project vicinity.

In October 2012, IPC was advised that ODOE and ODFW determined that ODFW's core area approach to categorizing sage-grouse habitat must be applied to the Project, as set forth in the *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (ODFW 2011), referred to hereafter as the "2011 Strategy." Under the 2011 Strategy, ODFW designated "core areas" of sage-grouse habitat. ODFW recommends that all mapped core areas be identified as Category 1 habitat, subject to site-specific analysis and possible recategorization as Category 2 based on actual habitat conditions (degraded habitat, existing infrastructure or other disturbances, etc.). Consequently, the Proposed Corridor in IPC's 2013 pASC did not entirely avoid Category 1 sage-grouse habitat. To address this issue, IPC worked with ODFW to determine the precise extent of Category 1 sage-grouse habitat within the Site Boundary, and made every effort to micro-site to achieve the least disturbance of Category 1 habitat. Concurrently with IPC's siting efforts, BLM also engaged in siting work that resulted in its development of two new alternatives designed to avoid sage-grouse habitat, and identification of preliminary preferred alternatives that differed from IPC's 2012 proposed corridor.

In July 2015, the Oregon Fish and Wildlife Commission adopted new mitigation policies for addressing impacts to sage-grouse habitat (see OAR 635-140-000, -0002, -0010, -0015, and -0025). The new policies provide mitigation measures for avoiding and minimizing sage-grouse habitat impacts, and compensating for unavoidable impacts (see OAR 635-140-0025(2)). Then Governor Brown ordered all state agencies to update by July 1, 2015, their regulatory programs to be consistent with the new ODFW sage-grouse mitigation policies (see Executive Order No. 15-18). Accordingly, the new policies will dictate the Project's sage-grouse mitigation requirements and the Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000) habitat categories (e.g., Category 1 habitat) will no longer apply to sage-grouse. Importantly, on October 19, 2015, ODFW filed a temporary rule exempting pending EFSC applications such as this Project from the avoidance and certain minimization provisions of ODFW's new sage-grouse policies (see OAR 635-415-0025(7)).

Regardless of the exemption, the history of the Project demonstrates that IPC—in response to ODFW and BLM input—has developed routes and changed the Project numerous times to avoid and minimize impacts to sage-grouse habitat. While the Proposed Corridor will impact some sage-grouse habitat, there is no reasonable alternative location that would avoid the habitat, and the public benefits of the Project outweigh the adverse effects on the same.

As illustrated by IPC's diligent siting efforts during all three phases of siting, IPC selected the Proposed Corridor based on careful consideration of the extent to which it achieves the least percentage of total length of transmission line located within areas of Habitat Category 1, as described by the ODFW.

(iii) Greatest percentage of the total length of the transmission line that would be located within or adjacent to public roads, as defined in ORS 368.001 and existing transmission line rights-of-way. IPC has designed the Project to be located adjacent to public roads and existing transmission line ROWs to the maximum extent practicable. The Project is too large to be entirely located within existing public ROWs; however, IPC has treated existing public roads and utility ROWs as siting opportunities, as reflected in the Exhibit B, Attachment B-2, 2012 Supplemental Siting Study. As a result, the Proposed Corridor is located parallel to over 100 miles of public roads (I-84) and/or existing transmission lines. This is considerably more than the other corridors under consideration, which was a significant factor in IPC's selection of the Proposed Corridor.

Since IPC submitted its NOI, it has considered additional locations in which the Project could be located adjacent to existing roads and utility ROWs. IPC has proposed to remove 12 miles of existing 69-kV transmission line and use its existing 90-foot ROW for the 500-kV transmission line. The existing 90-foot 69-kV ROW will not be widened. IPC has proposed to rebuild 0.9 mile of a 230-kV transmission line into a new 125-foot ROW. The existing 230-kV ROW will be widened to 250 feet to accommodate placement of the 500-kV transmission line. IPC has also proposed to rebuild approximately 1.1 miles of an existing 138-kV line into a new 100-foot ROW, and use approximately 0.8 mile of this ROW for the 500-kV transmission line. The existing 100-foot 138-kV ROW will be widened to 250 feet for 0.8 mile to accommodate placement of the 500-kV transmission line. Proposed ROW widths are discussed in Section 3.5.2.

(iv) Least percentage of the total length of transmission line would be located within lands that would require zone changes, variances or exceptions. IPC has, to the maximum extent practicable, designed the Project to avoid lands for which a zone change, variance, or land use exception would be required. Much of the Project is located on EFU-zoned lands, a zone for which a transmission line is a permitted use if siting the line on EFU is “necessary” for the Project (ORS 215.283; ORS 215.275). However, as described in detail in Exhibit K, Section 7.0, the Project will require a Goal 4 exception for the portions of the Site Boundary located in Goal 4 forest lands in Umatilla and Union counties. For most of the Project, no zone change, variance, or exception is required.

(v) Least percentage of the length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040. As described in detail in Exhibit L, Section 3.3, IPC’s Proposed Corridor was developed to avoid protected areas to the maximum extent practicable. There are approximately 82 protected areas within 20 miles of the Site Boundary, and all were considered constraints during the siting process. The Proposed Corridor crosses the corner of the Blue Mountain Forest State Scenic Corridor. This crossing is discussed further in Exhibit L, Section 3.5, and Exhibit R, Section 3.3. The fact that the Proposed Corridor avoids 81 of the 82 protected areas within the study area was a strong factor in support of its selection.

(vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist. To the extent possible, IPC has designed the Project to avoid disturbance to areas where historical, cultural, or archaeological resources were known or likely to exist. Historic, cultural, and archeological resources were important considerations in corridor selection and, where possible, these resources were avoided during the siting process. Five cultural resource factors were considered in evaluating the three corridors at the macro level: As shown in Attachment B-3, these included the “Burns District Archaeological Site,” locations “within 1,200 foot Historic Trail Buffer,” “within .5 mi of a National Register Historic Place Buffer,” crossings of “Intact Oregon Trail Segments”, and “Oregon Trail Brochure – Trail rut” Only locations “within 1,200 foot of historic trail buffer” show a significant difference in the corridor analysis. For this category, the Eastern Corridor is within 1,200 feet of a historic trail for about 4.5 miles more than the Central and Western corridors. Detailed field studies have been completed to identify additional historical, cultural, or archaeological resources. When these resources cannot be avoided, impacts can be addressed by spanning these resources, separating structures by up to 1,500 feet or more, and by other means such as relocating access roads and construction areas. When avoidance does not eliminate the potential for disturbance, treatment plans can be developed to mitigate impacts.

During Phase Two of the siting process, IPC performed cultural resource surveys of the proposed and alternative corridors. Based upon these data, adjustments were made to the proposed facilities to avoid or minimize impacts to historic, cultural, and archeological

resources. Exhibit S, Section 3.3 provides additional information on the avoidance of impact to these resources.

During Phase Three and Phase Four, IPC performed additional cultural resource surveys of new alternative corridors. The results of these surveys were used to modify the location of proposed facilities to avoid or minimize impacts to historic, cultural, and archeological resources along these alternative corridors. Exhibit S, Section 3.3 provides additional information on the avoidance of impact to these resources.

(vii) Greatest percentage of the total length the transmission line would be located to avoid seismic, geologic and soils hazards. As described in detail in Section 3.3 of both Exhibits H and I, IPC has designed the Proposed Corridor to avoid seismic, geologic, and soils hazards to the maximum extent practicable. In the corridor selection process there were 17 factors in the list of constraints associated with seismic, geologic, and soils hazards that were used to evaluate the proposed and alternative corridors (see Attachment B-3). Of these factors, four were encountered along the three final corridors considered at the macro level. For slopes greater than 35 percent, high erosion hazard, and landslides, the steeper terrain along the Central and Western corridors indicated a higher potential for impact. The Eastern Corridor showed a higher potential to be near fault lines. As part of micrositing, these factors have been considered in the siting of transmission structures, access roads, and other Project features to minimize seismic, geologic, and soils hazards. Prior to construction, a comprehensive geotechnical investigation will be conducted to further reduce such potential impacts.

(viii) Least percentage of the length of the transmission line located within lands zoned as exclusive farm use. As described in detail in Exhibit K, Sections 4.1 and 6.3, IPC has attempted to design the Proposed Corridor to avoid lands zoned EFU to the maximum extent practicable. However, as illustrated by Figure B-4 and in Exhibit K, Figure K-3 any corridor that meets the Project's stated purpose—connecting IPC's existing Hemingway Substation to the Longhorn Station near Boardman, Oregon—cannot avoid crossing lands zoned EFU. The predominance of land zoned EFU in the study area (approximately 77 percent in Oregon) makes it absolutely necessary for the Project to “cross land in one or more areas zoned for EFU in order to achieve a reasonably direct route.” Accordingly, as discussed in detail in Exhibit K, the lack of available non-EFU land is the primary reason that the Project is “locationally dependent” on EFU zones, and is therefore a “utility facility necessary for public service” within the meaning of ORS 215.275. Despite IPC's best efforts to design the Project to avoid EFU-zoned lands, the entire length of the Proposed Corridor in Oregon is zoned EFU or a hybrid farm-forest zone.

Nonetheless, and although not required by ORS 215.275, IPC's extensive siting process has prioritized avoiding impacts to irrigated and other high value farmland to the maximum extent possible.¹¹ As explained in detail in Attachment B-1, Appendix C, IPC identified irrigated farmland as a “high avoidance” constraint throughout its siting process. In order to both achieve the Project's objective and avoid impacts to the many protected resources in the study area (see discussion of factors i through vii), IPC's 2010 Proposed Corridor crossed 17.8 miles of irrigated farmland. During micrositing, IPC continued to refine its Proposed Corridor in response to site-specific information and landowner requests; these micrositing changes included

¹¹ IPC's efforts to minimize impacts to EFU-zoned lands are driven by its own siting objectives as well as OAR 345-021-0010(1)(b)(D)(viii), but not ORS 215.275. ORS 215.275 does not require a “utility facility necessary for public service” that is locationally dependent on EFU to further demonstrate that it has minimized impacts on EFU land. See *WKN Chopin LLC v. Umatilla County*, LUBA Opinion No. 2012-016 at page 17 (“ORS 215.275(2) requires consideration of alternatives to siting the proposed facility ‘in an exclusive farm use zone.’ There are no such alternatives in this case. ORS 215.275 simply does not require that an applicant proceed through additional inquiries that are designed to minimize impacts on EFU-zoned land, where non-EFU-zoned alternatives are not available.”)

changes to minimize impacts to irrigated agriculture and agricultural operations. The Project currently crosses 6.6 miles of irrigated farmland. Additionally, in Exhibit K, Section 4.1.2, IPC provides the six factor analysis required by ORS 215.275(2).

In an effort to further reduce impacts to agricultural land, IPC developed the West of Bombing Range Road Alternative (see Attachment B-4, 2015 Supplemental Siting Study). Working with BPA, IPC developed the West of Bombing Range Road Alternative, which takes advantage of an existing 69-kV transmission line ROW and was sited to minimize impacts to agriculture and NWSTF Boardman flight operations, and reduce impacts to WAGS habitat (through micrositing). The West of Bombing Range Road Alternative significantly reduced, but did not completely eliminate, impacts to agricultural lands and operations.

After completion of the corridor selection process, IPC performed more detailed engineering analyses of the Proposed Corridor that resulted in adjustments and changes to avoid sensitive resources as well as improve constructability. With the completion of these adjustments to the Proposed Corridor, IPC developed the Proposed Route that is analyzed in the ASC.

3.2 Description of Proposed Facility

OAR 345-021-0010(1)(b)(A) requires a description of the Project. The following section describes the transmission, station, communication, and related or supporting facilities proposed for this Project. Project dimensions are listed in Section 3.4, Table B-13. Detailed maps showing temporary and permanent facility locations are contained in Exhibit C, Attachments C-1 and C-2.

The information herein and in subsequent sections is based on the preliminary design that has been completed. The exact quantity, size, description, distance between, and placement of the structures and components will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, and economics.

3.2.1 Electrical Generating Capacity

OAR 345-021-0010(1)(b)(A)(i): The nominal electric generating capacity and the average electrical generating capacity, as defined in ORS 469.300.

OAR 345-021-0010(1)(b)(A)(i) is not applicable to the Project, because the Project will not generate electricity.

3.2.2 Major Components

OAR 345-021-0010(1)(b)(A)(ii): Major components, structures and systems, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy.

The Project does not include equipment used to generate electricity or useful thermal energy. Therefore, OAR 345-021-0010(1)(b)(A)(ii) does not apply to the Project.

3.2.2.1 Transmission Line System

The Project is an approximately 296.6-mile-long, electric transmission line. Approximately 272.8 miles of the transmission line are in Oregon and 23.8 miles are in Idaho. The Project is primarily a single-circuit 500-kV electric transmission line with 270.8 miles of single-circuit 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line.

The transmission line system is made up of ROW, transmission and foundation structures, conductors, grounding system, communication station sites, and associated hardware. Figure B-14 illustrates the typical transmission line construction activities including foundation and roads.

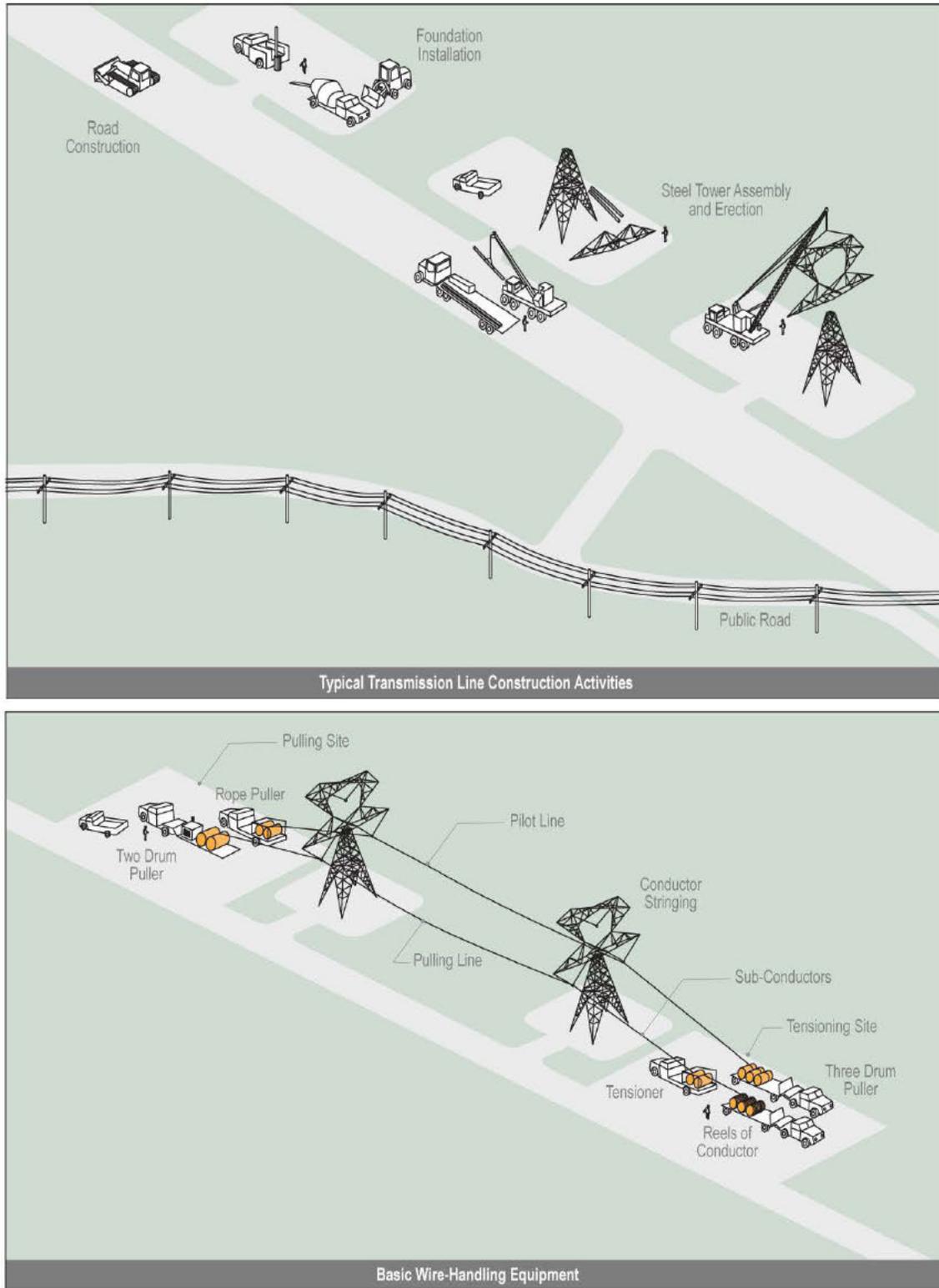


Figure B-14. Illustration of Transmission Line Components

Transmission Structures

Table B-8 describes structure characteristics for the Proposed Route. Table B-9 describes the structure characteristics for the alternatives. The majority of the proposed transmission line circuits will be supported by 500-kV single-circuit steel lattice towers.

Figure B-15 illustrates the proposed 500-kV single-circuit lattice steel structure configuration. Figure B-16 illustrates the alternative 500-kV single-circuit tubular steel pole Y-frame structure that would be used along the east edge of the NWSTF Boardman for West of Bombing Range Road Alternatives 1 and 2 where shorter structure heights are required. Figure B-17 illustrates the proposed/alternative 500-kV single-circuit tubular steel pole H-frame structure. Figure B-18 illustrates the alternative 500-kV single-circuit H-frame structure that will be used to reduce visual impacts to protected areas. Figure B-19 provides an illustration of a typical 230-kV single-circuit H-frame structure. Figure B-20 illustrates the proposed route rebuild single-circuit 138-kV wooden H-frame structure that would be used for approximately 1.1 miles.

Table B-8. Proposed Route Structure Characteristics

Structure Type	Number of Structures	Height (ft)	Distance Between Structures (ft)	Construction Disturbance Area per Structure (ft)	Operational Disturbance Area per Structure (ft)
Proposed 500-kV Single-Circuit Lattice Steel Structure (Figure B-15)	1,076	109-200	1,200-1,800	250 x 250 (1.4 acres)	50 x 50 (0.06 acre)
Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame Structure (NWSTF Boardman area) (Figure B-17)	70	65-105	350-950	90 x 250 (0.5 acre) on NWSTF <u>and</u> 150 x 250 (0.9 acre) off NWSTF	40 x 10 (0.001 acre)
Proposed Route Rebuild Single-Circuit 138-kV Wood H-Frame Structure (Figure B-20)	9	51-61	500-750	250 x 150 (0.9 acre)	16.5 x 5 (0.001 acre)
Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame (Figure B-18)	6	65-105	450-900	250 x 250 (1.4 acre)	40 x 10 (0.001 acre)
Proposed Route Rebuild Single-Circuit 230-kV Steel H-Frame Structure (Figure B-19)	5	57-75	400-1,200	250 x 100 (0.6 acre)	25 x 5 (0.01 acre)
500-kV Single-Circuit H-Frame	5	85-145	950-1650	250 x 250 (1.4 acres)	40 x 10 (0.001 acre)
Proposed 230-kV Single-Circuit Tubular Steel 3-Pole Dead-end	4	61-66	NA	250 x 150 (0.9 acre)	130 x 40 (0.01 acre)
Proposed 500-kV Single-Circuit Tubular Steel 3-Pole Dead-end	4	115	NA	250 x 250 (1.4 acres)	90 x 10 (0.02 acre)
Proposed 500-kV Single Circuit Tubular Steel 3-Pole Dead-end (NWSTF Boardman area)	3	115	NA	90 x 250 (0.5 acre)	90 x 10 (0.02 acre)
Proposed 500-kV Single-Circuit Tubular Steel 3-Pole Dead-end	3	75-90	NA	250 x 250 (1.4 acres)	90 x 10 (0.02 acre)

Structure Type	Number of Structures	Height (ft)	Distance Between Structures (ft)	Construction Disturbance Area per Structure (ft)	Operational Disturbance Area per Structure (ft)
138-kV Single-Circuit 3-Pole Dead-end	3	51.5	NA	250 x 150 (0.9 acre)	130 x 30 (0.09 acre)

ft – feet; NA – Not Applicable; NWSTF – Naval Weapons Systems Training Facility

Table B-9. Alternative Routes Structure Characteristics

Structure Type	Number of Structures	Height (ft)	Distance Between Structures (ft)	Construction Disturbance Area per Structure (ft)	Operational Disturbance Area per Structure (ft)
Proposed 500-kV Single-Circuit Lattice Steel Structure (Figure B-15)	114	109-200	1,200-1,800	250 x 250 (1.4 acres)	50 x 50 (0.06 acre)
Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame (NWSTF Boardman area) (Figure B-18)	33	90-100	550-1100	90 x 250 (0.5 acre) on NWSTF <u>and</u> 150 x 250 (0.9 acre) off NWSTF	40 x 10 (0.001 acre)
Alternative 500-kV Single-Circuit Tubular Steel Pole Y-Frame (NWSTF Boardman area) (Figure B-16)	8	85-95	575-980	Varies (0.4 acre)	8 x 8 (0.001 acre)
500-kV Single-Circuit, H-Frame Dead-end (NWSTF Boardman area)	2	95-100	NA	90 x 250 (0.5 acre)	50 x 10 (0.01 acre)
500-kV Single-Circuit, 3-Pole Dead-end (NWSTF Boardman area)	2	115	NA	90 x 250 (0.5 acre)	90 x 10 (0.02 acre)

ft – feet; NA – Not Applicable; NWSTF – Naval Weapons Systems Training Facility

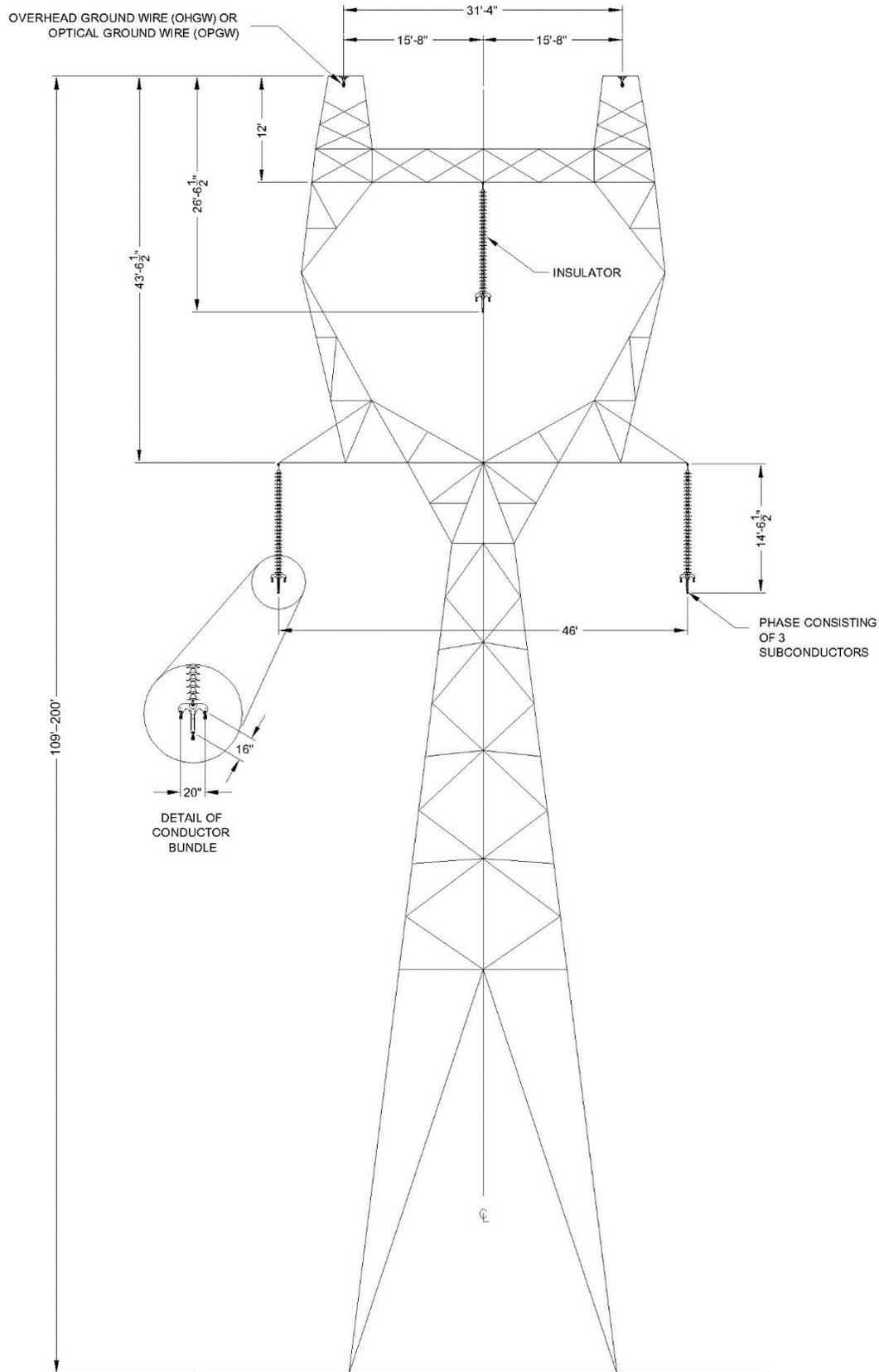


Figure B-15. Proposed 500-kV Single-Circuit Lattice Steel Structure

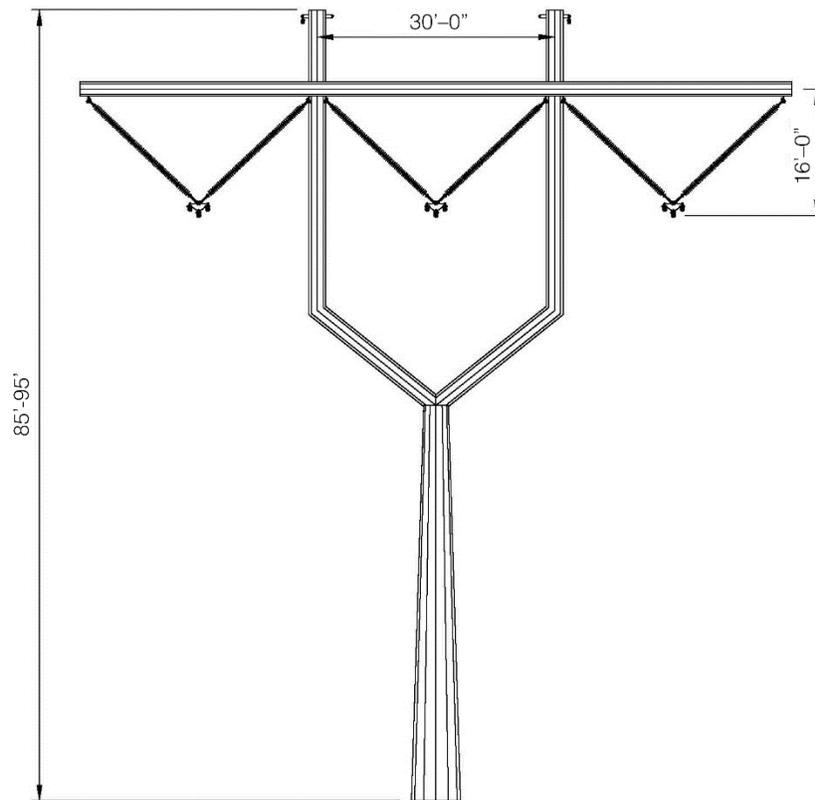


Figure B-16. Alternative 500-kV Single-Circuit Tubular Steel Pole Y-Frame Structure

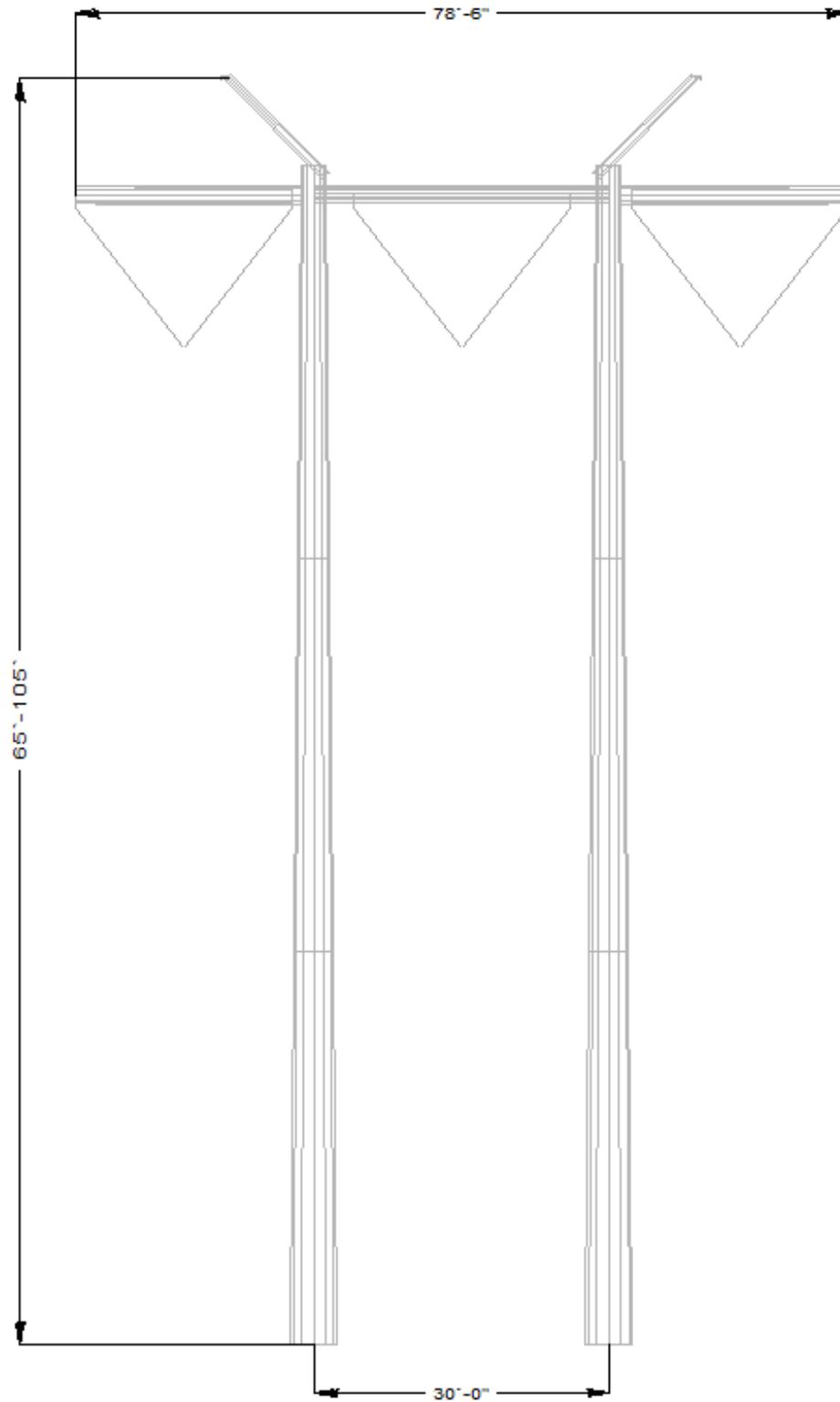


Figure B-17. Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame Structure

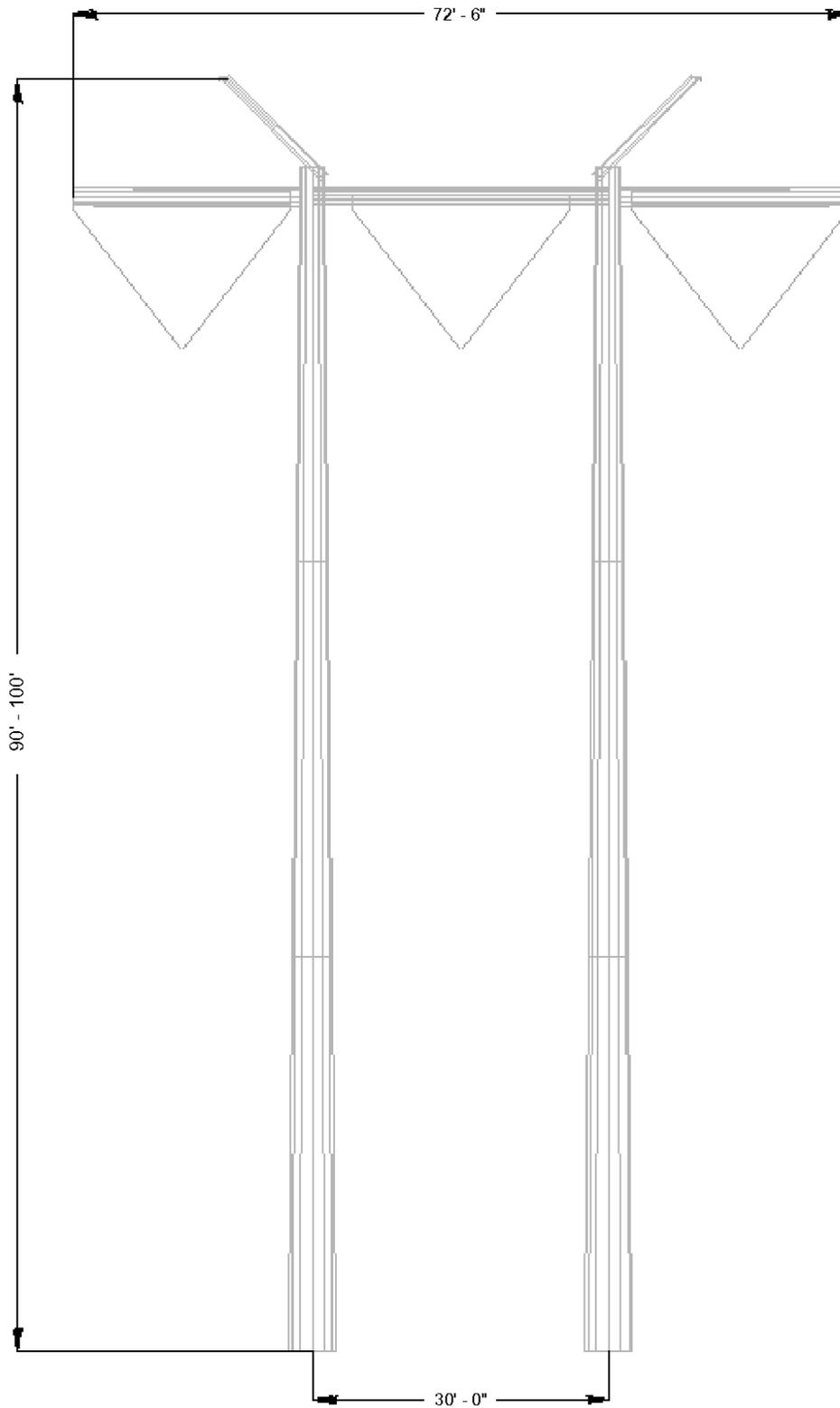


Figure B-18. Proposed/Alternative 500-kV Single-Circuit Tubular Steel Pole H-Frame Structure

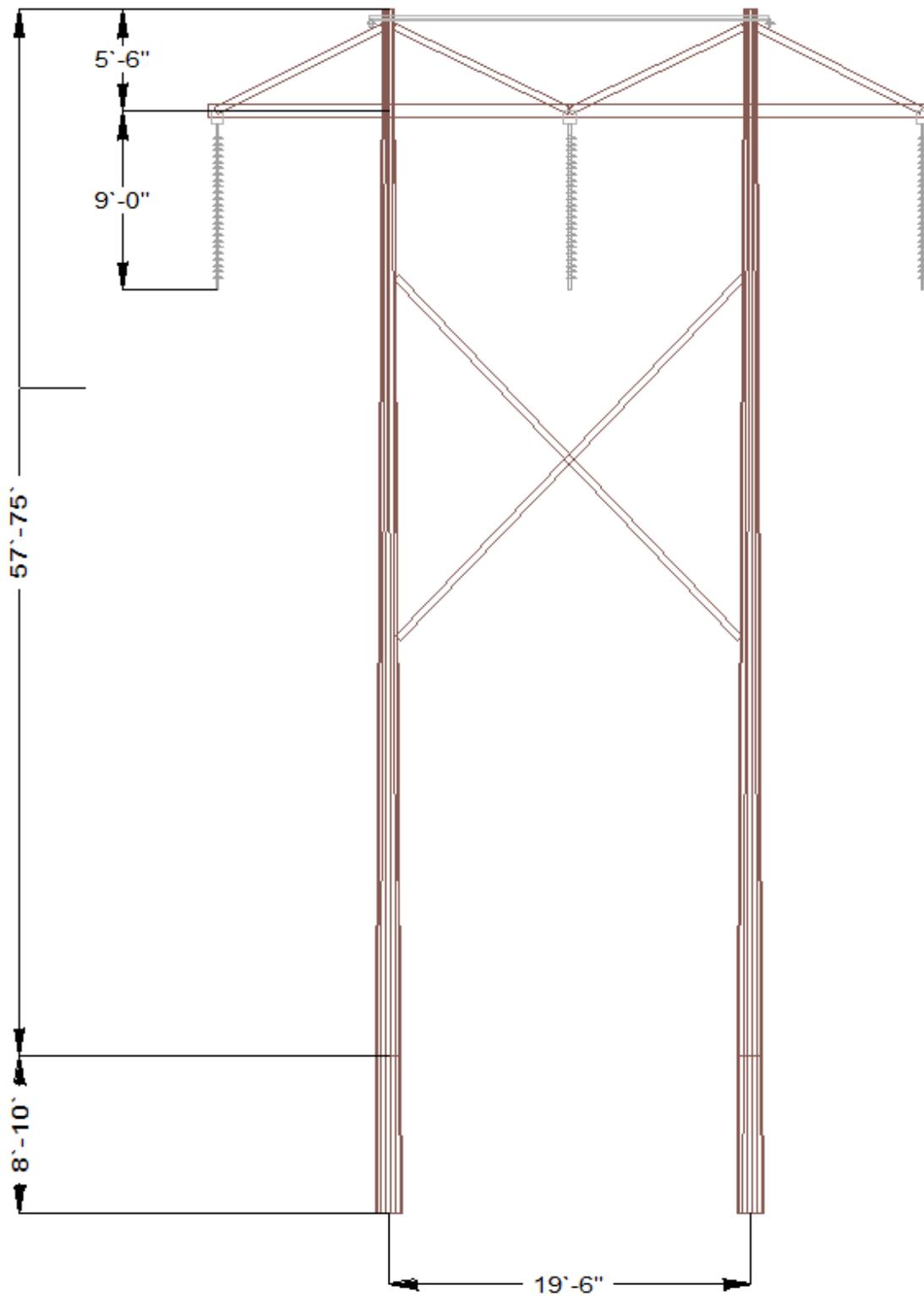


Figure B-19. Proposed Route Rebuild Single-Circuit 230-kV Steel H-Frame Structure

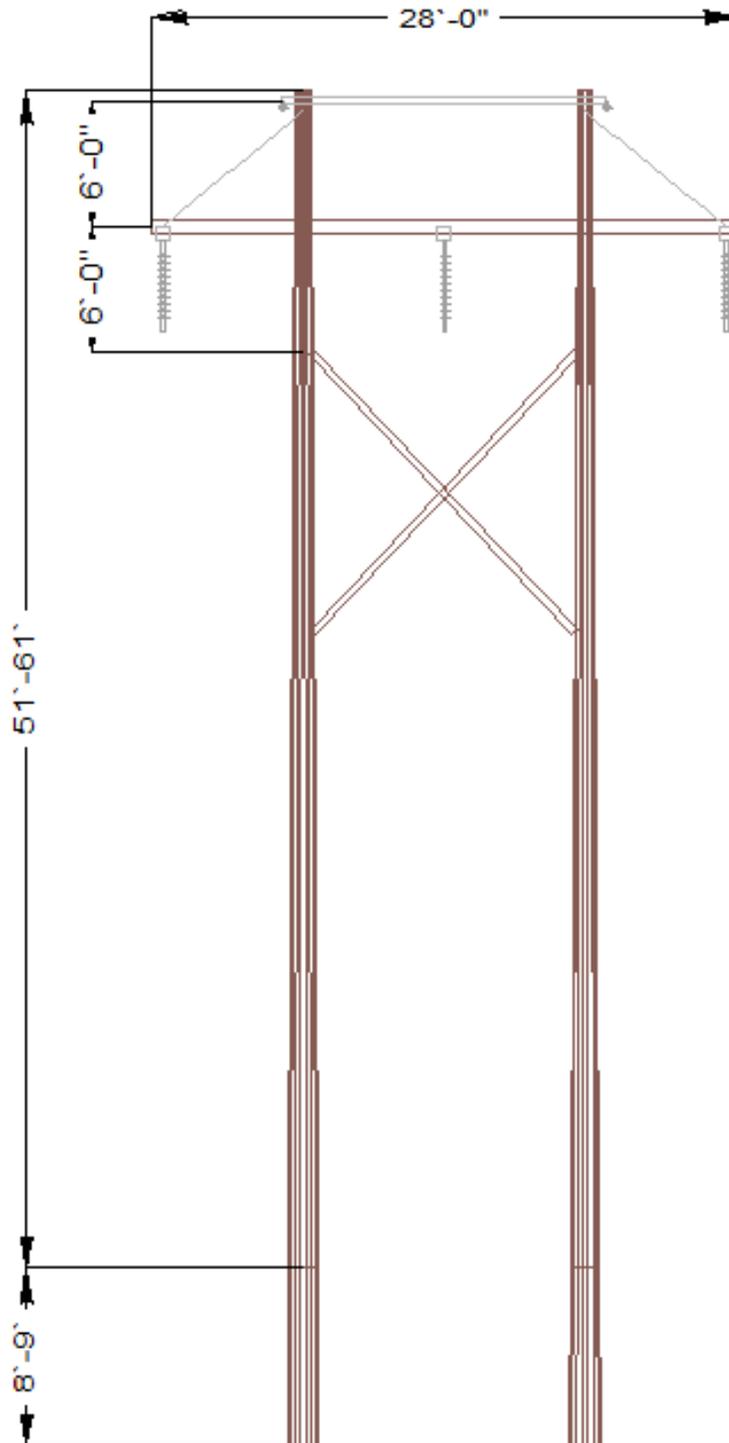


Figure B-20. Proposed Route Rebuild Single-Circuit 138-kV Wood H-Frame Structure

IPC will also use several types of support structures for special purposes as described below.

- *Tangent Structures* – Tangent structures are the most common type of structure and will be used along straight sections of the alignment. These structures are designed to support a range of wind and ice loading conditions but will only support loads associated with very slight line angles (0 to 1 degrees).
- *Angle Structures* – Angle structures are used at angle points along the transmission line corridor. Angle structures that are not designed as dead-end or terminal structures are called “running” angle structures. “Running” angle structures are designed to support a range of wind and ice loading conditions and will support loads associated with moderate line angles up to 25 degrees. Angle structures are typically designed for a specific range angles: 3 to 10 degrees, 10 to 25 degrees, etc.
- *Dead-End Structures* – Dead-end structures are generally used at station termination points, line angles greater than 25 degrees, on each end of long spans such as those crossing canyons and wide rivers, and other points along the transmission line where it is appropriate to support the tension in the conductor. Dead-end structures are designed to support the vertical loads, transverse loads, line angle loads (where appropriate), and the longitudinal load of the conductor. Dead-end structures may also be used in situations where maintaining clearance is difficult with tangent structures.
- *Tubular Steel Frames* – Tubular steel structures are fabricated from high strength plate steel formed into tubes. Tubular poles can be fabricated into various structure configurations including the H-frame and Y-frame structures that will be used on this Project. Tubular steel may be painted, galvanized, or made from weathering steel. Tubular H-frame and Y-frame steel structures will be bolted to drilled piers, piles, or a cast-in-place foundation, allowing their use in various soil types.
- *Transmission Line Crossing Structures* – Transmission line crossing structures are fabricated from high strength steel. These structures may be delta configuration lattice steel towers or tubular H-frame structures. Preferably, these structures are located perpendicular to the line being crossed. These structures' arrangements will allow the 500-kV line to cross over the top of lower voltage transmission lines or under other 500-kV lines when necessary. Crossing structures will have the same design properties as other transmission structures.
- *Transposition Structures* – At certain points along the transmission line corridor, it may be necessary to install transposition structures. A transposition structure is a transmission structure used to “transpose” each of the three phases (or conductors) in the transmission circuit so that each phase changes its relative place in the transmission circuit. Transposition structures used on the Project will be modified dead-end structures with added arms and insulator strings that will allow the phases to move to different positions on the structure. The need to install a transposition structure is dependent on the electrical characteristics and length of the line and the need to balance the electrical impedance of the transmission line between stations.

Removal of Existing 69-kV Structures

Removal of the existing 69-kV transmission line structures along the eastern boundary of the NWSTF Boardman would be completed using two specific methods. The majority of the structures would be removed by taking down the overhead conductor and removing each of the wooden poles at 3 inches below ground surface. The poles would be lifted by cranes onto trucks and removed from the site.

Removal of three of the H-frame structures that occur in WAGS habitat would be removed by cutting the poles into sections, transporting the pole sections by foot to the nearest existing

road, and driving the pole sections off-site. The construction contractor will climb the poles and remove the sections starting at the top. The poles will be removed down to slightly above ground level in order to eliminate potential raptor perching structures while avoiding ground disturbance. The below grade portions of the poles will be left in place. Alternatively, the wooden pole structures could be removed by using a helicopter in conjunction with hand crews working on the ground.

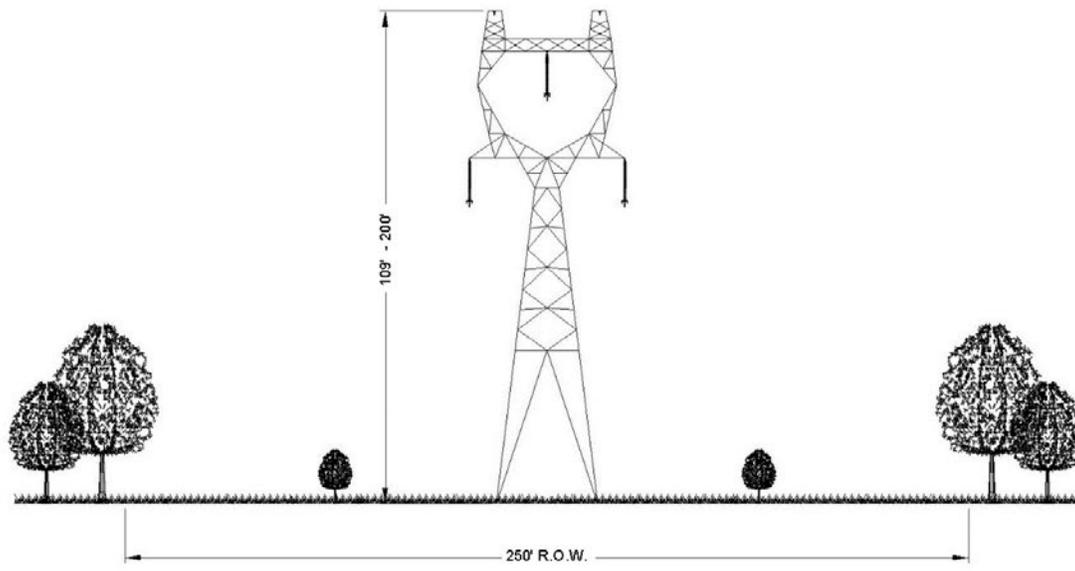
Right-of-Way Width

The ROW width for the majority of the single-circuit 500-kV line will be up to 250 feet. The ROW width requested along the east edge of NWSTF Boardman will be up to 90 feet. The ROW width for the 1.1-mile rebuilding of existing 138-kV transmission line will be up to 100 feet. The existing 138-kV ROW will be widened to 250 feet to facilitate placement of the 500-kV line within it. The ROW width for the 0.9-mile single-circuit 230-kV rebuilding portion will be up to 125 feet. The existing 230-kV ROW will be widened to 250 feet to facilitate placement of the 500-kV line within it.

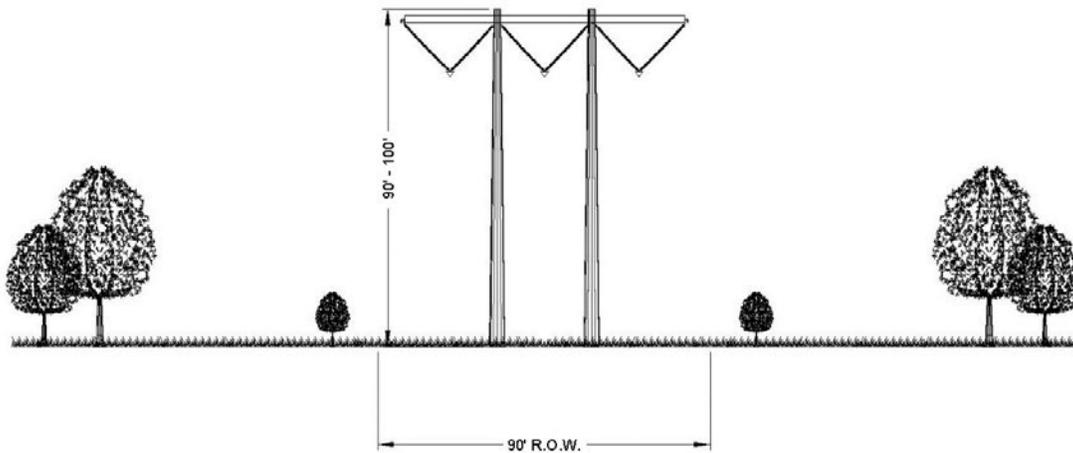
Figures B-21 through B-24 illustrate the ROW width requirements for the proposed and alternative tangent structures. The determination of these widths is based on three criteria:

1. Sufficient National Electrical Safety Code (NESC) clearance must be maintained to the edge of the ROW during a wind event when the conductors are blown towards the ROW edge.
2. Sufficient room must be provided within the ROW to perform transmission line maintenance.
3. Sufficient clearances must be maintained from the transmission line to the edge of the ROW where structures or trees may be located and deemed a hazard or danger to the transmission line. A narrower ROW could be accommodated in some areas, but in others the full 250 feet (125 feet on each side of the centerline) would be required. A narrower ROW in forested areas can result in reliability problems. Falling trees are a major cause of outages and damage to transmission lines. In addition, many forest managers are resistant to allowing utilities to remove hazardous trees, which makes reducing the ROW in forested areas not feasible.

Specific localized conditions may result in slightly different ROW widths. These will be finalized during the detailed design.

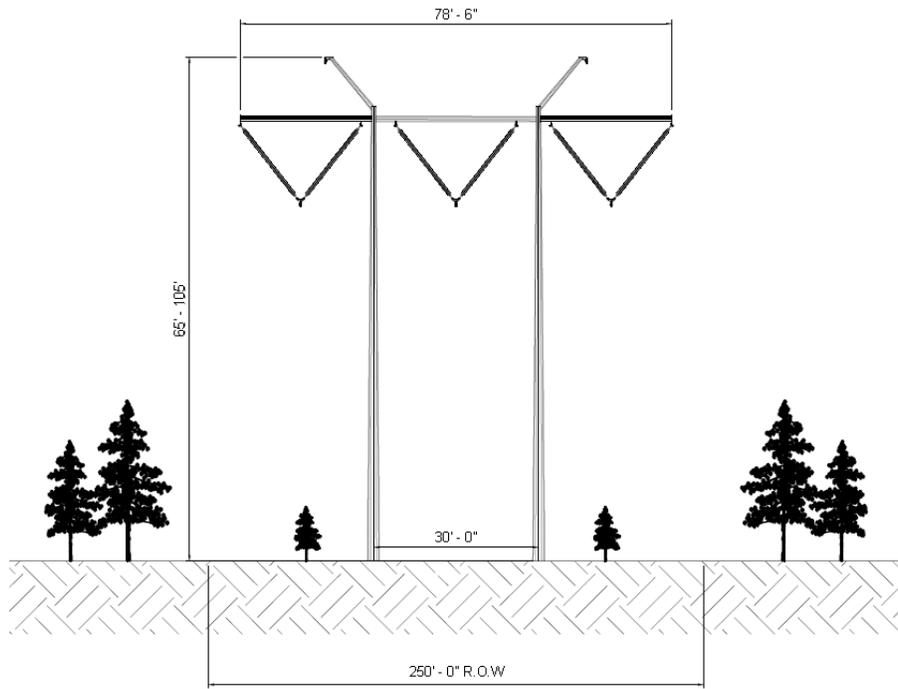


PROPOSED 500-KV LATTICE STEEL ROW DESIGN.



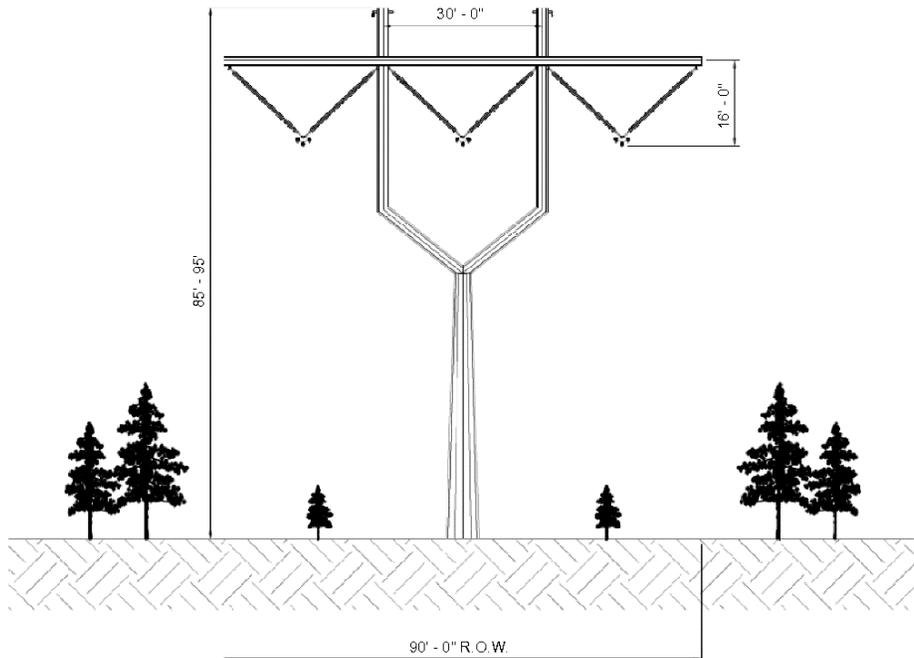
PROPOSED 500-KV STEEL POLE H-FRAME

Figure B-21. 500-kV ROW Designs



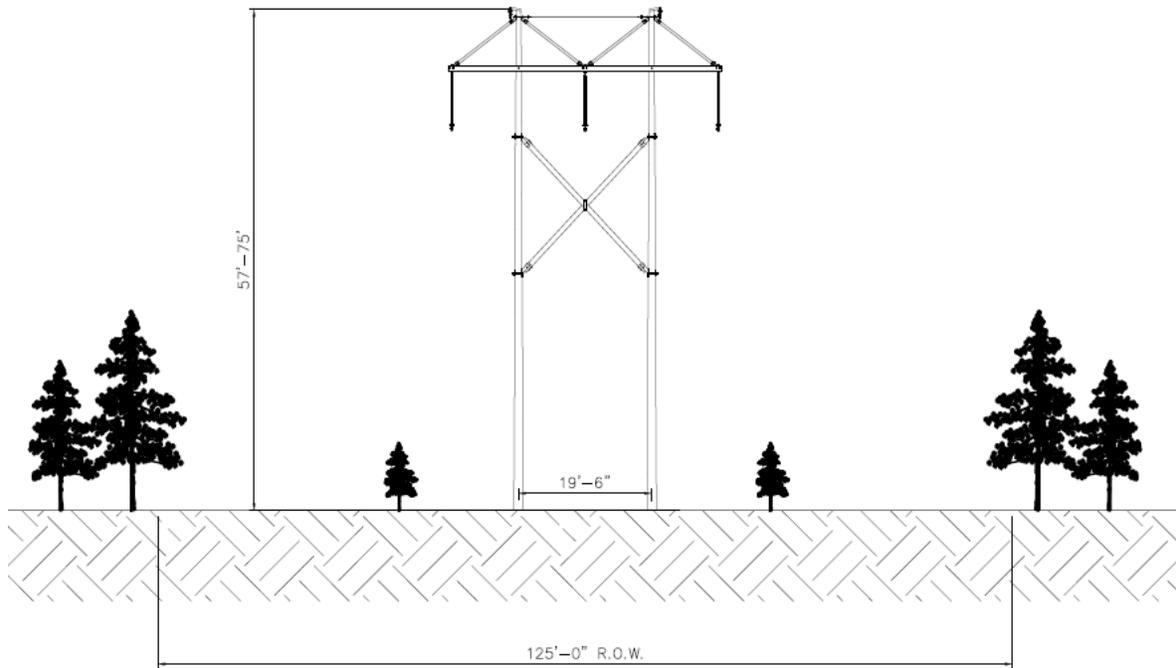
PROPOSED/ALTERNATIVE 500-KV H-FRAME STEEL ROW DESIGN

Figure B-22. Proposed/Alternative 500-kV ROW Designs

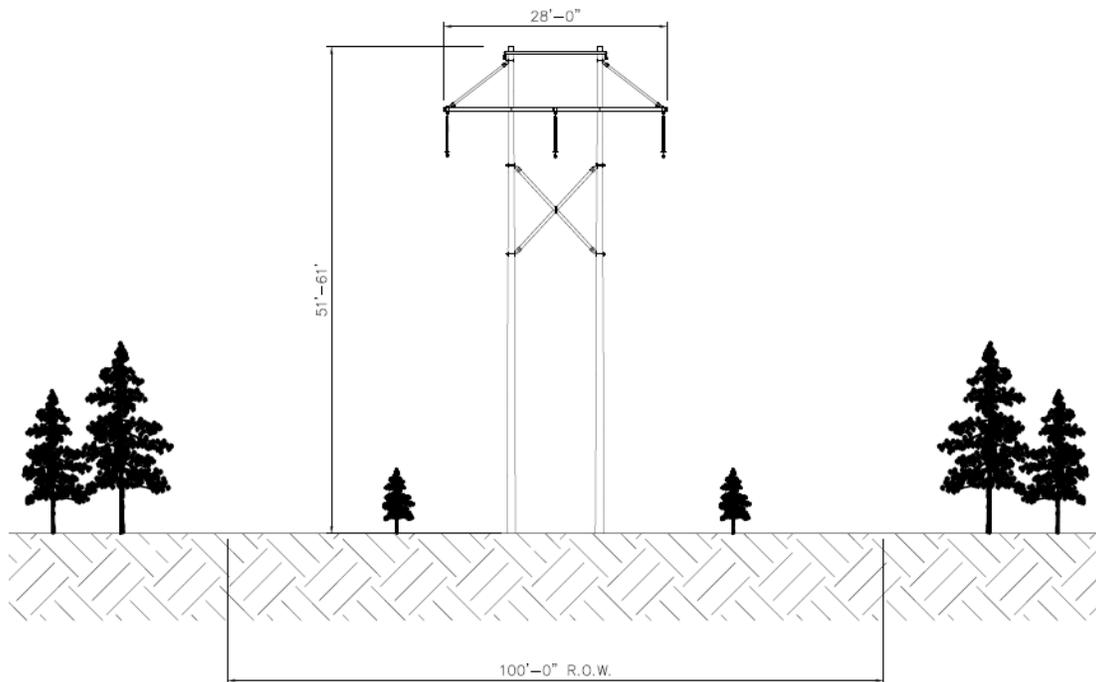


ALTERNATIVE 500-KV Y-FRAME STEEL ROW DESIGN

Figure B-23. Alternative 500-kV ROW Designs



PROPOSED REBUILD 230-KV H-FRAME STEEL ROW DESIGN



PROPOSED REBUILD 138-KV H-FRAME WOOD ROW DESIGN

Figure B-24. 230-kV and 138-kV ROW Designs

Structure and Conductor Clearances

Conductor phase-to-phase and phase-to-ground clearance parameters are determined in accordance with IPC company standards and the NESC, ANSI C2, produced by the American National Standards Institute (ANSI). These documents provide minimum distances between the conductors and ground, crossing points of other lines and the transmission support structure, and other conductors, and minimum working clearances for personnel during energized operation and maintenance activities (IEEE 2011). At normal operating conditions, the minimum clearance of conductors above ground is 34.5 feet for 500-kV lines, 27 feet for 230-kV lines, and 30 feet for 138-kV lines.

Structure Foundations

The 500-kV single-circuit lattice steel structures each require four foundations, one on each of the four corners of the lattice towers. The foundation style, diameter, and depth will be determined during final design and are dependent on structure loading conditions and the type of soil or rock present at each specific site. The preliminary design indicates the foundations for the single-circuit tangent lattice towers will be composed of steel-reinforced concrete drilled piers with a typical diameter of 4 feet and a depth of approximately 15 feet. For the 500-kV H-frame structures, each tangent structure will require two foundations, one for each pole that comprises the H-frame structure. Angle and dead-end structures will use a three-pole structure, each with its own foundation. They will be steel-reinforced drilled piers with a typical diameter of 6 to 8 feet and a depth of approximately 25 to 40 feet. The 138-kV H-frame structures will be direct-embedded wood poles. Tangent structures will be direct-embedded in a single drilled boring, typically 5 feet in diameter and 15 feet deep. Angle and dead-end structures will be on steel-reinforced drilled pier foundations with a typical diameter of 5 to 6 feet and a depth of approximately 20 to 25 feet. For the 230-kV H-frame structures, each of the two poles for tangent structures will be direct-embedded. Each of the three poles that make up the angle and dead-end structures will be direct-embedded and guyed. Typical direct-embedded foundations sizes will be 5 feet in diameter and 12 feet deep.

Typical foundation diameters and depths for the proposed structure families are shown in Table B-10.

Table B-10. Foundation Excavation Dimensions

Structure Type	Number of Holes per Structure	Depth (feet)	Diameter (feet)	Concrete (cubic yards)
500-kV Single-Circuit 3-Pole Dead-end	3	30	9	212
500-kV Single-Circuit H-Frame	2	25	8	93
500-kV Single-Circuit Lattice, Heavy Dead-end	4	30	6	126
500-kV Single-Circuit Lattice, Heavy Tangent	4	16	4	30
500-kV Single-Circuit Lattice, Light Tangent	4	16	4	30
500-kV Single-Circuit Lattice, Medium Dead-end	4	22	6	93
500-kV Single-Circuit Lattice, Small Angle	4	16	6	68

Structure Type	Number of Holes per Structure	Depth (feet)	Diameter (feet)	Concrete (cubic yards)
500-kV Single-Circuit Y-Frame, Tangent	1	43	8	80
500-kV Single-Circuit H-Frame, Tangent	2	25	8	93
230-kV Single-Circuit 3-Pole Dead-end, Guyed	3	12	4	NA
230-kV Single-Circuit H-Frame, Tangent	2	12	4	NA
138-kV Single-Circuit 3-Pole Dead-end	3	9	4	NA
138-kV Single-Circuit H-Frame, Tangent	2	9	4	NA

NA – not applicable

Conductors

The proposed conductor for the 500-kV lattice structure lines is aluminum conductor steel reinforced with trapezoidal aluminum wires. Each phase of a 500-kV three-phase circuit will be composed of three subconductors in a triple bundle configuration. The individual conductors will be bundled in a triangular configuration with spacing of 20 inches between horizontal subconductors and 16 inches of diagonal separation between the top two conductors and the lower conductor (see Figure B-15). The triple-bundled configuration is proposed to provide adequate current carrying capacity and to provide for a reduction in audible noise and radio interference as compared to a single large-diameter conductor. Each 500-kV subconductor will have a 36/7 aluminum/steel stranding, with an overall conductor diameter of 1.300 inches and a weight of 1.616 pounds per foot and a non-specular finish.¹²

Where multiple conductors are utilized in a bundle for each phase, the bundle spacing will be maintained through the use of conductor spacers at intermediate points along the conductor bundle between each structure. The spacers serve a dual purpose: in addition to maintaining the correct bundle configuration and spacing, the spacers are also designed to damp out wind-induced vibration in the conductors. The number of spacers required in each span between towers will be determined during the final design of the transmission line.

The proposed rebuilt 230-kV line will be a three-phase circuit composed of one conductor. Each conductor will have an overall diameter of 1.107 inches and a weight of 1.093 pounds per foot and a non-specular finish.

The proposed 138-kV rebuilt line will have one conductor per phase.

Other Hardware

Insulators

As shown in Figure B-15, the typical insulator assemblies for 500-kV steel lattice tangent structures will consist of an insulator string hung in the form of an "I." As shown in Figures B-16 and B-17, insulator assemblies for 500-kV H-frame structures will consist of two insulator strings

¹² Non-specular finish refers to a "dull" finish rather than a "shiny" finish.

hung in the form of a V. As shown in Figure B-18, insulator assemblies for the alternative 500-kV H-frame will consist of one insulator string hung in the form of an “I” on the outside and two insulator strings hung in the form of “V” on the inside. As shown in Figure B-18, insulator assemblies for 230-kV H-frame structures will consist of a single insulator suspended from the structure cross arm in the form of an “I.” As shown in Figure B-20, insulator assemblies for 138-kV tangent structures will consist of one insulator string hung in the form of an “I” that extend vertically down from the crossbar. Insulators are used to suspend each conductor bundle (phase) from the structure, maintaining the appropriate electrical clearance between the conductors, the ground, and the structure. Dead-end insulator assemblies for the transmission lines will use an I-shaped configuration, which consists of insulators hung from either a tower dead-end arm or a dead-end pole in the form of an “I.” Insulators will be composed of green-tinted toughened glass.

Grounding Systems

Alternating current (AC) transmission lines such as the Project transmission lines have the potential to induce currents on adjacent metallic structures such as transmission lines, railroads, pipelines, fences, or structures that are parallel to, cross, or are adjacent to the transmission line. Induced currents on these facilities will occur to some degree during steady-state operating conditions and during a fault condition on the transmission line. For example, during a lightning strike on the line, the insulators may flash over, causing a fault condition on the line and current will flow down the structure through the grounding system (i.e., ground rod or counterpoise) and into the ground. The magnitude of the effects of the AC induced currents on adjacent facilities is highly dependent on the magnitude of the current flows in the transmission line, the proximity of the adjacent facility to the line, and the distance (length) for which the two facilities parallel one another in proximity.

The methods and equipment needed to mitigate these conditions will be determined through electrical studies of the specific situation. As standard practice and as part of the design of the Project, electrical equipment and fencing at the station will be grounded. All fences, metal gates, pipelines, metal buildings, and other metal structures adjacent to the ROW that cross or are within the transmission line ROW will be grounded as determined necessary. If applicable, grounding of metallic objects outside of the ROW may also occur, depending on the distance from the transmission line as determined through the electrical studies. These actions address the majority of induced current effects on metallic facilities adjacent to the line by shunting the induced currents to ground through ground rods, ground mats, and other grounding systems, thus reducing the effect that a person may experience when touching a metallic object near the line (i.e., reduce electric shock potential). Transmission line public health effects are discussed in Exhibit AA, Section 3.10.

During final design of the transmission line, appropriate electrical studies will be conducted to identify the issues associated with paralleling other facilities and the types of equipment that will need to be installed (if any) to mitigate the effects of the induced currents.

Minor Additional Hardware

In addition to the conductors, insulators, and overhead shield wires, other associated hardware will be installed on the tower as part of the insulator assembly to support the conductors and shield wires. This hardware will include clamps, shackles, links, plates, and various other pieces composed of galvanized steel and aluminum.

A grounding system will be installed at the base of each transmission structure that will consist of copper or copper-clad ground rods embedded into the ground in immediate proximity to the structure foundation and connected to the structure by a buried copper lead. When the resistance to ground for a grounded transmission structure is greater than a specified

impedance value with the use of ground rods, counterpoise will be installed to lower the resistance to below a specified impedance value. Counterpoise consists of a bare copper-clad or galvanized-steel cable buried a minimum of 12 inches deep, extending from structures (from one or more legs of structure) for approximately 200 feet within the ROW.

Other hardware that is not associated with the transmission of electricity may be installed as part of the Project. This hardware may include aerial marker spheres or aircraft warning lighting as required for the conductors or structures per Federal Aviation Administration regulations.¹³ Structure proximity to airports and structure height are the determinants of whether Federal Aviation Administration regulations will apply based on an assessment of wire/tower strike risk. IPC does not anticipate that structure lighting will be required because proposed structures will be less than 200 feet tall and will not be near airports that require structure lighting.

3.2.2.2 Stations

As explained above in Section 1.2, IPC identified the need for a Project endpoint in the Boardman, Oregon, area because it is the easternmost point at which IPC can feasibly interconnect to the Pacific Northwest market.

Proposed Longhorn Station

The terminus for the Proposed Route is the proposed Longhorn Station. BPA has planned the Longhorn Station on land it purchased from the Port of Morrow. In this application, IPC is requesting authorization to develop (construct and operate) the Longhorn Station if the BPA does not develop the Longhorn Station on a timely basis.

The Longhorn Station location is described in more detail in Exhibit C, Section 3.2 and in Attachment C-1. For termination of the Project 500-kV line at the Longhorn Station, IPC would install 500-kV circuit breakers, high-voltage switches, bus supports, and transmission line termination structures, a 500-kV series capacitor bank, and 500-kV shunt reactor banks. The 500-kV transmission line termination structures are approximately 125 to 135 feet tall. A control house to accommodate the necessary system communications, control equipment, and a restroom facility will be constructed. A new all-weather access road will be used to reach the site, and the site would be supplied by distribution power brought in from the nearby existing system as necessary. Fiber optic signal communication equipment and a backup propane-powered generator will be installed. Figure B-25 is a photograph of a typical 500-kV station with multiple line connections.

¹³ U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular AC 70/7460-1K Obstruction Marking and Lighting, August 1, 2000; and Advisory Circular AC 70/7460-2K Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace, March 1, 2000.



Figure B-25. Typical 500-kV Station

3.2.2.3 Communication System

Optical Ground Wire

Reliable and secure communications for system control and monitoring is very important to maintain the operational integrity of the Project and of the overall interconnected system. Primary communications for relaying and control will be provided via the optical ground wire (OPGW) that will be installed on the transmission lines; this path is intended for IPC use.¹⁴ No new microwave sites are planned for the Project. Each 500-kV structure will have two lightning protection shield wires installed on the structure peaks (see Figures B-15 and B-16). One of the shield wires will be composed of extra high strength steel wire with a diameter of 0.495 inch and a weight of 0.517 pound per foot. The second shield wire will be an OPGW constructed of aluminum and steel, and will carry 48 glass fibers within its core. The OPGW will have a diameter of 0.646 inch and a weight of 0.407 pound per foot. The glass fibers inside the OPGW shield wire will provide optical data transfer capability among IPC's facilities along the fiber path. The data transferred are required for system control and monitoring.

Communication Station Sites

As the data signal is passed through the optical fiber cable, the signal degrades with distance. Consequently, signal communication station sites are required to amplify the signals if the distance between communication station sites exceeds approximately 40 miles. The locations of communication station sites are listed in Exhibit C, Table C-11 and shown on the maps in Attachment C-2. A total of 10 proposed and 2 alternative communication station sites have been identified. Communication station sites will be located on private lands; IPC has located the communication station sites within the ROW for the transmission line.

Facility service power will be required at each of the ten communication station sites ultimately selected for development. Typically, facility service power is provided from a local electric distribution line located in proximity to the station communication station site. The voltage of the

¹⁴ A secondary communication path will be used made up of the existing trunk communications systems currently in use by the BPA and IPC.

distribution supply line is typically 34.5-kV or lower and carried on wood poles. Distribution lines will be developed by local electric service providers; the local electric service providers will be responsible for any additional permitting required to develop distribution lines.

The typical communication station site will be 100 feet by 100 feet, with a fenced area of 75 feet by 75 feet. A prefabricated concrete communications structure with dimensions of approximately 11.5 feet by 32 feet by 12 feet tall will be placed on the site and access roads to the site and power from the local electric distribution circuits will be required. A standby generator with a liquefied propane gas tank will be installed at the site inside the fenced area. Two separate conduit (underground) or aerial cable routes will be used for each fiber optic cable bundle between the transmission line and communication station. Conduit will be 2-inch-diameter polyvinyl chloride and will be buried 3 feet below the surface extending from the communication shelter to two different legs of the transmission structure maintaining a 10-foot separation between the cables. All work will occur within the disturbance footprint for either the communication station or the structure to which the cables will attach. Figure B-26 illustrates the plan arrangement of a typical communications station site layout.

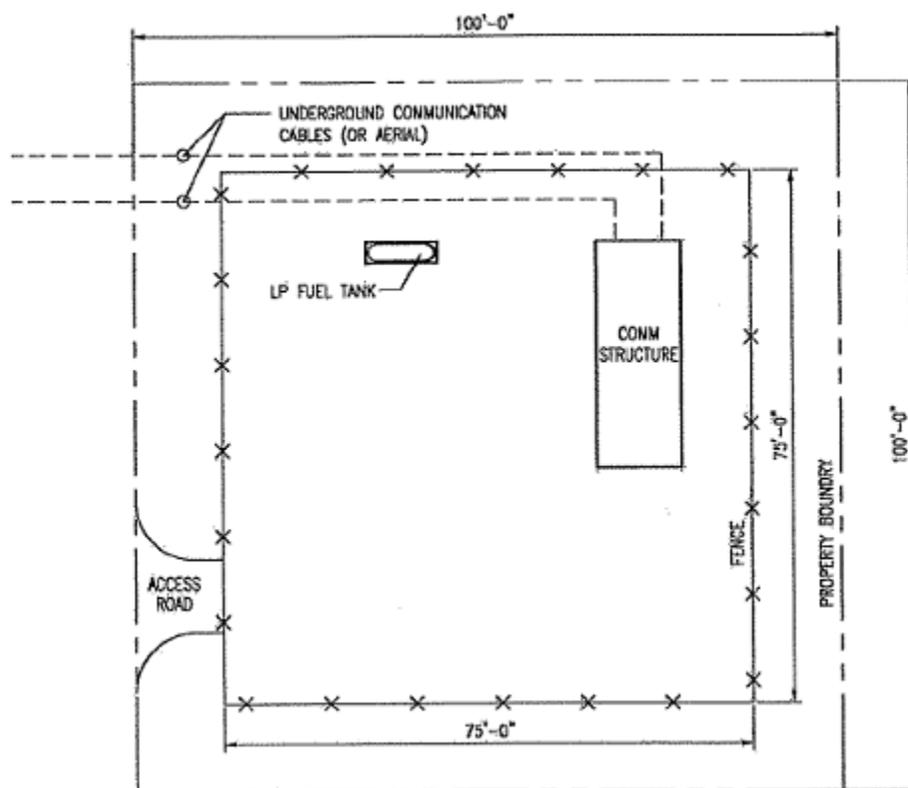


Figure B-26. Typical Communication Station Site Layout

3.2.3 Site Plan and General Arrangement

OAR 345-021-0010(1)(b)(A)(iii): A site plan and general arrangement of buildings, equipment and structures.

The general arrangement of a station and a communication station are shown in Figures B-25 and B-26. The general arrangement of multi-use areas and pulling and tensioning sites are shown in Figures B-27 and B-28 (see Sections 3.3.2 and 3.3.3 below).

3.2.4 Fuel and Chemical Storage Facilities

OAR 345-021-0010(1)(b)(A)(iv): Fuel and chemical storage facilities, including structures and systems for spill containment.

During construction, gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be present along the transmission line corridor, typically at multi-use areas, and at the Longhorn Station construction site. These products will be used to fuel, lubricate, and clean vehicles and equipment and will be transported in containerized trucks or in other federal and state approved containers. Enclosed containment will be provided for petroleum products and wastes and petroleum-related construction waste will be removed to a disposal facility authorized to accept such materials. Fuel and chemicals will be properly stored to prevent drainage or accidents. A typical example drawing of a spill containment area used during construction, including dimensions of spill containment area, is included in Exhibit G. Where required, preventive measures such as the use of vehicle drip pans for overnight parking areas may be implemented. Routine visual inspection for presence of petroleum leaks will be required for vehicles. Diesel fuel tanks will be located at the multi-use areas for vehicle and equipment fueling. Each fuel tank will be located within secondary containment and each station will be equipped with a spill kit. When on-ROW refueling is necessary, it will be done away from waterways. Accidental releases of hazardous materials will be prevented or minimized through proper containment of these substances during use and transportation to the site. A Spill Prevention, Containment, and Countermeasures Plan has been prepared for this Project (see Exhibit G, Attachment G-4). All hazardous and dangerous materials will be stored and secured in accordance with the appropriate regulations as discussed in Exhibit G.

During operations, no fuels or potentially hazardous materials such as general lubricants, general cleaners, ethylene glycol (antifreeze), vehicle fuel, or herbicides for weed control will be stored on the ROW. When used, they will be stored and disposed of in accordance with applicable local, state, federal environmental laws and regulations, and product labels where applicable. At the communication stations, liquid propane will be stored in approved tanks. Reactors at the termination station will be filled with an insulating mineral oil. Secondary containment structures will be installed to prevent oil from this equipment from reaching ground or water bodies in the event of a rupture or leak. IPC will use a standard type of oil containment consisting of a pit of a calculated capacity under the oil-filled equipment that has an oil-impervious liner. The pit is filled with rock to grade level. In case of an oil leak or rupture, the oil captured in the containment pit is removed and transported to a disposal facility.

Exhibit G, Section 3.3 describes quantities and handling procedures for fuel, lubricating oils, transformer oils, and other petroleum products and chemicals in greater detail.

3.2.5 Equipment and Systems for Fire

OAR 345-021-0010(1)(b)(A)(v): Equipment and systems for fire prevention and control.

During construction, the risk of fire danger is related to smoking, refueling activities, operating vehicles and other equipment off improved roadways, welding activities, and the use of explosive materials and flammable liquids. During operation, the risk of fire is primarily from vehicles and maintenance activities that require welding.

All federal, state, and county laws, ordinances, rules, and regulations pertaining to fire prevention and suppression will be strictly adhered to. All personnel will be advised of their responsibilities under the applicable fire laws and regulations.

The prevention and suppression of wildfires in eastern Oregon is carried out by BLM, USFS, and local fire districts and agencies (Table B-11). The agencies' activities are closely coordinated, primarily through the Pacific Northwest Wildfire Coordinating Group. Coordination of firefighting resources also occurs under Oregon's *Emergency Conflagration Act* that allows the state fire marshal to mobilize and dispatch structural firefighting personnel and equipment when a significant number of structures are threatened by fire and local structural fire-suppression capability is exhausted (OSFM 2007).

Table B-11. Fire Suppression Responsibilities in Oregon

Who	Where	Miles of Proposed Route
City fire departments and rural fire protection districts in mutual aid with Oregon Department of Forestry	Structures in Oregon's wildland interface areas covered by mutual-aid agreements. Rangeland fire protection associations on rangeland areas of eastern Oregon outside of both a forest protection district and a rural fire district.	193.8
BLM and BOR	National System of Public Lands and BOR-managed lands	69.9
USFS	National Forest and National Grasslands	7.1

BLM – Bureau of Land Management; BOR – Bureau of Reclamation; USFS – United States Department of Agriculture Forest Service

Source: ODEQ 2003

If IPC becomes aware of an emergency situation that is caused by a fire on or threatening BLM-managed or National Forest lands they will notify the appropriate agency contact. Specific construction-related activities and safety measures will be implemented during construction of the transmission line to prevent fires and to ensure quick response and suppression if a fire occurs. Typical practices to prevent fires during construction and maintenance/repair activities include brush clearing prior to work, posting a fire watch, and stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing “fire behavior” training to all construction personnel, keeping vehicles on or within designated roads or work areas, and providing fire suppression equipment and emergency notification numbers at each construction site.

IPC will require its contractor to maintain a list, to be provided to local fire-protection agencies, of all equipment that is either specifically designed for, or capable of, being adapted to fighting fires. IPC will require its contractor to provide basic fire-fighting equipment on-site during construction, including fire extinguishers, shovels, axes, and other tools in sufficient numbers so each employee on-site can assist in the event of a fire-fighting operation.

During transmission line operation, the risk of fire danger is minimal. The primary causes of fire on the ROW result from unauthorized entry by individuals for recreational purposes and from fires started outside the ROW. In the latter case, authorities can use the ROW as a potential point of attack for fighting a fire. During transmission line operation, access to the ROW will be restricted in accordance with jurisdictional agency or landowner requirements to minimize recreational use of the ROW.

During maintenance operations, IPC or its contractor will equip personnel with basic fire-fighting equipment, including fire extinguishers, shovels, and polaskis as described above. Maintenance crews will also carry emergency response/fire control phone numbers.

At the Longhorn Station, fire protection systems will be installed. Typical fire protection systems that could be used include:

- Automatic suppression systems such as fire sprinklers, foam, gaseous, explosion suppression, or other specialized extinguishing systems plus appropriate alarms.
- Adequate water supply, storage, and distribution systems are essential elements of water-based extinguishing systems.
- Automatic fire detection, occupant warning, manual fire alarm, and fire alarm reporting systems combined with properly equipped and adequately trained fire departments.
- Fire barrier systems or combinations of physical separation and barriers for outdoor locations.

At communication stations, smoke detectors will be installed that will alarm through the Supervisory Control and Data Acquisition system, which communicates to IPC's System Dispatch Center along the fiber optic lines.

Specific fire protection systems will be determined during final design of these Project facilities.

Exhibit U, Section 3.5.6 provides specific information on the effect of the Project on public and private fire protection providers. Exhibit U, Attachment U-3 contains a project-specific Fire Prevention and Suppression Plan that outlines responsibilities, notification procedures, fire prevention measures and precautions, fire suppression equipment, and initial response procedures.

3.3 Related and Supporting Facilities

OAR 345-021-0010(1)(b)(B): A description of major components, structures and systems of each related or supporting facility.

Permanent and temporary related and supporting facilities include access roads, multi-use areas, pulling and tensioning sites, light-duty fly yards within some pulling and tensioning sites, and communication station distribution lines.

3.3.1 Access Roads

The Project will require vehicular access during construction of the station, each communication station site, and each transmission structure, as well as temporary facilities including multi-use areas and pulling and tensioning sites. As described in Attachment B-5, Road Classification Guide and Access Control Plan, access roads included in the Site Boundary include:

- New roads; and
- Existing roads requiring substantial modification.

Existing roads that will be used for construction and operation of the Project but will not require substantial modification are not "related and supporting facilities"¹⁵ and, therefore, are not included in the Site Boundary. Table B-12 provides a summary of the access road classifications.

¹⁵ ORS 469.300(24) and OAR 345-001-0010(51).

Table B-12. Summary of Access Road Classifications

Access Road Classification		Site Boundary	Construction Disturbance	Operations Disturbance	Road Prism or Profile Changes	Extent of Work
New Roads	Primitive	200 feet	16 feet	10 feet	Yes	Clearing of vegetation or obstructions. Create roads by direct vehicle travel.
	Bladed	200 feet	16–35 feet	14 feet	Yes	Clearing of vegetation or obstructions. Create roads by cutting/filling existing terrain.
Existing Roads - Substantial Modification	Substantial Modification, 21-70% Improved	100 feet	16 feet	14 feet	Yes	Reconstruct portions of existing road to improve road function. Possible road prism widening, profile adjustments, horizontal curve adjustments, or material placement.
	Substantial Modification, 71-100% Improved	100 feet	16–30 feet	14 feet	Yes	Reconstruct portions of existing road to improve road function. Possible road prism widening, profile adjustments, horizontal curve adjustments, or material placement.
Existing Roads – No Substantial Modification	No Substantial Modification, 0-20% Improved	NA ¹	NA ¹	NA ¹	No	Repair of existing road to maintain original road function. No betterment of existing road function or design.

¹ Existing roads with no substantial modifications are not included in the Site Boundary and do not have an operation or construction disturbance width assigned to them.

IPC applied the following definitions to roads.

Access Road: A linear travel route designated to support construction, operation and maintenance of the transmission line.

Road Surface: The surface of the road on which vehicles would travel.

Bladed Road: Roads constructed using heavy equipment and designed to support vehicular traffic. Bladed road features typically include cuts and/or fills to construct a smooth travel surface and manage surface water drainage and include the manipulation or creation of a road prism and profile.

Road Alignment: The series of horizontal curves and tangents that define the travel path.

Road Prism: The area consisting of the road surface and any cut slope, fill slope and contiguous drainage features. For primitive roads, the road prism is defined as the travel surface and extent of clearing necessary for horizontal clearance or the extent of modification from the natural condition, whichever is greater.

Road Profile: The trace of a vertical plane intersecting the surface along the longitudinal centerline of the roadbed.

Road Segment: The length of road between intersecting nodes of a branching road network, between substantially different road surface materials (native and non-native material), or between different road classifications.

3.3.1.1 *New Roads*

New Primitive Roads. New primitive roads are characterized as follows:

- Created by direct vehicle travel over native material and existing vegetation.
- Disturbance may include clearing of large woody vegetation and other obstructions to ensure safe vehicle operation.
- Will generally be present on the landscape as two-track roads leaving no disturbance beyond the edge of the travel surface.
- May require intermittent maintenance work to support continued safe vehicle passage during construction.
- Typical construction disturbance is 16 feet wide. The operational width is 10 feet. The Site Boundary for a new primitive road will be 200 feet wide (100 feet each side of centerline).

New Bladed Roads. New bladed roads are characterized as follows:

- Construction of new road prism across side slope over 8 percent or over rough and uneven terrain.
- Typical construction disturbance is 16 feet wide, but can be up to 35 feet wide as dictated by terrain and soil conditions. The operational width is 14 feet. The Site Boundary for a new bladed road will be 200 feet wide (100 feet each side of centerline).

New roads are identified as being primitive or bladed for purposes of describing the disturbance width. The disturbance width may affect the Project's impact analysis elsewhere in the application, but it does not affect the classification of the roads for purposes of determining whether they are included in the Site Boundary. All new roads—primitive or bladed—are considered related or supporting facilities and are included in the Site Boundary.

3.3.1.2 Existing Roads – Substantial Modification

To determine whether existing roads will require improvements, IPC conducted field reconnaissance and surveyed aerial photos of existing road segments. If IPC determined improvements to an existing road will involve one or more of the following activities, the road segment was classified as requiring substantial improvements: (1) increasing the width of the existing road prism, (2) changing the existing road alignment, (3) using materials inconsistent with the existing road surface, (4) changing the existing road profile, or (5) involving repairs to more than 20 percent of the road surface area defined by road prism width and longitudinal distance over a defined road segment.

Existing roads that will require substantial modification are characterized as follows:

- Typical construction disturbance is 16 feet wide, but can be up to 30 feet wide when road modification exceeds 70 percent. The operational width is 14 feet. The Site Boundary for a substantial modification existing road will be 100 feet wide (50 feet each side of centerline).

Existing roads requiring substantial modification are identified as requiring 21–70 percent improvements or 71–100 percent improvements. The distinction between the two improvement categories may affect the Project's impact analysis in other sections of the application, but it does not affect the classification of the roads for purposes of determining whether they are included in the Site Boundary. Each existing road requiring improvements to more than 20 percent of the road is considered a related or supporting facility and is included in the Site Boundary.

3.3.1.3 Existing Roads – No Substantial Modification.

IPC classified existing road segments as requiring no substantial improvements if the road segments will meet each of the following criteria:

1. road maintenance activities will be limited to repair of the road prism to (i) produce a stable operating surface, (ii) ensure proper drainage and erosion control, and (iii) establish horizontal clearance;
2. proposed repair and/or construction activities will not (i) increase the width of the existing road prism, (ii) change the existing road alignment, (iii) use materials inconsistent with the existing road surface, and/or (iv) change the existing road profile; and
3. repairs will be limited to 20 percent or less of the road surface area defined by the road prism width and longitudinal distance over a defined road segment.

Note: Notwithstanding the above criteria, IPC may request that ODOE consider alternative road classifications and determinations of substantial modification for individual road segments.

After construction is completed, any new roads developed for the Project connecting to multi-use areas will be removed and restored to preconstruction conditions, unless the landowner requests otherwise. Roads developed for pulling and tensioning sites will be permanent because they will also provide access to structures for operations and maintenance. Both categories of access roads are shown on maps in Exhibit C, Attachment C-2.

3.3.2 Multi-use Areas

Construction of the Project will begin with the establishment of multi-use areas. The multi-use areas will serve as field offices; reporting locations for workers; parking space for vehicles and equipment; and sites for material delivery and storage, fabrication assembly of towers, cross arms and other hardware, concrete batch plants, and stations for equipment maintenance (see Figure B-27 for complete list of potential activities). Multi-use areas, each of which is about 30

acres in size, will be located approximately every 15 miles along the corridor. Multi-use area locations are listed in Exhibit C, Table C-14 and shown on maps in Exhibit C, Attachments C-2 and C-3 and are subject to change with a final design.

Helicopter operations may be staged out of multi-use areas. Project construction activities facilitated by helicopters may include delivery of construction laborers, equipment, and materials to structure sites; structure placement; hardware installation; and wire stringing operations. Helicopters may also be used to support the administration and management of the Project by IPC, the Construction Contractor, or both. Where construction access by truck is not practical due to steep terrain, all-terrain vehicle trails may be utilized to support maintenance activities. The use of helicopter construction methods for this Project will not change the length of the access road system required for operating the Project because vehicle access is required to each tower site regardless of the construction method employed.

During construction, gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be stored at multi-use areas. These products will be used to fuel, lubricate, and clean vehicles and equipment and will be transported to the multi-use sites in containerized trucks or in other federal and state approved containers. Enclosed containment will be provided for petroleum products and wastes and petroleum-related construction waste will be removed to a disposal facility authorized to accept such materials. Fuel and chemicals will be properly stored to prevent drainage or accidents. Where required, preventive measures such as the use of vehicle drip pans for overnight parking areas may be implemented. Routine visual inspection for presence of petroleum leaks will be required for vehicles. Diesel fuel tanks will be located at the multi-use areas for vehicle and equipment fueling. Each fuel tank will be located within secondary containment and each station will be equipped with a spill kit. When on-ROW refueling is necessary, it will be done away from waterways. Accidental releases of hazardous materials will be prevented or minimized through proper containment of these substances during use and transportation to the site. A Spill Prevention, Containment, and Countermeasures Plan will be prepared for all hazardous materials. All hazardous and dangerous materials will be stored and secured in accordance with the appropriate regulations.

During operations, no fuels or potentially hazardous materials such as general lubricants, general cleaners, ethylene glycol (antifreeze), vehicle fuel, and herbicides for weed control will be stored on the ROW. When used, they will be transported and disposed of in accordance with applicable local, state, federal environmental laws and regulations, and product labels as appropriate. At the communication stations, liquid propane will be stored in approved tanks.

Multi-use areas will be fenced and their gates locked. Security guards will be stationed where needed. In some cases, the multi-use area may need to be scraped by a bulldozer and a temporary layer of rock laid to provide an all-weather surface. Unless otherwise directed by the landowner, the rock will be removed from the multi-use area upon completion and the area will be restored.

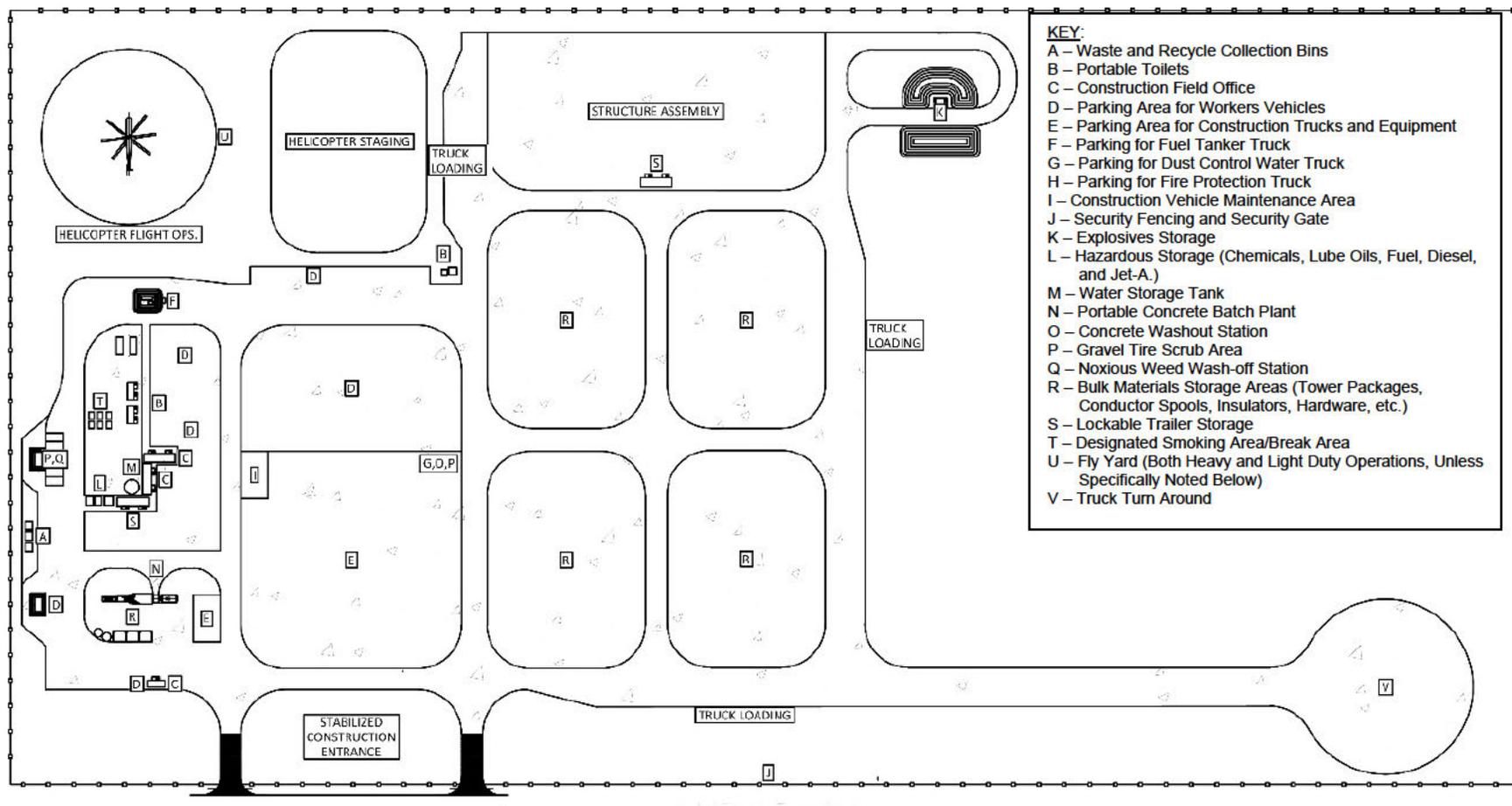


Figure B-27. Multi-use Area Layout

3.3.3 Pulling and Tensioning Sites

There will be 299 pulling and tensioning sites required for the Project. Pulling and tensioning sites will be required approximately every 1.5 to 2 miles along the ROW and at angle points greater than 30 degrees and will require approximately 5 acres at each end of the wire section to accommodate required equipment. Equipment at sites required for pulling and tensioning activities will include tractors and trailers with spooled reels that hold the conductors and trucks with the tensioning equipment.

Four pulling and tensioning sites are designated as light-duty fly yards. Light-duty fly yards are similar to the fly yards located in the multi-use areas but are smaller in size (Figure B-28). All of the equipment and activities that occur at a multi-use area may also occur at a light-duty fly yard. The exception would be that no oil and gas or explosive storage will occur and no batch plants will be located at the light-duty fly yards within the pulling and tensioning sites. Preliminary locations are shown in Exhibit C, Attachment C-2. The light-duty fly yards are located within four specific pulling and tensioning sites along the Project where the spacing between multi-use areas is too great. The light-duty fly yards will be approximately 5-acre sites spaced about 15 miles apart.

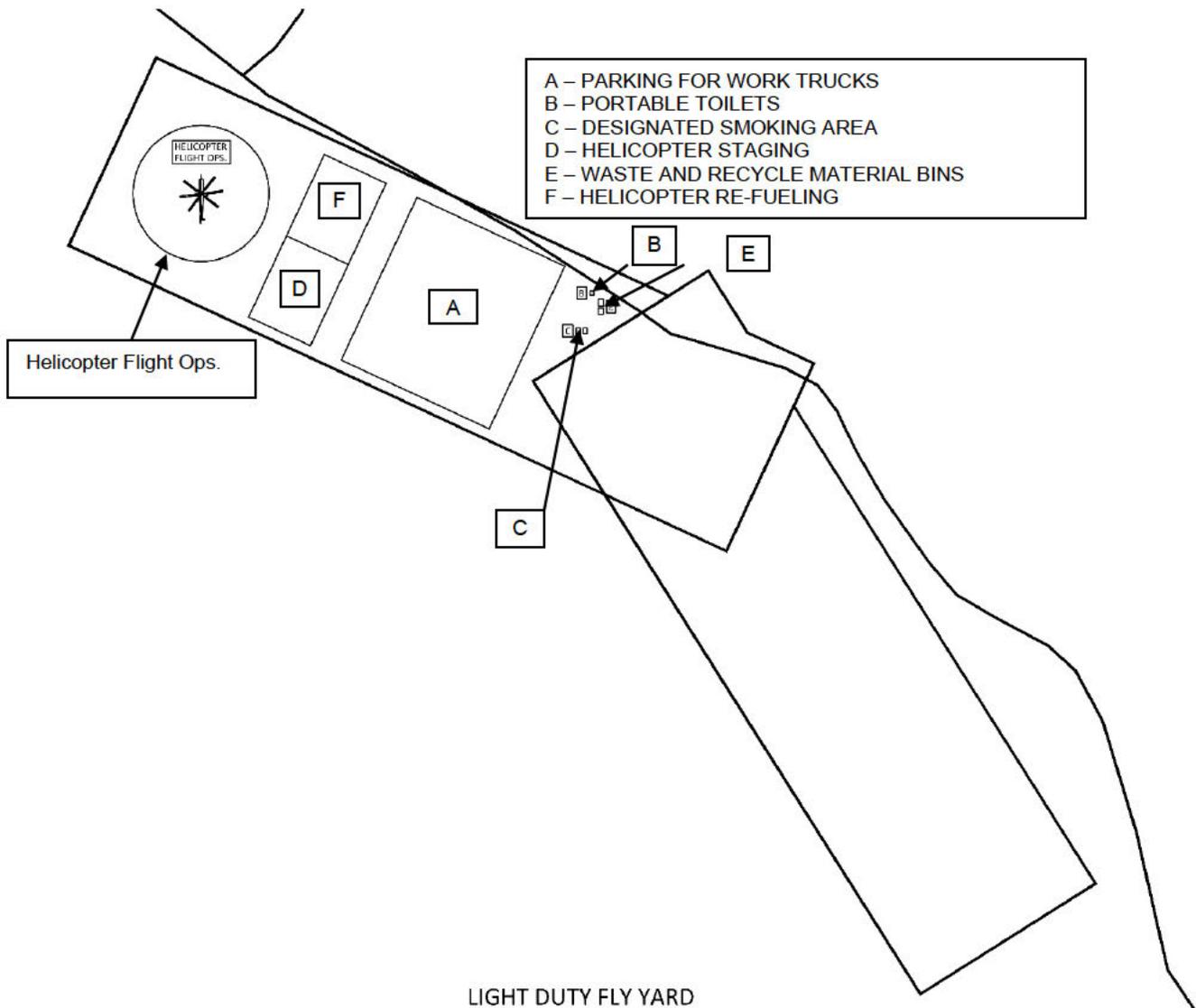


Figure B-28. Light-Duty Fly Yard on Pulling and Tensioning Site Layout

3.3.4 Communication Station Distribution Lines

As discussed in Section 3.2.2.3, local electric distribution service providers will install distribution lines to serve the Project's communication stations. Where the local service provider is a third party and not IPC, the distribution lines would not be considered related or supporting facilities pursuant to ORS § 469.300(24). However, IPC is the local service provider in Malheur and parts of Baker counties that will be serving communication stations BA-02, and MA-01, MA-02, MA-03, as well as alternative a communication station in Malheur County. Therefore, those distribution lines are considered related or supporting facilities and are included within the Site Boundary.

3.4 Approximate Dimensions

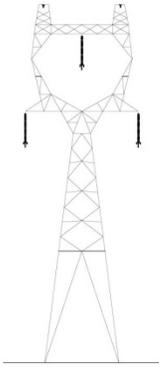
OAR 345-021-0010(1)(b)(C): The approximate dimensions of major facility structures and visible features.

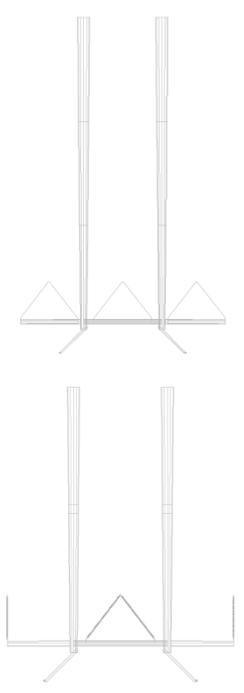
Table B-13 describes the dimensions of facility structures and visible features. The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.¹⁶

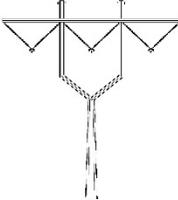
Table B-13. Project Structures and Visible Feature Dimensions

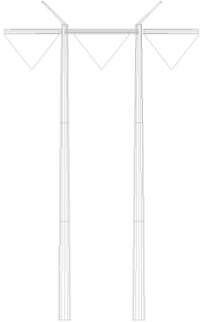
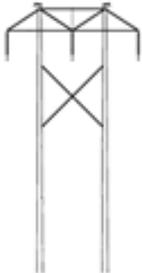
Facility	Description
Longhorn Station Expansion or Construction	<ul style="list-style-type: none"> • Existing access road. • The Bonneville Power Administration Longhorn Station will be built to terminate the Boardman to Hemingway Transmission Line Project line. The fenced area will be approximately 20 acres. • Tie to existing McNary to Coyote Springs high voltage transmission line. • 500-kV circuit breakers and related switching equipment. • Bus and support structures. • 500-kV line termination structures approximately 135 feet in height. • Control, protection, and communications equipment added inside the control building. • 500-kV series capacitor bank. • 500-kV shunt reactor bank. • Existing electric distribution line.

¹⁶ Note that diagrams of structures in this exhibit are not drawn to scale relative to each other.

Facility	Description
<p>Proposed 500-kV Single-Circuit Lattice</p> 	<ul style="list-style-type: none"> • Proposed 500-kV structure type: Self-supporting steel lattice towers having a dulled galvanized steel finish. • Structure heights: lattice tower varies between 109 to 200 feet. • Approximate span distance between structures: lattice: 1,200 to 1,800 feet. • Right-of-way (ROW) width: lattice: nominal 250 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One optical ground wire (OPGW) containing 48 fibers and having a diameter of 0.646 inch. One overhead ground wire (OHGW) made of extra high strength (EHS) steel and having a diameter of 0.5 inch. • Minimum ground clearance: 34.5 feet. • Line length: Approximately 270.8 miles (Oregon only). • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

Description	Facility
<ul style="list-style-type: none"> • Proposed 500-kV structure type: Self-supporting tubular steel H-frame structures, having a weathering steel (Corten) finish. • Number of poles per H-frame: 2. • Approximate pole diameters: 48 to 72 inches (at base), 16 to 24 inches (at tip). • Structure heights: 65-105 feet and 90-100 feet. • Approximate span distance between structures: 350 to 1,650 feet. • ROW width: 90-250 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One OPGW containing 48 fibers and having a diameter of 0.646 inch. One OHGW made of EHS steel and having a diameter of 0.5 inch. • Minimum ground clearance: 34.5 feet. • Line length: approximately 13 miles. The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line. 	 <p>Proposed 500-kV Single-Circuit H-Frame</p>

Facility	Description
<p>Alternative 500-kV Single-Circuit Y-Frame <i>(Applicable to West of Bombing Range Road Alternative 2 in portions of NWSTF Boardman)</i></p> 	<ul style="list-style-type: none"> • Proposed 500-kV structure type: Self-supporting tubular steel Y-frame structures, having a weathering steel (Corten) finish. • Number of poles per Y-frame: 1. • Approximate tubular steel pole diameters: 60 to 84 inches at the base. • Structure heights: variable between 85 to 95' feet. • Approximate span distance between structures: 575-980 feet. • ROW width: varies, up to 90 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One OPGW containing 48 fibers and having a diameter of 0.646 inch. One OHGW made of EHS steel and having a diameter of 0.5 inch. • Minimum ground clearance: 34.5 feet. • Line length: Approximately 1.3 miles. • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

Facility	Description
<p>Alternative 500-kV Single-Circuit Steel Pole H-Frame <i>(Used only if required to address specific land manager requirements or constraints)</i></p> 	<ul style="list-style-type: none"> • Alternative 500-kV structure types: Self-supporting tubular steel H-frame structures, having a weathering steel (Corten) finish. • Approximate tubular steel pole diameters: H-frame structures = 48 to 72 inches (at base), 16 to 24 inches (at tip). • Structure heights: variable between 85 to 165 feet. • Approximate span distance between structures: 600-1,300 feet. • ROW width: nominal 250 feet. • Three-phase 500-kV construction for all tower designs, conductor spacing, and clearances. • Conductors: Non-specular finish. • Subconductor diameter is 1.300 inches. • Bundle spacing: Subconductor bundle has a spacing of 20 inches between horizontal sub-conductors and 16 inches of diagonal spacing between the top two sub-conductors and the lower sub-conductor. • Two Shield Wires: One OPGW containing 48 fibers and having a diameter of 0.646 inch. One OHGW made of EHS steel and having a diameter of 0.5 inch. • Minimum ground clearance : 34.5 feet. • Line length: Undetermined. • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.
<p>Single-Circuit 230-kV Transmission Line <i>(Applicable to 230-kV rebuild portion of Proposed Route)</i></p> 	<ul style="list-style-type: none"> • Proposed structure type: Steel pole H-frame structures. Tangent H-frame structures are self-supporting, angle and dead-end H-frames will be guyed. • Number of poles per H-frame: Tangent and small angle H-frame structures will require two poles per structure. Medium and large angle structures as well as dead-ends will require three poles per structure. • Structure heights: variable between 57 to 75 feet. • Approximate span distance between structures: 400-1,200 feet. • ROW width: nominal 125 feet. • Conductors: non-specular finish. • Two EHS steel overhead ground wires with a diameter of 0.375 inch. • Minimum ground clearance: 27 feet. • Line length: 0.9 mile. • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

Facility	Description
<p>Single-Circuit 138-kV Transmission Line (Applicable to 138-kV rebuilding portion of Proposed Route)</p> 	<ul style="list-style-type: none"> • Proposed structure type: Wood-pole H-frame structures. Tangent H-frame structures are self-supporting, angle and dead-end H-frames will be guyed. • Number of poles per H-frame: Tangent and small angle H-frame structures will require two poles per structure. Medium and large angle structures as well as dead-ends will require three poles per structure. • Structure heights: variable between 51 to 61 feet. • Approximate span distance between structures: 500-750 feet. • ROW width for: nominal 100 feet. • Conductors: one conductor per phase. • Conductor Spacing: typical vertical spacing of 5.5 feet between shield wire and 138-kV phase wires, 13.5 feet horizontal spacing between phase wires. • Shield Wire: Two OHGW consisting of EHS steel and having a diameter of 0.375 inch. • Minimum design ground clearance: 30 feet. • Line length: Approximately 1.1 miles. • The final quantity, heights, span lengths, and clearances provided by the structures and ROW widths will depend on the final detailed design of the transmission line.

EHS – extra high strength; OHGW – overhead ground wire; OPGW – optical ground wire; ROW – right-of-way

3.5 Information Required for Transmission Line Projects

3.5.1 Transmission Line Length

OAD 345-021-0010(1)(b)(E)(i): The length of the pipeline or transmission line.

The Project is an approximately 272.8-mile-long, electric transmission line consisting of:

- New construction of 270.8 miles of single-circuit 500-kV electric transmission line,
- Removal of 12 miles of existing 69-kV transmission line,
- Rebuilding of 0.9 mile of a 230-kV transmission line, and
- Rebuilding of 1.1 miles of an existing 138-kV transmission line.

IPC also proposes four alternatives totaling 33.3 additional miles.

3.5.2 Proposed ROW Width

OAD 345-021-0010(1)(b)(E)(ii): The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.

The Site Boundary for the transmission line is 500 feet wide. IPC may locate the transmission line ROW anywhere within the Site Boundary. The typical ROW width for the 500-kV portion of the Project will be 250 feet. In forested areas, the ROW width may extend up to 300 feet to allow for maintenance of danger trees, while in other areas the ROW width will be narrower to

facilitate avoidance of resources or land owner or agency requests. Specific areas where the ROW width will vary include the following:

- While crossing the NWSTF Boardman, the 500-kV line will use approximately 12 miles of the existing 69-kV line 90-foot ROW. The existing 90-foot ROW will not be widened.
- The new ROW width for the single-circuit 230-kV rebuild portion will be up to 125 feet. The 0.9 miles of the existing 230-kV ROW will be widened to 250 feet to facilitate placement of the 500-kV line.
- The new ROW width for the 1.1 miles of 138-kV rebuild will be 100 feet. The 1.1 miles of the existing 138-kV ROW will be widened from 100 feet to 250 feet to accommodate placement of the 500-kV line.

The ROW width for Project roads will vary between 10 and 14 feet. For new primitive roads, the ROW width will be 10 feet. For new bladed roads, the ROW will be 14 feet. For existing roads both with and without substantial modification, the ROW width will be 14 feet. In areas of steep terrain, the ROW width for roads may need to be wider (up to 35 feet).

The site specific required ROW width will be determined and finalized during the final design of the Project.

3.5.3 Where Following Public ROW

OAR 345-021-0010(1)(b)(E)(iii): If the proposed transmission line or pipeline corridor follows or includes public right-of-way, a description of where the transmission line or pipeline would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a transmission line or pipeline adjacent to but not within the public right-of-way, describe the reasons for locating the transmission line or pipeline outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of evidence that would support locating the transmission line or pipeline outside the public right-of-way, based on those criteria.

In many locations, the Project is located adjacent to existing public ROWs; however, the Project is too large to be located entirely *within* existing public ROWs (see Section 3.1.1.2, Opportunities, for a discussion of where IPC explored existing ROWs as siting opportunities). All portions of the Project will be located in private ROWs or new ROW grants or special use authorizations on public land except to the extent the corridor must cross existing public ROWs.

3.5.4 Pipeline Operating Pressure and Delivery Capacity

OAR 345-021-0010(1)(b)(E)(iv): For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.

The Project does not involve a pipeline. OAR 345-021-0010(1)(b)(E)(iv) is not applicable.

3.5.5 Rated Voltage, Load Carrying Capacity Current and Structures

OAR 345-021-0010(1)(b)(E)(v): For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and dimensions.

Rated voltage – 500 kV.

Operating voltage – IPC will operate the Project between 535 kV and 550 kV.

Load carrying capacity – The Project, a single-circuit 500-kV line, will have a thermal continuous rating of about 3,000 MW. Due to reliability standards and the WECC’s rating process, the initial implementation of the facility is likely to result in a bidirectional rating of 1,400 MW. In total, the transfer capability of the Idaho to Northwest path will increase by 1,050 MW from west to east (imports into IPC’s balancing authority area). When coupled with other projects under development, the transfer capability of the Idaho to Northwest path will increase by 1,000 MW from east to west (exports into the Pacific Northwest).

Type of Current – AC.

Transmission line structures and dimensions are described in Section 3.2.2 above.

3.6 Construction Schedule

OAR 345-021-0010(1)(b)(F): A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant shall describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant shall include an estimate of the cost of that work. For the purpose of this exhibit, “work on the site” means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.

The station expansion construction and the communication station work will begin on a schedule that will allow for completion at approximately the same timeframe as the transmission line. Construction activity will begin within 3 years of the effective date of the site certificate, and construction will be completed within 7 years of the effective date of the site certificate. No work on the site as defined in OAR 345-001-0010 will take place before EFSC issues a Site Certificate.

3.7 Limitations on Use of the Right-of-Way (Second Amended Project Order Comments)

The Second Amended Project Order states that “[t]he application must explain in detail what limitations are placed on property owners in the transmission line right-of-way.” After the transmission line has been energized, agricultural and non-agricultural land uses that are compatible with safety regulations will be permitted in the ROW, subject to limitations. Limitations on uses include restrictions on placing buildings or structures within the ROW; restrictions on the use of equipment taller than 15 feet under the transmission line or around towers except as noted below; restrictions on crops that can grow to over 15 feet at maturity (such as timber) within 25 feet of the outermost phase conductor; restrictions on storage of flammable materials of any kind on the ROW; restrictions on refueling equipment under the transmission line; restrictions on grading, land recontouring, and material stockpiling under the transmission line or near structure locations; and required coordination with IPC for the construction of fences, irrigation lines, or other facilities that could be subject to induced current and for the use of agricultural equipment taller than 20 feet (see Exhibit K, Attachment K-1, Agricultural Lands Assessment; Exhibit P1, Attachment P1-4, Vegetation Management Plan; Exhibit AA, Electric and Magnetic Fields; and Attachment B-5 of this Exhibit, Road Classification Guide and Access Control Plan] for additional discussions regarding land uses within the ROW).

3.8 Areas of the Site Boundary Where Surveys Have Been Completed

Between the spring of 2011 and the summer of 2016, IPC conducted field surveys of the Project Site Boundary for wetlands, waters of the state, and cultural resources. IPC conducted the field surveys only on those areas where the landowner granted access and not on areas to which access had been denied or where sites could not be accessed due to safety or timing restrictions with landowners. Further, access granted by landowners differed for each type of resource survey. Some landowners allowed surveys on their lands for wetlands and waters of the state, but not for cultural resources; others allowed the opposite. In some instances, access was revoked by the landowner after one of the surveys had been completed, but not the other. For these reasons, portions of the Site Boundary have been surveyed for some resources, but not others. Mapbooks showing which portions of the Site Boundary have, and have not, been surveyed for each resource are included in Attachment B-7a (Wetland and Water Resources) and Attachment B-7b (Cultural Resources). The mapbooks do not identify the location of wetlands, waters of the state, or cultural resources—the location of those resources can be found in Exhibit J (wetland and water resources) and Exhibit S (cultural resources).

4.0 CONCLUSIONS

Exhibit B includes the application information required by OAR 345-021-0010(1)(b). The project description provides sufficient detail for members of the public and reviewing agencies to make informed comments, and it includes sufficient explanation of how the Proposed Corridor and alternative corridor segments were chosen and consideration of the siting factors under OAR 345-021-0010(1)(b)(D) as well as the analysis required by ORS 215.275.

5.0 COMPLIANCE CROSS-REFERENCES

Table B-14 identifies the location within the ASC of the information responsive to the application submittal requirements in OAR 345-021-0010(1)(d) and the relevant Second Amended Project Order provisions.

Table B-14. Compliance Requirements and Relevant Cross-References

Requirement	Location
OAR 345-021-0010(1)(b)	
(b) Exhibit B. Information about the proposed facility, construction schedule and temporary disturbances of the site, including:	All sections
(A) A description of the proposed energy facility, including as applicable:	Exhibit B, Section 3.2
(i) The nominal electric generating capacity and the average electrical generating capacity, as defined in ORS 469.300.	Exhibit B, Section 3.2.1
(ii) Major components, structures and systems, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy.	Exhibit B, Section 3.2.2
(iii) A site plan and general arrangement of buildings, equipment and structures.	Exhibit B, Section 3.2.3
(iv) Fuel and chemical storage facilities, including structures and systems for spill containment.	Exhibit B, Section 3.2.4
(v) Equipment and systems for fire prevention and control.	Exhibit B, Section 3.2.5
(vi) For thermal power plants.	Not Applicable

Requirement	Location
(vii) For surface facilities related to underground gas storage, estimated daily injection and withdrawal rates, horsepower compression required to operate at design injection or withdrawal rates, operating pressure range and fuel type of compressors.	Not Applicable
(viii) For facilities to store liquefied natural gas, the volume, maximum pressure, liquefaction and gasification capacity in thousand cubic feet per hour.	Not Applicable
(B) A description of major components, structures and systems of each related or supporting facility.	Exhibit B, Section 3.3
(C) The approximate dimensions of major facility structures and visible features.	Exhibit B, Section 3.4
(D) If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline that, by itself, is an energy facility under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridor(s) for analysis in the application. In the assessment, the applicant shall evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant shall discuss the reasons for selecting the corridor(s), based upon evaluation of the following factors:	Exhibit B, Section 3.1 and Section 3.1.1 through Section 3.1.5
(i) Least disturbance to streams, rivers and wetlands during construction.	Exhibit B, Section 3.1.6
(ii) Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife.	Exhibit B, Section 3.1.6
(iii) Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads and existing pipeline or transmission line rights-of-way.	Exhibit B, Section 3.1.6
(iv) Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions.	Exhibit B, Section 3.1.6
(v) Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040.	Exhibit B, Section 3.1.6
(vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist.	Exhibit B, Section 3.1.6
(vii) Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards.	Exhibit B, Section 3.1.6
(viii) Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use.	Exhibit B, Section 3.1.6
(E) If the proposed energy facility is a pipeline or transmission line or has, as a related or supporting facility, a transmission line or pipeline of any size:	Exhibit B, Section 3.5

Requirement	Location
(i) The length of the pipeline or transmission line.	Exhibit B, Section 3.5.1
(ii) The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.	Exhibit B, Section 3.5.2
(iii) If the proposed transmission line or pipeline corridor follows or includes public right-of-way, a description of where the transmission line or pipeline would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a transmission line or pipeline adjacent to but not within the public right-of-way, describe the reasons for locating the transmission line or pipeline outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of evidence that would support locating the transmission line or pipeline outside the public right-of-way, based on those criteria.	Exhibit B, Section 3.5.3
(iv) For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.	Exhibit B, Section 3.5.4
(v) For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and dimensions.	Exhibit B, Section 3.5.5
(F) A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant shall describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant shall include an estimate of the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.	Exhibit B, Section 3.6
Second Amended Project Order	
The description of the proposed facility in the application will form the basis for the description of the facility in the site certificate. The site certificate will require that IPC build the facility "substantially as described." Exhibit B will also provide the basis for the facility description in the notice of application that ODOE will issue to reviewing agencies and public. Therefore, Exhibit B shall describe the facility in enough detail for members of the public and reviewing agencies to make informed comments. Exhibit B shall describe the facility sufficiently for ODOE staff to verify that the constructed project will meet any representations that are the basis for findings of compliance with applicable regulations for standards. It is recommended IPC not include descriptive material that IPC would not want to be held to in a site certificate condition.	Exhibit B, Section 3.2 through Section 3.6
The application must clearly describe the width of the corridor in which the micro-siting corridor right-of-way would be sited along the length of the proposed line. The application must specify the width of the permanent right-of-way IPC will request, and must justify that width.	Exhibit B, Section 3.2.2 and Section 3.5.2

Requirement	Location
The application shall describe all related or supporting facilities that the applicant proposes to be included in and governed by the site certificate, including proposed multiple use areas, fly yards, and access roads. For existing roads or road segments that will be included as related or supporting facilities, include a general description of the proposed modifications and improvements. For multiple use areas and fly yards, include a description of the activities that are expected to occur at these areas.	Exhibit B, Section 3.3
The alternatives analysis described in section OAR 345-021-0010(1)(b)(D) must be consistent with the analysis required by ORS 215.275 and the required information in this rule. The Council recognizes that some of the factors in this rule compete with one another (for example, the requirements to both avoid habitat and avoid agricultural land), but expects the application to demonstrate that all required factors were considered.	Exhibit B, Section 3.1, Sections 3.1.1 through 3.1.4, and Exhibit K, Section 4

6.0 RESPONSE TO NOTICE OF INTENT AND SCOPING MEETING COMMENTS

ODOE received over 450 comments based on the NOI and the related scoping meetings. ODOE summarized those comments in the First Amended Project Order (December 2014) and then removed the summaries from the Second Amended Project Order “to reduce the risk of misinterpreting the intention of the individual comment.”¹⁷ Although ODOE eliminated the requirement that IPC address the comment summaries, IPC nonetheless voluntarily addresses those summaries here in Table B-15, identifying the location within the ASC of the information responsive to the comments summarized in the First Amended Project Order.

Table B-15. Responses to Comment Summaries

Comments	Location
Not Directly Related to an EFSC Standard. Commenters expressed many concerns about specific corridors proposed in the NOI. The Department understands that the corridor proposed in the Preliminary ASC might differ from that ultimately proposed in the Final ASC, but the applicant should ensure that the corridor selection analysis is included in Exhibit B.	Exhibit B, Section 3.1, and Attachment B-1 through Attachment B-6

7.0 REFERENCES

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Idaho Power/1303
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

*In re Application of San Diego Gas & Electric Company (U 902 E) for a
Certificate of Public Convenience and Necessity for the Sunrise Powerlink
Transmission Project, A.06-08-010, D. 08-12-058
(California PUC, Dec. 18, 2008)*

February 21, 2023

COM/MP1/tcg

Date of Issuance 12/24/2008

Decision 08-12-058 December 18, 2008

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of San
Diego Gas & Electric Company (U 902 E)
for a Certificate of Public Convenience and
Necessity for the Sunrise Powerlink
Transmission Project.

Application 06-08-010
(Filed August 4, 2006)

(See Appendix F for List of Appearances.)

**DECISION GRANTING A CERTIFICATE OF
PUBLIC CONVENIENCE AND NECESSITY FOR THE
SUNRISE POWERLINK TRANSMISSION PROJECT**

TABLE OF CONTENTS

Title	Page
DECISION GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SUNRISE POWERLINK TRANSMISSION PROJECT	2
1. Executive Summary	2
2. Background.....	8
2.1. Procedural History.....	8
2.2. Scoping Memo	12
3. Project Objectives and Description.....	13
3.1. Project Objectives	13
3.2. Description of the Northern Routes	14
3.2.1. The Proposed Project	14
3.2.2. SDG&E's "Enhanced" Northern Route.....	16
3.2.3. The Final Environmentally Superior Northern Route	16
4. Standard of Review and Governing Law	17
4.1. Burden of Proof	17
4.2. Section 1001 et seq.....	19
4.3. Rebuttable Presumption of Economic Need	20
5. SDG&E's Electric System.....	23
5.1. SDG&E's Transmission Resources	24
5.2. SDG&E's Generation Resources	25
5.3. Future Generation Additions	25
5.4. Local Capacity Requirement	28
5.5. Upgrades Planned for Neighboring Transmission Systems.....	29
5.5.1. Imperial Irrigation District Transmission Upgrades.....	29
5.5.2. Green Path.....	30
6. Modeling Assumptions for the Analytical Baseline	32
6.1. Summary of Adopted Analytical Baseline Assumptions	34
6.2. Assumptions Regarding the Proper Peak Demand Forecast	35
6.2.1. Parties' Positions.....	35
6.2.2. Discussion.....	37
6.3. California Solar Initiative Adjustments to the Peak Demand Forecast.....	38
6.3.1. Parties' Positions.....	38
6.3.2. Discussion.....	39
6.4. Energy Efficiency Adjustments to the Peak Demand Forecast	40
6.4.1. Parties' Positions.....	40
6.4.2. Discussion.....	41

TABLE OF CONTENTS
(Cont'd)

Title	Page
6.5. Distributed Generation Adjustments to the Peak Demand	
Forecast.....	42
6.5.1. Parties' Positions.....	42
6.5.2. Discussion.....	42
6.6. Demand Response Adjustments to the Peak Demand Forecast	42
6.6.1. Parties' Positions.....	42
6.6.2. Discussion.....	45
6.7. Assumptions Regarding In-Area Fossil Resources.....	45
6.7.1. The Existing South Bay Power Plant	47
6.7.1.1. Parties' Positions	48
6.7.1.2. Discussion	49
6.7.2. Peakers	50
6.7.2.1. Parties' Positions	50
6.7.2.2. Discussion	51
6.7.3. Other Fossil Resources.....	51
6.7.3.1. Parties' Positions	51
6.7.3.2. Discussion	53
6.8. Assumptions Regarding Out-of-State Generation - Including Coal	
Plant Construction	53
6.8.1. Parties' Positions.....	54
6.8.2. Discussion.....	61
6.8.3. Mexican Imports.....	63
6.9. Assumptions Regarding In-Area Renewables.....	63
6.9.1. Parties' Positions.....	63
6.9.2. Discussion.....	64
6.10. Assumptions Regarding Imperial Valley Renewables.....	65
6.10.1. Parties' Positions.....	65
6.10.2. Discussion.....	67
6.11. Assumptions Regarding the Availability of Out-of-State	
Renewables to California	68
6.11.1. Parties' Positions.....	68
6.11.2. Discussion.....	69
6.12. Assumptions Regarding Development of Renewables in Mexico	70
6.12.1. Parties' Positions.....	70
6.12.2. Discussion.....	70
6.13. Assumptions Regarding Renewable Costs	71
6.13.1. Parties' Positions.....	71
6.13.2. Discussion.....	72

TABLE OF CONTENTS
(Cont'd)

Title	Page
6.14. Assumptions Regarding Transmission Resources.....	73
6.14.1. The Dispatch Limit at Imperial Valley Substation	73
6.14.1.1. Parties' Positions	73
6.14.1.2. Discussion	76
6.14.2. Upgrades at Miguel Substation.....	76
6.14.2.1. Parties' Positions	76
6.14.2.2. Discussion	77
6.14.3. Path 44 Upgrades.....	78
6.14.3.1. Parties' Positions	78
6.14.3.2. Discussion	80
6.14.4. The Talega-Escondido/Valley-Serrano Transmission Line	80
6.14.4.1. Parties' Positions	81
6.14.4.2. Discussion	83
6.14.5. Imperial Irrigation District Upgrades.....	83
6.14.5.1. Parties' Positions	83
6.14.5.2. Discussion	84
6.14.6. The Green Path Transmission Line.....	84
6.14.6.1. Parties' Positions	85
6.14.6.2. Discussion	85
6.14.7. Modified Coastal Link	86
6.14.7.1. Parties' Positions	86
6.14.7.2. Discussion	88
6.15. Assumptions Regarding Gas Price Forecasts	88
6.15.1. Parties' Positions.....	88
6.15.2. Discussion.....	89
6.16. Assumptions Regarding Combustion Turbine Costs.....	90
6.16.1. Parties' Positions.....	90
6.16.2. Discussion.....	91
6.17. Assumptions Regarding Project Costs.....	92
6.17.1. Parties' Positions.....	92
6.17.1.1. Capital Costs.....	92
6.17.2. Operating and Maintenance Costs.....	95
6.17.3. Cost Recovery Period.....	97
6.18. Discussion	97
7. Estimates of SDG&E's Reliability Need Based on Analytical Baseline	
Assumptions.....	98
7.1.1. Parties' Positions.....	98
7.1.2. Discussion.....	100

TABLE OF CONTENTS
(Cont'd)

Title	Page
8. Energy Benefits.....	102
8.1. What They Are and How They Are Estimated	102
8.2. Overview of Conclusions.....	103
8.3. Parties’ Modeling Efforts	104
8.4. Discussion	106
9. Reliability Benefits	108
9.1. What They Are and How They Are Estimated	108
9.2. Overview of Conclusions.....	109
9.3. Parties’ Modeling Efforts	110
9.3.1. Sunrise’s Impact on Local Capacity Requirements	113
9.3.2. Estimating Benefits of Deferred New Generation	117
9.3.3. Estimating Must Run Contract Savings	118
9.3.4. Unquantifiable Reliability Benefits	120
9.4. SDG&E’s “Decision Quality” Framework Modeling	122
9.5. Planning for and Maintaining Reliability	123
9.6. Discussion	125
10. Potential Savings from Accessing Least Cost Renewable Resources	128
10.1. What They Are	128
10.2. Overview of Conclusions.....	129
10.3. How CAISO Estimates Potential Renewable Resource Savings	130
10.4. Discussion	135
11. Calculating Net Benefits	139
11.1. Overview of Conclusions.....	139
11.2. Parties’ Modeling Efforts	141
11.3. CAISO’s Compliance Exhibit	146
11.3.1. Overview	146
11.3.2. Discussion.....	155
11.4. The Commission’s Update to the Compliance Exhibit	155
11.4.1. Overview	155
11.4.2. Discussion.....	162
12. Green House Gas Impacts	163
12.1. GHG Emissions Projected in the EIR/EIS	164
12.1.1. Parties’ Positions.....	168
12.1.2. Discussion.....	170
12.2. GHG Impacts of the Proposed Alternatives	173
12.2.1. Parties’ Positions.....	174
12.2.2. Discussion.....	175
13. The Northern Routes’ Anza-Borrego Link.....	175

TABLE OF CONTENTS
(Cont'd)

Title	Page
13.1. Overview of the Proposed Project’s Route through Anza-Borrego ...	175
13.2. Anza-Borrego’s Place in the State Park System.....	177
13.3. Legal Issues Unique to the Anza-Borrego Link.....	180
13.3.1. Anza-Borrego’s General Plan	180
13.3.2. The California Wilderness Act and Potential Wilderness De-designation.....	184
13.3.3. SDG&E’s Right-of-Way through Anza-Borrego	188
13.4. Overview of the Environmental Impacts on Anza-Borrego.....	190
13.4.1. Environmental Impacts of the Proposed Project	190
13.4.1.1. Parties’ Positions	190
13.4.1.2. Discussion	191
13.4.2. Environmental Impacts of the “Enhanced” Northern Route....	197
13.4.2.1. Parties’ Positions	197
13.4.2.2. Discussion	198
13.4.3. Environmental Impacts of the Final Environmentally Superior Northern Route.....	201
13.4.3.1. Parties’ Positions	201
13.4.3.2. Discussion	201
13.5. Conclusions Regarding Any Route Through Anza-Borrego.....	204
14. Wildfire Risks	208
14.1. Overview	208
14.2. Risk of Fire Ignition	209
14.3. Risk of Dual Line Failure Due to Wildfire.....	212
14.4. Comparison of Fire Risk Across Transmission Alternatives.....	215
14.5. Mitigation to Reduce Risk of Fire Ignition	217
14.6. Conclusion	218
15. Environmental Review.....	218
15.1. Alternatives Analyzed in the EIR/EIS.....	221
15.2. Connected Actions.....	224
15.3. Future Transmission Expansion	225
15.4. All-Source Generation Alternative.....	227
15.4.1. Description	227
15.4.2. Parties’ Positions.....	228
15.4.3. Discussion.....	232
15.5. In-Area Renewable Alternative	236
15.5.1. Description	236
15.5.2. Parties’ Positions.....	237
15.5.3. Discussion.....	240

TABLE OF CONTENTS
(Cont'd)

Title	Page
15.6. LEAPS Transmission-Only Alternative	241
15.6.1. Description	241
15.6.2. Parties' Positions.....	242
15.6.3. Discussion.....	244
15.7. Final Environmentally Superior Southern Route.....	247
15.7.1. Parties' Positions.....	248
15.7.2. Discussion.....	249
15.8. Northern Routes.....	251
15.9. LEAPS Transmission Plus Generation Alternative.....	251
15.10. No Project Alternative.....	252
15.10.1. Description	252
15.10.2. Parties' Positions.....	252
15.10.3. Discussion.....	253
15.11. Conclusions Drawn from Environmental Review	254
16. Community Values and Other Requirements Pursuant to Public Utilities Code Section 1002(a).....	258
16.1. Mussey Grade Road and Backcounty Areas.....	258
16.2. Agricultural Community Values	261
17. Developing the Renewable Potential of the Imperial Valley.....	263
18. Certification of Final EIR, Project Authorization, Statement of Overriding Considerations, and Related Issues.....	268
18.1. Certification of Final EIR.....	268
18.2. Authorization of the Final Environmentally Superior Southern Route.....	269
18.3. Statement of Overriding Considerations.....	269
18.4. Mitigation Monitoring.....	271
18.5. Electro Magnetic Field (EMF) Issues.....	271
19. Compliance with Public Utilities Code Section 625.....	273
20. Specification of Maximum Reasonable Cost.....	273
21. Miscellaneous Procedural Matters	277
22. Comments on Alternate Proposed Decision.....	277
23. Assignment of Proceeding.....	281
24. Conclusion	281
Findings of Fact.....	281
Conclusions of Law	290
ORDER	292

A.06-08-010 COM/MP1/tcg

TABLE OF CONTENTS
(Cont'd)

Appendix A - Acronyms
Appendix B - Assumptions Modeled in CAISO Compliance Exhibit
Appendix C - Risk of Fire Ignition
Appendix D - Mitigation Measures
Appendix E - CPUC CEQA Findings of Fact
Appendix F - List of Appearances

A.06-08-010 COM/MP1/tcg

**DECISION GRANTING A CERTIFICATE OF PUBLIC
CONVENIENCE AND NECESSITY FOR THE
SUNRISE POWERLINK TRANSMISSION PROJECT**

1. Executive Summary

This decision grants the application of San Diego Gas & Electric Company (SDG&E) for a Certificate of Public Convenience and Necessity (CPCN) to construct the Sunrise Powerlink Transmission Project (Sunrise) using the Final Environmentally Superior Southern Route.¹

SDG&E's initial construction proposal, referred to as the Proposed Project, contemplates a new 500/230 kV transmission line running approximately 150 miles from the El Centro area of Imperial County to northwestern San Diego County.² The 500 kV portion of the line would travel the length of Anza-Borrego Desert State Park (Anza Borrego), a distance of approximately 25 miles. We find all of the routes that go through Anza-Borrego to be environmentally unacceptable and infeasible.

Assuming renewable procurement at the level of 33% Renewable Portfolio Standard (RPS), we estimate that the Final Environmentally Superior Southern Route will generate net benefits of over \$115 million per year,³ and we find that it is the second highest ranked Alternative that will facilitate our policy to achieve

¹ Appendix A contains a list of acronyms and other naming conventions we use in this decision.

² The Proposed Project includes construction of 91 miles of 500 kilovolt (kV) line and 59 miles of 230 kV transmission line, replacement of transmission cable for several other lines, a new substation, and modification of several other substations.

³ See Table 13, Section 11.4.1.

A.06-08-010 COM/MP1/tcg

greenhouse gas (GHG) reductions through renewable procurement at 33% RPS levels in the shortest time possible.⁴

A statutory framework governs our review of this application and we highlight its major components. Pursuant to Public Utilities Code Section 1001,⁵ before granting a CPCN we must find a need for the Proposed Project or an alternative evaluated in this proceeding. Section 1002(a) requires that we consider four additional factors: community values; recreational and park areas; historical and aesthetic values; and influence on the environment. SDG&E claims that Sunrise is needed to maintain reliability, promote renewable energy, and reduce energy costs and projects that construction of the line will provide economic benefits to its ratepayers. The CPCN portion of our proceeding has been the forum for economic review and this decision evaluates each of SDG&E's claims.

The review process established by the California Environmental Quality Act (CEQA)⁶ has been the primary focus for environmental review. As lead agency pursuant to CEQA, we have evaluated the environmental impacts of the Proposed Project, seven alternatives (two of them solely generation based, "non-wires" alternatives and the rest, transmission based, "wires" alternatives),

⁴ See Section 17.11.

⁵ Unless otherwise expressly stated, all references to statutes are to the California Public Utilities Code.

⁶ Pub. Resources Code § 21000, *et seq.* CEQA and its federal counterpart, the National Environmental Policy Act (NEPA, 42 USC § 4321, *et seq.*) require the preparation, respectively, of an environmental impact report (EIR) and an environmental impact statement (EIS) to identify alternatives to the proposed project, the potentially significant effects on the environment of the proposed project and its alternatives, and to indicate the manner in which those significant environmental effects can be mitigated or avoided.

A.06-08-010 COM/MP1/tcg

and a No Project Alternative. CEQA requires a lead agency to identify and study feasible alternatives and mitigation measures to reduce a project's significant environmental impacts.

This proceeding has been heavily-contested, involving lengthy evidentiary hearings and dozens of public meetings. In addition to voluminous testimony, documentary evidence, and two rounds of briefs in connection with the evidentiary hearings, there have been eleven opportunities for public comment, both written and oral, including Public Participation Hearings at five different locations. The Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS)⁷ prepared jointly by this Commission and the United States Bureau of Land Management (BLM) is over 11,000 pages long. Today's decision certifies the Final EIR, which is the CEQA portion of the Final EIR/EIS.

A significant portion of the environmental review focuses on the environmental impacts the Proposed Project and other Northern Routes would have on Anza-Borrego. SDG&E proposes to build the Proposed Project through wilderness lands in the heart of Anza-Borrego. Many members of the public have referred to Anza-Borrego as the crown jewel⁸ of the State Parks system. The Vision Statement in Anza-Borrego's General Plan states:

⁷ The Final EIR/EIS comprises not only the set of documents with that name but also the two prior sets of documents, the Draft EIR/EIS and the Recirculated Draft EIR/Supplemental Draft EIS. Unless specific reference to one of these set of documents is required, the decision refers generically to the EIR/EIS.

⁸ Written comment from the public and numerous speakers at public meetings refer to Anza-Borrego this way. For example, Monica Argandona, the Desert Program Director for the California Wilderness Coalition, used this term at the February 26, 2008 Public Participation Hearing in Borrego Springs. At that same meeting, another speaker, Mr. Rasmusson, stated that "while this park doesn't assume the majesty of a Hetch-Hetchy or Yosemite, it still remains a jewel nonetheless." RT 2977:2-4.

A.06-08-010 COM/MP1/tcg

Anza-Borrego is a place of awe, inspiration, and refuge. The vast desert landscape and scenery are preserved in a pristine condition. The full array of natural and cultural resources are cared for so as to perpetuate them for all time while supporting those seeking enjoyment from these resources ...⁹

The Final EIR/EIS finds that SDG&E's Proposed Project has 52 significant, unmitigable environmental impacts that would require de-designation of approximately 50 acres of state wilderness in Anza-Borrego. SDG&E subsequently proposed to build entirely within a 100-foot corridor in Anza-Borrego. However, the Final EIR/EIS concludes that this "Enhanced" Northern Route only increases the potential for significant, adverse impacts. Further, the status of legal right-of-way within that 100-foot corridor is heavily contested. Consequently, we find that all routes that would traverse Anza-Borrego are unacceptable.

The Final EIR/EIS ranks three alternatives as environmentally superior to the Final Environmentally Superior Southern Route – the All-Source Generation Alternative, the In-Area Renewable Alternative, and the LEAPS Transmission-Only Alternative.¹⁰ We find these three alternatives to be infeasible for, among other things, meeting California's broader policy goals.

Modeling performed by the CAISO demonstrates total projected reliability benefits of Sunrise to be over \$200 million per year in addition to a number of desirable, but unquantifiable, reliability benefits. Among other things, Sunrise will create a more robust southern California transmission system, and provide insurance against unexpected high load growth in SDG&E's service area. A

⁹ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page 3-8).

¹⁰ These alternatives are described in detail in Sections 6.14.4, 15, and 17.

A.06-08-010 COM/MP1/tcg

transmission solution affords SDG&E the best opportunity to plan for the current and future reliability needs throughout its service territory. The generation alternatives will not provide these benefits.

AB 32 requires that California reduce its GHG emissions to 1990 levels by 2020.¹¹ The Commission, with the Energy Commission, has adopted recommended policies and rules to be implemented by the California Air Resources Board (CARB) to meet California's GHG reduction objectives in the energy sector.¹² Among them is a recommendation that the electricity sector achieve renewable procurement at 33% RPS levels.¹³ On December 11, 2008 by a unanimous vote CARB adopted the Scoping plan, which incorporates this recommendation. Thus, this state and this Commission are committed to achieving GHG reductions in the energy sector, in part, through renewable procurement at 33% RPS levels.

Under renewable procurement at 33% RPS levels, the Final Environmentally Superior Southern Route is the second highest ranking alternative that will facilitate our renewable energy development and GHG emission reduction goals for the energy sector. The higher ranking alternative is environmentally unacceptable and therefore infeasible. We estimate that the Final Environmentally Superior Southern Route will facilitate development of 1,900 megawatts (MW) of Imperial Valley renewables by 2015, and that more than half of that development will be of high capacity geothermal resources. In

¹¹ AB 32 (Stats. 2006, c 598), codified at Health & Saf. Code § 38500 et seq.

¹² California Air Resources Board, *Climate Change Scoping Plan*, October 2008.

¹³ See, *Greenhouse Gas Regulatory Strategies*, and two prior decisions in our GHG rulemaking, D.08-03-018 and D.07-09-017.

A.06-08-010 COM/MP1/tcg

contrast, the higher ranked alternatives are not estimated to facilitate even half that amount of renewable development.

Assuming 33% RPS, Sunrise is estimated to generate over \$115 million in annual net benefits to ratepayers, which significantly exceeds the estimated net benefits of the All-Source Generation Alternatives.

We do not take our decision to approve the Final Environmentally Superior Southern Route lightly. Of particular concern is the risk of wildfires created by electric distribution and transmission lines and the risk of power outages as a result of wildfires. The Final EIR/EIS describes these risks, but finds that while there are likely to be increased dual line power outages, the fire risk posed by the Final Environmentally Superior Southern Route is minimized given that the route is comprised of 230 kV and 500 kV lines placed on tall, steel structures. We also require SDG&E to take significant mitigation measures to prevent fire ignition in both the construction and operation of the line. This decision also imposes 125 substantial mitigation measures directly on SDG&E to address the many of the environmental impacts of Sunrise.

We acknowledge that there has been significant public opposition to Sunrise. Of the more than 400 individuals who have commented on Sunrise during our Public Participation Hearings, the vast majority oppose one or more of the Sunrise alternatives because of impacts on community values, the environment, and the other factors we consider pursuant to § 1002(a). Our consideration of these factors is reflected in the Sunrise route we approve as set forth in this decision.

We are convinced that approval of Sunrise will help to unlock the potential of one of the richest renewable energy regions in California. However, we recognize that some parties are concerned that Sunrise will instead be used to

A.06-08-010 COM/MP1/tcg

support development of new fossil-fired generation. While we do not believe the record provides evidence that this is a likely outcome, we wish to stress that the Commission's decision in this case is only the first step toward fully developing renewable energy in the Imperial Valley region. We intend to use our extensive array of regulatory tools to ensure that the renewable resources enabled by Sunrise are indeed developed on a timely basis.

2. Background

2.1. Procedural History

This proceeding commenced on December 14, 2005, when SDG&E filed Application (A.) 05-12-014, its initial request for a CPCN for authority to construct Sunrise (2005 Application). Because of critical deficiencies in the 2005 Application, including failure to identify the route for Sunrise or to include a Proponent's Environmental Assessment (PEA), SDG&E filed an entirely new set of documents on August 4, 2006. Though at times SDG&E's 2006 filing has been referred to, informally, as an "amendment" to the 2005 filing, we designated the 2006 filing as a new application and assigned a new proceeding number, A.06-08-010 (2006 Application). The Chief Administrative Law Judge (ALJ) consolidated the dockets for the 2005 and 2006 Applications and subsequently, in D.07-11-008, we affirmed the consolidation and then closed the 2005 Application.

On September 6, 2006, responding to requests from the Commission's Energy Division, SDG&E filed a multiple volume supplement to the 2006 Application. On September 13, 2006, the assigned ALJ held a Prehearing Conference in Ramona, California. During this period the Commission continued to receive protests and ultimately more than a dozen were filed.¹⁴ A

¹⁴ The following persons and entities filed protests to the 2005 Application, the 2006 Application, or both: California State Parks Foundation (State Parks Foundation);

A.06-08-010 COM/MP1/tcg

Scoping Memo issued after the Prehearing Conference, as required by statute.¹⁵ The Scoping Memo established the scope of this proceeding and the schedule, coordinating the CPCN review with the timeline for the concurrent, parallel track CEQA/NEPA review. The Scoping Memo also designated ALJ Steven Weissman as the presiding officer and set two hearing phases, focusing Phase 1 on all issues that could be examined prior to issuance of the Draft EIR/EIS, and Phase 2 on issues tied to the Draft EIR/EIS. In Section 2.2 below, we discuss the Scoping Memo in greater detail. On October 2, 2006, SDG&E supplemented the 2006 Application to include and rank four alternative routings which, unlike its initial route, would not pass through Anza-Borrego. On January 19, 2007, SDG&E filed corrections to certain cost/benefit assumptions in the 2006 Application.

The NEPA and CEQA scoping processes commenced, respectively, on August 31, 2006 with BLM's publication in the Federal Register of a Notice of Intent to prepare an EIS; and on September 15, 2006 with the issuance by Commission Energy Division staff of a Notice of Preparation of an EIR. BLM and Commission staff, together with their environmental consultants, jointly held seven public scoping meetings in October 2006. By November 2006, the Commission had received over 300 comments on the Notice of Preparation from

Carmel Country Highland Owners; the Cities of Hemet, Murrieta and Temecula; Community Alliance for Sensible Energy; the Center for Biological Diversity and the Sierra Club, San Diego Chapter (Conservation Groups); Division of Ratepayer Advocates (DRA); Imperial Irrigation District; Mussey Grade Road Alliance (Mussey Grade); Nevada Hydro Company (Nevada Hydro); Ramona Alliance Against Sunrise Powerlink; Ratepayers For Affordable Clean Energy Coalition; Starlight Mountain Estates Owners; West Chase Homeowners Association; and Utility Consumers' Action Network (UCAN).

¹⁵ *Assigned Commissioner and Administrative Law Judge's Scoping Memo and Ruling (Scoping Memo)*, November 1, 2006.

A.06-08-010 COM/MP1/tcg

public, private, and tribal agencies and from members of the public. In February 2007, following preliminary identification of the alternatives to analyze in the EIR/EIS, BLM and Commission staff, and their consultants, held eight more public scoping meetings to gain further input. The subsequent CEQA/NEPA review proceeded with additional public notice and input at milestone intervals, consistent with those environmental laws.

Though we originally expected to release the Draft EIR/EIS on August 3, 2007, issuance of the document was delayed by five months when, in the course of Phase 1 hearings, SDG&E disclosed new information critical to the Commission's environmental review.¹⁶ The Commission and BLM released the Draft EIR/EIR on January 4, 2008. Between January 28 and February 1, 2008, BLM and Commission staff, and their consultants, held a series of nine workshops to present the Draft EIR/EIS to the public, to explain the ensuing public review process, and to accept written comments brought to the workshops. In late February 2008, the ALJ and the assigned Commissioner held five Public Participation Hearings where they took both written and oral statements. On July 11, 2008, the lead agencies released a Recirculated Draft EIR/Supplemental Draft EIS for additional public comment. After considering all additional comments, the lead agencies released the Final EIR/EIS on October 14, 2008.

Review of this application has included four Prehearing Conferences held over the course of this consolidated proceeding, several workshops, public input at Public Participation Hearings in Borrego Springs (three times, including one session attended by four commissioners and another attended by three), Ramona

¹⁶ *Assigned Commissioner's Ruling Addressing Newly Disclosed Environmental Information*, July 24, 2007.

A.06-08-010 COM/MP1/tcg

(three times, including comments received at two Prehearing Conferences), San Diego, Julian and Pine Valley, and 37 days of evidentiary hearings, approximately half in San Diego and half in San Francisco. Assigned Commissioner Dian M. Grueneich attended every Prehearing Conference and Public Participation Hearing. We received a round of Opening and Reply Briefs following Phase 1 hearings and a second round after Phase 2.¹⁷ Shortly thereafter, a Revised Scoping Memo directed CAISO to do additional modeling runs needed to complete the record and provide them as Exhibit Compliance -1 (Compliance Exhibit), authorized parties to file a round of comments, and addressed other outstanding matters.¹⁸

¹⁷ The following parties filed briefs: (1) Phase 1 Opening Briefs (on or about November 9, 2007): Cabrillo Power I LLC (Cabrillo Power), California Independent System Operator (CAISO); Conservation Groups, California Department of Parks and Recreation (State Parks), California Farm Bureau Foundation (Farm Bureau), DRA, Imperial Irrigation District, Mussey Grade, Nevada Hydro, Rancho Peñasquitos Concerned Citizens (Rancho Peñasquitos), SDG&E, South Bay Replacement Project (South Bay), and UCAN; (2) Phase 1 Reply Briefs (on or about November 30, 2007): CAISO; Conservation Groups, DRA, Imperial Irrigation District, Mussey Grade, Nevada Hydro, Rancho Peñasquitos, SDG&E, South Bay, State Parks and UCAN; (3) Phase 2 Opening Briefs (on or about May 30, 2008): CAISO, City of Santee, Conservation Groups, DRA, Farm Bureau, Imperial Irrigation District, Jacqueline Ayer, Mussey Grade, Nevada Hydro, Powers Engineering, Rancho Peñasquitos, SDG&E, South Bay, State Parks, and UCAN; (4) Phase 2 Reply Briefs (on or about June 13, 2008): CAISO; City of Santee; Conservation Groups, DRA; Farm Bureau, Imperial Irrigation District, Jacqueline Ayer, Mussey Grade; Nevada Hydro; Rancho Peñasquitos; SDG&E; State Parks, and UCAN.

¹⁸ *Revised Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge (Revised Scoping Memo), June 20, 2008.* A subsequent ruling revised the dates for comment. *Administrative Law Judge's Ruling Memorializing Dates for Comments on Exhibit Compliance-1, August 28, 2008.* The following parties filed comments/briefs: (1) Opening (on September 5, 2008): CAISO, DRA, Nevada Hydro, Rancho Peñasquitos, SDG&E, and UCAN; and (2) Reply (on September 10, 2008): CAISO, DRA, Jacqueline Ayer, and SDG&E.

A.06-08-010 COM/MP1/tcg

This abbreviated procedural history does not include the many discovery conferences and modeling workshops held in connection with our review of Sunrise. These were necessitated by the complexity of the issues before us, the number of parties, and in particular, by the importance of detailed computer modeling in analyzing SDG&E's effort to demonstrate the need for the Proposed Project, especially in comparison to the other alternatives.

2.2. Scoping Memo

As required by §1701.1, the Scoping Memo articulated the scope for this proceeding, established the preliminary schedule, and addressed various other procedural issues, such as discovery and the service of prepared testimony and pleadings.

The Scoping Memo identified the scope of this application as including "the proposed project using SDG&E's preferred route and configuration, alternative routes and configurations, the no project alternative, and non-wires alternatives." It also articulated the legal framework for review, including these over-arching elements: assessment of "need for and cost-effectiveness of the project" under § 1001, consideration of the four factors listed in § 1002(a) -- community values, recreational and park areas, historical and aesthetic values, and influence on the environment, the environmental analysis required by CEQA, and compliance with other law discussed in Section 4 and elsewhere in this decision. Finally, the Scoping Memo provided specific direction to the parties regarding additional modeling and related activities.

The Revised Scoping Memo, which issued after the Phase 2 hearings, acknowledged the need to recirculate the Draft EIR/EIS, set out the basic modeling assumptions to be used by CAISO in the preparation of the Compliance Exhibit, and adjusted the schedule of the proceeding accordingly.

A.06-08-010 COM/MP1/tcg

3. Project Objectives and Description

3.1. Project Objectives

SDG&E's PEA states that Sunrise was designed to address eight objectives.¹⁹ Under CEQA and NEPA, lead agencies must identify the project objectives to be considered for CEQA/NEPA purposes, and those objectives may or may not mirror an applicant's suggestion. After thorough consideration, Commission and BLM staff distilled SDG&E's eight PEA objectives to three Basic Project Objectives which we have used in our review of Sunrise:

- **Basic Project Objective 1:** to maintain reliability in the delivery of power to the San Diego region;

¹⁹ Section 3.1 of SDG&E's PEA sets forth the eight objectives, which we paraphrase as follows:

- 1) Ensure that SDG&E's transmission system satisfies reliability criteria.
- 2) Provide transmission facilities with a voltage level and transfer capability that (a) allows for prudent system expandability to meet both anticipated short-term (2010) and long-term (2015 and beyond) load growth and (b) supports regional expansion of the electric grid.
- 3) Provide transmission capability for Imperial Valley renewable resources for SDG&E customers to assist in meeting or exceeding California's 20% renewable energy source mandate by 2010 and the Governor's proposed goal of 33% by 2020.
- 4) Reduce the above-market costs associated with maintaining reliability in the San Diego area while mitigating the potential exercise of local market power, particularly the costs associated with older generators such as the South Bay and Encina Power Plants.
- 5) Improve regional transmission system infrastructure.
- 6) Obtain electricity generated by diverse fuel sources and decrease the dependence on increasingly scarce and costly natural gas.
- 7) Avoid, to the extent feasible, the taking and relocation of homes, businesses or industries, in the siting of the transmission line, substation and associated facilities.
- 8) Minimize the need for new or expanded transmission line right-of-way.

A.06-08-010 COM/MP1/tcg

- **Basic Project Objective 2:** to reduce the cost of energy in the region; and
- **Basic Project Objective 3:** to accommodate the delivery of renewable energy to meet state and federal renewable energy goals from geothermal and solar resources in the Imperial Valley and wind and other sources in San Diego County.²⁰

3.2. Description of the Northern Routes

SDG&E's Proposed Project and its subsequent routing variations through Anza-Borrego have become known during the course of this proceeding as the "Northern Route Alternatives" or "Northern Routes"; today's decision uses these terms, or as appropriate, "Northern Route."

3.2.1. The Proposed Project

The Proposed Project consists of a 150-mile transmission line between Southern California's Imperial and San Diego counties.²¹ The major project components comprise:

- A new 91-mile, single-circuit 500 kV overhead electric transmission line linking SDG&E's existing Imperial Valley Substation (in Imperial County near the City of El Centro) with a new 500/230 kV Central East Substation to be constructed in the San Felipe area of central San Diego County, southwest of the intersection of County Highway S22 and S2;
- A new 59-mile 230 kV double-circuit and single-circuit transmission line, running partly overhead and partly underground through San Diego County from the proposed new 500/230 kV Central East Substation to SDG&E's existing Peñasquitos Substation (in the City of San Diego); and
- Other upgrades, in particular the addition of a 230 kV shunt capacitor at SDG&E's San Luis Rey Substation, the addition of a

²⁰ Draft EIR/EIS, ES-3.2.

²¹ See Draft EIR/EIS, Sec. B.2 and B.3 for a more complete description of the Proposed Project.

A.06-08-010 COM/MP1/tcg

69 kV shunt capacitor at SDG&E's South Bay Substation, and replacement of the conductors on an existing 8.2 mile, 69 kV transmission line that runs from SDG&E's existing Sycamore Canyon Substation to its existing Elliott Substation.

The project's two transmission components (the 91-mile 500 kV component and the 59-mile double and single circuit 230 kV components) consist of five separate segments or "links":

- The Imperial Valley Link - 60.9 miles of 500 kV line from Imperial Valley Substation (west of El Centro) to the eastern boundary of Anza-Borrego;
- The Anza-Borrego Link - 22.6 miles of 500 kV line entirely within the boundaries of Anza-Borrego;
- The Central Link (Central San Diego County) - 27.3 miles (7.4 miles of 500 kV line; 19.9 miles of 230 kV line) in the communities of Ranchita and San Felipe;
- The Inland Valley Link (West-Central San Diego County) - 25.5 miles of 230 kV through the communities of Santa Ysabel and Ramona, and through Marine Corps Air Station Miramar; and
- The Coastal Link (Western San Diego County) - 13.6 miles of 230 kV line with new towers in communities of Rancho Peñasquitos and Torrey Hill (City of San Diego).

The Proposed Project also requires the relocation of several segments of existing transmission lines, as follows:

- Move nine miles of an existing 69 kV transmission line to parallel the proposed new 230 kV line at a point between the junction of State Route 76 and State Route 79, near the existing Santa Ysabel Substation; and
- Move existing 69 kV and 92 kV transmission lines located between the eastern boundary of Anza-Borrego and a point near the proposed new Central East Substation by undergrounding portions in the adjacent State Route

A.06-08-010 COM/MP1/tcg

78 roadway and placing portions on the new 500 kV towers sited within Anza-Borrego.

3.2.2. SDG&E's "Enhanced" Northern Route

In response to concerns and suggestions raised by agencies and landowners, SDG&E proposed, after the Phase 1 hearings, an "Enhanced" Northern Route, a 148.6 mile long transmission line that follows the same general corridor as the Proposed Project, with certain modifications.²² The major changes include:

- Modification of the Anza-Borrego Link's footprint by limiting the 500 kV line to the existing right-of-way for the existing wood pole line in Anza-Borrego, in an attempt to avoid the need to obtain new right-of-way within the Park or de-designate state wilderness; and
- A few minor segment alternatives and/or modified reroutes through portions of the Proposed Project's Imperial Valley and Inland Valley Links.

3.2.3. The Final Environmentally Superior Northern Route

The EIR/EIS evaluated and compared various routing alternatives that reduce the environmental impacts of the Proposed Project's route, including the "Enhanced" Northern Route, to identify the least environmentally damaging Northern Route. The Final Environmentally Superior Northern Route, 140.8 miles long, is a combination of segment alternatives and reroutes that "replace" corresponding sections of the Proposed Project. The Final Environmentally Superior Northern Route is almost identical to the Draft Environmentally Superior Northern Route, but was modified to include reroutes suggested by SDG&E that would reduce further the route's environmental

²² For a more detailed description, see Recirculated Draft EIR/Supplemental Draft EIS, Sec. 5.3.1.

A.06-08-010 COM/MP1/tcg

impacts, as analyzed in the Recirculated Draft EIR/Supplemental Draft EIS. The major differences between the Final Environmentally Superior Northern Route and the Proposed Project include:

- Relocation of the 230/500 kV substation east of Anza-Borrego;
- Installation of a double-circuit bundled 230 kV line through Anza-Borrego (the All Underground Option);²³ and
- Construction of the Santa Ysabel All Underground Alternative in the Santa Ysabel Valley.

The EIR/EIS describes the Final Environmentally Superior Northern Route in more detail.²⁴

4. Standard of Review and Governing Law

4.1. Burden of Proof

As the Applicant, SDG&E must demonstrate a need for the Commission to issue the CPCN.²⁵ The utility “has the burden of affirmatively establishing the reasonableness of all aspects of its application. Intervenors do not have the burden of proving the unreasonableness of [the utility’s] showing.”²⁶

Evidence Code §115 defines burden of proof as follows:

“Burden of proof” means the obligation of a party to establish by evidence a requisite degree of belief concerning a fact in the mind of the trier of fact... The burden of proof may require a party to

²³ The 230 kV transmission line between the San Felipe Substation and the connection to the Proposed Project would be installed underground in State Route 78 and County Highway S2.

²⁴ Draft EIR/EIS, Sec. H.

²⁵ *Investigation into Methodology for Economic Assessment of Transmission Projects*, D.06-11-018, 22 [“The Commission has long held that the applicant carries the burden of proof in a certification proceeding, and we reiterate those determinations today.”].

²⁶ *Southern California Edison Test Year 2006 General Rate Application*, D.06-05-016, 7.

A.06-08-010 COM/MP1/tcg

raise a reasonable doubt concerning the existence or nonexistence of a fact or that he establish the existence or nonexistence of a fact by a preponderance of the evidence, by clear and convincing evidence, or by proof beyond a reasonable doubt.

Except as otherwise provided by law, the burden of proof requires proof by a preponderance of the evidence.

SDG&E argues that the preponderance of the evidence standard should be applied here. Citing D.07-04-049, SDG&E states that the Commission has applied the higher, clear and convincing standard only in general rate cases and reasonableness reviews, and has expressly rejected its use for other purposes.²⁷ DRA, UCAN, and others point to several rate case decisions and reasonableness review decisions to support their contention that clear and convincing evidence is the correct standard of review for Sunrise.²⁸ No party refers to a decision on a prior transmission line CPCN.

²⁷ *Southern California Edison's Application for Approval of Summer 2007 New Generation RFOs and Cost Recovery*, D.07-04-049. The decision, which modified D.07-01-041 and denied rehearing, among other things determines that the preponderance of the evidence standard applies to review of the contract at issue, whereby Long Beach Generation will repower 260 megawatts of peaking capacity at Long Beach and make this capacity available to Edison for ten years.

²⁸ The parties' citations include: *Pacific Gas & Electric Co. Energy Cost Adjustment Clause Application*, D.82486, 701 (1980) 4 CPUC2d 693; D.00-02-046, *Southern California Edison General Rate Case*, D.83-05-036, (1983) 11 CPUC2d 474, 475. Our own research indicates that the Commission first appeared to require clear and convincing evidence in D.44923, where in the course of its review of a motion to dismiss a telephone utility's application for a rate increase, the Commission stated:

We must keep in mind that this is not an adversary proceeding in the sense that, as in an ordinary civil case, only a *prima facie* case must be shown. This is a legislative proceed in which the burden of proof rests most heavily upon applicant to prove by clear and convincing evidence that the present rates of which it complains work a confiscation of its property. [Citations omitted.] (*Pacific Telephone & Telegraph Co Rate Application*, D.44923, (1950) 50 CPUC 247, 248.)

A.06-08-010 COM/MP1/tcg

Witkin's explanation of these two standards is instructive. Preponderance of the evidence usually is defined "in terms of probability of truth, e.g., 'such evidence as, when weighed with that opposed to it, has more convincing force and the greater probability of truth.'"²⁹ Clear and convincing evidence "has been defined as 'clear, explicit and unequivocal,' and 'so clear as to leave no substantial doubt,' and 'sufficiently strong to command the unhesitating assent of every reasonable mind.'"³⁰

The preponderance of the evidence is generally the default standard in civil and administrative law cases and we apply that standard in this decision.³¹

4.2. Section 1001 et seq.

Section 1001 et seq. establishes the framework for our review of Sunrise and we focus, here, on the two basic components of that framework, §§ 1001 and 1002(a). Before we can authorize a CPCN for the Proposed Project or an alternative, § 1001 mandates that we find that the "present or future public convenience and necessity require or will require its construction." In reaching that ultimate determination, § 1002(a) mandates that we consider four factors: community values; recreational and park areas; historical and aesthetic values; and influence on the environment. The Commission has concluded that § 1002 imposes a "responsibility *independent of CEQA* to include environmental influences and community values in our consideration of a request for a

However, it is unclear from the discussion in D.44923 whether the Commission used the words "clear and convincing" in a lay sense only, or whether it was adopting a specific legal standard.

²⁹ Witkin, Calif. Evidence, 4th Edition, Vol. 1, 184.

³⁰ Witkin, Calif. Evidence, 4th Edition, Vol. 1, 187.

³¹ California Administrative Hearing Practice, 2d Edition (2005), 365.

A.06-08-010 COM/MP1/tcg

CPCN."³² The Commission has determined that the fourth factor – consideration of a project’s “influence on the environment” – is appropriately addressed through the CEQA process.³³ Given the terrain through which the Proposed Project and transmission line alternatives would pass, the Sunrise EIR/EIS necessarily addresses not only environmental impacts, but also impacts on recreational and park values, and on historic and aesthetic values. We review this comprehensive record, and the record on these issues developed in Phase 2 hearings, in Sections 13, 14, 15 of this decision. The extensive record on community values implications has been developed by the parties and through public input and we review this part of the record in Sections 13-15, and in Section 16.

4.3. Rebuttable Presumption of Economic Need

The Commission’s *Economic Methodology Decision*³⁴ adopted principles and minimum requirements to be followed in modeling the economic benefits generated by a proposed transmission line. The *Economic Methodology Decision* creates a rebuttable presumption in favor of an economic evaluation approved by CAISO’s Board of Directors, provided the economic evaluation meets the decision’s principles and minimum requirements and CAISO complies with specific procedural safeguards. Those safeguards are intended to ensure, among other things, that CAISO provided an opportunity for public comment on its

³² *Application of Southern California Edison for CPCN for Kramer-Victor Transmission Line*, (1990) 37 CPUC2d 413, 453.

³³ *Application of Lodi Gas Storage for CPCN for Gas Storage Facilities*, D.00-05-048, 28 [“[T]he appropriate place for the parties to address [the issue of a project’s influence on the environment] was in the EIR, so that the parties would not duplicate their efforts in both portions of the proceeding.”].

³⁴ *Economic Methodology Decision*, D.06-11-018.

A.06-08-010 COM/MP1/tcg

economic evaluation and substantively considered any public comment in the evaluation presented to its Board. The *Economic Methodology Decision* expressly restricts application of the rebuttable presumption to future proceedings unless the economic analysis at issue “complies with the safeguards and requirements of this decision and the assigned commissioner of a pending transmission proceeding issues a ruling that explicitly elects to apply it to that application.”³⁵

CAISO and SDG&E argue that this rebuttable presumption should apply to CAISO’s economic evaluation of the Proposed Project. We disagree. At the time the *Economic Methodology Decision* issued, SDG&E’s 2005 Application had been pending for almost one year. Likewise, CAISO’s Board already had approved CAISO’s economic evaluation of the Proposed Project, which had been presented to the Board as part of CAISO’s South Regional Transmission Plan. Furthermore, the assigned Commissioner for Sunrise never issued a ruling that elected to apply the rebuttable presumption to either the 2005 Application or the subsequent 2006 Application. CAISO acknowledges that no party ever moved for a ruling and no such ruling ever issued. However, CAISO characterizes the absence of a ruling as a “lack of technical compliance with the precepts” of the *Economic Methodology Decision*.³⁶ We do not agree.

The *Economic Methodology Decision* was issued to ensure that parties know early in a pending proceeding what evidentiary burden will bear in challenging a CAISO economic analysis. The Assigned Commissioner’s ruling required by the decision serves an important substantive purpose and is not a procedural technicality.

³⁵ D.06-11-018, 26.

³⁶ CAISO Phase 1 Opening Brief, 19.

A.06-08-010 COM/MP1/tcg

In addition, in the CPCN review at the Commission CAISO has not relied upon the economic evaluation presented to its Board. Instead, CAISO presented an entirely new economic analysis, which it developed during Phase 1 and 2 hearings, largely in response to comments from the parties. Thus, the CAISO Board-approved economic evaluation has become irrelevant.³⁷

To the extent SDG&E and CAISO argue that a rebuttable presumption should be granted CAISO' subsequent economic evaluation (the one developed during our CPCN review), we decline to do so for at least three reasons. First, the *Economic Methodology Decision* adopted the rebuttable presumption to "streamline" the CPCN portion of a proceeding by having an economic evaluation that reflects a significant amount of public review and input presented at the beginning of a proceeding.³⁸ The economic evaluation CAISO developed during the course of our Sunrise CPCN review, while helpful to the record and informed by public input, does not fulfill this streamlining purpose. Second, though CAISO's economic evaluation is extensive, it does not comply with CAISO's own Transmission Economic Assessment Methodology (TEAM)³⁹ for economic evaluations, nor does it comply with the principles and minimum

³⁷ Moreover, the CAISO Board-approved economic evaluation does not comply with the principles and minimum requirements of the *Economic Methodology Decision*, nor does it comply with the express procedural safeguards that decision requires before a rebuttable presumption can apply.

³⁸ See, e.g., *Economic Methodology Decision*, 3 [a rebuttable presumption is granted provided "the CAISO Board-approved evaluation is submitted to the Commission within sufficient time to be included within the scope of the proceeding."].

³⁹ TEAM is CAISO's proposed methodology for quantifying the economic benefits of transmission projects. CAISO considers five aspects of this methodology, which it terms key principles, to be necessary to any economic evaluation of a proposed transmission project." One of these five key principles is an uncertainty analysis. The *Economic Methodology Decision* describes CAISO's TEAM methodology in more detail. See *Economic Methodology Decision*, 10-11.

A.06-08-010 COM/MP1/tcg

requirements set forth in the *Economic Methodology Decision*. Third, granting a rebuttable presumption at this stage would be fundamentally unfair to the other parties, who have already developed their showing with the understanding that the rebuttable presumption does not apply to Sunrise.

5. SDG&E's Electric System

It is important to understand the structure of SDG&E's electric system to understand the potential role Sunrise⁴⁰ may play in that system.

SDG&E's service area covers all of San Diego County and some of Southern Orange County. SDG&E serves its customer demand through a combination of in area generation resources and imported capacity delivered from the east and south through the Imperial Valley and San Miguel (Miguel) Substations and delivered from the north through the San Onofre Nuclear Generating Station (SONGS) switchyard. We first discuss SDG&E's transmission and generation resources, including future generation resources that may be added to SDG&E's system. We then discuss the reliability criteria that establish SDG&E's Local Capacity Requirements, and how these criteria determine the generation and transmission resources SDG&E needs to operate its system. We then describe the future transmission plans of SDG&E's eastern neighbor, the Imperial Irrigation District, including the proposed Green Path project.

⁴⁰ Though as a general rule throughout this decision we use "Sunrise" as defined in the EIR/EIS to refer to the Proposed Project and all of its alternatives, including both transmission and generation alternatives, for purposes of the discussion in Sections 5 through 14, however, we follow the convention followed by parties in the CPCN portion of this proceeding and use "Sunrise" to mean the Proposed Project and all of the Northern and Southern Route Alternatives considered in the EIR/EIS. In other words, in Sections 5-14, we use "Sunrise" to mean all transmission alternatives except the LEAPS Transmission-Only Alternative (which is included in the LEAPS Transmission Plus Generation Alternative).

A.06-08-010 COM/MP1/tcg

5.1. SDG&E's Transmission Resources

SDG&E's service area has three high voltage transmission connections with other service areas: Path 44 to the San Luis Rey and Talega Substations, the Imperial Valley Substation linking to the Southwest Powerlink and other lines, and the Miguel Substation, linking to the Tijuana Substation in Baja, Mexico.

Path 44, running north and south between the SDG&E and Edison service areas, consists of five 230 kV lines, two from SONGS to SDG&E's Talega Substation, and three from SONGS to SDG&E's San Luis Rey Substation. The rating for Path 44, which has not been updated since 2001, is 2,500 MW.⁴¹

The Imperial Valley Substation connects SDG&E's system to the Imperial Irrigation District, Baja California in Mexico, and points east. SDG&E's Southwest Powerlink transmission line, which is SDG&E's only 500 kV transmission line, connects SDG&E's system to Arizona. It runs from SDG&E's Miguel Substation in the west of its service area to the Imperial Valley Substation at the eastern edge of SDG&E's service area, and then to the Palo-Verde transmission hub in Arizona. Transmission lines also run from the Imperial Valley Substation to:

- The Imperial Irrigation District system via a 230 kV transmission line that runs north from the Imperial Valley Substation to El Centro;
- The La Rosita Substation in Baja, Mexico via a 230 kV line that runs south from the Imperial Valley Substation; and
- Three gas fired generators totaling 1,070 MW of capacity in Baja, Mexico. The 600 MW *Termoelectrica de Mexicali* plant is owned by an affiliate of SDG&E; the 160 MW *Ciclo Combinado Mexicali* plant and the 310 MW *Central La Rosita* plant are owned by affiliates of Intergen.

⁴¹ UCAN Phase 1 Opening Brief, 78.

A.06-08-010 COM/MP1/tcg

SDG&E also connects to the *Comision Federal de Electricidad* (Mexican Electricity Commission) system via a 230 kV transmission line from the Miguel Substation to the Tijuana Substation in Baja, Mexico.

5.2. SDG&E's Generation Resources

Existing generation resources in San Diego's service area include:

- The Palomar Energy Facility - 541.5 MW⁴² connected at 230 kV;
- The Encina Power Plant - 960 MW connected at 138 and 230 kV;
- The South Bay Power Plant - 702 MW connected at 69 and 138 kV;
- A number of combustion turbines, qualifying facilities and small renewable generators totaling 728 MW and connected at lower voltages;
- A 50 MW (nameplate) wind generation facility connected at 69 kV; and
- A 4.5 MW contract with the San Diego County Water Authority for power from the Rancho Peñasquitos Hydro Facility.

5.3. Future Generation Additions

The existing South Bay Power Plant and part of the Encina Power Plant are likely to retire at some point in the next decade. As a result, several future generation additions are planned for SDG&E's service area.

⁴² Unless otherwise stated, capacities are Net Qualifying Capacity as set forth in CAISO's Compliance Exhibit. CAISO determines Net Qualifying Capacity to establish how much a generator will count towards meeting peak demand in the Local Reliability Area where it is located. CAISO defines Net Qualifying Capacity as the capacity of a generator under summer peak load conditions. CAISO measures Net Qualifying Capacity at the generator's terminal.

A.06-08-010 COM/MP1/tcg

SDG&E has signed Power Purchase Agreements for the following future resource additions to serve its bundled customer load:

- The 561 MW Otoy Mesa Generating Project in the southern portion of SDG&E's service area projected to be online in 2009;
- Contracts with the 94 MW Pala Peaker under development by J Power at SDG&E's Pala Substation and the 44 MW Margarita Peaker under development by Wellhead Power at SDG&E's Margarita Substation, both projected to be online before 2010;
- The 40 MW Lake Hodges Pumped Storage Project projected to be online by 2010;
- The 20 MW Bull Moose Biomass Facility projected to be online by 2010; and
- A 20 MW increase in capacity at the existing Palomar Energy Facility due to the installation of air inlet coolers by 2010.

SDG&E also has contracts with several demand response suppliers, including:

- An 8 MW contract with Envirepel at Ramona; and
- A 20 MW contract with EnerNOC.⁴³

SDG&E has also announced Power Purchase Agreements with projects in the Imperial Valley including:

- A three phase contract for 900 MW of solar thermal generation with Stirling Energy Systems;⁴⁴

⁴³ SDG&E also has a signed contract for an additional 30 MW with EnerNOC that was submitted to the Commission for approval via an Advice Letter. The Commission rejected the Advice Letter because the authority sought requires CPCN review. SDG&E has not yet submitted the CPCN application.

⁴⁴ SDG&E characterizes the Sterling Solar contract as a 300 MW contract, plus a 300 MW option, plus the equivalent of a 300 MW right of first refusal. Tr. November 13, 2009 All Party Meeting, 36.

A.06-08-010 COM/MP1/tcg

- One 20 MW contract and another 40 MW contract with Esmeralda for geothermal generation; and
- Two 49.5 MW contracts with Bethel solar thermal generation.

There are also three combined cycle generation facilities proposed for construction in SDG&E's service area. They are in varying stages of development, and are described in more detail in Section 6.7 below:

- The South Bay Replacement Project - 620 MW (nameplate capacity);
- The San Diego Community Power Project (also known as the ENPEX project) - 750 MW (nameplate capacity); and
- The Encina Power Plant Repowering (also known as the Carlsbad Energy Center) - 540 MW (nameplate capacity).

Additionally, SDG&E issued 2006 and 2007 Requests for Offers for peaking and baseload resources to come online in 2008 and 2010-2012 respectively (2006 and 2007 Peaker RFOs). These solicitations resulted in SDG&E's signed contracts for the Pala and Margarita Peakers, totaling 138 MW (as mentioned above).

There is evidence that SDG&E continues to negotiate with some of the bidders in those solicitations and that additional generation resources may be available in SDG&E's service area after 2010. These projects include:

- A 49 MW contract with the Miramar II Peaker, which was submitted to this Commission for approval on June 16, 2008;⁴⁵
- A 15 MW diesel fired peaking plant in Borrego Springs; and
- The repowering of the MMC Generation Facility located in Chula Vista and currently in permitting at the Energy Commission. The repowering would replace an existing 44.5 MW gas fired peaking plant with a nominal 100 MW gas fired peaking plant.

⁴⁵ A.08-06-017. We do not prejudge the outcome of other pending applications in this decision.

A.06-08-010 COM/MP1/tcg

Finally, the Commission has approved the installation of a significant amount of new solar photovoltaic (PV) capacity in SDG&E's service area pursuant to the California Solar Initiative. SDG&E and others have provided a range of the firm capacity associated with this new resource, from 70 MW⁴⁶ to 150 MW⁴⁷ or more.⁴⁸ In addition, SDG&E has an application pending before this Commission to build, own, and operate an additional 35 MW (alternating current) of solar PV in its service area.⁴⁹

5.4. Local Capacity Requirement

SDG&E's Local Capacity Requirement – both now and in the future – is a critical factor in determining whether Sunrise or other generation or transmission resources are needed to meet reliability criteria. Pursuant to reliability criteria established by the North American Electric Reliability Corporation (NERC), SDG&E must have enough local generation resources to reliably serve all load in its Local Reliability Area⁵⁰ after the loss of the largest generating unit in its service area followed by the loss of its most critical transmission line (the “G-1/N-1” criteria). The G-1/N-1 criteria determine SDG&E's “Local Capacity Requirement” since the Local Capacity Requirement is the amount of local generation that SDG&E must have to continue operating reliably after a G-1/N-1 event.

⁴⁶ See note 125, below.

⁴⁷ SDG&E Exhibit SD-26, Exhibit A, 15.

⁴⁸ UCAN Phase 1 Opening Brief, 173.

⁴⁹ A.08-07-017.

⁵⁰ SDG&E's Local Reliability Area is currently the same geographic region as SDG&E's service area.

A.06-08-010 COM/MP1/tcg

Today, the worst G-1/N-1 event for the San Diego area would be the overlapping outage of the SDG&E-owned Palomar power plant (G-1) plus loss of the Imperial Valley – Miguel 500 kV segment of Southwest Powerlink (N-1).⁵¹ This G-1/N-1 event will change when a generator with a greater capacity than Palomar is installed in the SDG&E Local Reliability Area (for example, Otay Mesa) or if a new transmission line interconnects into the SDG&E Local Reliability Area and the loss of that line results in a greater reduction in import capacity than the loss of the Imperial Valley – Miguel segment of the Southwest Powerlink. Additionally, CAISO constantly reevaluates the Local Capacity Requirement and may modify it due to many factors, including changes in the regional transmission grid, or changes in the amount of generation available in SDG&E's Local Reliability Area.

5.5. Upgrades Planned for Neighboring Transmission Systems

5.5.1. Imperial Irrigation District Transmission Upgrades

Imperial Irrigation District claims to have several transmission projects underway that will either complement a Southern Route Alternative⁵² to Sunrise or will provide the ability to deliver renewable (and non-renewable) energy from the Imperial Valley to CAISO customers. In addition to the Green Path project described below, Imperial Irrigation District is developing the following projects:

- The Coachella Valley-Devers 2 project, which will carry up to 1,600 MW via either a double-circuit 230 kV or single-circuit 500 kV line from the Imperial Irrigation District's Coachella Valley Substation to the proposed Devers 2 Substation, thus

⁵¹ SDG&E Phase 1 Opening Brief, 83.

⁵² We describe the Southern Route Alternatives in Section 15.7.

A.06-08-010 COM/MP1/tcg

connecting to the Los Angeles Department of Water and Power and CAISO control areas;⁵³

- The new 230 kV Midway-Bannister line which will allow 1,200 MW of renewable energy to flow from Imperial Irrigation District to Edison or SDG&E;⁵⁴
- The new 230 kV Dixieland-Imperial Valley line, which will increase export capability from the Imperial Irrigation District to SDG&E by 400 MW;⁵⁵ and
- A re-rating of and upgrades to Path 42, which interconnects the Imperial Irrigation District and Edison systems. Imperial Irrigation District is increasing the rating of Path 42 from 600 MW to 800 MW in order to increase the amount of resources that will flow to the CAISO grid through Edison's system. This change in rating will not require any transmission upgrades.⁵⁶ In addition to the re-rating, CAISO assumes that additional upgrades will occur on Path 42 to increase its transfer capability to 1,200 MW.⁵⁷

Imperial Irrigation District also has plans to expand its system to the east to connect to the Arizona Public Service grid and the Southwest Powerlink via a project known as the Highline-Knob-North Gila transmission line.⁵⁸

5.5.2. Green Path

Green Path is a very large transmission project sponsored by the Los Angeles Department of Water and Power, the Imperial Irrigation District, and possibly Citizens Energy.⁵⁹ Green Path is proposed to interconnect the Imperial

⁵³ Imperial Irrigation District Exhibit ID-3, 8.

⁵⁴ Imperial Irrigation District Exhibit ID-3, 4-5.

⁵⁵ Imperial Irrigation District Exhibit ID-3, 4-6.

⁵⁶ Imperial Irrigation District Phase 2 Opening Brief, 21.

⁵⁷ The Compliance Exhibit makes this assumption.

⁵⁸ UCAN Phase 2 Opening Brief, 39.

⁵⁹ RT 5571.

A.06-08-010 COM/MP1/tcg

Irrigation District grid with the CAISO and Los Angeles Department of Water and Power grids, thereby allowing, among other things, transmission of Imperial Valley renewables to load centers in Southern California.⁶⁰

Green Path consists of two major transmission components. The southern component, which we refer to as Green Path South, consists of a transmission path connecting Imperial Irrigation District's existing Coachella Valley Substation to Edison's existing Devers Substation, passing through Imperial Irrigation District's proposed Indian Hills Substation and Edison's proposed Devers 2 Substation.⁶¹ Green Path South would not directly interconnect with the SDG&E system. The northern component of Green Path would continue north and then west from the new Devers 2 Substation, up to Los Angeles Department of Water and Power's service area.⁶²

CAISO assumes that Green Path, in conjunction with the proposed Talega/Escondido - Valley/Serrano transmission line (TE/VS),⁶³ would allow

⁶⁰ RT 2661-2662.

⁶¹ The southern component of Green Path consists of: (1) a new 500 kV Devers 2 Substation; (2) one or two new one-mile 500 kV lines connecting the new Devers 2 Substation to the existing Devers Substation (which would be the point of interconnection between Green Path and the CAISO grid); (3) a new 30-mile 500 or 230 kV transmission line from a new Imperial Irrigation District Indian Hills Substation to the new Devers 2 Substation; and (4) a new 230 kV line from the new Imperial Irrigation District Indian Hills Substation to its existing Coachella Valley Substation.

⁶² The northern component of Green Path consists of: (1) a new 500 kV Hesperia Substation; (2) a new, 85-mile, 500 kV transmission line from the Devers 2 Substation to the Hesperia Substation; and (3) a new 5-mile 287 kV tap line from the Hesperia Substation to the existing Victorville - Century line, which would create a Century - Hesperia 287 kV line. The Hesperia - Victorville portion, approximately 17 miles long, would be upgraded to 500 kV.

⁶³ TE/VS is described in more detail in note 234, below, and in the text accompanying that note.

A.06-08-010 COM/MP1/tcg

delivery within the CAISO system of up to 2,000 MW of renewable resources from the Imperial Valley and points east or south.⁶⁴

6. Modeling Assumptions for the Analytical Baseline

As we discuss in Section 4.2, before granting a CPCN for Sunrise, we must find it is needed within the context of § 1001. SDG&E claims that Sunrise is needed to provide the following benefits to its ratepayers:

- Access to low cost out-of-state power;
- Enhanced reliability; and
- Access to low cost renewable resources.

These three benefits mirror the three Basic Project Objectives identified for use in our environmental analysis of Sunrise. The CPCN portion of this proceeding has, to a great extent, been devoted to quantifying these three benefits to determine whether the Proposed Project can meet these goals more economically than other alternatives.

We model SDG&E's three benefits as follows:

- Access to low cost out-of-state power = energy benefits generated by energy cost savings;
- Enhanced reliability = reliability benefits generated by reducing Local Capacity Requirements; and
- Access to low cost renewable resources = potential savings from accessing least cost renewable resource areas.⁶⁵

The assumptions underlying the modeling have significant impacts on the projected benefits generated by the models. For example, a typographical error by SDG&E regarding future gas prices produced estimated energy benefits of

⁶⁴ CAISO Phase 1 Opening Brief, 30.

⁶⁵ There are a number of qualitative benefits that cannot be quantified at all, and we address those benefits in Section 9.3.4, below.

A.06-08-010 COM/MP1/tcg

\$468 million per year – nearly five times its previous estimates, and more than twice the next highest estimate SDG&E used in this proceeding.⁶⁶

Consequently, the debates over modeling have focused on the parties' assumptions underlying their modeling – the Analytical Baseline from which their modeling starts. Section 6 explores those Analytical Baseline disputes and adopts the Analytical Baseline assumptions we rely upon to determine the energy benefits, reliability benefits, and potential savings from accessing least cost renewable resources for the various Sunrise alternatives.

Section 7 explains what the Analytical Baseline assumptions tell us about the reliability need or “shortfalls” predicted for SDG&E's service area, when they will be, and how large they will be.⁶⁷

Following the discussion of reliability need in Section 7, we address the parties' efforts to model energy benefits (Section 8), reliability benefits (Section 9), potential savings from accessing least cost renewable resources for the Sunrise alternatives (Section 10), and the net benefits they project for the Sunrise alternatives (Section 11). Net benefits are calculated by adding together energy benefits, reliability benefits, and potential renewable resource cost savings and then subtracting the projected cost of the project. In each of these sections, we identify our conclusions on the major areas in dispute.

After considering the net benefits, we examine in Section 11.3 the net benefit results from CAISO's Compliance Exhibit - modeling performed by

⁶⁶ See discussion in Section 8.3, below.

⁶⁷ It is important to note that the baseline assumptions are based on reasonably foreseeable future events occurring. However, we remain cognizant that actual resources will be developed pursuant to the applicable statutes and policies, and therefore the model is not dictating a particular outcome. Actual resource development will significantly impact future reliability “shortfalls.”

A.06-08-010 COM/MP1/tcg

CAISO at the end of the proceeding using many of our Analytical Baseline assumptions. In Section 11.4, we “update” the Compliance Exhibit (Update) to estimate net benefits for the Proposed Project and its alternatives based on our adopted Analytical Baseline assumptions. Based on this Update, and the net benefits it projects, we summarize our conclusions about the benefits of the transmission and generation alternatives, and consequently the need for Sunrise.

6.1. Summary of Adopted Analytical Baseline Assumptions

We adopt CAISO’s modeling approach to quantifying energy and reliability benefits, and potential savings from accessing least cost renewable resources, but we deviate from CAISO’s final Phase 2 modeling assumptions in the following ways:⁶⁸

- We rely on the Energy Commission staff’s November 2007 Forecast of 1-in-10 peak demand (Section 6.2), including its embedded assumptions for the California Solar Initiative (Section 6.3), energy efficiency (Section 6.4), and other distributed generation (Section 6.5);
- We adjust the November 2007 Forecast by including the demand response savings we have approved in SDG&E’s most recent Long Term Procurement Plan (Section 6.6);
- We assume that the existing South Bay Power Plant will retire by December 31, 2012 or the end of the year in which Sunrise comes online, whichever is earlier (Section 6.7.1);
- We assume 540 MW from the Carlsbad Energy Center will come online in the summer of 2013, resulting in a net increase of 222 MW (Section 6.7.3);
- We assume only 25% of the new coal fired generation identified in the SSG-WI database⁶⁹ will come online and that

⁶⁸ Table B-1 in Appendix B sets forth all of the assumptions modeled in the CAISO Compliance Exhibit.

⁶⁹ See note 177 below.

A.06-08-010 COM/MP1/tcg

gas fired combined cycle resources will be used to replace the canceled coal plants (Section 6.8);

- We assume that at least 50% of the out-of-state renewables identified by CAISO for its renewable savings modeling will be available to California (Section 6.11);
- We adopt CAISO's initial renewable cost estimates (Section 6.13);
- We assume the implementation of UCAN's Miguel Import Limit Upgrade (Section 6.14.2);
- We assume Imperial Irrigation District's Path 42 increased rating and upgrades (reflecting a transfer capability of 1,200 MW) and its Dixieland-Imperial Valley line (Section 6.14.5);
- We assume Rancho Peñasquitos' proposed Coastal Link Alternative (Section 6.14.7); and
- We assume SDG&E's estimated capital costs for all of the Sunrise alternatives, and SDG&E's 58-year amortization period for the Sunrise transmission alternatives (Section 6.17).

These assumptions, in conjunction with CAISO's other modeling assumptions, form our Analytical Baseline for estimating the energy benefits, reliability benefits, and potential savings from accessing least cost renewable resources for all of the Sunrise alternatives.

6.2. Assumptions Regarding the Proper Peak Demand Forecast

6.2.1. Parties' Positions

Parties have proposed a variety of different approaches to determining the peak demand forecast for use in the Analytical Baseline. Most parties, including SDG&E, UCAN, and DRA, started with some iteration of the Energy Commission's 1-in-10 peak demand forecast from the 2006 Integrated Energy Policy Report (2006 Forecast). During the course of the proceeding, the Energy Commission staff updated its 1-in-10 peak demand forecast several times. Some

A.06-08-010 COM/MP1/tcg

parties adjusted their peak demand forecasts to more or less track the Energy Commission changes. The 2006 Forecast, and those afterward, include the impact of expected savings from energy efficiency and distributed generation (including the California Solar Initiative), but do not include savings projected from demand response, including savings expected from the installation of advanced metering infrastructure (AMI).

SDG&E originally relied upon the 2006 Forecast.⁷⁰ SDG&E amended its Analytical Baseline in Phase 1 to address, in part, the Energy Commission staff's May 2007 update.⁷¹

CAISO began with the Energy Commission staff's May 2007 forecast,⁷² but it did not use the Energy Commission staff projections of peak demand in future years. Instead, it took the 1-in-10 peak demand forecasted by the Energy Commission for 2008 and then escalated it by 1.7% per year to generate the peak demand forecast for future years. CAISO used this escalation rate because it was equal to the historic growth in peak demand from 2006-2008. However, 1.7% is not the long term rate used to generate future peak demand in either the May or November 2007 forecasts.⁷³ CAISO relied on its own future forecasts, and made no revisions to its escalation rates, for the duration of the proceeding. CAISO claims it evaluated the impact of correcting its escalation rates to be consistent with the November 2007 Forecast, and determined that the impact was not

⁷⁰ SDG&E Exhibit SD-26.

⁷¹ SDG&E Phase 1 Opening Brief, 64.

⁷² CAISO Phase 1 Opening Brief, 21, referring to Energy Commission, "Staff Forecast of 2008 Peak Demand," report Energy Commission-200-2007-006, May 2007.

⁷³ See, e.g., California Energy Demand 2008-2018, Staff Revised Forecast, California Energy Commission-200-2007-015-SF2, November 2007, 144 (November 2007 Forecast).

A.06-08-010 COM/MP1/tcg

significant.⁷⁴ Though CAISO refers to this evaluation in its Phase 2 Opening Brief, CAISO never offered the evaluation in evidence and the evaluation is not part of the record of this proceeding.⁷⁵

UCAN began with the 2006 Forecast, but made a number of adjustments in projected demand-side reductions to reflect what it characterized as more recent updates.⁷⁶ At the end of Phase 1, UCAN recommended using the Energy Commission staff's October 2007 forecast, with adjustments to supply discussed below.⁷⁷

In Phase 2, all of the parties except CAISO used the November 2007 Forecast as the basis of their peak demand forecasts in their Analytical Baselines. As stated above, CAISO continued to rely upon its initial demand forecast throughout the proceeding.

6.2.2. Discussion

The Scoping Memo ordered parties to use, to the degree possible, "the most recent Commission-adopted assumptions, goals, policies and levels of effort in its base case forecasts of loads and resources."⁷⁸ The *Economic Methodology Decision* sets forth this requirement also.⁷⁹ The Commission's December 2007 decision in the Long Term Procurement Plan proceeding (*LTPP Decision*) uses the Energy Commission's November 2007 Forecast.⁸⁰ While the

⁷⁴ RT 5540-5541.

⁷⁵ CAISO Phase 2 Opening Brief, 10; RT 5418.

⁷⁶ UCAN Phase 1 Opening Brief, 9.

⁷⁷ UCAN Motion Requesting the Commission Take Official Notice of Regulatory Filings, November 9, 2007.

⁷⁸ *Scoping Memo*, 13.

⁷⁹ *Economic Methodology Decision*, Attachment A, 5-6.

⁸⁰ *LTPP Decision*, D.07-12-052, 39.

A.06-08-010 COM/MP1/tcg

LTPP Decision relies on a 1-in-2 peak demand forecast for determining procurement authorization, the November 2007 Forecast also includes a 1-in-10 peak demand forecast. For consistency with the *LTPP Decision*, we adopt the November 2007 Forecast of 1-in-10 peak demand.

6.3. California Solar Initiative Adjustments to the Peak Demand Forecast

6.3.1. Parties' Positions

In Phase 1, SDG&E's projected load reduction associated with the California Solar Initiative increased from 2 MW in 2008 to 150 MW in 2015. This assumption is consistent with SDG&E's 2006 Long Term Procurement Plan application.⁸¹ SDG&E characterized its assumptions regarding the penetration rate of solar PV as well as the coincidence factor (i.e., that the solar PV systems will generate at 50% of their installed capacity during peak hours) as "extremely aggressive."⁸² In Phase 2, SDG&E lowered its projections, consistent with the November 2007 Forecast, to 13 MW in 2010 and 30 MW by 2015.⁸³

CAISO assumes California Solar Initiative impacts consistent with SDG&E's Phase 1 and Phase 2 estimates. UCAN claims that SDG&E stopped increasing the impacts of the program after 2015 and that SDG&E could achieve an additional 60 MW of solar PV capacity by 2017.⁸⁴

In Phase 2, Powers Engineering presented an alternative to Sunrise based entirely on solar PV, other forms of distributed generation, and energy efficiency. This alternative is described in the Powers Engineering report, "San Diego Smart

⁸¹ SDG&E Compliance Filing in R.06-02-013, "2007-2016 Long Term Procurement Plan," (December 11, 2006).

⁸² SDG&E Phase 1 Opening Brief, 47.

⁸³ SDG&E Phase 2 Reply Brief, 240-41.

⁸⁴ UCAN Phase 1 Opening Brief, 14.

A.06-08-010 COM/MP1/tcg

Energy 2020 – The 21st Century Alternative” (Smart Energy Report).⁸⁵ The Smart Energy Report proposes the “San Diego Solar Initiative” to install 2,040 MW (nameplate, alternating current) of rooftop solar PV, with an emphasis on large commercial installations, coupled with battery storage to allow full use of this capacity during peak demand periods.⁸⁶ This proposal anticipates financing through \$1.5 billion of ratepayer funded incentive programs.⁸⁷ Under the proposal, solar PV and other renewable distributed generation would provide half of the San Diego County energy demand that Powers Engineering projects for 2020.⁸⁸

SDG&E opposes the Powers Engineering proposal because none of its thousands of megawatts are identified as under construction, sited, or even proposed by developers.⁸⁹ SDG&E further questions the accuracy of the Powers Engineering cost-effectiveness claims, cost assumptions, program penetration assumptions, and the technical feasibility of the battery backup systems proposed to meet the utility’s peak demands.⁹⁰

6.3.2. Discussion

The November 2007 Forecast includes an adjustment to peak demand to reflect Energy Commission staff estimates of the effects of the California Solar Initiative programs.⁹¹ However, these estimates differ significantly from those

⁸⁵ RT 3403.

⁸⁶ Powers Engineering Exhibit Powers-1, Attachment B, 3.

⁸⁷ Powers Engineering Exhibit Powers-2, 3. Powers Engineering also proposes a scaled-down Solar Initiative of 920 MW of solar PV at a projected cost of \$700 million.

⁸⁸ Powers Engineering Exhibit Powers-2, 3.

⁸⁹ SDG&E Phase 2 Opening Brief, 237.

⁹⁰ SDG&E Phase 2 Opening Brief, 237-8.

⁹¹ SDG&E Phase 2 Opening Brief, 136.

A.06-08-010 COM/MP1/tcg

initially assumed by SDG&E and other parties in this proceeding. For example, parties generally assumed in Phase 1 that the California Solar Initiative would reduce peak demand by approximately 150 MW by 2015, while the November 2007 Forecast assumes that it will reduce peak demand in 2015 by only 30 MW.⁹² For consistency with the *LTPP* Decision, we adopt these determinations of the November 2007 Forecast for purposes of the Analytical Baseline. However, we revisit the import of the California Solar Initiative, and its impacts on the need for Sunrise, in Section 11.3, below.

6.4. Energy Efficiency Adjustments to the Peak Demand Forecast

6.4.1. Parties' Positions

The 2006 and 2007 Energy Commission forecasts include energy efficiency assessments. However, UCAN asserts that the forecasts do not reflect all feasible energy efficiency improvements. Thus, UCAN makes a number of adjustments to the 2006 and 2007 Forecasts, pointing to more recent Energy Commission forecasts projecting higher levels of energy efficiency impacts in SDG&E's territory.⁹³ UCAN recommends adjusting the November 2007 Forecast to reflect post-2008 energy efficiency impacts of 0 MW in 2009, 26 MW in 2010, and

⁹² SDG&E implies that its Phase 2 California Solar Initiative levels are too low and should be at least 70 MW, rather than the 33 MW that the November 2007 Forecast assumes for 2016 and that it uses in this proceeding. SDG&E claims that the Commission has allocated California Solar Initiative funds such that SDG&E will receive enough funding to acquire 180.3 MW (nameplate). See D.06-12-033, Appendix B, Table 11. SDG&E claims that the firm peak delivery from those solar PV units will be 39% of nameplate. See SDG&E Exhibit SD-27, 6, e.g., 180.3 MW * 39% = 70 MW. This is significantly greater than 33 MW. See SDG&E Phase 1 Opening Brief, 47-48.

⁹³ UCAN Phase 1 Opening Brief, 43; see also UCAN Phase 2 Opening Brief, 60-61.

A.06-08-010 COM/MP1/tcg

115 MW in 2016.⁹⁴ UCAN also points to approximately 102 MW of additional energy efficiency attributable to new building standards that will materialize over a 10-year period, at about 10 MW a year.⁹⁵

Powers Engineering recommends reducing SDG&E's forecasted energy usage by 20% relative to a 2003 baseline through energy efficiency measures.⁹⁶ SDG&E challenges this proposal, claiming that Powers Engineering fails to identify any energy efficiency measures incremental to that already assumed by SDG&E and the Energy Commission.⁹⁷ SDG&E claims that the cost-effectiveness of the one specific measure Powers Engineering identified, the installation of high-efficiency air conditioners, is highly questionable due to the conflation of incremental and replacement costs.⁹⁸

6.4.2. Discussion

We decline to adopt the energy efficiency assumption changes proposed by UCAN and Powers Engineering. For consistency, we adopt the approach followed in the *LTPP Decision*, which assumes the level of energy efficiency already embedded in the November 2007 Forecast.⁹⁹

⁹⁴ UCAN Phase 2 Opening Brief, 60.

⁹⁵ UCAN Exhibit 10, 23-24.

⁹⁶ Powers Engineering Exhibit Powers-1, 5.

⁹⁷ SDG&E Phase 2 Opening Brief, 238.

⁹⁸ SDG&E Phase 2 Opening Brief, 238.

⁹⁹ LTPP Decision, 53.

A.06-08-010 COM/MP1/tcg

6.5. Distributed Generation Adjustments to the Peak Demand Forecast

6.5.1. Parties' Positions

The 2006 and 2007 Energy Commission forecasts take projected distributed generation into account. Nevertheless, UCAN points to SDG&E's "Utility of the Future" proposal and claims that SDG&E asserts that this program might induce 48-159 MW of additional distributed generation.¹⁰⁰ Powers Engineering suggests an additional 700 MW of "clean" distributed generation from combined heat and power sources.¹⁰¹

6.5.2. Discussion

The November 2007 Forecast includes adjustments for the effects of the distributed generation and we accept those adjustments here to be consistent with the *LTPP Decision*, which also defers to the November 2007 Forecast.¹⁰²

6.6. Demand Response Adjustments to the Peak Demand Forecast

6.6.1. Parties' Positions

The 2006 and 2007 Energy Commission forecasts do not take into account projected impacts of demand response, including those expected from the installation of AMI.¹⁰³ Thus, parties attempted to quantify those impacts in this

¹⁰⁰ UCAN Phase 1 Opening Brief, 45.

¹⁰¹ Powers Engineering Exhibit Powers-2, 5. This combined heat and power generation is proposed to replace the in-area combined cycle plant in the All-Source Generation Alternative discussed in Section 15.4.

¹⁰² *LTPP Decision*, 29.

¹⁰³ Demand response is a resource that allows end-use electric customers to reduce their electricity usage in a given time period, or shift that usage to another time period, in response to a price signal, a financial incentive, an environmental condition, or a reliability signal. The Commission has concluded that one of the benefits of AMI will be increased use of demand response.

A.06-08-010 COM/MP1/tcg

proceeding. Parties' positions on both of these issues changed multiple times during the proceeding, and the amount of demand response to include in the final Analytical Baseline was under debate through the last days of record development.

SDG&E and CAISO's original Analytical Baselines contained no demand response.¹⁰⁴ However, over time both CAISO and SDG&E agreed to include some demand response to meet Local Capacity Requirements, and to thus make demand response adjustments to the peak demand forecast. SDG&E eventually adjusted its peak demand forecast in its Analytical Baseline to account for 29 MW of demand response; CAISO adjusted its Analytical Baseline to account for 59 MW of demand response, which consisted of three contracts: Celerity (20 MW), Converge (9 MW), and EnerNOC (20 MW). DRA and UCAN recommended that the Analytical Baseline include CAISO's projected demand response, plus an additional 30 MW contract with EnerNOC that SDG&E has signed.¹⁰⁵ SDG&E and CAISO point out that this Commission did not approve the contract when SDG&E submitted it as an Advice Letter. UCAN and DRA respond that the Commission did not rule on the merits of the contract, but rather rejected the Advice Letter as an improper vehicle for review of the contract. The Commission invited SDG&E to file an application for CPCN review, but SDG&E has not yet done so.¹⁰⁶

UCAN continues to assert that SDG&E's Analytical Baseline does not properly account for committed demand response savings. With respect to

¹⁰⁴ See SDG&E Exhibit SD-5, Vol. 2, Part 1, Chap. 2, page II-29; CAISO Exhibit I-1, Exhibit A, 3.

¹⁰⁵ UCAN Phase 2 Opening Brief, 5; see also DRA Phase 1 Opening Brief, 9.

¹⁰⁶ RT 4852-4853.

A.06-08-010 COM/MP1/tcg

demand response not related to AMI, in addition to the 30 MW EnerNOC contract starting in 2008, UCAN asserts SDG&E's Analytical Baseline is still missing 4 MW starting in 2010.¹⁰⁷

It has been difficult to determine how much demand response associated with AMI should be included in the Analytical Baseline. SDG&E initially assumed the same estimates contained in its AMI application approved by this Commission.¹⁰⁸ DRA assumed the same amounts. CAISO claims to have accounted for the impacts of SDG&E's AMI program, although CAISO's reported values were 72 MW less in 2010 than those reported by SDG&E, and approximately 26 MW less in 2011 through 2020.

UCAN adds an incremental 77 and 96 MW in 2010 and 2020, respectively, to SDG&E's AMI estimates, contending that SDG&E included these amounts in its Test Year 2008 General Rate Case.¹⁰⁹ SDG&E argues that UCAN's proposal is unreasonable since our final decision in that proceeding adopts a lower number.¹¹⁰

Later in Phase 1, SDG&E reduced its AMI estimates to 82 MW in 2010 and 232 MW in 2020, claiming that the Commission settlement in its General Rate Case will result in lower AMI savings than SDG&E projected.¹¹¹

¹⁰⁷ UCAN Phase 1 Opening Brief, 44.

¹⁰⁸ SDG&E Phase 1 Opening Brief, 51.

¹⁰⁹ UCAN Phase 1 Opening Brief, 44-45.

¹¹⁰ SDG&E Phase 1 Reply Brief, 12. UCAN Exhibit U-66 is SDG&E's testimony in its 2008 Phase 2 General Rate Case (A.07-01-047). The AMI projections eventually adopted in D.08-02-034 (the Commission's decision on Phase 2 of SDG&E's General Rate Case) were lower than those shown in UCAN Exhibit U-66, which imply lower levels of AMI impacts. See *Motion for Adoption of All Party and All Issue Settlement*, A.07-01-047, November 1, 2007, Attachment 1, 7.

¹¹¹ SDG&E Phase 1 Opening Brief, 50-51, referring to D.07-04-043.

A.06-08-010 COM/MP1/tcg

Powers Engineering recommends reducing electric demand by 1,136 MW relative to the 2007 peak demand, in part through demand response programs, including AMI.¹¹² With respect to demand response, Powers Engineering suggests that 231 MW of peak demand can be met by demand response.¹¹³ It is not clear if this value is incremental to, or duplicative of, SDG&E's 279 MW (in 2020) AMI reductions.

6.6.2. Discussion

The parties differ significantly regarding their projections of future demand response, including impacts associated with AMI. The levels of demand response assumed by SDG&E in this proceeding do not reflect the current state of its demand response programs. For consistency with determinations made pursuant to the Long Term Procurement Plan proceeding, we adopt the demand response savings projected in SDG&E's most recent Long Term Procurement Plan, which also accounts for AMI and other price-sensitive demand response.¹¹⁴ Table B-2 in Appendix B presents SDG&E's approved demand response impacts relative to the November 2007 Forecast.

6.7. Assumptions Regarding In-Area Fossil Resources

While parties initially disagreed over which in-area fossil resources to include in the Analytical Baseline, their proposals merged substantially over time. Table 1 sets forth the parties' final positions on which in-area fossil resources should be included in the Analytical Baseline:

¹¹² Powers Engineering Exhibit Powers-1, Attachment B, 3.

¹¹³ Powers Engineering Exhibit Powers-1, Attachment B, 73.

¹¹⁴ Approved in Resolution E-4189 (September 4, 2008).

A.06-08-010 COM/MP1/tcg

Table 1: Parties' Positions Regarding In-Area Fossil Resources

Party	Retirement Date	Projected On Line Date - if applicable					
	Existing South Bay Power Plant	Otay Mesa - 561 MW	Pala and Margarita Peakers - 138 MW ¹¹⁵	Other Peakers	Carlsbad Energy Center - 540 MW ¹¹⁶	Palomar Air Inlet Coolers	Other Resources
SDG&E ¹¹⁷	End of 2009	2009	2010	N/A	N/A	N/A	N/A
CAISO ¹¹⁸	2010	2009	Before 2010	N/A	N/A	2010	N/A
UCAN ¹¹⁹	N/A	2009	Before 2010	46 MW for 2012 and beyond	By end of 2012	Before 2010	49 MW from MMC - in permitting
DRA ¹²⁰	No position	2009	Before 2010	N/A	N/A	N/A	N/A
South Bay ¹²¹	After Feb 2010	N/A	N/A	N/A	N/A	N/A	N/A
Adopted Baseline ¹²²	No later than end of 2012	Before 2011	Before 2011	N/A	Before Summer 2013	Before 2011	N/A

Parties generally agree on the amount of capacity provided by the existing generating units within SDG&E's service area. CAISO's capacity values differ slightly from those presented by others because it uses its established Net Qualifying Capacity values in its analysis, while others use dependable summer capacity. We adopt CAISO's Net Qualifying Capacity values for existing

¹¹⁵ See note 164, below.

¹¹⁶ This project consists of nameplate capacity of 540 MW, but given the repowering nature of the project, it results in a net increase of 222 MW to SDG&E's service territory.

¹¹⁷ SDG&E Exhibit SD-16, 21; SDG&E noted that the South Bay retirement would likely be contingent on Sunrise coming online. SDG&E Exhibit SD-7C, page II 13, note 18.

¹¹⁸ CAISO Exhibit I-6, 31, Table 5.

¹¹⁹ UCAN Phase 1 Reply Brief, 16; UCAN Phase 1 Opening Brief, Table 1; UCAN Phase 1 Opening Brief, Table 1.

¹²⁰ DRA Phase 2 Opening Brief, 27; DRA Exhibit D-66, Vol. 1, 3, Table ES-1.

¹²¹ South Bay Phase 2 Opening Brief, 5.

¹²² Compliance Exhibit, SDG&E LnR Table (Updated aug26cdr v3 E3.xls).

A.06-08-010 COM/MP1/tcg

generation because CAISO is the organization responsible for assessing Local Capacity Requirements. We assume the same level of in-area fossil generation assumed by CAISO, as set forth in our description of SDG&E's system in Section 5.

Remaining disagreements focus on parties' projections of which plants will retire when, and what will replace them. We focus in the next three Sections on the most significant resources in question, and make findings and conclusions to arrive at our Analytical Baseline assumptions. We do not prejudge any pending application that may be addressing any specific resource discussed here.

6.7.1. The Existing South Bay Power Plant

The existing South Bay Power Plant is a 702 MW combined cycle facility located in the City of Chula Vista.¹²³ Parties disagree over what date to assume this plant will retire. Some units of the existing plant operate under Reliability Must Run (Must Run) contracts with CASIO and those units cannot retire until the CAISO releases them from their Must Run obligations.

The South Bay Replacement Project would replace the existing plant with a 620 MW facility located on a much smaller portion of the same site. Chula Vista officials oppose replacing the existing plant in its current location given interest in developing the existing plant's bay property. LS Power, the replacement project's developer, withdrew its Energy Commission Application for Certification for the repower in the face of this opposition and because it failed to obtain a Power Purchase Agreement from SDG&E for the replacement project. It is unclear if, or when development efforts will resume.

¹²³ The South Bay Power Plant consists of five units: four dual-fuel steam units (Units 1-4) and one combustion turbine (Unit 5). The five units of the existing South Bay Power Plant were installed between 1960 and 1971.

A.06-08-010 COM/MP1/tcg

6.7.1.1. Parties' Positions

SDG&E and CAISO assume in Phase 1 that the existing South Bay Power Plant will retire before 2010. DRA disagrees, but does not offer an alternative date for its retirement.

South Bay points out that the existing South Bay Power Plant will not retire until three months after the last of three events occur: (1) the last day of the primary term of the lease (November 1, 2009); (2) certain bonds are paid off and retired; and (3) CAISO terminates and does not subsequently reinstate the Must Run status of the plant.¹²⁴ The key factor, according to South Bay, is CAISO's termination of the plant's Must Run status. South Bay argues that given the plant's size and strategic location within the San Diego load pocket, additional resources beyond those assumed in SDG&E's Analytical Baseline would be needed before CAISO would terminate the Must Run status of the plant. Thus, South Bay claims that one cannot assume that CAISO will allow the existing South Bay Power Plant to retire before the replacement resources are operational, and thus CAISO and SDG&E assumptions of a retirement before 2010 are unrealistic.

CAISO's position regarding the conditions under which it will release the existing South Bay Power Plant from its Must Run status have varied throughout the proceeding. However, CAISO has always been clear that the existing South Bay Power Plant cannot retire until CAISO releases it from these obligations.¹²⁵

Initially, CAISO appeared to take the position that the existing South Bay Power Plant could retire upon operation of Sunrise. However, a letter from

¹²⁴ South Bay Phase 1 Opening Brief, 19.

¹²⁵ RT 1834.

A.06-08-010 COM/MP1/tcg

CAISO to Chula Vista¹²⁶ describes that at least two of three sets of facilities are required to be online prior to a retirement of the existing South Bay Power Plant: the Otay Mesa Generating Facility, the Pala and Margarita Peak, or Sunrise.

CAISO addressed additional conditions to the existing South Bay Power Plant's retirement in a CAISO study regarding the need for ocean-cooled power plants (like the existing South Bay Power Plant) to maintain reliability and integrate renewable resources.¹²⁷ In that study, CAISO implied that the existing South Bay Power Plant would not be able to retire until 900 MW came online from the Stirling Solar Project, or some similar project in the Imperial Valley.

CAISO also states that it will be "critically important" to maintain existing generating capacity to accommodate renewable resources that will come under the state's RPS program.¹²⁸

6.7.1.2. Discussion

There is no question that the South Bay Power Plant is an old power plant and that it is critical to SDG&E's current reliability needs. We are not convinced, given the ages of the various units and the costs to replace them, that the existing South Bay Power Plant is viable as a long term resource. No party presented any engineering evidence that the existing South Bay Power Plant could continue to operate for an extended period. However, SDG&E and CAISO will rely on the existing South Bay Power Plant in the short term if Sunrise is not online by 2010 and there is insufficient alternative in-area generation to meet reliability needs.¹²⁹ SDG&E admits that keeping the existing South Bay Power Plant in operation is

¹²⁶ DRA Exhibit D-102, Attachment I.

¹²⁷ CAISO Exhibit I-11.

¹²⁸ CAISO Exhibit I-10, 14.

¹²⁹ RT 1832-1835.

A.06-08-010 COM/MP1/tcg

probably the most reasonable option if Sunrise is delayed.¹³⁰ Thus, we conclude that it is highly likely that at least some units of the existing South Bay Power Plant will be kept online until Sunrise is in service or sufficient new in-area generation is built. Consequently, for our Analytical Baseline, we assume that the existing South Bay Power Plant will retire December 31, 2012 or the end of the year in which Sunrise comes online, whichever is earlier. While we believe this is a safe assumption for modeling purposes, we are cognizant that continuing to operate South Bay, with its continued reliance on its once through cooling system, runs counter to several state environmental policy objectives.

6.7.2. Peakers

6.7.2.1. Parties' Positions

CAISO, UCAN, and DRA all believe that the Pala and Margarita Peakers resulting from SDG&E's 2006 solicitation will come online before 2010.¹³¹ UCAN proposes that we include an additional 46 MW of peaking capacity in the Analytical Baseline after 2010. In support, it identifies three potential plants to come online before 2012, including the 49 MW expansion of the MMC Power Plant in Chula Vista, which is in permitting before the Energy Commission,¹³²

¹³⁰ RT 1764; see also SDG&E Exhibit SD-26, 56.

¹³¹ On September 20, 2008, CAISO issued an updated Local Capacity Requirements analysis stating that the Lake Hodges, Otay Mesa, and Pala and Margarita Peakers projects are being removed from the 2009 Local Capacity Requirements study "because of information provided by developers indicating that the 'in-service date' for these projects has been delayed beyond summer of 2009, making it [sic] ineligible for inclusion in the 2009 LCR Study." 2009 Local Capacity Technical Analysis - Report and Study Results Update for San Diego Area 1 (September 30, 2008). There is no indication that any of these projects will not be online before the end of 2010 in this report or in the record of this proceeding. This report is not part of the record in this proceeding.

¹³² The new MMC project is replacing an existing 45 MW peaking plant at the same site. The new facility has a nominal capacity of 100 MW. See: <http://www.energy.ca.gov/sitingcases/chulavista/index.html>.

A.06-08-010 COM/MP1/tcg

and two other peakers SDG&E is negotiating with as a result of its 2006 and 2007 RFOs – the Miramar II project and a new peaker in Borrego Springs. UCAN also claims that there are numerous other peaker projects being developed in SDG&E’s service area. For example, UCAN identifies 330 MW of new combustion turbine capacity seeking to interconnect at SDG&E’s Otay Mesa Substation.¹³³

6.7.2.2. Discussion

We agree it is reasonable to include the Pala and Margarita Peakers as available before 2011 in the Analytical Baseline, and we understand that the CAISO has made this adjustment to its own Analytical Baseline. Even if these projects are delayed, there is still enough time to construct these plants or their replacements.

We find it more reasonable to consider other potential future peaker capacity as an alternative to Sunrise, rather than as part of the Analytical Baseline, since SDG&E theoretically could avoid the need for additional peakers if Sunrise were constructed. Thus, we do not include UCAN’s other additional peaker capacity in the Analytical Baseline.

6.7.3. Other Fossil Resources

6.7.3.1. Parties’ Positions

All parties agree that the 561 MW Otay Mesa Generating Project in the southern portion of SDG&E’s service area should be included in the Analytical Baseline. It has a signed Power Purchase Agreement with SDG&E, is under construction, and is expected to be operational before 2011.

¹³³ See UCAN Phase 2 Opening Brief, 58.

A.06-08-010 COM/MP1/tcg

UCAN believes that we can expect the development of over 800 MW of new fossil fired plants in SDG&E's service area by 2016, and it identifies the following potential resources, in addition to the peakers discussed above:

- 222 MW of new net capacity in 2011 or 2012 from the Carlsbad Energy Center, currently in permitting at the Energy Commission;
- 565 MW from a new combined cycle plant interconnected in the Escondido area; and
- The planned addition of air inlet coolers at Palomar (20-24 MW).¹³⁴

Cabrillo, the operator of the existing Encina Power Plant and the developer of the Carlsbad Energy Center that would replace part of Encina, notes that the Carlsbad Energy Center has filed an Application for Certification with the Energy Commission¹³⁵ and expects it to be acted on by the end of 2008. The existing plant has a nominal rated capacity of 965 MW. The new Carlsbad Energy Center would replace the existing steam boilers at Encina Units 1-3 (318 MW) with a more efficient 540 MW combined-cycle power plant.¹³⁶ The repowering would result in a 222 MW net increase in capacity at the Encina site.

DRA asserts that it is unrealistic to assume that other existing in-area generation, in particular the Encina Power Plant, will remain in operation until 2020.¹³⁷ DRA notes that additional generation could be developed pursuant to offers currently pending before SDG&E in its 2007 request for offers (RFO), but it offers no assumptions to include in our Analytical Baseline.¹³⁸

¹³⁴ UCAN Phase 2 Opening Brief, 58.

¹³⁵ Docket 07-AFC-06.

¹³⁶ Cabrillo Phase 1 Opening Brief, 3.

¹³⁷ DRA Phase 1 Opening Brief, 17-19.

¹³⁸ DRA Phase 1 Opening Brief, 16.

A.06-08-010 COM/MP1/tcg

6.7.3.2. Discussion

CAISO includes the 561 MW Otay Mesa Generating Project and 20 MW from the Palomar air-inlet coolers in its updated Analytical Baseline, and we conclude that is appropriate to assume they will both be online before 2011 for our own Analytical Baseline.

Based upon the number of proposals for conventional fossil generation facilities in SDG&E's service area, and the advanced status of at least one of those proposals, we find it reasonable to expect that at least one other combined cycle unit, in addition to the Otay Mesa Generating Project, will come online in the next several years. We agree with UCAN that the Carlsbad Energy Center, in permitting at the Energy Commission, has a high likelihood of coming online by 2012 or 2013. For that reason, we assume a net increase of 222 MW before Summer 2013 as a result of including the Carlsbad Energy Center in the Analytical Baseline.

6.8. Assumptions Regarding Out-of-State Generation – Including Coal Plant Construction

An important assumption in the Analytical Baseline is the availability of out-of-state resources. If neighboring states in the Western Electricity Coordinating Council (WECC)¹³⁹ have more low cost resources than they can use, then Sunrise may increase the amount of imported generation from these resources to the CAISO control area, thus potentially lowering energy prices in

¹³⁹ WECC is the interconnected transmission region in which California's investor-owned utilities operate. It is comprised of the western states, Baja California, and parts of Canada. A transmission line added to the WECC grid will impact the dispatch of generation resources throughout WECC. Thus, we consider Sunrise's impact on that dispatch here.

A.06-08-010 COM/MP1/tcg

California. This is one component of the potential “energy” benefits generated by Sunrise.

A significant amount of the new import capability assumed for the future in WECC is coal fired generation. Thus, the Commission’s decision on how much we assume actually will be constructed is important, both because of the impact of that assumption on the magnitude of the energy benefits for Sunrise and because of our decision’s impacts on how we implement California’s GHG policies pursuant to AB 32,¹⁴⁰ SB 1368,¹⁴¹ and our own loading order.¹⁴²

6.8.1. Parties’ Positions

Parties disagree significantly over the availability and type of low cost power to assume in WECC. Specifically, many parties believe that SDG&E and CAISO overestimate the amount of new generation that will be constructed in WECC.¹⁴³

Both SDG&E and CAISO modeled energy dispatch behavior throughout WECC using SSG-WI data regarding the transmission, loads, and generation forecasted for WECC.¹⁴⁴ SDG&E modified the SSG-WI data in a number of ways. Most significantly, SDG&E replaced 1,300 MW of peakers assumed by SSG-WI to

¹⁴⁰ AB 32 (Stats. 2006, c 598), codified at Health & Saf. Code § 38500 et seq.

¹⁴¹ SB 1368 (Stats. 2006, c 488), codified at §§ 8340-8341.

¹⁴² Energy Action Plan 1, May 8, 2003, 4; Energy Action Plan II, September 21, 2005, 2.

¹⁴³ These parties argue that this overstatement results in an overstatement of the energy benefits the Sunrise transmission alternatives will generate by displacing in state generation with low cost imports.

¹⁴⁴ SSG-WI was a volunteer effort staffed by WECC participants which, among other things, facilitated transmission planning across the western interconnect. SSG-WI members assembled a database identifying existing and future loads and generation and transmission resources throughout WECC. Ultimately, the SSG-WI database was turned over to WECC and it is now managed and updated by WECC’s Transmission Expansion Planning and Policy Committee (TEPPC).

A.06-08-010 COM/MP1/tcg

come online in the area of the Palo Verde Substation with combined cycle facilities that would generate more low priced power than the peakers they replaced.¹⁴⁵

CAISO relied on SDG&E's modifications to the SSG-WI database in preparing its CAISO South Regional Transmission Plan¹⁴⁶ report for CAISO Board approval of Sunrise. However, after performing a "top-to-bottom" review of its CAISO South Regional Transmission Plan input assumptions early in this proceeding, CAISO elected not to retain most of SDG&E's changes to the SSG-WI data, including the replacement of the Palo Verde peakers with combined cycle facilities.¹⁴⁷

SDG&E's use of the modified SSG-WI database (including the peaker to combined cycle adjustment discussed above) assumes that 6,988 MW of thermal capacity (a mix of coal, oil, gas, and nuclear) will be added in Arizona and New Mexico by 2015, of which 3,697 MW (over 57%) will be coal. Over the same time frame, CAISO projects 6,532 MW of thermal capacity additions in Arizona and New Mexico, of which 3,308 MW will be coal. In total, the SDG&E and CAISO Analytical Baselines both project over 12,000 MW of new coal plant construction in WECC by 2015, with approximately 7,500 MW constructed in the Rockies (including Alberta), 700 MW in Nevada, and 500 MW in the Pacific Northwest.¹⁴⁸ This new coal fired generation would exert downward pressure on regional spot prices, which could benefit SDG&E and other California load serving entities.

¹⁴⁵ CAISO Exhibit I-1, Exhibit A, 7.

¹⁴⁶ 2006 Application, Volume 2 Part 2, Appendix I-1, 63, Table 6.16.

¹⁴⁷ RT 2591.

¹⁴⁸ CAISO Exhibit I-7.

A.06-08-010 COM/MP1/tcg

UCAN asserts that SDG&E assumes a “huge amount” of future overbuilding of coal and natural gas plants in Arizona and elsewhere, which Sunrise would supposedly import to California.¹⁴⁹ UCAN claims that only 400 MW of the 3,697 MW of coal plants included by SDG&E in Arizona and New Mexico (less than 11%) have been justified.¹⁵⁰ UCAN argues that using Sunrise to facilitate the delivery of coal fired resources to California conflicts with Commission policy discouraging reliance upon such fuels.¹⁵¹

SDG&E responds that state law only proscribes California load serving entities from entering into new long term contracts to purchase the output of high-GHG emitting sources, such as coal fired generation. SDG&E states that the law does not prevent load serving entities from “lowering their commodity costs by taking advantage of the lower spot market energy prices.”¹⁵²

UCAN also asserts that by assuming the construction of the combined cycle plants near Palo Verde Substation, plants which have not even been proposed, SDG&E unreasonably increases the projection of the amount of low cost generation in Arizona flowing to California over Sunrise.¹⁵³

DRA believes that SDG&E assumes an “unsupportable WECC capacity expansion plan” for its modeling, including projections of 12,000 MW of new coal plant capacity. DRA questions the accuracy of the SSG-WI database relied upon by SDG&E, and believes SDG&E should have verified the database resource expansion assumptions through: (1) review of existing studies that have

¹⁴⁹ UCAN Exhibit U-1, 6.

¹⁵⁰ UCAN Phase 1 Opening Brief, 197-198.

¹⁵¹ CAISO Exhibit I-4, 120.

¹⁵² SDG&E Exhibit SD-15, 29.

¹⁵³ UCAN Phase 1 Opening Brief, 195.

A.06-08-010 COM/MP1/tcg

used the SSG-WI database; (2) discussion with the analysts who put that database together; and (3) review of the “reasonableness” of the results.¹⁵⁴

SDG&E states that it conducted such reviews and discussions, and checked the reasonableness of its results.¹⁵⁵

DRA also argues that the SSG-WI database assumes unrealistic future planning margins, claiming that the developers of the SSG-WI database believe that the “[a]ggregate planning margin of 29% suggests we added too much generation... [The] [m]arket would not support/finance excessive generation capacity.”¹⁵⁶

SDG&E responds that it has conducted a detailed review of the resources in the current WECC database (which is based on the SSG-WI data) and has found that, in aggregate, WECC planning reserve margin in year 2015 is closer to 23% than the 29% claimed.¹⁵⁷ SDG&E says that even this calculation of the planning reserve margin is inflated due to the potential transmission constraints, rainfall variation, and weather conditions that may affect solar and wind resource output. On balance, SDG&E believes that more reasonable calculations produce a 20% planning reserve margin for 2015.¹⁵⁸

South Bay, like UCAN and DRA, is highly critical of SDG&E’s and CAISO’s assumed resource additions in WECC. South Bay assumes that only 400 MW of the 5,945 MW of new thermal generation expected to be built in

¹⁵⁴ DRA Exhibit D-56, 5.

¹⁵⁵ SDG&E Exhibit SD-15, 66.

¹⁵⁶ DRA Exhibit D-56, 6; see also CAISO Exhibit I-7, 35.

¹⁵⁷ SDG&E Exhibit SD-15, 59.

¹⁵⁸ SDG&E Exhibit SD-15, 60.

A.06-08-010 COM/MP1/tcg

Arizona and New Mexico by 2015 will be coal.¹⁵⁹ South Bay observes that assuming generation in excess of what reasonably would be in place serves to depress the prices of imported power, which increases the benefits of Sunrise. South Bay argues that the 2005 SSG-WI database forecasts about 17,000 MW more new generation than should reasonably be assumed to come online between 2006 and 2015.¹⁶⁰ In support, South Bay points to the anomalous results that occur when the SSG-WI database is run, including new plants that do not operate and market heat rates below 6,000 British thermal units (Btu) per kilowatt hour (kWh). South Bay also points to renunciations by the database's authors.¹⁶¹ Both DRA and UCAN agree with South Bay's assessment that the anomalous results generated by modeling with the SSG-WI database demonstrate that its future generation assumptions are flawed.¹⁶²

South Bay also argues that SDG&E's and CAISO's assumptions concerning new coal fired generation in the Southwest are flawed in four respects. First, South Bay states that concerns about global warming make it less likely that new conventional coal generation will be constructed. Second, South Bay asserts that new coal fired generation in the Southwest is unlikely to serve California load. Third, according to South Bay, the large planning reserve margin in the SSG-WI assumptions likely would not support coal investment. Fourth, South Bay suggests that the high coal generation assumptions depend on the completion of

¹⁵⁹ SDG&E Exhibit SD-31, 7.

¹⁶⁰ South Bay Phase 1 Opening Brief, 20.

¹⁶¹ South Bay Phase 1 Opening Brief, 21-22. South Bay's witness routinely tracks and forecasts planned resource additions throughout the West. His testimony in this case was based on these routine assessments rather than a special study for this proceeding. RT 1262-1263.

¹⁶² DRA Exhibit D-56, 6-8; see also, UCAN Exhibit U-1, 6; UCAN Exhibit U-4, 120.

A.06-08-010 COM/MP1/tcg

upgrades to transmission lines between northern Arizona and northwestern New Mexico that would facilitate the flow of power from the Four Corners region to California.¹⁶³

South Bay believes its assumption that only 400 MW of new coal generation will be constructed in the Southwest over the next eight years is more reasonable. South Bay points out that WECC's 2006 load and resources summary also projects only 400 MW of new coal added to WECC system by 2015.¹⁶⁴

South Bay also disputes the SDG&E assumption that numerous new combined cycle power plants will be built near the Palo Verde Substation, resulting in excess power that will be sold to California.¹⁶⁵ South Bay first argues that this assumption conflicts with economic reality and recent trends. Specifically, South Bay notes that load is growing rapidly in parts of the Southwest and that the load serving entities there are already securing available capacity. Second, South Bay states that new power plants are only being built in response to requests for offers from the load serving entities in the Southwest, not as merchant power plants. Third, according to South Bay, the Arizona Corporation Commission's recent rejection of the Devers-Palo Verde 2 project reveals a disinclination, at least among regulators, to approve facilities in the Southwest for the benefit of customers in California. Finally, South Bay claims

¹⁶³ South Bay Phase 1 Opening Brief, 25-26.

¹⁶⁴ South Bay Phase 1 Opening Brief, 27.

¹⁶⁵ Early in the proceeding CAISO agreed that SDG&E had added too many combined cycles at Palo Verde. We agree with CAISO's final Analytical Baseline assumptions regarding the amount of gas fired power to assume in the Palo Verde area by 2015.

A.06-08-010 COM/MP1/tcg

that investors currently are not showing an interest in developing merchant power plants in the Southwest in the hope of serving the California market.¹⁶⁶

Nevada Hydro concurs with South Bay and assumes 400 MW of new coal generation in its modeling.¹⁶⁷

SDG&E responds to the intervenors' claims on several points. First, SDG&E explains that CAISO assumed significant combined cycle additions in the Palo Verde area in its assessment of the Devers-Palo Verde 2 project. Second, SDG&E points to WECC's July 2006 10-year loads and resources plan projecting 5,070 MW of new generation in the Southwest, of which 4,171 MW is combined cycles and 19 MW is combustion turbines. Third, SDG&E identifies several proposed generation projects in Nevada projected to be online by 2010, including 5,756 MW of new coal fired generation.¹⁶⁸

CAISO does not address the accuracy of these assumptions. Instead, CAISO claims that assuming too much generation in WECC does not affect the magnitude of Sunrise's energy benefits, as excess generation impacts both the "with" and "without" Sunrise cases equally.¹⁶⁹ In summary, CAISO argues that if the types of power assumed are the same both in and out-of-state, excess power out-of-state will not impact the price of power in state. It states that "[t]he same SSG-WI resources are used in both the base case and its alternatives. The presence of alleged excess generation would not necessarily bias [CAISO's] analysis towards Sunrise."¹⁷⁰ CAISO argues that "[a]s long as the marginal

¹⁶⁶ South Bay Phase 1 Opening Brief, 23-24.

¹⁶⁷ SDG&E Exhibit SD-31, 7.

¹⁶⁸ SDG&E Exhibit SD-15, 4-5.

¹⁶⁹ CAISO Exhibit I-6, 12-13.

¹⁷⁰ CAISO Exhibit I-6, 12-13.

A.06-08-010 COM/MP1/tcg

generation units within and outside California are similar natural-gas-fired units and the locational natural gas price difference is small, the excess generation levels in the SSG-WI database should not have a material effect on CAISO's energy benefit estimate."¹⁷¹ CAISO asserts that all these criteria have been met, and thus the impact on its incremental analysis of excess capacity in the Southwest is small.

DRA, TURN, and South Bay all dispute CAISO's claim that assuming excess power in WECC will not impact the energy benefit projections for Sunrise. South Bay responds that cheaper out-of-region generation will create phantom congestion coming into the state and Sunrise will be assumed to relieve that congestion, thus generating energy benefits.¹⁷²

UCAN points out that SDG&E's own modeling demonstrates that reducing resources in the southwest results in significant reductions in estimated energy benefits. For example, UCAN claims that reducing capacity in the southwest by 2,000 MW results in a 56% reduction in SDG&E's estimated energy benefits related to Sunrise.¹⁷³

6.8.2. Discussion

We agree that SDG&E and CAISO have overstated the amount of fossil fired generation that will be built in WECC in their Analytical Baselines. We also agree that this overstatement results in a lowering of out-of-state power prices, which competes with in state generation, making Sunrise appear more cost-effective than is reasonable to assume. CAISO's modeling confirms this.¹⁷⁴

¹⁷¹ CAISO Exhibit I-6, 13.

¹⁷² South Bay Phase 1 Opening Brief, 23.

¹⁷³ UCAN Phase 1 Opening Brief, 198.

¹⁷⁴ Compliance Exhibit, 7.

A.06-08-010 COM/MP1/tcg

We are not convinced by CAISO that this overstatement has only trivial impacts on the cost-effectiveness results. CAISO's argument assumes that new out-of-state generation will be similar to California's generation resources. However, CAISO projects an excess of coal fired generation from out-of-state, and assumes that the in state generation is gas fired. Thus, the modeling should reflect that lower cost, out-of-state, coal fired power will compete with more expensive, in state, gas fired generation, and attribute economic benefits to Sunrise because of its out-of-state import capability. As pointed out by UCAN, SDG&E's modeling confirms that a reduction in out-of-state capacity reduces energy benefits by over 50%, which is far from trivial.

We agree that the SDG&E and CAISO assumption of approximately 12,000 MW of new coal generation construction in WECC is excessive in today's world. First, we believe the long-term carbon-procurement restrictions in SB 1368, among other factors, will discourage the construction of new coal plants in proximity to California. It is not reasonable to assume generation developers will build large, base load coal plants merely to sell into the spot market. Second, the looming potential for carbon regulation and an interest in federal climate legislation make forecasts of extensive new conventional coal generation very unlikely.

Given the wide range in coal plant projections, the anomalous impacts high projections have on modeling, and our assessment based on current policies that conventional coal plant development will not approach the extreme levels projected by CAISO and SDG&E, we include only 25% of the coal fired generation identified in the SSG-WI database in the Analytical Baseline.

A.06-08-010 COM/MP1/tcg

6.8.3. Mexican Imports

Parties generally agree that the existing combined cycle plants located in Baja, Mexico that sell power into the United States, described in Section 5.2 above, will continue to operate in the future. Therefore, we agree with the CAISO Analytical Baseline that includes all of these resources.

6.9. Assumptions Regarding In-Area Renewables

6.9.1. Parties' Positions

Parties disagree about the renewable development potential in SDG&E's service area. SDG&E's Analytical Baseline assumes that 40 MW from the Lake Hodges pumped storage project will come online in 2008 and that 20 MW from the Bullmoose biomass project will come online in 2009. SDG&E assumes that all other in-area renewable generation will remain at current levels.¹⁷⁵ CAISO includes those resources, as well as a 4.5 MW contract with the San Diego County Water Authority, in its Analytical Baseline.¹⁷⁶

SDG&E acknowledges the tremendous renewable potential in its service area, but argues that most of it is not economically viable. SDG&E states that up to 10% of its retail load could be met by biomass projects in the San Diego area, but to date only 150 MW has been proposed and only 2.2 MW is viable.¹⁷⁷ SDG&E fails to explain how it defined viability in the context of this biomass analysis.

In Phase 1 of this proceeding, SDG&E pointed to a lack of developer interest in responding to its RPS solicitations to support its claims that in-area

¹⁷⁵ SDG&E Exhibit SD-26, Appendix I, page I-2.

¹⁷⁶ CAISO Phase 1 Opening Brief, Table V-1, 21.

¹⁷⁷ SDG&E Phase 1 Opening Brief, 93.

A.06-08-010 COM/MP1/tcg

renewables are not viable.¹⁷⁸ SDG&E claimed that, while it has received over 190 offers totaling 8,300 MW of capacity from all regions, only 51 of these offers (for 988 MW) were from developers proposing to interconnect anywhere in SDG&E's service area other than to the Southwest Powerlink.¹⁷⁹ Of these bids, SDG&E signed 11 contracts totaling 107 MW.

SDG&E estimates that wind generation in the eastern parts of its service area could reach 500 to 600 MW and offers the greatest potential for new, in basin renewables. However, SDG&E claims that \$300 million in new transmission infrastructure is required to deliver this power to SDG&E customers. As a result, SDG&E has deemed in-area wind projects previously bid into SDG&E solicitations to be uneconomic.¹⁸⁰

6.9.2. Discussion

We are not convinced by SDG&E's arguments that future in-area renewables are not economically viable. A supply curve developed by CAISO in this proceeding, and reproduced in Section 10.3, includes approximately 750 MW of incremental in-area wind generation that could be developed with a delivered cost of \$77 per megawatt hour (MWh) (levelized 2007\$), making it CAISO's lowest cost incremental source of new renewable generation. While we cannot say for certain that the resources included in CAISO's supply curve are available to SDG&E, especially at the prices indicated, the CAISO data suggests it is premature to rule out the potential for wind resources east of San Diego.

However, instead of adjusting the Analytical Baseline to reflect a different amount of future renewable development in SDG&E's service area, we consider

¹⁷⁸ SDG&E Phase 1 Opening Brief, 92-94.

¹⁷⁹ SDG&E Phase 1 Opening Brief, 92.

¹⁸⁰ SDG&E Phase 1 Opening Brief, 93.

A.06-08-010 COM/MP1/tcg

future in-area renewable generation in both the All-Source Generation and In-Area Renewable Alternatives to Sunrise. We describe those alternatives in Sections 15.4 and 15.5, below.

We adopt the same in-area renewables for our Analytical Baseline that CAISO assumes: the Lake Hodges Pumped Storage Project (40 MW online in 2008), the Bullmoose Biomass Project (20 MW online 2009) and the 4.5 MW contract with the San Diego County Water Authority.

6.10. Assumptions Regarding Imperial Valley Renewables

6.10.1. Parties' Positions

While all of the parties seem to agree that construction of Sunrise (or any other transmission line from the Imperial Valley to the CAISO grid) will result in the development of some incremental amount of Imperial Valley renewables, they disagree about the amount of development such a line will generate, and the time frame for that development. Additionally, notwithstanding these positions on development, only CAISO and DRA assumed increased development as a result of Sunrise for the purposes of modeling. All of the other parties assumed the same level of renewable development with or without Sunrise in their Analytical Baselines.

SDG&E assumes a significant amount of renewable development in Imperial Valley, in both its "with" and "without" Sunrise cases. To support its projections of over 1,100 MW of new renewable development in Imperial Valley by 2010 and a total of over 2,700 MW by 2015, SDG&E points to over 5,000 MW of new generator interconnection requests¹⁸¹ that Sunrise would "facilitate," including 3,000 MW of wind that would connect at the Imperial Valley

¹⁸¹ SDG&E Phase 1 Opening Brief, 98.

A.06-08-010 COM/MP1/tcg

Substation.¹⁸² However, SDG&E fails to quantify the amount of Imperial Valley development it projects as a result of Sunrise (as opposed to development that would happen without Sunrise). SDG&E justifies this omission by explaining that it would be too difficult to separate the renewable benefits of Sunrise from its total projected benefits.¹⁸³ Thus, SDG&E assumes the same level of aggressive renewable development in the Imperial Valley both with and without Sunrise. SDG&E's Analytical Baseline assumes no incremental renewable resource additions in the Imperial Valley after 2015.¹⁸⁴

CAISO assumes that approximately 600 MW of geothermal resources would be developed in the Imperial Valley and delivered over the existing Path 42 between the Imperial Irrigation District and Edison.¹⁸⁵ In addition, CAISO assumes that if Sunrise is developed 900 MW of solar thermal and 1,000 MW of geothermal resources will come on line by 2015, which would result in an additional 9,900 GWh of renewable generation from the Imperial Valley.¹⁸⁶ CAISO assumes that absent Sunrise, this incremental 1,900 MW of renewable generation does not come online in the Imperial Valley.¹⁸⁷

Observing the slow pace of development in the Imperial Valley, UCAN assumes only 178 MW of new Imperial Valley renewables will come online by

¹⁸² SDG&E Exhibit SD-15, 50.

¹⁸³ SDG&E Phase 1 Opening Brief, 160.

¹⁸⁴ SDG&E SD-26, Exhibit A, 8.

¹⁸⁵ CAISO Exhibit I-2, Table 4.3.

¹⁸⁶ CAISO Exhibit I-2, Table 4.7. CAISO assumes no wind development in the Imperial Valley. CAISO Exhibit I-2, Table 4.3.

¹⁸⁷ See Compliance Exhibit Work Papers. CAISO assumes that SDG&E receives Resource Adequacy credit for the new renewables in the Imperial Valley only if Sunrise comes online. Thus, these resources would create a reliability benefit.

A.06-08-010 COM/MP1/tcg

2010 with or without Sunrise.¹⁸⁸ It assumes for analytical purposes a total of 1,885 MW of renewable resources online in the Imperial Valley in 2015, with or without Sunrise.¹⁸⁹

DRA does not propose assumptions for the renewable portion of the Analytical Baseline. However, it does state that SDG&E does not need Sunrise to meet its RPS obligations, but that Sunrise will facilitate (and likely reduce) the costs of RPS compliance by reducing barriers to delivery of Imperial Valley renewable resources to the CAISO grid, and possibly accelerating incremental investment in Imperial Valley renewable resources.¹⁹⁰

6.10.2. Discussion

It is reasonable to assume that, without a secure transmission path, no significant amount of new renewable generation will be constructed in the Imperial Valley. Developers will not risk their capital investment without certainty that their projects' generation will be deliverable to loads. However, the converse is also true: adequate transmission does not guarantee that new renewable generation will be developed and delivered to the CAISO grid. In the Imperial Valley there are at least three potential markets for new renewable generation: the CAISO grid via the existing Southwest Powerlink, Sunrise, or the proposed Green Path South; the Imperial Irrigation District or Los Angeles Department of Water and Power via the proposed Green Path; and utilities to the east of California via the Southwest Powerlink or other lines currently in operation or in permitting. Depending on the demand for renewable generation,

¹⁸⁸ UCAN Exhibit U-4, 100-103.

¹⁸⁹ UCAN also appears to contemplate the possibility of only 700 MW of renewable development in the Imperial Valley. See, e.g., UCAN Phase 1 Opening Brief, 60-63.

¹⁹⁰ DRA Phase 1 Opening Brief, 26.

A.06-08-010 COM/MP1/tcg

ownership of the generation projects in the Imperial Valley, the ease of contracting, and other factors, new transmission to the CAISO grid from the Imperial Valley does not guarantee that new generation will be built to serve CAISO load.

On balance, we agree with CAISO and SDG&E that the construction of Sunrise would encourage the development of renewable resources in the Imperial Valley. Even with the problems associated with the CAISO interconnection queue,¹⁹¹ there has been a significant increase in development activity in the Imperial Valley since SDG&E announced the Proposed Project.

CAISO assumes 200 MW of incremental geothermal capacity and 180 MW of solar thermal capacity per year from 2011 through 2015.¹⁹² While the precise level of annual resource additions is uncertain, this is a reasonable assumption to make about the level of incremental renewables from the Imperial Valley by 2015 for the purposes of modeling. We adopt the level of Imperial Valley renewable resource development CAISO assumes in its modeling runs for our Analytical Baseline.

6.11. Assumptions Regarding the Availability of Out-of-State Renewables to California

6.11.1. Parties' Positions

In its modeling of RPS compliance savings, CAISO adjusted its assumptions regarding the availability of out-of-state renewable resources to California several times, ultimately concluding that between 25% and 50% of the

¹⁹¹ CAISO Exhibit I-10, 7-10.

¹⁹² Compliance Exhibit Work Papers, "Template_case11_use_sunrise_v3.xls," tab "RPS Capacity."

A.06-08-010 COM/MP1/tcg

renewable resources it identified in WECC (outside of California) would be developed and delivered to California.¹⁹³

Nevada Hydro takes issue with CAISO's assumption, pointing out that CAISO did not make any assumptions regarding the failure of renewable resources planned for development in California.¹⁹⁴

UCAN also challenges CAISO's assertion that such a small portion of renewable resources from California's neighbors will be available, arguing that many new out-of-state renewable projects will not require new transmission designed exclusively for export to California. UCAN believes that many new out-of-state renewables only will require connections to the existing grid for deliveries to California.¹⁹⁵

6.11.2. Discussion

We agree with CAISO that some portion of out-of-state resources will not be available to California. However, we find CAISO's suggestion that 75% of these projects will not be available too extreme. We agree with UCAN that many out-of-state renewables will be deliverable to California without new transmission facilities, as demonstrated by SDG&E's Advice Letter filing requesting approval of two Montana wind contracts for a total capacity of 210 MW.¹⁹⁶ We adopt CAISO's initial assumption that 50% of CAISO-identified out-of-state renewables will be available to California.

¹⁹³ CAISO Exhibit I-6, 44-45.

¹⁹⁴ Nevada Hydro Phase 1 Opening Brief, 34-35.

¹⁹⁵ UCAN Phase 1 Opening Brief, 181-182.

¹⁹⁶ SDG&E Advice Letter 1997-E, June 4, 2008.

A.06-08-010 COM/MP1/tcg

6.12. Assumptions Regarding Development of Renewables in Mexico

6.12.1. Parties' Positions

Parties generally agree on the level of future renewable generation in Mexico that should be included in the Analytical Baseline. While SDG&E contends that several thousand megawatts of new wind generation are being developed to use Sunrise, it does not assume any new generation from Mexico in its modeling.¹⁹⁷

Similarly, CAISO's modeling does not assume any new renewable generation in Mexico, though it does acknowledge that a transmission line from Mexico to the United States has been proposed, and that Sunrise or some other transmission upgrade will be required to deliver this wind power to California.¹⁹⁸

UCAN is skeptical of SDG&E claims about the level of wind generation potential in Mexico.¹⁹⁹ It cites the inconsistencies in SDG&E's showing and also points out that having projects in the CAISO interconnection queue does not guarantee that they will be built.²⁰⁰

6.12.2. Discussion

We agree with the assumptions used by both CAISO and SDG&E and assume no future renewables from Mexico in the Analytical Baseline. Among other things, the proposed 500 kV line for delivery of power from Mexico is not approved, and the CAISO interconnection queue does not guarantee the amount of generation that will be developed in a particular area.

¹⁹⁷ SDG&E Exhibit SD-6, Appendix IV, Table IV-11, page IV-5.

¹⁹⁸ RT 5412.

¹⁹⁹ UCAN Phase 1 Opening Brief, 69-70.

²⁰⁰ UCAN Phase 1 Opening Brief, 74.

A.06-08-010 COM/MP1/tcg

6.13. Assumptions Regarding Renewable Costs

6.13.1. Parties' Positions

CAISO initially relied upon two sets of cost estimates in its renewable resource savings modeling. For in-state resources, CAISO used cost estimates contained in a study prepared in 2005 by the Center for Resource Solutions for the Commission.²⁰¹ For out-of-state resources, CAISO relied principally on the Northwest Transmission Assessment Committee report on Canada-Northwest-California transmission costs from May of 2006 (together, CAISO's CRS Renewable Costs).²⁰² CAISO later proposed using alternative renewable cost assumptions, assuming lower generation costs for solar thermal (\$100/MWh in place of \$120/MWh) and higher costs for wind projects (\$85/MWh in place of \$66/MWh) (CAISO's Alternative Renewable Costs).²⁰³ CAISO justified its increase in wind cost estimates on an Energy Commission staff report,²⁰⁴ and based its proposed solar thermal cost estimates on anecdotal information from developers.²⁰⁵

UCAN and DRA take issue with CAISO's Alternative Renewable Costs. UCAN suggests that CAISO selectively chose costs from an Energy Commission staff report for wind but ignored the Energy Commission's solar thermal cost

²⁰¹ CAISO Phase 1 Opening Brief, 31, citing to "Achieving a 33% Renewable Energy Target," The Center for Resource Solutions, November 1, 2005."

²⁰² See CAISO Exhibit I-2, 48, which cites to "Canada-Northwest-California Transmission Options Study," Northwest Power Pool, Northwest Transmission Assessment Committee, Canada-NW-California Study Group, May 16, 2006. Neither this study, nor the Center for Resource Solutions study, are part of the record in this proceeding.

²⁰³ CAISO Exhibit I-5, 43-45.

²⁰⁴ CAISO Exhibit I-6, 44.

²⁰⁵ RT 5557-5561.

A.06-08-010 COM/MP1/tcg

estimates. UCAN claims that if CAISO had used both the solar thermal and wind costs from the Energy Commission staff report, it would have found that its alternative renewable cost scenario would have generated Sunrise renewable resource costs of \$828 million per year, rather than generating renewable resource savings of \$160 million per year.²⁰⁶

DRA suggests that CAISO has engaged in “cherry-picking” and that it fails to consider other, equally plausible, renewable cost scenarios.²⁰⁷

In Phase 2, DRA used CAISO’s model to develop its own estimates of RPS compliance savings. DRA made a number of changes to the model’s inputs, including changes to various renewable costs. Having made those changes, DRA examines a number of different renewable development scenarios. DRA’s estimates of gross annual benefits over the life of Sunrise vary from as little as \$1 million to over \$100 million per year, depending on the scenario examined and the assumed online date for Sunrise.²⁰⁸

CAISO takes issue with DRA’s use of CAISO’s model, and its revisions to CAISO’s cost estimates. CAISO claims that DRA’s assumptions regarding higher geothermal generation costs and lower wind generation costs are implausible and that even DRA’s own witness agreed that DRA’s assumptions were unlikely.²⁰⁹

6.13.2. Discussion

In its initial analysis, CAISO relied on renewable energy cost assumptions from two primary sources, ensuring that CASIO’s analysis was based on

²⁰⁶ UCAN Phase 1 Opening Brief, 304.

²⁰⁷ DRA Phase 1 Opening Brief, 68-69.

²⁰⁸ DRA Phase 2 Opening Brief, 30-32.

²⁰⁹ CAISO Phase 2 Reply Brief, 39-40.

A.06-08-010 COM/MP1/tcg

consistent assumptions across technologies. It claimed this consistency across its cost assumptions as a strength of its analysis. However, it later recommended other cost assumptions, revising only its solar thermal and wind cost projections. Thus, the internal consistency of relying on cost estimates from only two sources was lost. Unlike its review of combustion turbine costs, CAISO admitted that its re-assessment in support of these new renewable costs was not extensive.²¹⁰

We find CAISO's initial approach of using cost estimates primarily from two consistent sources superior to using costs based on information from a wide variety of potentially inconsistent sources, which can lead to conflicting assumptions. Consequently, we adopt CAISO's CRS Renewable Costs for our Analytical Baseline.

6.14. Assumptions Regarding Transmission Resources

Transmission upgrades, modifications, or additions to SDG&E's and neighboring systems can significantly affect the need for Sunrise. Consequently, parties debated the transfer capability of existing resources that should be assumed in the Analytical Baseline, and the impact and viability of potential upgrades, modifications, and large transmission additions to both the SDG&E and Imperial Irrigation District grids.

6.14.1. The Dispatch Limit at Imperial Valley Substation

6.14.1.1. Parties' Positions

UCAN contends that SDG&E understates the import capability of the Southwest Powerlink and, as a result, overstates the need for resources within its service area. In short, UCAN asserts that increasing the assumed transfer

²¹⁰ RT 5557-5561.

A.06-08-010 COM/MP1/tcg

capability of the Southwest Powerlink would allow more energy to flow into SDG&E's service area, reducing the need for either in-area generation, Sunrise, or both.²¹¹ Consequently, UCAN has made several proposals to increase the transfer capability of various parts of the SDG&E system, as summarized below, and the parties spent significant time and effort debating the merits of those proposals in Phase 1.

In its Phase 2 opening testimony, CAISO announced limitations on the amount of generation that could be dispatched from the Imperial Valley Substation. CAISO states that in late 2007 (after the conclusion of the Phase 1 hearings), it established a 1,150 MW dispatch limit for all generation connected to the Imperial Valley Substation or the Imperial Valley-Miguel portion of the Southwest Powerlink.²¹² CAISO states that it imposed this dispatch limit after an interconnection study revealed a "dramatic increase" in risk to the Mexican electrical system when generation above 1,150 MW is added to the Imperial Valley Substation.²¹³ CAISO stated that "[The Mexican Electricity Commission] is currently unwilling to accept this increased risk to its system and, as a result, a joint decision was made by CAISO, SDG&E, and [The Mexican Electricity Commission] to establish the dispatch limit."²¹⁴ CAISO claims that reliability criteria prescribe the 1,150 MW dispatch limit because an outage of any single transmission element cannot exceed the maximum amount of generation that can

²¹¹ UCAN Exhibit U-4, 48-50.

²¹² CAISO Exhibit I-8, 22.

²¹³ CAISO Phase 2 Opening Brief, 6.

²¹⁴ CAISO Phase 2 Opening Brief, 6.

A.06-08-010 COM/MP1/tcg

be tripped simultaneously. In SDG&E's case, this simultaneous outage would be equivalent to one unit of SONGS (e.g., 1,150 MW).²¹⁵

Pursuant to this dispatch limit, CAISO will not allow more than 1,150 MW of generation connected directly to the Imperial Valley substation to be dispatched at the same time. Although more generation can be connected at the Imperial Valley substation, not all can operate simultaneously. Therefore, CAISO contends that the Analytical Baseline cannot assume the dispatch of more than 1,150 MW of generation directly interconnected to the Imperial Valley Substation.

UCAN challenges the dispatch limit, arguing that it is "perfectly feasible to have more than 1,150 MW both connected to [Imperial Valley] substation and/or [Southwest Powerlink], and have more than 1,150 MW generating, and have a loss of either a Miguel transformer or the [Southwest Powerlink] line itself, and still not need to trip more than 1,150 MW of generation" and "[i]f SDG&E means to imply that there is an 1,150 MW limit on Southwest Powerlink flows then this is a false statement.[fn] If SDG&E means to imply there's an 1,150 MW limit on deliveries to the Miguel substation or to the Imperial Valley substation, that's also false."²¹⁶

CAISO states that UCAN is wrong because the "Miguel transformer tripping scheme protects the Miguel transformers but does not protect the parallel [Mexican] system" and that UCAN "overlooks the adverse impacts on the [Mexican] system that would be caused by the interconnection of more than 1,150 MW of generation at the [Imperial Valley] substation."²¹⁷

²¹⁵ RT 5319.

²¹⁶ UCAN Phase 2 Opening Brief, 52, 72.

²¹⁷ CAISO Phase 2 Reply Brief, 28.

A.06-08-010 COM/MP1/tcg

6.14.1.2. Discussion

We are troubled by the timing of the CAISO's disclosure of the dispatch limit. There is evidence that it was in place before Phase 2 and was overlooked by CAISO earlier in the proceeding -- SDG&E testified in Phase 1 that such a dispatch limit was in place.²¹⁸ Aside from the unfortunate timing of the disclosure, CAISO has presented credible evidence on this issue. Consequently, we adopt the 1,150 MW dispatch limit CAISO has assumed for purposes of the Analytical Baseline.

6.14.2. Upgrades at Miguel Substation

6.14.2.1. Parties' Positions

UCAN proposes two sets of modifications to SDG&E's Miguel Substation: (1) increase the all-hours import limit into the Miguel Substation from 1,450-1,700 MW to 1,900 MW (Miguel Import Limit Upgrade) and (2) increase the all-hours export limit from the Miguel Substation from 1,900 MW to 2,100 MW (Miguel Output Limit Upgrade).²¹⁹ UCAN contends both upgrades would allow greater flows of energy over the Southwest Powerlink.

UCAN explains that to implement the Miguel Import Limit Upgrade CAISO only would need to approve a Remedial Action Scheme²²⁰ permitting the tripping of a second transformer at Miguel Substation when two conditions exist: (1) the first transformer at Miguel Substation trips and (2) flows over the Southwest Powerlink exceed 1,450 MW. UCAN claims that instituting this Remedial Action Scheme would increase CAISO's ability to import renewable

²¹⁸ RT 520.

²¹⁹ UCAN Exhibit U-4, 11-13.

²²⁰ Remedial Action Schemes allow the dropping of load resulting in an outage in certain circumstances to prevent damage to the system and to avoid otherwise costly upgrades.

A.06-08-010 COM/MP1/tcg

and low cost energy over the Southwest Powerlink by 200 to 450 MW when all equipment at Miguel Substation is operating (which is most hours of the year). This change would allow the Miguel Substation to accommodate additional imports and move them to other parts of SDG&E's system. UCAN contends that implementation of the Remedial Action Scheme is costless. UCAN filed a motion in Phase 1 asking the Commission to order SDG&E to implement the Miguel Import Limit Upgrade.²²¹

Neither SDG&E nor CAISO claims that the Miguel Import Limit Upgrade proposal is infeasible. They concede it has promise and that they planned to study it to ensure that other systems are not affected.²²²

UCAN predicts that implementing the Miguel Output Limit Upgrade would require a number of upgrades and potential implementation of another Remedial Action Scheme and estimates that the incremental cost of this upgrade would be between \$4 million and \$35 million.²²³ SDG&E has not rebutted this evidence.²²⁴

6.14.2.2. Discussion

We find UCAN's Miguel Import Limit Upgrade proposal to be reasonable. The record demonstrates that the CAISO is currently reviewing this potential upgrade. The proposal does not appear to require physical upgrades, only implementation of a Remedial Action Scheme, and thus could be implemented quickly. We adopt it for the Analytical Baseline, and we direct SDG&E to report

²²¹ *Motion by Utility Consumers' Action Network to Compel SDG&E to Upgrade its Import Capability at Miguel Substation*, June 5, 2007.

²²² See, e.g., SDG&E Phase 1 Reply Brief, 59; CAISO Phase 1 Reply Brief, 28.

²²³ UCAN Phase 1 Opening Brief, 113-114.

²²⁴ UCAN Phase 1 Opening Brief, 113-114.

A.06-08-010 COM/MP1/tcg

within 60 days of the effective date of this decision on the status of its implementation and to serve the report on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

UCAN admits that the Miguel Export Limit Upgrade has very small benefits, since unconstrained flows out of Miguel Substation rarely are expected to exceed 1,900 MW.²²⁵ This upgrade also adds complexity to the operation of SDG&E's system. We decline to assume this upgrade in our Analytical Baseline.

6.14.3. Path 44 Upgrades

6.14.3.1. Parties' Positions

Path 44 links the Edison and SDG&E high voltage transmission systems. UCAN points out that Path 44's rating has not been updated since 2001 and proposes that SDG&E "take the actions necessary" to upgrade the N-1/G-1 rating of Path 44 from 2,500 MW to 2,850 MW.²²⁶ If feasible, this upgrade would permit greater energy flows from Edison to SDG&E, reducing the need for new in-area resources. It also would allow increased flows to SDG&E in unconstrained conditions, thereby reducing SDG&E's locational marginal costs and generating ratepayer benefits. UCAN assumes that this upgrade would:

- Require adding a third 230/69 kV transformer at SDG&E's San Luis Rey Substation;²²⁷

²²⁵ UCAN Exhibit U-4, 10.

²²⁶ UCAN Phase 1 Opening Brief, 78, 81. UCAN claims that the proposed upgrade would also result in an increase in the N-0 All Lines in Service rating from 2,850 MW to 3,200 MW, thereby increasing SDG&E's Simultaneous and Non-Simultaneous Import limits by 350 MW. UCAN Phase 1 Opening Brief, 110.

²²⁷ UCAN also suggests that addition of a transformer at SDG&E's San Luis Rey Substation (in addition to adoption of the 1,900 MW Miguel Import Limit and apart from the Path 44 Upgrade proposal) would allow the all-lines-in-service rating of the Southwest Powerlink to increase by about 350 MW (from 2,850 MW to approximately

A.06-08-010 COM/MP1/tcg

- “[Q]uite possibly” require upgrading the Barre-Ellis transmission line [located in southern Orange County in Edison’s service territory)];
- “[M]ay or may not require” upgrades to the SONGS-San Luis Rey corridor;
- Require modifications to the Mira Loma-Chino #3 line; and
- “[P]robably” require reactive devices such as capacitors to be added to the SDG&E system.²²⁸

SDG&E disagrees with UCAN about the viability of this proposal. First, SDG&E points out that increasing a path rating is a long, complex process. Second, SDG&E claims that a key element to upgrading Path 44 (i.e., upgrading the Barre-Ellis transmission line in Edison’s service area) likely is infeasible because that corridor already is very crowded and the proposed upgrade might require setting new towers between existing towers. Third, SDG&E claims that the upgrades required to increase the rating on Path 44 will not be cost-effective.²²⁹ Finally, SDG&E notes that CAISO’s stakeholder process considered and rejected UCAN’s Path 44 proposal as an alternative to Sunrise.²³⁰

UCAN claims that the CAISO stakeholder process cited by SDG&E not only excluded UCAN from participation, but its results have been discredited in hearings and disavowed by CAISO itself.²³¹

CAISO opposes UCAN’s Path 44 proposal for several reasons. CAISO states that increasing the path rating would result in transient frequency dips in

3,200 MW), which also would allow increased imports over the Southwest Powerlink. UCAN Phase 1 Opening Brief, 109-111.

²²⁸ UCAN Phase 1 Opening Brief, 81-82.

²²⁹ SDG&E Phase 1 Opening Brief, 107-113.

²³⁰ SDG&E Phase 2 Opening Brief, 220.

²³¹ UCAN Phase 2 Reply Brief, 29-30.

A.06-08-010 COM/MP1/tcg

Mexico which would cause NERC criteria violations, specifically, and thermal overloads, generally. CAISO also claims that UCAN's Path 44 proposal might be uneconomic because a decrease in SDG&E's Local Capacity Requirements would be offset by an increase in Local Capacity Requirements in the Los Angeles area.²³²

UCAN disagrees with CAISO's assessment, contending that UCAN's plan of service under the Path 44 proposal includes reinforcements to correct the criteria violations and thermal overloads.²³³

6.14.3.2. Discussion

We are not convinced at this time that UCAN's Path 44 proposal presents a viable means to increase import capability into the SDG&E load area and do not adopt it for the Analytical Baseline. However, we agree that a review of Path 44's rating is warranted, particularly since the last one occurred in 2001, and UCAN presents credible evidence that an increase in Path 44's rating may be possible.

We direct SDG&E to take the necessary steps to institute a review of Path 44's rating, and to report within 60 days of the effective date of this decision on the status of the review and to serve the report on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

6.14.4. The Talega-Escondido/Valley-Serrano Transmission Line

The Talega-Escondido/Valley-Serrano 500 kV transmission line (TE/VS) would connect the SDG&E and Edison transmission systems, thus creating a

²³² CAISO Phase 1 Opening Brief, 33-36.

²³³ UCAN Phase 1 Reply Brief, 48.

A.06-08-010 COM/MP1/tcg

second extra-high voltage interconnection between SDG&E's system and the rest of the CAISO grid. Nevada Hydro proposes TE/VS as a component of the Lake Elsinore Advanced Pumped Storage (LEAPS) project. Nevada Hydro has applied to this Commission for a CPCN for TE/VS and contends it can be online by 2011.²³⁴

TE/VS would not connect to the Imperial Valley or any other transmission constrained renewable area, and so it would not directly facilitate advancement of California's RPS goals. However, TE/VS could facilitate the movement of energy, including renewables, through the CAISO grid²³⁵ by, for example, increasing the transfer capability between the SDG&E and Edison systems, allowing SDG&E to purchase and deliver additional renewable energy from north of the SDG&E system.²³⁶

6.14.4.1. Parties' Positions

Parties disagree about the transfer capability of TE/VS, the costs to build TE/VS and integrate it into the SDG&E and Edison systems, and the timing of construction.

²³⁴ Nevada Hydro Phase 2 Opening Brief, 46. Nevada Hydro filed A.07-10-005, which seeks a CPCN for TE/VS from this Commission. The Sunrise EIR/EIS identifies TE/VS, under the name LEAPS Transmission-Only Alternative, as a transmission-based alternative to the Proposed Project. LEAPS refers to the pumped storage generation component of the larger project which Nevada Hydro proposes to build, which has both generation and transmission aspects, but is not actually part of the LEAPS Transmission-Only Alternative. The Sunrise EIR/EIS identifies this larger project as another alternative, known as the LEAPS Transmission Plus Generation Alternative. We discuss the environmental impacts of both of these alternatives in Section 15.

²³⁵ See, e.g., Imperial Irrigation District Phase 2 Opening Brief, 5-6. Imperial Irrigation District explains how, relying on both TE/VS and proposed Imperial Irrigation District transmission upgrades, Imperial Valley renewables could be delivered to the SDG&E service area, if necessary.

²³⁶ Nevada Hydro Phase 2 Opening Brief, 39-40.

A.06-08-010 COM/MP1/tcg

With regard to the transfer capability of TE/VS, Nevada Hydro claims that TE/VS can deliver 1,000 MW between the Edison and SDG&E service territories, while SDG&E contends that the transfer capability is only 795 MW.²³⁷

Nevada Hydro has not provided any evidence regarding costs to construct TE/VS, but claims that TE/VS will cost less than \$400 million.²³⁸

SDG&E contends that the costs to integrate TE/VS into its system (to accommodate approximately 795 MW of transfer capability) would be approximately \$1 billion, with a total installed cost of \$1.8 billion.²³⁹ Nevada Hydro disputes this estimate, asserting that CAISO analysis shows that TE/VS (in conjunction with Green Path) can provide virtually the same levelized net benefit for ratepayers as Sunrise,²⁴⁰ and that the Southwest Transmission Expansion Plan process found that a line similar to TE/VS could provide 750 MW of transfer capability with only “minor upgrades.”²⁴¹

Finally, parties disagree about the timing of the construction of TE/VS. Nevada Hydro contends that TE/VS can be online by 2011. SDG&E contends that TE/VS will be online in 2012.²⁴² Ultimately, CAISO changed its Phase 1 assumption of a 2011 date and now agrees with SDG&E.²⁴³

Nevada Hydro argues that LEAPS, in conjunction with TE/VS, should not be considered as an alternative to Sunrise. It argues that we consider only

²³⁷ SDG&E Phase 1 Opening Brief, 134.

²³⁸ Nevada Hydro Phase 2 Opening Brief, 66.

²³⁹ SDG&E Phase 1 Opening Brief, 135.

²⁴⁰ Nevada Hydro Phase 2 Opening Brief, 6.

²⁴¹ Nevada Hydro Phase 1 Reply Brief, 22.

²⁴² SDG&E Phase 2 Reply Brief, 132-133.

²⁴³ CAISO Phase 2 Opening Brief, 9.

A.06-08-010 COM/MP1/tcg

TE/VS (without the LEAPS component) in our Analytical Baseline, and if not that, then as an alternative to Sunrise.²⁴⁴

6.14.4.2. Discussion

We agree that TE/VS alone is more relevant to evaluation of both our economic and environmental alternatives. Because we wish to avoid prejudging the pending TE/VS CPCN application, we will not assume that TE/VS exists for purposes of the Analytical Baseline. We study it as an alternative in both the EIR/EIS and in the economic modeling for this proceeding.

6.14.5. Imperial Irrigation District Upgrades

6.14.5.1. Parties' Positions

Section 5.5 above summarizes Imperial Irrigation District's plans to upgrade its high voltage transmission system to deliver Imperial Valley renewables to the CAISO and Los Angeles Department of Water and Power control areas. The plans include, among other things, re-rating and upgrading Path 42 and constructing three transmission lines: the Coachella Valley-Devers 2 line, the Midway-Bannister line, and the Dixieland-Imperial Valley line.

Parties disagree about which of these upgrades to assume in the Analytical Baseline. SDG&E states that Imperial Irrigation District's transmission upgrades and new facilities are only one part of an overall solution to accessing renewable resources from the Imperial Valley and that, without Sunrise, Imperial Valley renewables will, to a great degree, remain stranded even if all of Imperial Irrigation District's upgrades are assumed to occur.²⁴⁵

UCAN notes that Imperial Irrigation District's proposals to upgrade Path 42 and construct the Coachella Valley-Devers 2 transmission line will

²⁴⁴ Nevada Hydro Phase 1 Opening Brief, 8-9.

²⁴⁵ SDG&E Exhibit SD-37, pages 3.1-3.3.

A.06-08-010 COM/MP1/tcg

double the existing transfer capability between it and Edison. UCAN suggests that Imperial Irrigation District's proposed 230 kV Dixieland-Imperial Valley line will also increase Imperial Valley exports to the CAISO grid. UCAN also notes the potential for other new transmission interconnections from the Imperial Irrigation District system to the east (the proposed Highline-Knob-North Gila transmission line) to connect to Arizona Public Service and the Southwest Powerlink.²⁴⁶

CAISO states that the planned Path 42 upgrades will increase the transfer capability between Edison and the Imperial Irrigation District Systems to 1,200, and that it included this assumption in its modeling.²⁴⁷

6.14.5.2. Discussion

We adopt the assumption for our Analytical Baseline that Path 42 will be upgraded this year to 1,200 MW and that the Dixieland-Imperial Valley line, approved by the Imperial Irrigation District Board, will be in service by the middle of 2010.²⁴⁸

6.14.6. The Green Path Transmission Line

As described in Section 5.5.2 above, Green Path is a 500 kV transmission project proposed to deliver energy from the Imperial Irrigation District system to the CAISO and Los Angeles Department of Water and Power control areas. CAISO assumes that Green Path will allow delivery to the CAISO grid of up to 2,000 MW from the Imperial Valley and points east or south.²⁴⁹

²⁴⁶ UCAN Phase 2 Opening Brief, 39.

²⁴⁷ CAISO Exhibit I-2, 12-13.

²⁴⁸ Imperial Irrigation District Phase 2 Opening Brief, 20.

²⁴⁹ CAISO Phase 1 Opening Brief, 30.

A.06-08-010 COM/MP1/tcg

Since Green Path does not interconnect with the SDG&E system, it cannot deliver renewable resources from Imperial Valley directly to SDG&E's service area. However, renewable resources delivered to the CAISO system can be counted for RPS compliance purposes. Thus, Green Path might facilitate RPS goals by providing renewable resources access to the CAISO grid.

6.14.6.1. Parties' Positions

In Phase 1, CAISO assumed that Green Path would come online in 2010. However, in Phase 2, CAISO revised the in-service date to 2011.²⁵⁰ SDG&E suggests that Green Path cannot be assumed to deliver renewables to the CAISO grid, and is therefore not an alternative to Sunrise, because the Los Angeles Department of Water and Power intends to rely on Green Path to meet its own 20% renewable requirement.²⁵¹

UCAN argues that we should include Green Path in our Analytical Baseline because: (1) the Imperial Irrigation District testified to its commitment to Green Path in Phase 1; (2) Green Path has already reached the third (and final) step in WECC review and approval process; and (3) CAISO now assumes Green Path will be built as part of its Local Capacity Requirement and deliverable studies.²⁵²

6.14.6.2. Discussion

We did not identify Green Path as an alternative to Sunrise in our environmental analysis. Because it is still so speculative, we conclude that Green Path should not be included in the Analytical Baseline. However, because of its potentially significant impact on Sunrise-related benefits, CAISO considers

²⁵⁰ CAISO Phase 2 Opening Brief, 9.

²⁵¹ SDG&E Phase 1 Opening Brief, 97.

²⁵² UCAN Exhibit U-100, 7.

A.06-08-010 COM/MP1/tcg

Green Path, in combination with LEAPS and TE/VS, in its modeling as an alternative to Sunrise. Therefore, we review the results of CAISO's modeling in Section 11 to understand the risk that construction of Green Path would diminish the benefits of Sunrise.

6.14.7. Modified Coastal Link

6.14.7.1. Parties' Positions

In Phase 1, Rancho Peñasquitos identified a series of transformer and reconductoring projects intended to eliminate the need for the Proposed Project's 230 kV Coastal Link transmission line segment, which is described in Section 3.2.1, above. Rancho Peñasquitos suggested that its Coastal Link Alternative would minimize local impacts (by eliminating the line through the community entirely) and reduce costs.²⁵³

SDG&E's Phase 2 changes to the transmission topology used to analyze powerflows required Rancho Peñasquitos to revamp its alternative. As revised, the Rancho Peñasquitos Coastal Link Alternative includes: (1) installation of an additional 230/69 kV, 224 MVA transformer at SDG&E's Sycamore Canyon Substation with associated substation upgrades; (2) reconductoring both 69 kV circuits of the Sycamore Canyon to Pomerado Substation transmission line; (3) reconductoring the 69 kV circuit of the Sycamore Canyon to Scripps transmission line;²⁵⁴ and (4) the installation of a 230/138 kV, 392 MVA transformer at SDG&E's Encina Substation, unless CAISO approves a Remedial

²⁵³ Rancho Peñasquitos Phase 1 Opening Brief, 7-10.

²⁵⁴ Between Phases 1 and 2 of this proceeding, SDG&E cancelled a transmission project which would have obviated the need for this reconductoring.

A.06-08-010 COM/MP1/tcg

Action Scheme designed to move Encina Power Plant generation to solve overloads on the Sycamore Canyon to Chicarita 138 kV transmission line.²⁵⁵

In Phase 1, SDG&E argued that the Rancho Peñasquitos reliability analysis was inadequate to support the conclusion that this alternative could replace the Coastal Link. SDG&E noted that the Coastal Link is more expensive than the Rancho Peñasquitos alternative because of the extensive undergrounding needed to minimize the community impact of the Proposed Project.²⁵⁶

In Phase 2 SDG&E estimates that Rancho Peñasquitos' Coastal Link Alternative will cost \$83.66 million assuming a 2012 date.²⁵⁷ SDG&E has continued to object to the Rancho Peñasquitos alternative, has argued for the alleged technical superiority of the Coastal Link,²⁵⁸ and has claimed that Rancho Peñasquitos' alternative requires the installation of a transformer at Encina.²⁵⁹

CAISO studied several scenarios proposed by Rancho Peñasquitos in Phase 1 and found that its Coastal Link Alternative could adequately meet reliability needs.²⁶⁰ CAISO also studied Rancho Peñasquitos' proposed alternatives in Phase 2 and did not take issue with their reliability.

²⁵⁵ Rancho Peñasquitos Phase 2 Opening Brief, 16-17.

²⁵⁶ SDG&E Phase 1 Reply Brief, 52.

²⁵⁷ Rancho Peñasquitos Phase 2 Opening Brief, 17-18.

²⁵⁸ SDG&E Phase 2 Reply Brief, 156-157.

²⁵⁹ SDG&E Phase 2 Reply Brief, 155-156. SDG&E does not clarify if the transformer would be at the Encina Power Plant or the Encina Substation.

²⁶⁰ CAISO Phase 1 Opening Brief, 42.

A.06-08-010 COM/MP1/tcg

6.14.7.2. Discussion

We adopt Rancho Peñasquitos' Coastal Link Alternative, defined in Rancho Peñasquitos' Phase 2 Reply Brief, as part of the Analytical Baseline.²⁶¹ CAISO does not oppose Rancho Peñasquitos' alternative and finds it an acceptable alternative to SDG&E's proposed Coastal Link. SDG&E's arguments are not convincing, particularly since, as Rancho Peñasquitos points out, SDG&E ignores the significantly lower costs and lesser environmental impacts of the Rancho Peñasquitos Coastal Link Alternative compared to SDG&E's proposed Coastal Link.²⁶²

6.15. Assumptions Regarding Gas Price Forecasts

6.15.1. Parties' Positions

Gas price forecasts are a key input to the SDG&E and CAISO production cost models. SDG&E's modeled price of gas at the California border begins at approximately \$7 per million Btu (MMBtu) in 2007 and escalates to over \$9/MMBtu in 2020 (nominal dollars).²⁶³ SDG&E does not add intrastate gas transportation charges to derive a burnertip gas price for generators in California.

²⁶¹ We clarify here that the Final EIR/EIS Environmentally Superior Southern Route does not include, as part of the Coastal Link Alternative, reconductoring of the Poway - Pomerado 69 kV transmission line.

²⁶² The EIR/EIS analyzed Rancho Peñasquitos' Coastal Link Alternative and determined it to be environmentally superior to SDG&E's proposed Coastal Link. Consequently, the Rancho Peñasquitos Alternative replaces the SDG&E's proposed Coastal Link in both the Final Environmentally Superior Northern and Southern Routes.

²⁶³ SDG&E Exhibit SD-27, 56.

A.06-08-010 COM/MP1/tcg

In its modeling, CAISO assumes gas at the southern California border to be held constant at \$6.89/MMBtu in 2015.²⁶⁴ CAISO adds intrastate gas transportation charges of \$0.3935/MMBtu and \$0.1651/MMBtu for gas delivered to generators in the Southern California Gas and Pacific Gas and Electric Company (PG&E) service areas, respectively. After UCAN pointed out that CAISO had failed to include gas taxes in Arizona,²⁶⁵ CAISO added 5.6% to the border gas price for generators in Arizona.²⁶⁶ Given this change, UCAN generally supports CAISO's gas price forecast, especially when compared to that used by SDG&E.²⁶⁷

DRA asserts that SDG&E's forecast is too high for a base case analysis and that it inflates the benefits of Sunrise.²⁶⁸

6.15.2. Discussion

Assumptions regarding gas prices have a major impact on the economic benefits of Sunrise. CAISO's gas price forecast addresses the difference in gas prices paid by Arizona and California generators, which impacts the value of Sunrise. SDG&E's gas price forecasts do not. In addition, CAISO's gas price forecasts are conservative, as recommended by DRA. For these reasons, we adopt CAISO's gas price forecasts for our Analytical Baseline.

²⁶⁴ CAISO Exhibit I-2, 17.

²⁶⁵ UCAN Phase 1 Opening Brief, 198-199.

²⁶⁶ CAISO Exhibit I-2, Appendix A, 1.

²⁶⁷ UCAN Phase 1 Opening Brief, 249.

²⁶⁸ DRA Phase 1 Opening Brief, 51-52.

A.06-08-010 COM/MP1/tcg

6.16. Assumptions Regarding Combustion Turbine Costs

6.16.1. Parties' Positions

Reliability benefits include the cost of any new generation that is deferred by a generation or transmission resource proposed to fill a reliability need. These benefits are quantified in this proceeding as the value of deferred combustion turbines. In calculating reliability benefits in Phase 1, CAISO valued deferred combustion turbines at \$78/kW-year (2007\$, escalated at 2% per year), plus an interconnection cost adder of 35.2% of the cost of the combustion turbine.²⁶⁹ In Phase 2 CAISO raises this figure substantially, to \$162.10/kW-yr (2007\$, escalated at 2% per year), based on a December 2007 Energy Commission staff study (December 2007 Study).²⁷⁰ It retains the 35.2% cost adder for interconnection costs.

UCAN takes issue with CAISO's change in combustion turbine costs between Phase 1 and Phase 2. UCAN argues that CAISO cannot essentially double the cost of new combustion turbines in Phase 2 without increasing the cost of either Local or System Resource Adequacy, which are dependent on combustion turbines.²⁷¹ CAISO disagrees in part and states that System Resource Adequacy is based on generation costs, not the costs of new combustion turbines.²⁷²

UCAN also claims that the interconnection costs assumed for new combustion turbines are inconsistent with CAISO's assumptions regarding the costs for Sunrise. UCAN claims that since CAISO assumes new combustion

²⁶⁹ CAISO Phase 1 Opening Brief, 62.

²⁷⁰ CAISO Exhibit I-12, 6-7.

²⁷¹ UCAN Comments on Compliance Exhibit, 22-23.

²⁷² CAISO Reply Comments on Compliance Exhibit, 10-11.

A.06-08-010 COM/MP1/tcg

turbine interconnection costs are a fixed percentage of the cost of combustion turbines, these costs effectively double in Phase 2 when CAISO raises the costs of new combustion turbines. According to UCAN, however, CAISO's estimate of the cost of Sunrise does not escalate at nearly the same rate from Phase 1 to Phase 2.²⁷³ CAISO counters that the cost differences are not unreasonable and attributes them to the greater detail underlying the cost estimates for Sunrise. CAISO also argues that even if the new combustion turbine interconnection costs escalate at the same rate as Sunrise costs, Sunrise still will be economically superior to all of the alternatives, assuming 33% RPS and the higher combustion turbine costs CAISO uses.²⁷⁴

DRA²⁷⁵ and SDG&E²⁷⁶ support CAISO's higher combustion turbine costs.

6.16.2. Discussion

The wide variation between CAISO's Phase 1 and Phase 2 combustion turbine cost estimates is notable. CAISO and SDG&E claim that we should use combustion turbine cost estimates included in an Energy Commission staff study from December 2007 (December 2007 Study). However, from January 2007 through the close of hearings in Phase 1, SDG&E and CAISO used cost estimates for combustion turbines that were less than half those in the December 2007 Study - \$78/kW-year verses \$162.10/kW-year (both 2007\$, escalated at 2% per year).

Moreover, some of the cost estimates from the December 2007 Study are not reasonable. In Phase 2, CAISO uses the December 2007 Study for estimates

²⁷³ UCAN Comments on Compliance Exhibit, 21-22.

²⁷⁴ CAISO Reply Comments on Compliance Exhibit, 10.

²⁷⁵ DRA Reply Comments on Compliance Exhibit, 2, note 2.

²⁷⁶ SDG&E Comments on Compliance Exhibit, 3-5.

A.06-08-010 COM/MP1/tcg

of the cost of combustion turbines but disavows other cost estimates in the study, such as estimates of the cost of new combined cycle and solar thermal generation.²⁷⁷ Nevertheless, CAISO testified that it had access to market data and that this information showed that the December 2007 Study's estimates of combustion turbine prices were reasonable.²⁷⁸ Additionally, DRA and SDG&E support CAISO's Phase 2 combustion turbine prices, and UCAN's arguments do not suggest that the estimates are wrong, only that CAISO has failed to make other adjustments UCAN considers necessary as a result of the higher combustion turbine costs. We find CAISO's Phase 2 combustion turbine costs reasonable, and we adopt them for our Analytical Baseline.

6.17. Assumptions Regarding Project Costs

6.17.1. Parties' Positions

In order to calculate net benefits, we must estimate project costs for each alternative and then subtract those costs from the sum of gross benefits. Project costs include capital costs and operating and maintenance costs, annualized over a specific recovery period. We discuss each of these cost components below.

6.17.1.1. Capital Costs

In Phase 1, SDG&E estimated the capital cost to construct the Proposed Project at \$1.265 billion.²⁷⁹ This estimate includes: the costs of all work on the project, including necessary substation upgrades, transmission line upgrades, and upgrades elsewhere on the SDG&E system; engineering, environmental, construction management, and other support services; and accounting overheads including Allowance for Funds Used During Construction, escalation, and an

²⁷⁷ See RT 2393-2395; see also RT 5542-5545.

²⁷⁸ RT 5545.

²⁷⁹ SDG&E Phase 1 Opening Brief, 74.

A.06-08-010 COM/MP1/tcg

18.35% contingency to address unanticipated changes. SDG&E states this cost estimate is based on preliminary design work and claims it has not prepared a detailed cost estimate.

In Phase 2 SDG&E revised its capital cost estimates to reflect a later online date of 2011 and to include environmental mitigation costs. SDG&E estimates capital costs of its Proposed Project to be \$1.792 billion, including the costs of mitigation, and after accounting for the RPCC alternative segment.²⁸⁰ SDG&E claims that no other party has credibly challenged the methodology used to develop these cost estimates.²⁸¹

CAISO also presented capital costs estimates for the Proposed Project and some of its alternatives, based on information from SDG&E and others.

SDG&E and CAISO translate the capital costs for the Proposed Project and various alternatives into levelized annual revenue requirements, as set forth below:

²⁸⁰ SDG&E Exhibit SD-142, Table 11-5.

²⁸¹ SDG&E Phase 2 Opening Brief, 45.

A.06-08-010 COM/MP1/tcg

**Table 3: SDG&E and CAISO Capital Cost Estimates
(Annual Levelized \$ Million)²⁸²**

Alternative	SDG&E ²⁸³	CAISO ²⁸⁴
Proposed Project	160	183
TE/VS + LEAPS	-	111
Green Path	-	29
South Bay Repower	-	8
SDG&E Alt. 1: All-Source Generation Alternative	507	-
SDG&E Alt. 2: In-Area Renewable Alternative	544	-
SDG&E Alt. 3: LEAPS Transmission-Only	263	-
SDG&E Alt. 4: Draft EIR/EIS Environmentally Superior Southern Route	150	164
SDG&E Alt. 5: Draft EIR/EIS Environmentally Superior Northern Route	280	306
SDG&E "Enhanced" Northern Route	161	184
SDG&E "Modified" Southern Route	161	-

DRA questions whether SDG&E's estimate fully includes all capital costs and points out that construction costs may change once environmental review is done and the final routing details have been established.²⁸⁵ DRA also argues that SDG&E should have included the cost of the San Felipe Substation in Imperial Valley in its capital costs, because that substation appears to be necessary to achieve any reduction in Local Capacity Requirements.²⁸⁶

UCAN argues that the San Felipe Substation should be included in estimated capital costs, as well as other facilities needed to mitigate the overloads

²⁸² Unless otherwise stated, tables containing annual levelized benefits are for benefits from 2010-2049 for Phase 1 and from 2012-2058 for Phase 2.

²⁸³ SDG&E Exhibit SD-142, Table 11-6.

²⁸⁴ CAISO Exhibit I-13, 22. We calculate the capital cost of Green Path by subtracting the capital cost of Sunrise from the Sunrise + Green Path total.

²⁸⁵ DRA Phase 1 Opening Brief, 21.

²⁸⁶ DRA Phase 1 Opening Brief, 71-72.

A.06-08-010 COM/MP1/tcg

that UCAN claims Sunrise would cause.²⁸⁷ UCAN also contends SDG&E “may have failed to include” costs associated with future transmission additions that UCAN asserts will be necessary if Sunrise is constructed.²⁸⁸ UCAN lists several of these additional projects it asserts may be needed as a result of Sunrise.²⁸⁹

6.17.2. Operating and Maintenance Costs

In Phase 1 SDG&E estimated the operating and maintenance costs for Sunrise to be \$10 million per year (in 2010 dollars), including associated administrative and general costs.²⁹⁰ This translated to a \$624 million revenue requirement over 40 years. In Phase 2 SDG&E lowered its operating and maintenance revenue requirement to \$327 million. According to SDG&E, the revised operating and maintenance forecast is based on a more detailed estimation than its Phase 1 estimates, the annual cost varies from year to year, and the total number of years is extended to 58.²⁹¹ UCAN asserts that SDG&E has underestimated its Phase 1 Sunrise operating and maintenance costs by a factor of at least four.²⁹² UCAN observes that for 2006, SDG&E’s transmission operating and maintenance costs totaled over \$30 million, or approximately 3.3% of its nearly \$1 billion transmission plant valuation. In contrast, SDG&E proposed only 0.7% in operating and maintenance costs for Sunrise, a project which will double its transmission rate base. UCAN proposed that Sunrise’s operating and maintenance costs should be estimated at \$26.3 million per year,

²⁸⁷ UCAN Phase 1 Opening Brief, 292-293.

²⁸⁸ UCAN Phase 1 Opening Brief, 290.

²⁸⁹ UCAN Phase 1 Opening Brief, 291-292.

²⁹⁰ SDG&E Phase 1 Opening Brief, 75.

²⁹¹ SDG&E Phase 2 Reply Brief, 245-246.

²⁹² UCAN Phase 1 Opening Brief, 282.

A.06-08-010 COM/MP1/tcg

administrative and general costs should be at least \$8.4 million per year, and other fees and charges should be at least \$0.6 million per year, for a total of \$35.3 million per year.²⁹³

SDG&E responds that UCAN errs when it divides operating and maintenance in current dollars by the gross book cost of plant, which was recorded many years ago in prior year (deflated) dollars.²⁹⁴

CAISO states that it included a level of operating and maintenance costs of approximately \$3.9 million per year in the Compliance Exhibit. CAISO criticizes UCAN's higher cost estimates as being flawed. First, CAISO echoes SDG&E's criticism of UCAN's method for deriving an operating and maintenance per dollar of net book estimate for Sunrise. Second, CAISO suggests that the ratio of operating and maintenance costs to capital costs are likely to decline given the increases in costs of transmission construction materials.²⁹⁵

Mussey Grade argues that the cost of potential wildfires accidentally started as a result of Sunrise's operation should be estimated and applied to the costs of the project. Mussey Grade estimates these costs to be on the order of \$2 million per year.²⁹⁶ SDG&E responds that Mussey Grade's analysis overstates the risk of fire from Sunrise and that the potential cost of wildfires is already included in SDG&E operating costs through its liability insurance.²⁹⁷

²⁹³ UCAN Phase 1 Opening Brief, 280-286.

²⁹⁴ SDG&E Phase 1 Reply Brief, 117.

²⁹⁵ CAISO Reply Comments on Compliance Exhibit, 8-9.

²⁹⁶ Mussey Grade Phase 1 Opening Brief, 5.

²⁹⁷ SDG&E Exhibit SD-15, 15.

A.06-08-010 COM/MP1/tcg

6.17.3. Cost Recovery Period

In Phase 1, SDG&E and other parties used a 40-year life to amortize Sunrise's capital costs. In Phase 2, SDG&E represents it has reached an agreement with the Federal Energy Regulatory Commission (FERC) regarding amortization of transmission investments and accordingly, that Sunrise should be amortized over 58 years.²⁹⁸

UCAN objects to the use of the 58-year amortization period. UCAN contends that because this amortization period was the product of a settlement approved on May 18, 2007 (prior to the date for distributing prepared rebuttal testimony in Phase 1 of this proceeding), SDG&E should have included it in its Phase 1 showing.

6.18. Discussion

We find that SDG&E has offered the best developed capital cost estimates for the Proposed Project and the other transmission alternatives. We adopt these capital cost estimates as Analytical Baseline assumptions.²⁹⁹ While we are not convinced that SDG&E has the best information available to estimate the capital costs associated with the generation alternatives, no other party has provided cost estimates for them.³⁰⁰ Therefore, except where we expressly deviate from SDG&E's estimates of the costs of the generation alternatives (as discussed in Section 11), we adopt these SDG&E cost estimates in the Analytical Baseline.

²⁹⁸ SDG&E Exhibit SD-36, page 11. 29.

²⁹⁹ Concerns raised by UCAN and DRA about capital costs associated with the San Felipe Substation are moot because that substation is contingent upon a Northern Route, and we do not approve a Northern Route.

³⁰⁰ Nevada Hydro disputes SDG&E's TE/V cost estimates. However, Nevada Hydro circulated and then withdrew its own prepared testimony on the cost estimates for the TE/V, so we have no alternative estimate in the record.

A.06-08-010 COM/MP1/tcg

We also find that SDG&E's Phase 2 estimates of the project's operating and maintenance costs are reasonable. SDG&E's projections are based on detailed estimates that SDG&E is in the best position to prepare. We agree with SDG&E and CAISO that UCAN make unreasonable assumptions to arrive at their higher operating and maintenance forecast. For the purposes of our Analytical Baseline assumptions we will rely on CAISO's Compliance Exhibit assumption, which is consistent with SDG&E's Phase 2 estimates.

With regard to wildfire costs, for the purposes of modeling, we agree that SDG&E's insurance covers potential costs.

We agree with SDG&E regarding the cost recovery period. Even though this parameter changed during the course of this proceeding, the 58-year amortization period is SDG&E's most-current information and is recognized by FERC. Accordingly, we adopt it for our Analytical Baseline assumptions.

7. Estimates of SDG&E's Reliability Need Based on Analytical Baseline Assumptions

7.1.1. Parties' Positions

Using their own, varying Analytical Baseline assumptions (described in the preceding Section), SDG&E, CAISO, and UCAN project when SDG&E will experience a reliability need or "shortfall" in its service area, and how big the shortfall will be. Table 4 sets forth these parties' final estimates of SDG&E's reliability need:

A.06-08-010 COM/MP1/tcg

**Table 4: Parties' Final Projections of Reliability Need³⁰¹
(MW Surplus / (Deficiency))**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SDG&E 302	39	78	(104)	(133)	(175)	(229)	(300)	(371)	(440)	-	-
CAISO ³⁰³	12	45	(146)	(187)	(244)	(313)	(403)	(495)	(588)	(683)	(779)
UCAN ³⁰⁴	2	61	36	14	(8)	(47)	(101)	(157)	(212)	-	-

DRA, Nevada Hydro, and Powers Engineering dispute CAISO and SDG&E estimates of reliability need. DRA concludes SDG&E will not require additional resources until at least 2013, but more likely 2015 or 2016, whether or not Sunrise is built.³⁰⁵

Nevada Hydro states that, with the addition of the TE/Vs line, SDG&E will require additional resources no sooner than 2020.³⁰⁶

³⁰¹ Both CAISO and SDG&E originally predicted shortfalls starting in 2010. While neither party revised its Phase 1 load and resource showing, both later acknowledged that Sunrise would not be online in 2010. CAISO assumes that Sunrise will not be online until 2011. CAISO Exhibit I-12, 2. We adjust CAISO's showing in Table 4 to assume that 145 MW will be under a Must Run contract in 2010 and 2011, consistent with the discussion regarding the existing South Bay Power Plan in Section 6.7.1. SDG&E suggested that a reliability need caused by a delay in Sunrise coming online would be addressed by adding new peakers in the San Diego area. See SDG&E Exhibit SD-35. Thus, we assume the addition of these peakers in Table 4, consistent with the discussion in Section 6.7.2.

³⁰² SDG&E Exhibit SD-142, LD2D-#217099-v1-RMR_AIL_Revised_Alternatives_Workpapers. SDG&E's final numbers were adjusted to keep the N-1 import limit at 2,500 MW.

³⁰³ CAISO Phase 1 Opening Brief, 21.

³⁰⁴ UCAN Exhibit U-101, "Phase II rebuttal workpapers.xls."

³⁰⁵ DRA Phase 1 Opening Brief, 1.

³⁰⁶ Nevada Hydro Phase 1 Opening Brief, 12.

A.06-08-010 COM/MP1/tcg

Powers Engineering's proposed combination of increased solar PV, other distributed generation, demand response, and energy efficiency is designed to avoid any need for new resources until 2020.

7.1.2. Discussion

Section 6.1 summarizes our adopted Analytical Baseline assumptions. We adopt the findings in Table 5, which presents the projected "reliability need" for SDG&E's service area applying our adopted Analytical Baseline assumptions.

**Table 5: Commission's Adopted Projections of Reliability Need
(MW Surplus/(Deficiency))**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MW Surplus/ (Deficiency)	773	698	624	55	(22)	(95)	(164)	(237)	(310)	(383)	(456)

Table 5 shows that under our adopted Analytical Baseline assumptions SDG&E's service area has no reliability need for new resources before 2014 and has a surplus of capacity of 773 MW in 2010, 698 MW in 2011, 624 MW in 2012, and 55 MW in 2013. It also shows a reliability need for new resources starting at 22 MW in 2014 and 95 MW in 2015, with a total of 456 MW by 2020.

However, we note that the projection of reliability need shown in Table 5 above, is premised on a number of assumptions. As the parties have demonstrated throughout this proceeding, there are a number of assumptions that could drastically affect the resource mix and availability in San Diego's service territory. For example, the South Bay facility, with a nameplate rating of 702 MW, significantly impacts the reliability need assumptions.³⁰⁷ In addition,

³⁰⁷ The baseline assumes that South Bay will operate until the earlier of December 31, 2012 or the end of the year in which Sunrise comes online.

A.06-08-010 COM/MP1/tcg

several projects, in various stages of development are assumed to be operational in the baseline assumptions – Carlsbad Energy Center (net 222 MW), Pala & Wellhead (net 138 MW).

Taken as a whole, these facilities represent over 1,000 MW of local generation that is assumed to be operational. South Bay is at the end of its useful life, and only continues to operate because it is designated as a Must Run resource by the CAISO. At this point in time, South Bay is critical to maintaining a reliable electrical system in the San Diego region. According to the CAISO, SDG&E will experience capacity deficiencies if South Bay is taken out of service³⁰⁸ and there is no viable replacement option available. Simply assuming that South Bay will remain in service until it is no longer needed does not give this Commission much comfort. Relying on an aging inefficient unit to maintain system reliability for the greater San Diego region is a very risky proposition. It would be a far better solution, in terms of reliability, if SDG&E actively seek out methods to replace the reliability benefits currently provided by the South Bay unit.³⁰⁹

In addition, recent experience suggests that the time required to develop and carry out competitive RFOs, then finance, permit and construct new generation resources – including a cushion to account for unanticipated delays – requires that procurement decisions be made up to seven years in advance of when resources are needed. Otherwise we are forced to perform “just-in-time”

³⁰⁸ CAISO Opening Brief on Compliance Exhibit-1, 13.

³⁰⁹ In addition, supporting or encouraging the retirement or repowering of California’s aging power plant fleet supports a number of California’s policy objectives (e.g., reduction of once-thru cooling units, Brownfield development per the goals set out in AB 1576, renewable resource integration, air quality goals, and reduction of GHGs).

A.06-08-010 COM/MP1/tcg

procurement that threatens reliability, drives up the cost of delivering power, and typically does not result in additional preferred/renewable resources.³¹⁰

Based on all of the preceding information, we make these baseline assumptions for purposes of project comparison but we are certainly aware of the fact that one incorrect assumption could significantly impact the reliability need in SDG&E's service area.³¹¹

8. Energy Benefits

8.1. What They Are and How They Are Estimated

SDG&E claims that Sunrise will lower consumer costs by increasing the availability of lower cost, out-of-state power. This cost savings is referred to as an "energy benefit." Other types of energy benefits include:

- Transmission grid efficiencies that reduce the total cost to deliver energy throughout the year, including line loss reductions and congestion cost savings; and
- Increased profits from utility-retained nuclear and hydro generation resulting from reduced market prices, which are passed through to California investor-owned utility ratepayers.³¹²

A transmission project like Sunrise will change how the grid operates and how generation resources are dispatched throughout WECC. These changes in grid operations and generation dispatch result in the energy benefits (or costs) described above.

³¹⁰ *LTPP Decision*, 85-86.

³¹¹ A one year delay in commercial operation of the Carlsbad facility could turn a 55 MW reliability "surplus" into a 167 MW deficit, based on modeling assumptions.

³¹² If profits decline as a result of a proposed project, then this is a project cost, rather than a benefit.

A.06-08-010 COM/MP1/tcg

To determine how a proposed high voltage transmission line will impact the grid, planners use sophisticated production cost simulation models to capture the changes in generation dispatch resulting from the proposed line. These models simulate the operation of the utility system by modeling not only the hourly changes in loads across the regions, but also the operation of the fleet of power plants to meet these changing loads in a least-cost fashion given operational constraints, reliability requirements, and power flows on the interconnected grid. Given the resulting dispatch of these fleets of power plants, the models forecast the hourly marginal price of power at various points throughout WECC.³¹³ The total cost of generated power, assuming that the proposed transmission project is in operation, is then subtracted from the total cost in a reference case that does not assume the line's existence, to arrive at production cost savings resulting from the proposed project.

The assumptions underlying production cost models have a significant impact on modeling results. In this proceeding, both SDG&E and CAISO began their production cost modeling using the databases of generation and transmission resources compiled by SSG-WI. They then modified this data, based on their own assumptions as described in Section 6.8.1 above. Their modeling generated significantly different estimates of energy benefits based on their different assumptions.

8.2. Overview of Conclusions

Four parties submitted production cost modeling cases estimating the energy benefits generated by the Proposed Project and some of its alternatives, while UCAN and DRA derived energy benefits from others' modeling results.

³¹³ These production cost models can also estimate overall emissions from these power plants, such as GHG emissions, as discussed in Section 13 below.

A.06-08-010 COM/MP1/tcg

For the Proposed Project, SDG&E concludes by estimating energy benefits of \$105 million per year, which are reduced to \$52 million per year when compared to a combustion turbine reference case.³¹⁴ CAISO's final estimate of energy benefits is \$34 million per year;³¹⁵ DRA estimates a range of energy benefits between \$20 million and \$80 million per year;³¹⁶ and UCAN does not separately state energy benefits, but claims that its estimate would be less than SDG&E's.³¹⁷

SDG&E revised its estimated energy benefits during the proceeding to address both modeling errors and to test new assumptions. SDG&E's final estimated energy benefits far exceed the projections of the other parties, including CAISO's. Given SDG&E's anomalous showings, and other factors discussed below, we conclude that we cannot rely on SDG&E's estimated energy benefits. We adopt the energy benefits for Sunrise estimated in the Compliance Exhibit of \$5 million per year under 20% RPS and \$18 million per year under 33% RPS.

8.3. Parties' Modeling Efforts

Parties' estimates of Sunrise's energy benefits have evolved throughout the proceeding in response to SDG&E's changes in assumptions and modeling methodologies and corrections of errors in its analyses.

Table 6 below summarizes the change in SDG&E's projected energy benefits over the course of the proceeding. SDG&E estimated energy benefits of \$96 million per year in the 2005 Application, \$468 million per year in the 2006 Application, and eventually finished in July 2007 with an estimate of \$105 million

³¹⁴ SDG&E Exhibit SD-142, 36.

³¹⁵ CAISO Exhibit I-2, 3-5.

³¹⁶ DRA Phase 2 Opening Brief, 15.

³¹⁷ UCAN Phase 2 Opening Brief, 174-176.

A.06-08-010 COM/MP1/tcg

per year in energy benefits. When compared to a combustion turbine reference case modeled using its own Analytical Baseline assumptions in Phase 2, SDG&E projects energy benefits of \$52 million per year from Sunrise.

**Table 6: SDG&E Assessment of Energy Benefits
(Annual Levelized \$ Millions)**

Source	Projected Energy Benefits
2005 Application, page V-13	96
2006 Application, Chap. IV, page IV-8	468
January 2007 Correction to 2006 Application ³¹⁸	101
7/25/07 Errata ³¹⁹	105
Sunrise compared to combustion turbine reference case ³²⁰	52

CAISO estimated energy benefits of \$125 million (\$2006) for the year 2015 in its report to its Governing Board. After a top to bottom review of its case at the beginning of Phase 1, CAISO changed its estimate of energy benefits for the

³¹⁸ Correction to Amended Application of San Diego Gas & Electric Company, filed January 19, 2007, page IV-8.

³¹⁹ SDG&E Exhibit SD-26, Exhibit J, 6-7.

³²⁰ SDG&E Exhibit SD-142, 35. In Phase 2 SDG&E initially submitted calculations of net benefits absent the standard combustion turbine reference case. Instead, SDG&E treated the Proposed Project as the reference case and compared each of the alternatives' net benefits against the net benefits generated by Sunrise. Thus, comparisons with Phase 1 results were difficult. To remedy this shortcoming, the ALJ directed SDG&E to submit testimony with a combustion turbine reference case similar to its Phase 1 assessment, and two additional reference cases. SDG&E presented these results in May 2008, showing substantially lower net benefits than in Phase 1. After the hearings concluded, CAISO claimed in its Phase 2 reply brief that SDG&E's analysis of benefits in response to the ALJ's ruling was fatally flawed. CAISO did not provide an affidavit to substantiate its claims nor propose any remedy. SDG&E did not rely on SDG&E Exhibits SD-142, SD-143, or SD-144 (the results of this analysis) in either its Phase 2 opening or reply briefs.

A.06-08-010 COM/MP1/tcg

year 2015 to \$140 million (\$2015), which is equal to \$112 million (\$2006).³²¹ After a workshop among the parties, in March 2007 CAISO revised downward its showing of levelized benefits for Sunrise and projected reduced energy benefits of \$34 million per year (2006\$).³²²

Instead of pursuing varied assumptions to test these energy benefit revisions, CAISO elected to keep them constant – at \$34 million per year – through the rest of the proceeding.³²³

8.4. Discussion

Throughout this proceeding, parties identified a number of errors in SDG&E's energy benefit modeling. While we acknowledge that SDG&E attempted to remedy these defects, we are unable to conclude that SDG&E has identified or corrected all of its modeling errors or the assumptions that drive those models. We also find key SDG&E assumptions unreasonable. For example, SDG&E assumes the same level of renewable resources in the Imperial Valley whether or not Sunrise or other transmission options, such as Green Path, are built. This assumption contradicts SDG&E's testimony regarding the likely level of renewable development in the Imperial Valley without Sunrise.³²⁴ It also is inconsistent with SDG&E's assertion that, without a new transmission line, the

³²¹ For consistency, CAISO Exhibit I-1 2015 benefits have been brought to 2006 dollars from 2015 dollars by deflating at 2.5%.

³²² CAISO Exhibit I-2, 3-5.

³²³ CAISO did not perform any production cost modeling in Phase 2. Instead, CAISO focused its later modeling efforts on the projected reliability and RPS Compliance benefits of the project. Those efforts are described in the following Sections of this decision.

³²⁴ See, for example, SDG&E Exhibit SD-15.

A.06-08-010 COM/MP1/tcg

1,150 MW dispatch limit precludes interconnection of new resources at Imperial Valley Substation.³²⁵

Similarly, CAISO's modeling produced varied results and is based on several significant assumptions we do not adopt. Among other things, CAISO's modeling does not use the November 2007 Forecast of peak demand, and adjustments to that forecast, that we adopt. It also assumes more than 12,000 MW of new coal generation in WECC; we assume only 25% of that coal generation, as discussed in Section 6.11, above. Finally, at the end of Phase 1, CAISO adopted \$34 million per year as the estimated energy benefits of Sunrise, and did not run any further production cost models to address potential deficiencies in this showing.

We do not adopt CAISO's energy benefit projections discussed here. Instead, we rely on the energy benefits generated by the CAISO Compliance Exhibit, which scales from CAISO's Phase 1 production cost modeling to apply most of our Analytical Baseline assumptions adopted here. The CAISO Compliance Exhibit, discussed in Section 11.3, estimates energy benefits for both SDG&E's "Enhanced" Northern Route and the Draft EIR/EIS Environmentally Superior Southern Route to be \$5 million per year under 20% RPS and \$18 million per year under 33% RPS. CAISO estimates no energy benefits for the All-Source Generation Alternative.

³²⁵ SDG&E's assumption is also inconsistent with CAISO powerflow modeling that found reliability criteria violations with this level of Imperial Valley renewable development absent Sunrise. See, e.g., CAISO Exhibit I-3, which describes criteria violations associated with a UCAN-specified scenario having the same level of renewables in Imperial Valley as assumed by SDG&E.

A.06-08-010 COM/MP1/tcg

9. Reliability Benefits

9.1. What They Are and How They Are Estimated

Reliability benefits are savings generated when a generation or transmission resource results in:

- Deferred or avoided new generation (generally quantified as combustion turbine costs); and
- Must Run contract savings – also referred to as “reduced local reliability costs” or “market power mitigation costs.”

By improving the transfer capability between the San Diego load area and generation resources outside of the load area, Sunrise will lower the Local Capacity Requirements in the San Diego area, deferring the need for both Must Run contracts and new generation. However, to the extent that Sunrise or other transmission alternatives cause generating capacity in a neighboring Local Reliability Area to become committed to SDG&E, this will simultaneously reduce SDG&E’s Local Capacity Requirement and increase the Local Capacity Requirement in neighboring systems. Thus, CAISO assumes in its modeling that Sunrise will increase the Local Capacity Requirement in the Los Angeles Basin,³²⁶ and so it also calculates the “reliability cost” to ratepayers of this System Resource Adequacy generation that Sunrise draws from the Los Angeles basin. CAISO also calculates avoided System Resource Adequacy based on new renewable generation resulting from Sunrise.

The value of avoided Must Run contracts is quantified based on costs. The value of deferred new generation is measured as the discounted difference in the cost of new generation resources (usually combustion turbines) with and without

³²⁶ CAISO assumes Sunrise will draw resources from the Imperial Irrigation District that would have otherwise met Los Angeles basin Local Resource Adequacy needs.

A.06-08-010 COM/MP1/tcg

the deferral. For example, the value of a five-year delay in the need for a new combustion turbine is measured as the cost of the combustion turbine built in lieu of Sunrise minus the discounted cost of the combustion turbine built five years later.

A proposed project or its alternatives may have other reliability benefits that are not easily quantified. For example, transmission line alternatives are more susceptible to wildfire-induced outages than generation alternatives. Also, generation alternatives may provide reliability services to CAISO, such as reactive power support and grid regulation, that a transmission alternative cannot provide.

Finally, SDG&E presents a quantitative assessment of the potential customer costs associated with outages on different transmission alternatives.

9.2. Overview of Conclusions

As set forth in Section 7 above, parties predict, based on their own Analytical Baseline assumptions, different reliability needs in SDG&E's service area beginning in different years. SDG&E, CAISO, UCAN, and DRA each modeled reliability benefits. Table 7 presents parties' final estimates of the reliability benefits generated by the Proposed Project:

A.06-08-010 COM/MP1/tcg

**Table 7: Parties' Final Projected Reliability Benefits
(Annual Levelized \$ Millions)**

Party	Must Run Contract Savings	Avoided New Generation Costs	System RA Costs	Total Reliability Benefit
SDG&E ³²⁷	\$104	\$44		\$148
CAISO ³²⁸	\$35	\$231	-\$29	\$237
DRA ³²⁹				\$8 - \$117
UCAN ³³⁰				<SDG&E

This table shows CAISO's total projected reliability benefits to be substantially higher than other parties' projections.

We adopt CAISO's modeling methodology for reliability benefits consistent with our adopted Analytical Baseline assumptions as discussed in Section 11.4.

9.3. Parties' Modeling Efforts

Parties' modeling efforts produce varying results because they predict that SDG&E will have a reliability need at different times, and of different amounts. They also disagree about Sunrise's impacts on SDG&E's Local Capacity Requirement, and how to calculate the value of avoided new generation costs and Must Run contract savings.

In estimating Sunrise's impact on SDG&E's Local Capacity Requirement, CAISO assumes that Sunrise will cause SDG&E's "All Lines in Service" Simultaneous Import Limit to increase from 2,850 MW to 4,200 MW and its

³²⁷ SDG&E Exhibit SD-142, 28, 32.

³²⁸ CAISO Exhibit I-13, Work Papers.

³²⁹ DRA Phase 2 Opening Brief, 14.

³³⁰ UCAN Phase 1 Opening Brief, 261-63. UCAN does not separately estimate reliability benefits, however its reliability benefits would be less than SDG&E's.

A.06-08-010 COM/MP1/tcg

Non-Simultaneous (G-1/N-1) Import Limit to increase by 1,000 MW, from 2,500 MW to 3,500 MW.³³¹ These increased import limits result in a potential reduction in SDG&E's Local Capacity Requirement, and thus a reduction in the amount of new in-area generating capacity and Must Run contracts needed by SDG&E to meet those requirements.

Table 8 shows the progression of CAISO's projected reliability benefits for Sunrise:

Table 8: CAISO Assessment of Annual Levelized Reliability Benefits

Source	Must Run Contract Savings	Avoided New Generation Costs	System Resource Adequacy Cost	Total Reliability Benefits (\$ millions)
CAISO Exhibit I-2, Table 3.5 (4/20/07 Second Errata to Testimony, Part II, Phase 1)	42	107	Not calculated	149
CAISO Exhibit I-6, Table 6 (7/12/07 Errata to Rebuttal Testimony, Phase 1)	42	115	-29	129
CAISO Exhibit I-12, Work Papers (Direct Testimony, Phase 2)	36	211	-27	220
CAISO Exhibit I-13 Work Papers (Rebuttal Testimony Work Papers, Phase 2)	35	231	-29	237

CAISO updated its projected reliability benefits for Sunrise several times during Phase 1 of the proceeding in response to parties' comments. For example, CAISO assumed a higher price floor for Resource Adequacy resources and the addition of 660 MW of non-local Resource Adequacy capacity purchases. CAISO also reduced the 2015 Local Capacity Requirements for SDG&E's service area by 242 MW by assuming: (1) increased load growth; (2) increased demand response (30 MW from the EnerNOC contract); (3) increased AMI savings (which CAISO

³³¹ CAISO Phase 1 Opening Brief, 21.

A.06-08-010 COM/MP1/tcg

states will reduce the Local Capacity Requirement by 223 MW); and (4) the addition of 182.5 MW of incremental in-area generation.³³² Finally, CAISO assumed that transmission alternatives would affect Local Capacity Requirements in several ways. First, Sunrise would reduce SDG&E's Local Capacity Requirement by 1,000 MW and, at the same time increase the Local Capacity Requirement in the Los Angeles basin by 1,000 MW. Second, CAISO assumed that new resources developed in the Imperial Valley will reduce the Los Angeles basin Local Capacity Requirement. However, until Imperial Valley renewables develop as a result of Sunrise, Sunrise generates a negative benefit since there are no new resources in the Imperial Valley to counteract the Sunrise-generated increase in the Los Angeles basin Local Capacity Requirement. CAISO calculates the resulting increase of the Los Angeles basin Local Capacity Requirement as a System Resource Adequacy cost to SDG&E of \$27/kW-yr (\$2006).

Some of these changes tended to increase estimated reliability benefits, and some tended to decrease estimated reliability benefits. In total, CAISO's projected reliability benefits fell by \$20 million per year in Phase 1, from \$149 million per year to \$129 million per year.

In Phase 2, as described in Section 6.16 above, CAISO changed its estimated combustion turbine costs from \$78/kW-year to \$162.10/kW-yr. This change raised its projected reliability benefits from \$129 million per year in Phase 1 to \$237 million per year in Phase 2.

³³² CAISO Exhibit I-6, 16-20, 30-33. CAISO assumed the 182.5 MW of incremental generation would be comprised of: 4.5 MW from the San Diego County Water Authority Project; 20 MW from the Bull Moose Project; 138 MW from the Pala and Margarita Peak; and 20 MW from the addition of the air inlet coolers at Palomar.

A.06-08-010 COM/MP1/tcg

In Phase 1, DRA relied on adjustments to SDG&E's local reliability cost model. However, in Phase 2, DRA developed its own model to estimate reliability benefits.³³³

Parties disagree with CAISO's assumptions about Sunrise's impact on SDG&E's Local Capacity Requirements and they disagree with CAISO's calculations of avoided new generation costs and Must Run contract savings. We address each of these issues in turn.

9.3.1. Sunrise's Impact on Local Capacity Requirements

Parties dispute CAISO's conclusions regarding Sunrise's impact on Local Capacity Requirements in San Diego and the Los Angeles basin. Nevada Hydro disputes CAISO's conclusion that TE/VS-generated Local Capacity Requirement reductions in SDG&E's service area will be offset by an identical increase in Local Capacity Requirements in the Los Angeles basin.³³⁴ Nevada Hydro also believes both SDG&E and CAISO have applied more stringent criteria than the applicable standard under CAISO Grid Planning Criteria.³³⁵ SDG&E and CAISO contend that Nevada Hydro misinterprets or does not understand CAISO Grid Standards, in particular how they relate to Path 44.³³⁶

DRA argues that SDG&E incorrectly assumes that Sunrise will provide 1,000 MW of reduced Local Capacity Requirements and thus over-estimates the reliability benefits of Sunrise, or at least fails to account for the risk that Sunrise

³³³ DRA Exhibit D-101, 23.

³³⁴ Nevada Hydro Phase 1 Opening Brief, 32.

³³⁵ Nevada Hydro Phase 2 Opening Brief, 35.

³³⁶ SDG&E Phase 2 Reply Brief, 140-141; CAISO Phase 2 Reply Brief, 14-17.

A.06-08-010 COM/MP1/tcg

will not yield such benefits.³³⁷ DRA also asserts that none of the transmission alternatives will offer significant local reliability benefits to SDG&E customers and that the Commission must continue to monitor SDG&E's local reliability regardless of the action we take on any Sunrise transmission alternative.³³⁸ DRA states that CAISO reports suggest that Sunrise could result in increased Local Capacity Requirements in San Diego.³³⁹ DRA focuses on the report assessment that while Sunrise will reduce the need for new generation in the San Diego local area by 1,000 MW, CAISO's new "South Bay Sub-area" will require contracts with the South Bay Power Plant, a new plant, or upgrades on SDG&E's transmission system, and CAISO's new "Greater Imperial Valley-San Diego" area could require as much as 3,190 MW of local generation.³⁴⁰

Both CAISO and SDG&E claim that DRA's analysis is flawed. They contend that resources in the Greater Imperial Valley-San Diego area that do not currently count toward meeting Local Capacity Requirements would be counted once Sunrise comes online and that because little or no incremental costs are associated with these resources, SDG&E will avoid up to 1,000 MW of new capacity. These resources include the two combined cycle generators in Mexico that interconnect directly to the Imperial Valley substation, which are highly efficient and relatively new generators currently delivering power to the CAISO grid. Also, as Imperial Valley renewables are developed and connected to either Sunrise or the Southwest Powerlink at or west of the Imperial Valley substation, these resources would also meet local capacity requirements at little or no cost

³³⁷ DRA Phase 2 Reply Brief, 22, 55.

³³⁸ DRA Exhibit D-101, Volume 1, 38.

³³⁹ See, for example, DRA Exhibit D-45.

³⁴⁰ DRA Exhibit D-101, 8-11, 17-18.

A.06-08-010 COM/MP1/tcg

(as DRA acknowledges). However, CAISO agrees that delays in development of Imperial Valley renewables will result in reduced reliability benefits. According to CAISO, levelized benefits are reduced by \$11 million per year if Imperial Valley renewable development occurs slower than expected.³⁴¹ SDG&E does not address the impact of delayed renewable development on its reliability benefit projections.

UCAN argues that Sunrise's impact on Local Capacity Requirements is not clear. UCAN states that there are overloads under certain contingencies when Sunrise is analyzed (1) with all lines in service and 4,200 MW of imports or (2) under G-1/N-1 conditions and 3,500 MW of imports. Because of these overloads, UCAN contends that it is uncertain that Sunrise will increase SDG&E's import capacity under contingency conditions by 1,000 MW (thus lowering Local Capacity Requirements).³⁴² SDG&E claims that upgrades have been completed to address this issue.³⁴³

UCAN also argues that Sunrise is extremely oversized relative to the magnitude of need in the SDG&E service area. UCAN states, for example, that Sunrise exceeds, by 994 MW, UCAN's estimated reliability shortfall of 6 MW in 2017.³⁴⁴

South Bay agrees with CAISO and SDG&E that Sunrise will increase import capability into San Diego by about 1,000 MW but contends that in-area

³⁴¹ CAISO Exhibit I-13, 19.

³⁴² UCAN Phase 1 Opening Brief, 55, note 214.

³⁴³ SDG&E Phase 1 Reply Brief, 124.

³⁴⁴ UCAN Phase 1 Opening Brief, 55. UCAN ultimately projects a reliability shortfall of 157 MW in 2017. See Table 4 in Section 7 above.

A.06-08-010 COM/MP1/tcg

generation can provide greater reliability benefits at a lower cost.³⁴⁵ South Bay states that the assumption that additional System Resource Adequacy capacity³⁴⁶ will be available for import over Sunrise is questionable, given the rapid load growth in the Southwest that will use that power and the Arizona Corporation Commission's decision to deny the Devers - Palo Verde transmission line. South Bay states that the Arizona Corporation Commission's regulatory decision demonstrates the difficulty in siting out-of-state energy facilities for the benefit of California customers.³⁴⁷

South Bay concludes that even with enough System Resource Adequacy capacity, SDG&E will need to procure capacity from local generation resources to meet its Local Capacity Requirements, whether or not Sunrise is built. South Bay points out that local generation, such as the existing South Bay Power Plant or its replacement project, meet both System and Local Resource Adequacy (or Local Capacity) Requirements.³⁴⁸ Under the Commission's rules on counting capacity

³⁴⁵ South Bay Phase 1 Opening Brief, 11.

³⁴⁶ Under the Commission's System Resource Adequacy requirements, each load serving entity is required to procure the capacity resources, including reserves, needed to serve its aggregate system load. However, the load serving entity is not required to account for local transmission constraints that could prevent the procured capacity from being available to serve load. Thus, load serving entities could be resource-adequate on an aggregate or system basis but transmission-constrained local load pockets could still be resource-deficient. It is this problem that Local Resource Adequacy requirements are intended to resolve. If the transfer capability into a local load pocket area is less than the load demand within the area, then, depending on reliability criteria, additional generation capacity within the load pocket is needed to satisfy the Local Resource Adequacy requirement. See D.06-06-064.

³⁴⁷ South Bay Opening Phase 1 Brief, 13.

³⁴⁸ South Bay Opening Phase 1 Brief, 13.

A.06-08-010 COM/MP1/tcg

for these purposes, imported generation does not meet Local Capacity Requirements.³⁴⁹

9.3.2. Estimating Benefits of Deferred New Generation

SDG&E states that the value of combustion turbines deferred by Sunrise represents the value of the avoided revenue requirement associated with its fixed costs. In Phase 1, SDG&E estimated the deferred generation savings attributable to Sunrise at approximately \$96 million per year,³⁵⁰ but SDG&E's Phase 2 showing anticipates reduced savings of only \$44 million per year.³⁵¹

In its final Phase 1 showing, CAISO estimated that without Sunrise 313 MW of new combustion turbine resources would be needed in 2015 and valued those combustion turbine additions at \$78/kW-year (2007\$, escalated at 2% per year), resulting in avoided new generation costs of \$115 million per year. As discussed in Section 6.16, CAISO's Phase 2 combustion turbine cost estimates increase to \$162.10/kW-yr (2007\$, escalated at 2% per year). The updated combustion turbine costs double CAISO's projected generation savings to \$231 million per year.³⁵²

UCAN argued in Phase 1 that SDG&E overstated combustion turbine costs by including 138 MW associated with the Pala and Margarita Peakers.³⁵³ UCAN

³⁴⁹ South Bay Exhibit S-8, 2.

³⁵⁰ SDG&E Exhibit SD-26, Exhibit H, Table H-17.

³⁵¹ SDG&E Exhibit SD-142, 32.

³⁵² CAISO Exhibit I-12, 8. The assumed increase of \$119 million from updated combustion turbine costs was added to the \$87 million non-Must Run reliability benefits from Exhibit I-6, Table 6.

³⁵³ UCAN Phase 1 Opening Brief, 261.

A.06-08-010 COM/MP1/tcg

estimated that including these plants in the reliability benefits calculations overstates the benefits by \$15 million per year.³⁵⁴

9.3.3. Estimating Must Run Contract Savings

SDG&E estimated the Must Run contract savings of Sunrise to be \$96.7 million³⁵⁵ per year in Phase 1; its Phase 2 estimate is \$104 million per year.³⁵⁶

CAISO estimated the Must Run contract savings of Sunrise to be \$42 million per year in Phase 1; its Phase 2 estimate is \$35 million per year. To calculate these benefit estimates, CAISO used a spreadsheet model to determine Must Run contract savings under several different scenarios and compared them to a reference case.

CAISO's modeling approach rests on several important assumptions. First, CAISO assumes that existing Must Run generators will remain viable and ready to accept a Must Run contract, even if they do not receive a Must Run contract for several years. Second, CAISO assumes that all non-Sunrise scenarios provide the same amount of RPS-related System Resource Adequacy, regardless of the level of in-area renewable generation. Third, CAISO's modeling assumes that Sunrise permanently avoids the construction of new combustion turbines, rather than merely postponing them.

DRA argued in Phase 1 that SDG&E and CAISO Must Run cost estimates were unrealistic because they included older units that DRA contended likely would retire and could not operate economically under CAISO assumptions.³⁵⁷ DRA estimated the Must Run contract savings associated with reduced Local

³⁵⁴ *Ibid.*, 263.

³⁵⁵ SDG&E Phase 1 Opening Brief, 159.

³⁵⁶ SDG&E Exhibit SD-142, 32.

³⁵⁷ DRA Phase 1 Opening Brief, 60-61.

A.06-08-010 COM/MP1/tcg

Capacity Requirements by assuming: (1) higher combustion turbine costs from SDG&E's 2008 Peaker RFO; (2) that all future Must Run contracts would be provided "full cost recovery"; (3) that local units would retire if they did not receive full cost recovery contracts and would be replaced by combustion turbines; and (4) that San Diego customers would continue to pay System Resource Adequacy costs to compensate for reduced Local Capacity Requirements.³⁵⁸ Based on those assumptions, DRA estimated the total reliability benefits associated with Sunrise at \$56 million per year in Phase 1, with Must Run contract savings constituting a portion of that.³⁵⁹

In Phase 2 DRA asserts that CAISO improperly assumes that Must Run contract prices will drop as a result of competition. DRA argues that Must Run contract prices will not fall appreciably below their FERC-established cost of service. Further, given the relative inefficiencies of many Must Run units, DRA challenges CAISO assumptions that Must Run units will recover any of their operating costs from the market. Rather, DRA assumes that existing Must Run units will require contracts that provide them full cost of service recovery.³⁶⁰ CAISO disagrees, pointing out that Sunrise will reduce the need for Must Run contracts and, as a result, CAISO will be able to contract with lower-cost in-area generators, thereby reducing Must Run contract prices below those available today.³⁶¹

UCAN itemizes numerous changes in SDG&E's and CAISO's assumptions underlying the Must Run benefits calculations, and suggests that eventually both

³⁵⁸ DRA Phase 1 Opening Brief, 65-66.

³⁵⁹ DRA Phase 1 Opening Brief, 65-67.

³⁶⁰ DRA Exhibit D-101, Vol. 1, 21.

³⁶¹ CAISO Phase 2 Reply Brief, 40.

A.06-08-010 COM/MP1/tcg

CAISO and SDG&E come close to agreeing with UCAN's opening position.³⁶² UCAN claims that SDG&E's modeling assumes that the existing Encina units can be mothballed and then returned to service in lieu of building more expensive combustion turbines. UCAN argues that because the Encina units have worse heat rates than new combustion turbines, they are unlikely to ever earn substantial operating profits from energy sales. Consequently, UCAN contends that SDG&E cannot expect the Encina units will be available without capacity payments. UCAN claims that shutdowns would lead to an even smaller number of merchant generators competing to provide resources to meet the Local Capacity Requirement and the net effect would be the same MW of local capacity sold by fewer merchant generators at a higher price.³⁶³

9.3.4. Unquantifiable Reliability Benefits

Parties identify a number of difficult to quantify or unquantifiable reliability benefits, ranging from the reduced fire risks inherent in some alternatives,³⁶⁴ to the general value of long-term improvements to SDG&E's aging transmission infrastructure. SDG&E identifies the following unquantified benefits of Sunrise:

- A reduced vulnerability to fires, as Sunrise would not share a corridor with the Southwest Powerlink;
- Improved maintenance, as Sunrise would allow for "maintenance to be performed more readily on all interconnections with less risk";
- A more robust southern California transmission system;

³⁶² UCAN Phase 1 Opening Brief, 260.

³⁶³ UCAN Exhibit U-4, 162.

³⁶⁴ Mussey Grade, as well as the EIR/EIS, attempt to quantify some of the fire risks associated with Sunrise and its alternatives. Mussey Grades' efforts are discussed in Section 6.17.2.

A.06-08-010 COM/MP1/tcg

- Support of future system expansion and interconnection;
- Long-term improvement to the aging infrastructure, including facilitating the replacement of aging power plants in the San Diego area and the consequent reduction in airborne emissions;
- Insurance against unexpected high load growth in SDG&E's service area;
- Reduced uncertainty created by potential qualifying facility contract terminations; and
- Reduced electricity costs by increased competition and fuel diversity in wholesale electricity markets selling into California.³⁶⁵

Parties dispute these benefits as either inaccurate or unsubstantiated. For example, Conservation Groups argue that siting Sunrise in "fire prone, remote areas" increases the risk of fires and the system's vulnerability to them.³⁶⁶ UCAN argues that SDG&E's claim of improved maintenance is unsubstantiated and that additional costs would result, instead.³⁶⁷ Nevada Hydro argues that TE/VS not only provides all of the benefits SDG&E lists, but is superior to Sunrise because it provides a link to the north, rather than another link to Arizona.³⁶⁸

CAISO agrees Sunrise provides future expandability options,³⁶⁹ but assigns no more than a 50% probability that an expansion would occur in the next ten years.³⁷⁰

³⁶⁵ SDG&E Phase 1 Opening Brief, 87-91.

³⁶⁶ Conservation Groups Phase 1 Opening Brief, 37.

³⁶⁷ UCAN Phase 1 Reply Brief, 17-18.

³⁶⁸ Nevada Hydro Phase 1 Reply Brief, 15.

³⁶⁹ CAISO Phase 2 Opening Brief, 14.

³⁷⁰ RT 5432.

A.06-08-010 COM/MP1/tcg

Other parties identify unquantifiable benefits associated with generation alternatives. South Bay states that in-area generation offers reliability benefits that a transmission line cannot provide, including: (1) reactive power support that maintains the voltage of the transmission system within required limits,³⁷¹ which will be increasingly important as more intermittent renewable generation enters the resource mix; (2) dispatchability by CAISO to mitigate intrazonal congestion,³⁷² one of the problems requiring the Must Run designation for so much of the San Diego area's existing generation; and (3) regulation of reserves, essential for maintaining the frequency of the CAISO grid within the specified reliability standards and for integration of intermittent renewable resources to effectively serve CAISO load.³⁷³

9.4. SDG&E's "Decision Quality" Framework Modeling

In Phase 2, SDG&E presented an analytical framework for making strategic decisions "involving multiple stakeholders and values, long time horizons, and significantly different alternatives that will play out in a highly uncertain future."³⁷⁴ SDG&E proposed this analysis, referred to as the "Decision Quality" framework, to ensure the decision made in this proceeding is the "best course of action for SDG&E's customers and stakeholders[.]"³⁷⁵

³⁷¹ South Bay Exhibit S-8, 2-3.

³⁷² South Bay Exhibit S-8, 3.

³⁷³ South Bay Phase 1 Opening Brief, 15.

³⁷⁴ SDG&E Exhibit SD-34C, 13.1.

³⁷⁵ *Ibid.*

A.06-08-010 COM/MP1/tcg

Using this modeling framework, SDG&E evaluates six decision alternatives³⁷⁶ applying six criteria: outage risk, in-service date, GHG impact, RPS compliance, reliability need, and future expandability. All but two of the criteria (GHG impact and RPS compliance) attempt to quantify reliability benefits. SDG&E quantifies the output of the analysis based on the six criteria as an expected value for each alternative, bracketed by a range of values representing a 10% to 90% likelihood of outcome. In all cases, SDG&E finds that its “Enhanced” Northern Route is equal or superior to the other alternatives. In particular, SDG&E estimates significant costs associated with the outage risks projected for any other transmission alternative.

Parties’ generally do not dispute the value of the Decision Quality modeling methodology. Rather, they contest SDG&E’s underlying assumptions. SDG&E’s modeling witness states that he relied solely upon SDG&E for all of the data input into the model, and that he did not verify the data provided by SDG&E, nor consider other parties’ perspectives regarding that data.³⁷⁷

9.5. Planning for and Maintaining Reliability

Pursuant to § 451, SDG&E as an electric utility is required to provide “adequate, efficient, just and reasonable service...and facilities,...as necessary to promote the safety, health and convenience of...the public,” including obtaining adequate supplies of electricity for use by its customers. In practice, as applied to an electric utility as the Load Serving Entity (LSE), the Commission interprets

³⁷⁶ The alternatives considered in the modeling were the All-Source Generation Alternative, the In-Area Renewable Alternative, the LEAPS Transmission-Only Alternative, Environmentally Superior Southern Route Alternative, the Environmentally Superior Northern Route Alternative, and SDG&E’s “Enhanced” Northern Route. SDG&E Exhibit SD-34c, pages 13.5-13.6.

³⁷⁷ RT 5248, 5292.

A.06-08-010 COM/MP1/tcg

this language as having the obligation to plan for and to serve the existing and foreseeable electric requirements of its customers' demand within the utility's service area. Separate from its supply service obligation, SDG&E as the owner of transmission and distribution facilities is also obligated both by state and federal law to provide transmission and distribution services to SDG&E's bundled customers as well as customers of other LSEs serving retail customers within SDG&E's service area.

SDG&E's evidence shows SDG&E faces a reliability deficiency in 2010 under a wide variety of scenarios.³⁷⁸ SDG&E's analysis reflects a reliability deficiency in 2010 of at least 90 MW³⁷⁹ and as much as 247 MW using the assumptions in SDG&E's January 26, 2007 supplemental testimony.³⁸⁰

While intervenors question the need for Sunrise in 2010,³⁸¹ no intervenor appears to deny that the San Diego area faces a grid reliability deficiency, and in fact some admit the criticality of the matter.³⁸² The loss of one of the two primary SDG&E import paths, specifically the Imperial Valley-Miguel 500 kV line, causes significant reliability issues for SDG&E and the interconnected transmission system. To cure this deficiency, DRA believes that substantial new investment in San Diego area resources – including generation and transmission – will be necessary from 2010 to 2020.³⁸³ DRA states, and SDG&E agrees, that Sunrise would likely provide a more reliable means of meeting loads in San Diego than

³⁷⁸ See, e.g., SDG&E Exhibit SD-26 at 47.

³⁷⁹ SDG&E Exhibit SD-15, 9, Table 1.

³⁸⁰ SDG&E Exhibit SD-26, 47.

³⁸¹ South Bay Exhibit S-8, 5; DRA Exhibit D-66, 60:6-7; UCAN Exhibit U-101, 3.

³⁸² DRA Exhibit D-66, ES-1.

³⁸³ DRA Exhibit D-66, 25:23-25.

A.06-08-010 COM/MP1/tcg

the major generation alternatives³⁸⁴ and that expanded transmission capacity into San Diego should give SDG&E and other LSEs more procurement options than the purchase of output from a generator in San Diego.³⁸⁵ UCAN also admits that SDG&E does have legitimate reliability needs over the next decade.³⁸⁶

9.6. Discussion

We find reasonable CAISO's assumptions regarding Sunrise's impacts on Local Capacity Requirements in both San Diego and Los Angeles. Nevada Hydro's showing is unpersuasive; we do not accept Nevada Hydro's claims that CAISO and SDG&E have used improper metrics in evaluating TE/VS impacts on Local Reliability Requirements, nor that CAISO failed to perform its studies properly.³⁸⁷

We do not accept DRA's arguments about Sunrise's potential impacts on Local Capacity Requirements. We agree with the CAISO that the possible creation of a Greater Imperial Valley-San Diego local reliability area would allow renewable generation in the Imperial Valley area to satisfy both RPS and LCR requirements.³⁸⁸

³⁸⁴ DRA Exhibit D-66, 39:13-14.

³⁸⁵ DRA Exhibit D-66, 40:6-8.

³⁸⁶ UCAN Exhibit U-04, 2.

³⁸⁷ Our findings on this issue are for purposes of this proceeding only, and shall not be precedent for any future proceeding, including the TE/VS CPCN Application currently pending before us.

³⁸⁸ CAISO Phase 2 reply brief at 7-8; SDG&E Phase 2 reply brief at 259-261; Sparks, Ex. I-9 at 15:14-22, 16:21-22, 17-18.

A.06-08-010 COM/MP1/tcg

UCAN's suggestion that Sunrise may create technical reliability problems concerns us. Neither SDG&E nor CAISO establish that criteria violations in the power flow and other technical modeling of Sunrise are insignificant.

We find reasonable CAISO's modeling approach for avoided new generation costs. Among other things, we assume the same combustion turbine costs as those used by CAISO in Phase 2.

We agree with UCAN that SDG&E improperly included the 138 MW associated with the Pala and Margarita Peakers in its reliability savings projections. Both the CAISO and our Analytical Baselines include those peakers. As a result, they are not counted as reliability savings generated by Sunrise.

We do not agree with some of the assumptions underlying CAISO's modeling of Must Run contract savings. For example, we are not certain that potential Must Run generators will continue to be available to operate after several years with no Must Run contract. Nor are we certain that Sunrise will permanently avoid the construction of all new combustion turbines; however, we believe that the construction of Sunrise will obviate the need for some combustion turbines and significantly postpone the construction of others. However, we find that, on balance, for the reasons provided above, the CAISO's reliability benefits modeling effort is superior to other efforts. Thus, we adopt CAISO's reliability benefits modeling methodology consistent with our adopted Analytical Baseline assumptions as discussed below in Section 11.4.

The Commission has acknowledged that there is uncertainty surrounding resource planning and development. Predicting when aging power plants will retire presents a significant challenge to capacity planning. Predicting with absolute accuracy when infrastructure additions – generation and/or transmission – will occur further complicates planning and development efforts.

A.06-08-010 COM/MP1/tcg

As we have seen in the recent past, it is extremely challenging to permit, site, and construct generation within the state of California.³⁸⁹ Given the difficult permitting environment, project delay is becoming more of the norm as opposed to the exception. The record before us is clear that SDG&E will face a capacity shortfall. The difficult question to answer is exactly when this shortfall will occur.

Throughout this proceeding parties relied heavily upon modeling efforts to determine need, costs, benefits, etc. of the proposed project and its alternatives. However, it is important to note that the model is not intended to provide an accurate picture of the future. The model is not intended to predict, or dictate future resource procurement activities. Actual resource development will be subject to the various procurement processes established by statute and Commission decisions.

We do not believe that, given California's challenging permitting environment, relying on increasingly adding in-basin generation to SDG&E's service territory is a viable long-term solution to meeting SDG&E's capacity needs. Adding conventional peaking resources may be an acceptable solution for short-term, unforeseen reliability needs, but is an untenable solution for maintaining system reliability in the long-term. As we have seen in other service territories, short-term, 'just-in-time' procurement is inefficient, costly, may run afoul of the State loading order, and is far too risky to rely upon to meet reliability needs of SDG&E's (or any other LSE's) ratepayers.³⁹⁰

The reliability benefits – both quantifiable and non-quantifiable – of the transmission alternatives presented throughout this proceeding lead us to rule in

³⁸⁹ See, *LTPP Decision*, 85-86, D.07-12-052, D.08-02-019, and D.08-11-004.

³⁹⁰ *LTPP Decision*, 85-86.

A.06-08-010 COM/MP1/tcg

favor of a transmission solution to meet SDG&E's reliability needs. A transmission solution affords SDG&E the best opportunity to plan for the current *and future* reliability needs throughout its service territory. In addition, a transmission solution – Sunrise – will not only meet SDG&E's reliability needs, but it will facilitate the development of renewable resources, thus advancing state policy to reduce GHG emissions. We agree with SDG&E that Sunrise will also provide a number of desirable, but unquantifiable, reliability benefits. Among other things, Sunrise will create a more robust southern California transmission system, and provide insurance against unexpected high load growth in SDG&E's service area. The generation alternatives will not provide these benefits.

As discussed elsewhere in this decision, the environmental review will guide us in determining the final environmentally superior route for the Sunrise Project.

We give no weight to the results of SDG&E's Decision Quality modeling. While the modeling methodology may have merit, SDG&E's assumptions for the modeling were not verified and may conflict with our adopted Analytical Baseline assumptions.

10. Potential Savings from Accessing Least Cost Renewable Resources

10.1. What They Are

The RPS law requires utilities to engage in renewable energy procurement,³⁹¹ and SDG&E claims that Sunrise is needed to support the cost-effective development of Imperial Valley renewables. One way to support SDG&E's claim would be to demonstrate that developing Sunrise provides

³⁹¹ See, e.g., § 399.12.

A.06-08-010 COM/MP1/tcg

access to renewable resources that are less expensive than the renewable resources that would be delivered if Sunrise were not built. However, since RPS is a fairly recent development, there is no standardized approach to quantifying such savings.

The Renewable Energy Transmission Initiative, also known as “RETI” and begun in mid-2007, plans to issue a report before the end of 2008 that identifies all developable renewable resource areas in California and prioritizes them by economic and environmental criteria to promote development of the most cost-effective and least environmentally damaging renewable resource areas first.³⁹² However, RETI did not exist when SDG&E filed its 2006 Application. CAISO recognized the need to quantify the value of developing Imperial Valley renewables in comparison to other renewable resource areas and thus developed a new modeling approach for this proceeding. CAISO’s model estimates the annual levelized ratepayer benefits of developing one renewable resource area before another.

While lacking the environmental, engineering, and updated RPS cost components included in the RETI analysis, CAISO’s modeling of renewable resource savings associated with various renewable resource areas provides useful information regarding Sunrise’s cost impacts on renewable development in the Imperial Valley.

10.2. Overview of Conclusions

We commend CAISO for undertaking this renewable resource savings modeling effort and we adopt its methodology here. However, CAISO’s final showing makes several key assumptions with which we do not agree. We do not

³⁹² Additional information about RETI is available at <http://www.energy.ca.gov/reti/index.html>.

A.06-08-010 COM/MP1/tcg

adopt CAISO's Alternative Renewable Costs, or its assumption that only 25% of out-of-state renewable resources will be available to California. Instead, our adopted Analytical Baseline assumes CAISO's CRS Renewable Costs, and that 50% of out-of-state renewable resources will be available to California. We also adopt a different approach when the model finds that developing Imperial Valley or in-area renewables would increase renewable resource costs. In the Sunrise cases CAISO assumed that the least cost renewable resources would be delivered whether or not Sunrise is built. However, in the All-Source Generation Alternative, CAISO assumed that San Diego renewable resources would be delivered even if they were more expensive than other available resources. As discussed further below, we believe the approach CAISO took in the Sunrise cases is more reasonable, and we have modified the All-Source Generation Alternative accordingly.

The model finds that building Sunrise will not result in potential savings from accessing least cost renewable resources assuming a 20% RPS. However, significant savings could be achieved assuming a 33% RPS.

10.3. How CAISO Estimates Potential Renewable Resource Savings

CAISO's modeling of potential renewable resource savings starts with assumptions about how California's RPS program operates. CAISO assumes that SDG&E and the other load-serving entities in CAISO's control area will meet 20% RPS by 2010, and that these entities will increase renewable procurement to meet 26.5% of their load with renewables by 2015 and 33% of their load with renewables by 2020.³⁹³ CAISO also assumes that 75% of the non-Commission

³⁹³ CAISO Phase 1 Opening Brief, 29.

A.06-08-010 COM/MP1/tcg

regulated utilities will voluntarily comply with 20% RPS by 2010 and 33% RPS by 2020.³⁹⁴

CAISO developed “least cost” supply curves by identifying all RPS-eligible generation resources in the WECC available to be developed and delivered to California in 2010, 2015 and 2020. It then estimated the costs of those resources using its CRS Renewable Costs, developed as described in Section 6.13 above.³⁹⁵

CAISO aggregated the renewable resources it identified into 17 geographic “resource areas” and averaged the cost of each resource area.³⁹⁶ CAISO added transmission-related costs to each resource area to arrive at a levelized cost of delivered renewable resources from each resource area.³⁹⁷ Once CAISO established the quantity and levelized delivered cost of power from each resource area, it ranked each resource area from lowest to highest-cost to create a renewable supply curve. Figure 1 presents CAISO’s initial supply curve, prior to the adjustments described below:

³⁹⁴ CAISO Phase 1 Opening Brief, 30; see also CAISO Exhibit I-2, 31.

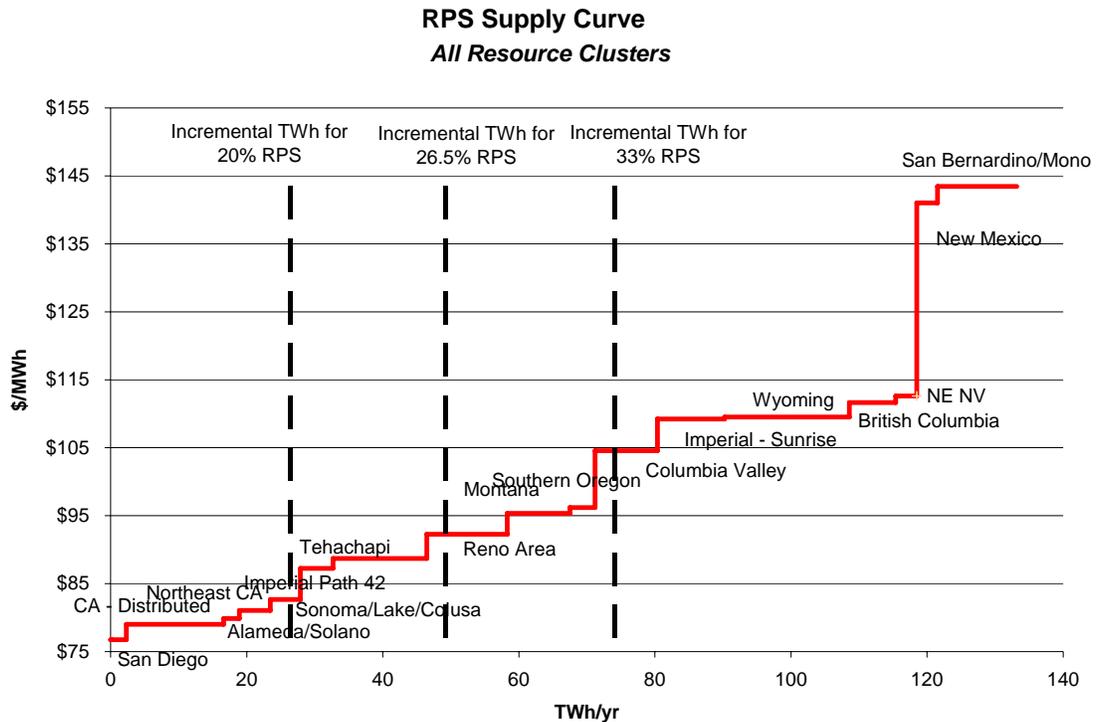
³⁹⁵ Table 4.3 at CAISO Exhibit I-2, 52 presents CAISO’s assumed generation-related costs by type and location. Costs presented in this table do not include delivery costs to the CAISO grid.

³⁹⁶ Table 4.4 at CAISO Exhibit I-2, 52 presents the resource costs by resource area.

³⁹⁷ CAISO Exhibit I-2, Table 4.5, 54 presents CAISO’s assumed transmission costs by resource area.

A.06-08-010 COM/MP1/tcg

Figure 1: CAISO’s Initial Supply Curve of Potential Renewable Resources To Meet Varying RPS Levels in California³⁹⁸



The CAISO’s model assumes the 20%, 26.5%, and 33% RPS targets will be met through the delivery of the lowest cost renewable resources available to California. For illustrative purposes, Figure 1 implies that the 20% RPS goal is met largely through the delivery of California distributed resources; the 26.5% goal is met with resources including those in Tehachapi; and the 33% is met with additional resources in the Reno area, Montana, and Southern Oregon. Figure 1, which shows the supply curve prior to adjustment discussed below, shows that if all of the renewable resources in the supply curve ultimately were developed, resources in the Imperial Valley delivered over Sunrise (labeled “Imperial -

³⁹⁸ CAISO Exhibit I-2, Figure 4.1, 66.

A.06-08-010 COM/MP1/tcg

Sunrise” on the figure and referred to here as Imperial Valley Sunrise Renewables) would only be delivered if the RPS target were above 33%.³⁹⁹

In Phase 1, CAISO modeled three cases: (1) Sunrise is online by 2010; (2) Green Path and the TE/VS project are online by 2010; and (3) the 620 MW South Bay Replacement Project is online by 2010.⁴⁰⁰ CAISO also developed a combustion turbine reference case assuming 565 MW of capacity online by 2015 (Reference Case).

CAISO constructed three different resource portfolios specific to the three cases it modeled. CAISO’s projected levels of Imperial Valley renewable development both with and without Sunrise are set forth in Section 6.10 above. Based on those projections, all of the cases assume that about 700 MW of Imperial Valley geothermal resources are not transmission-dependent and therefore will be online by 2010 (labeled “Imperial – Path 42” on the figure above).⁴⁰¹ However, based on the assumption that transmission to the Imperial Valley will increase renewable development in that area, CAISO assumes greater levels of renewable development in the Imperial Valley for the transmission cases starting in 2011.⁴⁰² To model this, CAISO “forces” the Imperial Valley Sunrise Renewables to the front of the supply curve despite the higher costs projected for those resources. This is equivalent to assuming that Imperial Valley

³⁹⁹ See CAISO Exhibit I-2, Table 4-3, 52 for a more specific listing of the generation resources.

⁴⁰⁰ In Phase 2, CAISO assumes Sunrise is online in 2011, South Bay Replacement Project is online in 2010, and Green Path + TE/VS + LEAPS is online in 2012. CAISO Exhibit I-12, 11.

⁴⁰¹ The cases assume there is adequate capacity on Path 42 between the Imperial Valley and Edison.

⁴⁰² See CAISO Exhibit I-12, 9.

A.06-08-010 COM/MP1/tcg

Sunrise renewables resources replace the highest cost resources that would be delivered in the absence of Sunrise. Because Sunrise is projected to have a higher transfer capability than Green Path, CAISO assumes a higher amount of Imperial Valley Sunrise Renewables in the Sunrise resource portfolio by 2015 (1,000 MW of geothermal and 900 MW of solar thermal) than in the Green Path + LEAPS resource portfolio (1,341 MW of geothermal and 667 MW of solar thermal).⁴⁰³

CAISO then adjusts its initial renewable supply curve assumptions by reducing the amount of out-of-state renewables projected to be developed and delivered to California to 50%. Under that assumption, the levelized costs of Imperial Valley Sunrise Renewables (\$109/MWh) are higher than the costs of renewables from other areas until 2020, when they appear less expensive than a small amount of renewable resources from British Columbia, resulting in a savings of \$5 million per year starting in 2020.⁴⁰⁴ However, before 2020, CAISO's estimated costs for Imperial Valley Sunrise Renewables are significantly higher than renewable resources delivered from other areas.⁴⁰⁵

To calculate the renewable resource savings associated with a particular alternative, CAISO's model assumes that the renewables that can be delivered as a result of the alternative (Imperial Valley renewables in the case of Sunrise and San Diego renewables in the case of the All-Source Generation cases) displace the highest costs renewables that would be delivered without the alternative. In Sunrise cases, if Imperial Valley Sunrise Renewables are more expensive than the renewable resources that they would be displacing, CAISO assumes that the

⁴⁰³ CAISO Exhibit I-2, 52, 68-69.

⁴⁰⁴ CAISO Exhibit I-2, 69.

⁴⁰⁵ CAISO Exhibit I-2, 67. We see this result in CAISO's Compliance Exhibit, discussed below.

A.06-08-010 COM/MP1/tcg

potential renewable savings would be zero. In the All-Source Generation cases, CAISO assumes that the new San Diego renewables would be delivered irrespective of their relative cost. That assumption results in a negative renewable energy savings in several All-Source Generation cases.

CAISO later added a second renewable cost scenario assuming lower generation costs for solar thermal and higher costs for wind projects, as discussed in Section 6.13 above.⁴⁰⁶ CAISO also adjusted its modeling to assume only 25% (instead of 50%) of out-of-state renewables available to meet RPS.⁴⁰⁷ Based on these changes, CAISO estimates Sunrise generates \$228 million in potential renewable resource savings starting in 2015.

10.4. Discussion

There are important differences between the CAISO's renewable saving model and the actual RPS program as implemented by the Commission. As required by the RPS statutes and Commission decision, the investor-owned utilities conduct periodic solicitations for renewable resources. The utilities select resources by applying a "least cost" and "best fit" evaluation method.⁴⁰⁸ The criteria applied by the utilities includes quantitative factors such as curtailability, dispatchability, local reliability, and repowering; and qualitative factors such as benefits to low income or minority communities, environmental stewardship, local reliability, and resource diversity.⁴⁰⁹ The utilities bring

⁴⁰⁶ CAISO projects no wind in the Imperial Valley and abundant solar thermal resources. See Section 6.10 above. Thus, CAISO's revised renewable cost assumptions tend to improve the economics of Imperial Valley renewables over other renewable resource areas with wind resources.

⁴⁰⁷ CAISO Phase 1 Opening Brief, 32.

⁴⁰⁸ See, e.g., § 399.14.

⁴⁰⁹ See, D.04-07-029.

A.06-08-010 COM/MP1/tcg

selected renewable contracts to the Commission for approval, and the Commission approves or denies resources based on a number of factors, of which cost is only one. Since 2002 the Commission has approved at least 95 contracts with renewable resources for 5,900 MW including 61 contracts with new renewable projects, totaling 4,480 MW, all under the existing RPS framework.⁴¹⁰

The contracts that have actually been approved by the Commission have not been the same as the least cost resources identified in CAISO's analysis. For example, the model's assumptions would suggest that distributed renewable sources such as urban municipal waste and landfill gas would represent a large portion of the resources that will be delivered to meet 20% RPS. A review of the resources actually approved by the Commission demonstrates that distributed resources like these represent a relatively small proportion of the approved resources. It is unclear whether there are developers that are even developing these distributed renewable sources, or if the utilities have the opportunity to procure them. In practice the Commission has approved a diverse variety of resources types (including wind, geothermal, and solar) of varying sizes and located throughout California and beyond. Many of the approved resources appear in the CAISO's analysis as relatively higher cost resources.

Nonetheless, we adopt CAISO's modeling methodology for this proceeding as a useful tool to identify potential renewable resource cost savings from the construction of Sunrise and other alternatives. If Sunrise or other alternatives provide access to relatively lower cost renewable resources, then the CAISO model is a reasonable model for estimating the potential cost savings.

⁴¹⁰ Renewables Portfolio Standard Quarterly Report, July 2008, 4.

A.06-08-010 COM/MP1/tcg

CAISO's least cost assumptions lead to a reference case in which renewable resource costs are much lower than the Commission would expect to see in practice. Since the alternatives are compared to the least cost case, the calculated savings very likely underestimate the true potential cost savings of the alternative.

As we discuss above in Section 6.13, we do not adopt CAISO's Alternative Renewable Costs, or its assumption that only 25% of out-of-state renewables will be available to California. Instead, we adopt CAISO's CRS Renewable Costs used in CAISO's initial modeling effort and we assume that 50% of out-of-state renewables will be available to California. Thus, we do not adopt the final results of CAISO's renewable resource cost modeling.

DRA pointed out that CAISO's model for the Compliance Filing did not allow renewable resource benefits to be less than zero (e.g., to increase the total cost of renewable resources) for the 20% RPS Sunrise cases.⁴¹¹ However, we believe the approach CAISO took in the Sunrise cases is reasonable.

An underlying assumption of CAISO's model is that the lowest cost renewables should be delivered first. Given that assumption, it would be inconsistent to assume that higher cost renewable energy in the Imperial Valley would be delivered just because Sunrise is built. Therefore, for the purposes of estimating the potential savings from accessing least cost renewable resources, it is most appropriate to assume that the savings are at worst zero.

In the All-Source Generation Alternative, CAISO assumed that the renewable resource savings could be negative. To ensure that a consistent approach is taken in all cases, we have assumed that the relatively expensive

⁴¹¹ DRA Opening Comments on Compliance Exhibit, 6.

A.06-08-010 COM/MP1/tcg

renewable resources would not be delivered in the All-Source Generation Alternative; therefore, the renewable resource savings would be zero.

Applying our adopted Analytical Baseline assumptions, the model finds that Sunrise will not result in renewable resource savings assuming 20% RPS. However, Sunrise potentially generates significant savings assuming 33% RPS.

It would be incorrect to interpret this finding as implying that Imperial Valley renewable energy will not be delivered if Sunrise is built and the RPS remains at 20%. As discussed in Section 4.3, the evidence in this case suggests that significant renewable development in and around the Imperial Valley will be facilitated by Sunrise, even if the RPS remains at 20%. The Commission, in fact, has already approved several utility contracts with Imperial Valley renewable projects.⁴¹² Rather, the model is best regarded as an estimate of potential savings given a number of idealized assumptions. The model is not intended to provide an accurate picture of the future. As discussed above, the actual development of RPS projects will be subject to the RPS processes established by statute and Commission decisions.

Similarly, the model's finding that Sunrise will generate no renewable resource savings assuming a 20% RPS should not be taken out of context. While the CAISO's modeling approach is valid for the purposes of calculating potential renewable resource savings, in reality there could be cost savings as a result of the construction of Sunrise due to differences between the modeling assumptions and the way in which the RPS program operates. The fact that several contracts with Imperial Valley resources have already been approved suggests that there are relatively attractive renewable resources in the Imperial Valley.

⁴¹² See, D.07-04-039; Resolutions E-3965, E-4073, E-4126, E-4171.

A.06-08-010 COM/MP1/tcg

11. Calculating Net Benefits

As described in the three preceding Sections, parties' estimates of the energy and reliability benefits generated by the Proposed Project and some of its alternatives vary greatly. Only CAISO attempted to estimate potential savings from accessing least cost renewable resources.⁴¹³ We calculate net benefits by adding together the three kinds of benefits already discussed - energy benefits, reliability benefits, and renewable resource savings - and then subtracting project costs.⁴¹⁴ For a sense of the scope and scale of the resulting net benefit estimates, we calculate net benefits of the Proposed Project and its alternatives relative to a reference case that assumes combustion turbines will be added to meet future reliability needs.

11.1. Overview of Conclusions

Given parties' changing assumptions about combustion turbine costs, renewable costs, capital costs, and other assumptions, their net benefit calculations also changed throughout the proceeding.

Recognizing these disparities, and in an attempt to bring clarity to this proceeding, the Revised Scoping Memo directed CAISO to prepare a Compliance Exhibit using Analytical Baseline assumptions similar to those we adopt in today's decision.⁴¹⁵ The Compliance Exhibit defines a large set of consistent and

⁴¹³ Essentially, SDG&E assumed that the project would not provide any benefits of reducing renewable resource costs, since it assumed the same level of renewables in all scenarios.

⁴¹⁴ We estimate each of the three benefits relative to a reference case. Transmission costs of the reference case are accounted for in the cost of new combustion turbines. Thus, we do not subtract Sunrise costs from reference case transmission costs to determine net benefits.

⁴¹⁵ Since the Analytical Baseline assumptions we adopt here were not known when CAISO prepared the Compliance Exhibit, the assumptions in the Compliance Exhibit

A.06-08-010 COM/MP1/tcg

reasonable assumptions across scenarios. It then varies assumptions regarding RPS compliance requirements, and renewable and combustion turbine prices, to estimate the net benefits generated by three different alternatives -- the “Enhanced” Northern Route, the Draft EIR/EIS Environmentally Superior Southern Route, and the All-Source Generation Alternative⁴¹⁶ -- relative to a combustion turbine reference case (Reference Case). In summary, the Compliance Exhibit finds no net benefits under any alternative assuming the current 20% RPS. It finds the Draft EIR/EIS Environmentally Superior Southern Route has slightly higher net benefits than SDG&E’s “Enhanced” Northern Route Alternative under 33% RPS, and positive net benefits for the non-wires All-Source Generation Alternative only under specific combustion turbine and renewable cost assumptions.

In response to discovered errors and comments by parties, and to analyze the Compliance Exhibit’s three alternatives using the Analytical Baseline assumptions we adopt here, we have updated the Compliance Exhibit as described in Section 11.4 below.

Based on the results of the Update we find that, assuming a 20% RPS, Sunrise would result in significant economic benefits for ratepayers. The All-Source Generation Alternative would result in even higher net benefits. Assuming 33% RPS, Sunrise is estimated to generate over \$115 million per year in net benefits, which is \$24 million per year more than the All-Source

are not identical to our Analytical Baseline assumptions. We correct for that in an Update, discussed below.

⁴¹⁶ The “Enhanced” Northern Route and Draft EIR/EIS Environmentally Superior Southern Route Alternatives are proxies for all Sunrise transmission routes. They are assumed to generate the same level of gross benefits, and to only vary by capital costs. Consequently, we use the term “Sunrise” here to refer to these cases modeled in the Compliance Exhibit and the Update.

A.06-08-010 COM/MP1/tcg

Generation Alternative. Adding the unquantifiable benefits of a transmission alternative to our consideration, we find that Sunrise is the superior alternative for meeting SDG&E's longer-term reliability needs economically.

11.2. Parties' Modeling Efforts

SDG&E's net benefit estimates generally have diminished throughout the course of the proceeding. Initially, energy benefits were the primary component of SDG&E's benefit showing, varying from \$468 million per year in its 2006 Application to \$105 million per year by the end of the Phase 1 hearings, to \$52 million per year when compared to a combustion turbine reference case modeled using its own Analytical Baseline assumptions.⁴¹⁷ These variations in energy benefits flow through to SDG&E's showing of net benefits for Sunrise, which vary in similar proportions throughout the proceeding, from \$57 million per year in its 2005 Application, to \$447 million per year in its 2006 Application, to \$142 million per year by the end of Phase 1, and to \$41 million when compared to a combustion turbine reference case applying SDG&E's own Analytical Baseline. Table 9 presents SDG&E's changing net benefit estimates for the Proposed Project.⁴¹⁸

⁴¹⁷ See note 338, above.

⁴¹⁸ The gross benefits in Table 9 apply to Sunrise, regardless of its routing. However, the costs of the various Sunrise routes differ. Therefore, net benefits, which take costs into account, differ by route.

A.06-08-010 COM/MP1/tcg

**Table 9: SDG&E Estimates of Net Benefits
(Annual Levelized \$ Millions)**

Source	Gross Benefits	Costs	Total Net Benefits	Benefit/Cost Ratio
2005 Application, page V-13	210	153	57	1.37:1
2006 Application, Chapter IV, pages IV-8 to V-9	621	174	447	3.57:1
January 2007 Correction to 2006 Application ⁴¹⁹	259	174	85	1.49:1
July 25, 2007 Errata ⁴²⁰	298	156	142	1.91:1
Sunrise compared to combustion turbine reference case ⁴²¹	201	160	41	1.26:1

Likewise, CAISO's net benefit showing has varied – from \$52 to \$145 million per year (assuming lower renewable costs) to \$226 to \$318 million per year (using its Alternative Renewable Costs).⁴²² In Phase 1 CAISO estimated the net benefits of Sunrise under 33% RPS to range from \$52 to \$226 million per year.⁴²³ The lower estimates assumed CAISO's CRS Renewable Costs; the higher estimates assumed CAISO's Alternative Renewable Costs (higher wind and lower solar thermal costs) and only 25% of out-of-state renewables available to California.

In Phase 2, CAISO concludes that Sunrise under 33% RPS will provide net benefits between \$145 million and \$318 million per year.⁴²⁴ CAISO attributes the bulk of this increase from its Phase 1 projected benefits to its changed

⁴¹⁹ Correction to Amended Application of San Diego Gas & Electric Company, January 19, 2007, pages IV-8 to IV-9; see also SDG&E Exhibit SD-6, pages IV-8 to IV-9.

⁴²⁰ SDG&E Exhibit SD-26, Exh. J, 6.

⁴²¹ SDG&E Exhibit SD-142, 14.

⁴²² These renewable costs are addressed in Section 6.13 above.

⁴²³ CAISO Phase 1 Opening Brief, 15.

⁴²⁴ CAISO Phase 2 Opening Brief, 13.

A.06-08-010 COM/MP1/tcg

assumption in Phase 2 of increased combustion turbine costs, which has two opposing effects on net benefits: (1) it increases reliability benefits, thereby increasing net benefits for all alternatives; and (2) it increases the cost of alternatives heavily dependent on combustion turbines, thereby decreasing their net benefits. Table 10 presents CAISO's changing net benefit estimates for the Proposed Project, using CAISO's CRS Renewable Costs and assuming 33% RPS.

**Table 10: CAISO Estimates of Net Benefits Under 33% RPS Assuming
CRS Renewable Costs
(Annual Levelized \$ Millions)**

Source	Gross Benefits	Costs	Total Net Benefits	Benefit/Cost Ratio ⁴²⁵
Exhibit SD-5, Appendix I-1 (CAISO South Regional Transmission Plan) ⁴²⁶	3,241	2,059	1,182	1.57:1
Exhibit I-1, 41 (1/26/07 Testimony, Part I, Phase 1) ⁴²⁷	250	163	87	1.54:1
CAISO Exhibit I-2, 6 (4/20/07 Second Errata to Testimony, Part II, Phase 1)	241	157	84	1.54:1
CAISO Exhibit I-6, 45 (7/12/07 Errata to Rebuttal Testimony, Phase 1)	209	157	52	1.33:1
Exhibit I-12, 3 (3/12/08 Testimony, Phase 2)	305	182	123	1.68:1
Exhibit I-13, 22 (3/28/08 Rebuttal Testimony Phase 2)	327	183	145	1.79:1

⁴²⁵ Benefit/Cost Ratios = Gross Benefits/Costs.

⁴²⁶ Benefits and costs are NPV 2010\$.

⁴²⁷ Benefits are 2015 nominal dollars and costs are levelized costs of transmission.

A.06-08-010 COM/MP1/tcg

Table 11 below presents CAISO's changing net benefit estimates for the Proposed Project, using CAISO's Alternative Renewable Costs and assuming 33% RPS.

Table 11: CAISO Estimates of Net Benefits Under 33% RPS Assuming CAISO's Alternative Renewable Costs (Annual Levelized \$ Millions)

Source	Gross Benefits	Costs	Total Net Benefits	Benefit/Cost Ratio ⁴²⁸
CAISO Exhibit I-6, 46 (7/12/07 Errata to Rebuttal Testimony, Phase 1)	383	157	226	2.44:1
Exhibit I-12, 3 (3/12/08 Testimony, Phase 2)	473	182	291	2.60:1
Exhibit I-13, 22 (3/28/08 Rebuttal Testimony Phase 2)	500	183	318	2.73:1

Except for SDG&E and CAISO, parties generally argue that Sunrise will generate little or no net benefits, and may even result in net costs to ratepayers. UCAN claims that SDG&E overstates the benefits of Sunrise, understates its costs, and overstates the costs of the baseline combustion turbine case. In Phase 1, UCAN projected Sunrise would cost ratepayers \$81 million per year more than its combustion turbine reference case.⁴²⁹ In Phase 2, UCAN projects Sunrise will cost ratepayers \$74 million per year more than its combustion turbine reference case and "up to" \$120 million per year more than other alternatives.⁴³⁰ In contrast, UCAN estimates positive net benefits for its own

⁴²⁸ Benefit/Cost Ratios = Gross Benefits/Costs.

⁴²⁹ UCAN Phase 1 Opening Brief, 302.

⁴³⁰ UCAN Phase 2 Opening Brief, 4.

A.06-08-010 COM/MP1/tcg

all-source generation alternative. UCAN provides no net benefit estimates for other alternatives.

Similarly, in Phase 1, DRA estimated that Sunrise would cost \$37.8 million per year more than the combustion turbine reference case, resulting in a benefit-cost ratio of 0.76:1.⁴³¹ In Phase 2, DRA claims that “despite [SDG&E’s] ongoing adoption of many corrections suggested by intervenors,” SDG&E’s economic case is still “deeply flawed,” and that correcting additional deficiencies will reduce the benefit cost ratio to below one.⁴³²

Not all parties have estimated net benefit or benefit-cost ratios for the Proposed Project and its alternatives and parties that developed estimates did not calculate the net benefits of all alternatives. To demonstrate the disparities among the parties’ calculations, Table B-3 in Appendix B presents the parties’ final net benefit and/or benefit-cost ratios for the Proposed Project and its alternatives. Among other things, Table B-3 shows:

- The change in net benefits between the TE/VS + Green Path and the Sunrise + TE/VS + Green Path cases estimates a decrease in benefits if Sunrise is added after TE/VS and Green Path are built, such that Sunrise provides no incremental benefits;
- Southern Route Alternatives generally provide larger net benefits than Northern Route Alternatives;
- There is an enormous disparity in parties’ estimated net benefits for TE/VS and LEAPS; and
- Only DRA provided a range of net benefits, even though SDG&E was required to provide sensitivity analysis.

⁴³¹ DRA Phase 1 Opening Brief, 74.

⁴³² DRA Phase 2 Opening Brief, 8.

A.06-08-010 COM/MP1/tcg

11.3. CAISO's Compliance Exhibit

11.3.1. Overview

The Revised Scoping Memo directed CAISO to prepare a Compliance Exhibit consisting of additional model runs that employ a set of assumptions specified in the Revised Scoping Memo. CAISO proposed modifications to these assumptions, and the final assumptions that CAISO modeled are set forth in Table B-1 in Appendix B.

Many of the assumptions used in the Compliance Exhibit are consistent with the Analytical Baseline assumptions adopted here. The Revised Scoping Memo directed that where it did not specify assumptions, CAISO should use its preferred modeling assumptions from Phase 2 of this proceeding.⁴³³ The Revised Scoping Memo ordered CAISO to evaluate the operational grid impacts of each alternative and to estimate for each alternative its energy benefits, reliability benefits, and RPS compliance savings. Where CAISO determined that specific alternatives were equivalent, it did not perform separate analyses.

In August 2008, CAISO prepared a draft Compliance Exhibit, including preliminary estimates of net benefits. The draft was the subject of a workshop on August 22, 2008, where parties also discussed CAISO's methodology. Based on comments received from parties, CAISO revised its draft and served the Compliance Exhibit on August 26, 2008.⁴³⁴

⁴³³ Revised Scoping Memo, 2.

⁴³⁴ Consistent with the Revised Scoping Memo, the Compliance Exhibit, including its Work Papers, has been received in evidence as Exhibit Compliance-1. It is the only compliance exhibit in the record.

A.06-08-010 COM/MP1/tcg

The Compliance Exhibit estimates net benefits for 13 cases,⁴³⁵ based on three alternatives:

- A combustion turbine reference case;
- SDG&E's "Enhanced" Northern Route;
- The Draft EIR/EIS Environmentally Superior Southern Route;
and
- The All-Source Generation Alternative.

Cases 2-4 in the Compliance Exhibit present net benefits for each alternative under 20% RPS. Cases 6-8 present net benefits under 33% RPS. All of these cases assume the CAISO's lower Phase 1 combustion turbine costs. Case 9 presents net benefits assuming Sunrise comes online in 2011, rather than 2012, as assumed for all the other cases.⁴³⁶ CAISO added cases 11-13, which estimate net benefits under 33% RPS using the higher combustion turbine costs it assumes in Phase 2. CAISO used SDG&E's estimated capital costs for the alternatives, consistent with our adopted Analytical Baseline assumptions. However, to provide a range of renewable resource costs for the All-Source Generation Alternative,⁴³⁷ CAISO also ran Cases 4b, 8b, and 13b using its CRS Renewable Costs, consistent with our adopted Analytical Baseline assumptions.

To calculate gross benefits for each alternative under the new assumptions, CAISO needed to calculate energy benefits, reliability benefits, and potential renewable resource savings for each case relative to a reference case. However,

⁴³⁵ Net benefits for each case are estimated relative to the three combustion turbine Reference Cases, Cases 1, 5, and 10.

⁴³⁶ For the reasons discussed in Section 15.5, the Compliance Exhibit and our Update assume that SDG&E's Enhanced Northern Route will come online in 2012, rather than in 2011, as assumed by SDG&E and CAISO. SDG&E Phase 2 Opening Brief, 281; CAISO Phase 2 Reply Brief, 33.

⁴³⁷ The cost of the transmission alternatives are not impacted by renewable costs.

A.06-08-010 COM/MP1/tcg

CAISO declined to perform new GridView runs using the assumptions in the Revised Scoping Memo - which are necessary to estimate energy benefits - given time constraints and data development difficulties. Evidence in the record at that point suggested that, on balance, energy benefit calculations using the Revised Scoping Memo assumptions would result in energy benefit estimates of less than \$34 million per year, a small number compared to the value of other benefits at issue. Thus, instead of running production cost models to calculate energy benefits, CAISO estimated energy benefits using results from prior production cost modeling.⁴³⁸

CAISO calculated reliability benefits and renewable resource savings - the first and second most significant benefits on a dollar basis - using its own spreadsheet models, which were made available to parties.

CAISO presented load and resource tables to support the Compliance Exhibit. These tables show that there is no need for additional in-area generating capacity until 2014 at the earliest,⁴³⁹ primarily due to the assumptions that the existing South Bay Power Plant will stay online through 2012 and that the Carlsbad Energy Center (which replaces Units 1-3 at the Encina Power Plant) will come online before Summer 2013.

Table 5 in Section 7, above summarizes by year the Compliance Exhibit findings we adopt regarding the reliability need in SDG&E's service area.

The 13 cases (plus the 3 cases using CAISO's CRS Renewable Costs) modeled by CAISO and their estimated net benefits are set forth in Table 12 below. Table 13 shows the major components of the net benefit calculation -

⁴³⁸ CAISO provided parties with work papers describing its approach and parties were given the opportunity to comment on the approach.

⁴³⁹ Compliance Exhibit, 6-8.

A.06-08-010 COM/MP1/tcg

energy benefits, reliability benefits, potential renewable savings, and cost. The Compliance Exhibit shows:

- Under 20% RPS, all of the generation and transmission alternatives are more expensive than the combustion turbine reference case, assuming the lower Phase 1 combustion turbine costs (Cases 2 through 4b);
- Under 33% RPS assuming the lower Phase 1 combustion turbine costs, the “Enhanced” Northern Route and the Draft EIR/EIS Environmentally Superior Southern Route Alternatives have positive net benefits of \$22 and \$25 million per year, respectively (Cases 6 and 7). The Southern Route has higher net benefits because of its lower projected capital costs;
- Under 33% RPS assuming the substantially higher Phase 2 combustion turbine costs, the projected net benefits of the “Enhanced” Northern Route and the Draft EIR/EIS Environmentally Superior Southern Route Alternatives are 5 to 6 times greater (at \$129 and \$132 million per year, respectively) than estimates under the lower Phase 1 combustion turbine costs (Cases 11 and 12 compared to Cases 6 and 7);
- Under all RPS scenarios and combustion turbine cost assumptions, the All-Source Generation Alternative is not economic using SDG&E’s proposed renewable costs (Cases 4, 8, and 13);
- Assuming CAISO’s CRS Renewable Costs, the lower Phase 1 combustion turbine costs, and 33% RPS, CAISO estimates that the All-Source Generation Alternative produces net costs of \$3 million per year (Case 8b);

A.06-08-010 COM/MP1/tcg

- Assuming CAISO's CRS Renewable Costs, the higher Phase 2 combustion turbine costs, and 33% RPS, CAISO estimates that the All-Source Generation Alternative produces net benefits of \$49 million per year (Case 13b); and
- Delaying the online date of the "Enhanced" Northern Route from 2011 to 2012 increases the net benefits of that alternative by \$2 million per year (compare \$22 million per year in Case 6 assuming a 2012 online date to \$20 million per year in Case 9 assuming at 2011 online date).⁴⁴⁰

⁴⁴⁰ This is consistent with CAISO's results from Phase 1, which showed that 2010 was not the optimal online date for Sunrise.

A.06-08-010 COM/MP1/tcg

**Table 12: Summary of CAISO Compliance Exhibit
(Annual Levelized \$ Millions)**

Case #	Name	RPS	CT Costs	Other Variation	Net Benefits Relative to Reference Case (\$ million)
1	Combustion Turbine Reference Case	20%	Phase 1 ⁴⁴¹		N/A
2	SDG&E's Enhanced Northern Route	20%	Phase 1		-57
3	Draft EIR/EIS Environmentally Superior Southern Route	20%	Phase 1		-54
4	All Source Generation Alternative	20%	Phase 1	SDG&E RPS Costs	-125
4b	All Source Generation Alternative	20%	Phase 1	CRS RPS Costs	-33
5	Combustion Turbine Reference Case	33%	Phase 1		N/A
6	SDG&E's Enhanced Northern Route	33%	Phase 1		22
7	Draft EIR/EIS Environmentally Superior Southern Route	33%	Phase 1		25
8	All Source Generation Alternative	33%	Phase 1	SDG&E RPS Costs	-94
8b	All Source Generation Alternative	33%	Phase 1	CRS RPS Costs	-3
9	SDG&E's Enhanced Northern Route	33%	Phase 1	On Line 2011; 2012 for all other cases	20
10	Combustion Turbine Reference Case	33%	Phase 2		N/A
11	SDG&E's Enhanced Northern Route	33%	Phase 2		129

⁴⁴¹ In Phase 1, the CAISO estimated combustion turbine costs at \$78/kW-year. In Phase 2, the CAISO revised this estimate to \$162.10/kW-year (both 2007\$, escalated at 2% per year).

A.06-08-010 COM/MP1/tcg

12	Draft EIR/EIS Environmentally Superior Southern Route	33%	Phase 2		132
13	All Source Generation Alternative	33%	Phase 2	SDG&E RPS Costs	-42
13b	All Source Generation Alternative	33%	Phase 2	CRS RPS Costs	49

A.06-08-010 COM/MP1/tcg

**Table 13: Costs and Benefits in CAISO Compliance Exhibit
(Annual Levelized \$ Millions)**

Case #	Name	Energy Benefit	Reliability Benefit	Potential Renewable Savings	Cost	Net Benefits Relative to Reference Case
1	Combustion Turbine Reference Case					N/A
2	SDG&E's Enhanced Northern Route	5	102	0	-164	-57
3	Draft EIR/EIS Environmentally Superior Southern Route	5	102	0	-162	-54
4	All Source Generation Alternative	0	41	-166	0	-125
4b	All Source Generation Alternative	0	41	-74	0	-33
5	Combustion Turbine Reference Case					N/A
6	SDG&E's Enhanced Northern Route	18	107	61	-164	22
7	Draft EIR/EIS Environmentally Superior Southern Route	18	107	61	-162	25
8	All Source Generation Alternative	0	41	-135	0	-94
8b	All Source Generation Alternative	0	41	-44	0	-3
9	SDG&E's Enhanced Northern Route	18	116	56	-169	20
10	Combustion Turbine Reference Case					N/A
11	SDG&E's Enhanced Northern Route	18	214	61	-164	129

A.06-08-010 COM/MP1/tcg

12	Draft EIR/EIS Environmentally Superior Southern Route	18	214	61	-162	132
13	All Source Generation Alternative	0	93	-135	0	-42
13b	All Source Generation Alternative	0	93	-44	0	49

NOTE: Components may not sum to total due to rounding.

Production cost modeling for the Compliance Exhibit would have given us a better understanding of the impact of our decision to assume only 25% of the coal fired generation projected to be built in the WECC. However, in the absence of such modeling, we accept CAISO's estimates of energy benefits based on prior production cost modeling results as reasonable. This approach results in estimated Sunrise energy benefits of \$5 million per year for 20% RPS cases and \$18 million per year for 33% RPS cases. CAISO assumed the All-Source Generation Alternative would provide no energy benefits.

Several parties filed comments on the Compliance Exhibit. UCAN observes that if the California Solar Initiative program is forecasted to be a success, solar PV costs under the program should not be included as incremental costs in the cost of the All-Source Generation alternatives because such costs have already been included in the costs of the California Solar Initiative program.⁴⁴² In addition, CAISO recognized that it did not revise Sunrise costs to include the UCAN operations and maintenance estimates. However, we are relying on the operating and maintenance assumptions from the CAISO's Compliance Exhibit for our Analytical Baseline assumptions.

⁴⁴² UCAN Comments on Compliance Exhibit, 9.

A.06-08-010 COM/MP1/tcg

11.3.2. Discussion

The Compliance Exhibit, which applies many of the Analytical Baseline assumptions we adopt here, provides insight into how changes in RPS compliance requirements, and renewable and combustion turbine prices, influence the net benefits of Sunrise and the All-Source Generation Alternative, compared to the Reference Case. The Compliance Exhibit suggests that none of the alternatives are economic compared to the Reference Case under 20% RPS. Assuming 33% RPS and low combustion turbine costs, the Compliance Exhibit also shows that the net benefits of the transmission alternatives are positive but not very large, whereas the net benefits of the generation alternatives are negative (e.g., that there are costs, not savings). Assuming 33% RPS and CAISO's Phase 2 combustion turbine costs (which we adopt for our Analytical Baseline), the Compliance Exhibit shows that the transmission alternatives provide significantly greater net benefits than the All-Source Generation Alternative, regardless of renewable cost assumptions.

Assuming 33% RPS, CAISO Phase 2 combustion turbine costs, and CAISO CRS Renewable Costs, the Compliance Exhibit shows Sunrise will produce net benefits exceeding those of the All-Source Generation Alternative by approximately \$80 million per year.⁴⁴³

11.4. The Commission's Update to the Compliance Exhibit

11.4.1. Overview

We have applied all of our Analytical Baseline assumptions adopted in this decision to prepare an Update to the Compliance Exhibit (Update). To calculate

⁴⁴³ Using SDG&E's renewable costs for the All-Source Generation Alternative increases the relative benefit of Sunrise to nearly \$110 million per year.

A.06-08-010 COM/MP1/tcg

net benefits for the Update, we used the same spreadsheet models relied upon by the CAISO to develop the Compliance Exhibit. The Update revises input assumptions to those spreadsheet models.

Most significantly, we apply CAISO's Phase 2 combustion turbine costs to the 20% RPS cases. Our Update makes four other changes to the Compliance Exhibit. First, CAISO used the wrong mix of generation resources for the All-Source Generation cases (Cases 5, 5b, 8, 8b, 13, and 13b), overstating the amount of renewables in that case. CAISO inadvertently assumed 300 MW of solar thermal, 400 MW of wind, 100 MW of biomass/biogas, and 210 MW of solar PV by 2016, which is the total amount of renewables specified in the EIR/EIS for the In-Area Renewable Alternative.⁴⁴⁴ We correct this error in the Update, assuming 200 MW of wind, 50 MW of biomass/biogas, and 210 MW of solar PV by 2016, as specified for the All-Source Generation Alternative.⁴⁴⁵

Second, we agree in part with UCAN's observation that the solar PV costs associated with the 105 MW (firm capacity) due to the California Solar Initiative are not incremental to the Reference Case and, as a result, should not be included in the cost estimates of the All-Source Generation Alternative. However, instead of deducting all of the solar PV costs, we assume that by 2016 approximately 37 MW (firm capacity) of the solar PV capacity added as part of the All-Source Generation Alternative will be provided under the California Solar Initiative and therefore those costs are not attributable to the All-Source Generation

⁴⁴⁴ No party noted this error in the Draft Compliance Exhibit workshop or in their Compliance Exhibit comments.

⁴⁴⁵ All capacity values are nameplate.

A.06-08-010 COM/MP1/tcg

Alternative.⁴⁴⁶ Both of these changes result in lower cost estimates for the All-Source Generation Alternative.

Third, we assume that least cost renewable resources will be delivered in all cases. This change affected the All-Source Generation alternative.

Fourth, we adjust the CAISO's assumed costs for the Draft EIR/EIS Environmentally Superior Southern Route to be consistent with SDG&E's cost estimates for the Final Environmentally Superior Southern Route we approve here.

In summary, our Update makes the following changes to the Compliance Exhibit:

- We assume CAISO's Phase 2 combustion turbine costs for all cases;
- We adjust the amount of in-area renewables in the All-Source Generation Alternative, thereby changing the distribution of renewables throughout the WECC, consistent with CAISO's assumed supply curves;
- We subtract \$367 million per year from the assumed capital cost of the All-Source Generation Alternative in each scenario to address the 37 MW of solar PV already paid for in the California Solar Initiative program;⁴⁴⁷

⁴⁴⁶ In 2016, our adopted Analytical Baseline assumes 33 MW (firm) of solar PV. However, as discussed in note 108 above, SDG&E assumes that SDG&E's firm capacity under the California Solar Initiative will be between 70 MW and 150 MW. We conservatively assume that SDG&E's installed capacity will be 70 MW under the California Solar Initiative, meaning that the costs of 37 MW (70 MW - 33 MW) beyond our Analytical Baseline should not be attributable to the All-Source Generation Alternative.

⁴⁴⁷ We assume CAISO's CRS Renewable Costs for solar PV. Assuming SDG&E's estimated solar PV costs, we would subtract \$776 million from the cost of the All-Source Generation Alternative.

A.06-08-010 COM/MP1/tcg

- We adjust the treatment of renewable resource savings for the All-Source Generation Alternative so that least cost renewable resources are delivered in all cases; and
- We update the capital cost estimate for the Modified Southern Route to match the revised cost estimate of \$1.883 billion adopted in this decision.

Table 14 summarizes the net benefits given these changes. Table 15 provides further detail on the major benefit and cost components for each case.

A.06-08-010 COM/MP1/tcg

The Update generates the following results:

**Table 14: Commission Update to Compliance Exhibit
(Annual Levelized \$ Million)**

Case #	Name	RPS	Variations in Assumptions	CT Costs - Compliance Exhibit	CAISO Compliance Exhibit Net Benefits	CT Costs - CPUC Update	CPUC Update Net Benefits
1	Combustion Turbine Reference Case	20%		Phase 1		Phase 2	
2	SDG&E's Enhanced Northern Route	20%		Phase 1	-57	Phase 2	51
3	Draft EIR/EIS Environmentally Superior Southern Route	20%		Phase 1	-54	Phase 2	38
4	All Source Generation Alternative	20%	SDG&E RPS Costs	Phase 1	-125	Phase 2	93
4b	All Source Generation Alternative	20%	CRS RPS Costs	Phase 1	-33	Phase 2	93
5	Combustion Turbine Reference Case	33%		Phase 1		Phase 2	
6	SDG&E's Enhanced Northern Route	33%		Phase 1	22	Phase 2	129
7	Draft EIR/EIS Environmentally Superior Southern Route	33%		Phase 1	25	Phase 2	117
8	All Source Generation Alternative	33%	SDG&E RPS Costs	Phase 1	-94	Phase 2	93
8b	All Source Generation Alternative	33%	CRS RPS Costs	Phase 1	-3	Phase 2	93
10	Combustion Turbine Reference Case	33%		Phase 2		Phase 2	
11	SDG&E's Enhanced Northern Route	33%		Phase 2	129	Phase 2	129
12	Draft EIR/EIS Environmentally Superior Southern Route	33%		Phase 2	132	Phase 2	117

A.06-08-010 COM/MP1/tcg

13	All Source Generation Alternative	33%	SDG&E RPS Costs	Phase 2	-42	Phase 2	93
13b	All Source Generation Alternative	33%	CRS RPS Costs	Phase 2	49	Phase 2	93

A.06-08-010 COM/MP1/tcg

**Table 15: Costs and Benefits in Commission Update
(Annual Levelized \$ Millions)**

Case #	Name	Energy Benefit	Reliability Benefit	Potential Renewable Savings	Cost	Net Benefits Relative to Reference Case
1	Combustion Turbine Reference Case					N/A
2	SDG&E's Enhanced Northern Route	5	209	0	-164	51
3	Draft EIR/EIS Environmentally Superior Southern Route	5	209	0	-177	38
4	All Source Generation Alternative	0	93	0	0	93
4b	All Source Generation Alternative	0	93	0	0	93
5	Combustion Turbine Reference Case					N/A
6	SDG&E's Enhanced Northern Route	18	214	61	-164	129
7	Draft EIR/EIS Environmentally Superior Southern Route	18	214	61	-177	117
8	All Source Generation Alternative	0	93	0	0	93
8b	All Source Generation Alternative	0	93	0	0	93
10	Combustion Turbine Reference Case					N/A
11	SDG&E's Enhanced Northern Route	18	214	61	-164	129
12	Draft EIR/EIS Environmentally Superior Southern Route	18	214	61	-177	117

A.06-08-010 COM/MP1/tcg

13	All Source Generation Alternative	0	93	0	0	93
13b	All Source Generation Alternative	0	93	0	0	93

NOTE: Components may not sum to total due to rounding.

11.4.2. Discussion

The Update differs from the preliminary findings in the Compliance Exhibit. Unlike the Compliance Exhibit, the Update estimates that assuming a 20% RPS, Sunrise will result in significant cost savings for ratepayers – nearly \$40 million per year assuming the Southern Route. The increased benefits are largely generated by assuming the CAISO Phase 2 combustion turbine costs. The benefits generated by the All-Source Generation Alternative also increase substantially to \$93 million per year. The increased benefits in the All-Source Generation Alternative are due to the assumption that least cost renewable resources will be delivered in all cases. According to the modeling, the All-Source Generation Alternative has higher net benefits than Sunrise assuming a 20% RPS.

Assuming 33% RPS and CAISO Phase 2 combustion turbine costs, the Update estimates Sunrise will generate over \$115 million per year in net benefits, which significantly exceeds the \$93 million per year of net benefits estimated for the All-Source Generation Alternatives.

Because of its higher estimated capital costs, the Draft EIR/EIS Environmentally Superior Southern Route is estimated to generate \$13 million per year less in net benefits than SDG&E’s “Enhanced” Northern Route.⁴⁴⁸

⁴⁴⁸ The capital cost estimate for the Southern Route was revised based on comments on the Alternate Proposed Decision of President Peevey, as described elsewhere in this

A.06-08-010 COM/MP1/tcg

Taking into account the unquantifiable reliability costs and benefits discussed in Section 9 above, and the environmental issues discussed in Sections 15 and 17 below, the modeling further supports our conclusion that the Final Environmentally Superior Southern Route (which is a variation on the Draft EIR/EIS Environmentally Superior Southern Route modeled in the Compliance Exhibit and Update) is the superior alternative.

12. Green House Gas Impacts

AB 32 requires that California reduce its GHG emissions to 1990 levels by 2020.⁴⁴⁹ This Commission, with the Energy Commission, has adopted recommended policies and rules to be implemented by the CARB to meet California's GHG reduction objectives in the energy sector. Among them is a recommendation that the required share of renewable energy in California's resource mix be increased from 20% in 2010 to 33% by 2020 and that this requirement be extended to all California retail providers, including publicly owned utilities.⁴⁵⁰ The expanded RPS is an important element of CARB's *Climate Change Scoping Plan* for achieving the emissions reductions mandated under AB 32, which was adopted unanimously by the board on December 11, 2008. According to the *Scoping Plan*, increasing the RPS from 20% to 33% will contribute 21.3 MMtCO₂E in 2020 out of a total of 174 MMtCO₂E in reductions from its business as usual case.⁴⁵¹

decision. Parties did not make recommendations to revise the Northern Route capital cost estimate; therefore, we had no basis to make further changes to that estimate.

⁴⁴⁹ See note 173, above.

⁴⁵⁰ See *Greenhouse Gas Regulatory Strategies*, and two prior decisions in our GHG rulemaking, D.08-03-018 and D.07-09-017.

⁴⁵¹ California Air Resources Board, *Climate Change Scoping Plan*, October 2008, pp. 44-46.

A.06-08-010 COM/MP1/tcg

California's Attorney General is enforcing strict compliance with GHG emission goals and full disclosure of potential climate change impacts in EIRs.⁴⁵² Consequently, as the lead CEQA agency, we included a GHG emission analysis in the EIR/EIS that quantifies CO₂ emissions related to the Sunrise transmission alternatives and considers and compares the GHG impacts of the generation alternatives to Sunrise. As explained below, appropriately limiting the scope of our environmental review to Sunrise, connected actions and alternatives to it has the effect of removing from our analysis the GHG impacts of Sunrise within the broader policy context of the RPS and the systematic grid upgrades needed to meet the 33% target by 2020.

12.1. GHG Emissions Projected in the EIR/EIS

The Draft and Final EIR/EIS begin by estimating CO₂ emissions due to the two-year construction of Sunrise. They find that 109,000 tons of emissions will result from construction activities, primarily from the operation of on and off-road equipment used during construction, as well as material deliveries, water and fuel transport, and worker commutes.⁴⁵³ These construction-phase emissions are then compared to emissions associated with the operation of Sunrise and its alternatives.

As discussed elsewhere one of the primary benefits of the Sunrise Powerlink is to facilitate RPS compliance by significantly increasing access to Imperial Valley's rich renewable energy resources. However, the Draft and Final EIR/EIS do not consider avoided emissions resulting from implementation of either the current 20% RPS or increasing the mandate to 33% by 2020. The CAISO production cost modeling that they rely upon *assumes* a mandate of 33%

⁴⁵² Conservation Groups Phase 2 Opening Brief, 69-70.

⁴⁵³ Draft EIR/EIS, Sec. D.11-52.

A.06-08-010 COM/MP1/tcg

renewables by 2020 for investor-owned utilities and voluntary compliance with this standard by 75% of publicly owned utility loads. The comparisons presented in the Draft and Final EIR/EIS therefore focus exclusively on *incremental* changes in WECC-wide CO₂ emissions resulting from dispatching the entire system under alternative scenarios for transmission and generation build-out through 2015. In all of the cases that the CAISO analyzed, it assumed that all retailers are halfway between the 2010 and 2020 targets, delivering 26.5% renewable energy in 2015 (the only year modeled).

The CAISO's modeling therefore only supports comparisons between WECC-wide GHG emissions under different scenarios in which the RPS is met. In the CAISO's model runs none of the emissions reductions that are expected to result from achieving the RPS are specifically attributed to Sunrise, to any of the other alternatives considered or to any of the other transmission lines that the CAISO assumes will be constructed as part of the grid upgrades required to meet the 33% target. In fact, as discussed below, the primary conclusion supported by the CAISO's modeling is that as long as the RPS is achieved, WECC-wide GHG emissions are virtually the same regardless of whether Sunrise carries energy from conventional or renewable generators.

The EIR/EIS contains a limited discussion of the CAISO's analysis. Below we flesh this out with additional information developed in the course of this proceeding. CAISO's data and analyses on CO₂ emissions under these alternative scenarios were provided in response to a data request by our environmental consultant. On our own motion to ensure the completeness of the record we identify "Information Request #2 to California Independent System Operator" as CAISO Exhibit I-16 and receive it in evidence on the effective date of this decision. Note that this document is included as a reference in the Air

A.06-08-010 COM/MP1/tcg

Quality section of the EIR/EIS (see References, Section D.11.21, page D.11-80). A copy of this document was posted to the CEQA website⁴⁵⁴ on October 11 and November 14 of 2007 and an updated version sent to parties via email by CAISO on August 4, 2008. This updated version, included among the work papers CAISO provided supporting its response to the *Revised Scoping Memo*, reflects a correction to the fuel oil emissions rate used in the original analysis.

Based upon that CAISO modeling, the Draft EIR/EIS projected Sunrise would reduce WECC-wide CO₂ emissions by 1,650 tons in the year 2015 under a scenario in which a substantial amount of the renewable potential in the Imperial Valley is developed and delivered via Sunrise. After release of the Draft EIR/EIS, DRA identified emission rate errors in CAISO's production cost modeling.⁴⁵⁵ The Final EIR/EIS adopts CAISO's correction of these errors, and estimates that Sunrise will reduce CO₂ emissions by 8,950 tons in the year 2015. Because CAISO only modeled emission information for the year 2015, the Final EIR/EIS estimates long-term avoided CO₂ emissions over a 40-year period by multiplying the 2015 rate by 40 years, estimating that Sunrise would provide 358,000 tons of net CO₂ savings over 40 years. This approach implicitly holds the WECC's current resource mix constant for the next four decades, and does not take into account further additions to California's renewable resources resulting from meeting a 33% target in 2020.

The same CAISO analysis also indicates that, if Sunrise were constructed, but the renewables necessary to achieve the 26.5% level were developed outside of the Imperial Valley, GHG emissions in the year 2015 would be 23,325 tons lower than in the base case. Over 40 years this would yield a potential reduction

⁴⁵⁴ (http://www.cpuc.ca.gov/Environment/info/aspen/sunrise/data_reqs.htm)

⁴⁵⁵ DRA Exhibit D-100, 10-1.

A.06-08-010 COM/MP1/tcg

of 933,000 tons of CO₂. This is over 2.5 times the level of reductions that would be realized if Sunrise were used to transport renewable energy from the Imperial Valley. The principal finding supported by this analysis is that, provided the RPS is achieved, WECC-wide GHG emissions are virtually the same whether Sunrise carries energy from renewable or fossil-fired generators. It does not support the contentions of some parties that Sunrise will lead to increased GHG emissions, beyond those resulting from its construction and ongoing operation and maintenance activities.

A close examination of the assumptions underlying CAISO's modeling also reveals that the CAISO believes that if Sunrise is not built then other transmission upgrades will be needed to deliver 26.5% renewables in 2015. In cases in which Sunrise is not built (Base Case, South Bay Case) or not used to carry Imperial Valley renewables, the CAISO assumes that a new 1,000 MW transmission line would be built to deliver wind and geothermal energy from northeastern California.⁴⁵⁶ Clearly this would be a major undertaking, but estimating the construction-phase GHG emissions for such an alternative transmission line is beyond the scope of the EIR/EIS.

The Final EIR/EIS points out that the CAISO's estimates of changes in GHG emissions are uncertain because they are based on CAISO's assumption that the utilities will comply with 26.5% RPS whether or not Sunrise is built.⁴⁵⁷

The Final EIR/EIS therefore notes that its projections of reduced GHG emissions

⁴⁵⁶ The CAISO's response to Request ISO-4 (Exhibit CAISO I-16, p. 1) identifies several California wind and geothermal projects in northeast California that would need to be developed in order to reach 26.5% renewables in 2015 without Sunrise. CAISO Exhibit I-2, Table 2.1, identifies transmission additions associated with these and other incremental renewable resources. These include a 1,000 MW transmission line to northeast California.

⁴⁵⁷ Final EIR/EIS, Sec. D.11-50.

A.06-08-010 COM/MP1/tcg

are dependent on actual development of renewable resources, and potentially a change in the RPS law. However, the Final EIR does not conclude that this renewable development needs to occur in the Imperial Valley, only that it needs to occur.

Mitigation measures in the Final EIR/EIS require that SDG&E offset construction and operation-phase GHG emissions with carbon credits. SDG&E can satisfy the requirement by purchasing carbon credits certified by the California Climate Action Registry. However, the Final EIR/EIS notes that carbon markets “are not fully formed or regulated” at this time. Accordingly, the Final EIR/EIS concludes that, even with the mitigation requirement, the CO₂ emissions from the project are “significant and unavoidable (Class I)” for the purposes of CEQA.⁴⁵⁸

12.1.1. Parties’ Positions

SDG&E initially argued that Sunrise would reduce GHG emissions by over one half million tons of CO₂ emissions per year and that the Imperial Valley renewable development supported by Sunrise would dwarf Sunrise construction-related emissions.

SDG&E’s revised position agrees with the Final EIR/EIS in claiming that Sunrise would reduce CO₂ by 8,955 tons in 2015 for a total of 358,000 tons over a 40-year period.⁴⁵⁹ This figure does not account for Sunrise’s construction-related CO₂ emissions. DRA confirms this estimate, but argues that neither SDG&E’s nor CAISO’s GridView modeling should be relied upon to estimate GHG impacts because of their embedded assumptions. UCAN objects to relying on the CAISO’s GridView modeling to estimate GHG impacts, and argues that

⁴⁵⁸ Final EIR/EIS, D.11-52-D.11-55.

⁴⁵⁹ SDG&E Phase 2 Opening Brief, 87.

A.06-08-010 COM/MP1/tcg

Sunrise will likely increase coal fired generation, thereby increasing GHG emissions, rather than reducing them.⁴⁶⁰

SDG&E contends that the EIR/EIS estimates of net construction-related CO₂ emissions are overly conservative because there is no quantification of construction-related CO₂ emissions associated with building transmission for other facilities that would need to be built to meet RPS targets if Sunrise is not built.⁴⁶¹

While Conservation Groups emphasize that construction-related GHG impacts must be mitigated,⁴⁶² they focus on whether renewable resources will actually flow on Sunrise in amounts sufficient to offset the GHG impacts generated by Sunrise's construction and WECC-dispatch impacts. Conservation Groups argue that without a guarantee that renewables will flow over Sunrise, there are no guarantees that CO₂ emission reductions associated with WECC-dispatch impacts (operational CO₂ emissions) will compensate for construction-related CO₂ emissions.⁴⁶³ They propose that we ensure reductions in operational CO₂ emissions by requiring SDG&E to contract with viable renewables whose output would fill Sunrise. Conservation Groups cite to a Minnesota example, where regulators conditioned their approval of the line in this way.⁴⁶⁴

SDG&E urges the Commission to ignore Conservation Groups' "Minnesota approach." SDG&E points out that it already "has a Commission-

⁴⁶⁰ UCAN Phase 1 Reply Brief, 30.

⁴⁶¹ SDG&E Phase 2 Opening Brief, 89.

⁴⁶² Conservation Groups Phase 2 Opening Brief, 66.

⁴⁶³ Conservation Groups Phase 2 Opening Brief, 66-67.

⁴⁶⁴ Conservation Groups Phase 2 Opening Brief, 29-30, referring to *Order Granting Certificates of Need Subject to Conditions*, Minnesota Public Utilities Commission, Docket No. E-002/CN-01-1958 (March 11, 2003).

A.06-08-010 COM/MP1/tcg

approved power purchase contract with Stirling that contemplates three stages of development up to a total of 900 MW. In addition, SDG&E has a Commission-approved power purchase contracts [sic] with Esmeralda Energy for 20 MW and has entered into power purchase contracts with Bethel Energy for 98.8 MW... all of which will be located in the Imperial Valley and will be deliverable across Sunrise.”⁴⁶⁵ SDG&E also claims that there are numerous Imperial Valley renewable generators “lining up at the door waiting for Sunrise to be built.”⁴⁶⁶ Thus, SDG&E argues that even if the Stirling contracts ultimately fail it is reasonable to assume that other renewable resources will be available to take their place in its portfolio.

12.1.2. Discussion

We adopt the construction-related CO₂ emission estimates in the EIR/EIS. We also agree with SDG&E that the construction-related CO₂ emission estimates in the Draft EIR/EIS are conservative given the lack of a reference case in which additional transmission is built to meet the RPS targets. However, as noted by SDG&E, there is insufficient information in the record to support a modification of these estimates.

We agree with Conservation Groups that construction-related GHG emissions should be mitigated to the maximum extent possible, and we have addressed that in the EIR/EIS mitigation measures.

While we agree with DRA and UCAN that GridView modeling has a number of faults, we do find it provides useful high level information. In the Compliance Exhibit, CAISO did not update its 2015 GridView modeling, but it did correct the emission rate errors from Phase 1. Its final quantification of GHG

⁴⁶⁵ SDG&E Phase 2 Reply Brief, 75.

⁴⁶⁶ SDG&E Phase 2 Reply Brief, 76.

A.06-08-010 COM/MP1/tcg

emissions matches that of the Final EIR/EIS and is within 5 tons of SDG&E's own correction.⁴⁶⁷

CAISO modeling has shown that Sunrise could potentially carry significant fossil fueled power because of its projected availability and cost, and a portion of this power may be coal fired. However, as noted above, CAISO modeling also indicates that whether Sunrise carries renewable energy from the Imperial Valley or energy from fossil-fired generators, Sunrise in combination with renewable penetration of 26.5% results in reductions in operational CO₂ emissions relative to the base case in 2015. The range of GHG savings relative to the base case runs from 8,950 tons CO₂ per year if Imperial Valley renewables are developed to 23,325 tons of CO₂ emissions per year if Imperial Valley renewables are replaced instead with renewables developed elsewhere.⁴⁶⁸

Importantly, CAISO's analysis did not include a scenario in which the level of renewable penetration is assumed to be dependent on the availability of Sunrise. This limits, for example, our ability to assess the GHG impacts of Sunrise relative to a base case in which less renewable energy is available than if Sunrise had been built. However, it seems reasonable to assume that this would cause a relative increase in base case GHG emissions, thereby increasing the GHG savings that could be attributed to Sunrise if it were built.

Given CAISO's analyses and the implications thereof we think it is reasonable to conclude that by supporting achievement of the RPS Sunrise will yield significant GHG emission reductions relative to what would occur absent its construction if one accepts the assumption that in all cases the same level of

⁴⁶⁷ CAISO's Compliance Exhibit finds Sunrise would reduce CO₂ emissions in 2015 by 8,949 tons.

⁴⁶⁸ CAISO Exhibit 1-16.

A.06-08-010 COM/MP1/tcg

renewable development will occur. Conservation Groups express a concern and solution to that concern that appears to be premised in part on a relaxation of this assumption by suggesting that unless Sunrise is explicitly dedicated to transporting renewable energy from the Imperial Valley, the GHG benefits of the line will be compromised. Implicitly, this assumes that unless the line leads to development of Imperial Valley renewables, fewer renewables overall will be developed than otherwise would be statewide. As the CAISO analysis demonstrates, and the Final EIR/EIS essentially accepts, this is not necessarily the case. It may be that in the absence of Imperial Valley renewable development, other renewable resources will be developed in their stead. Indeed this would certainly be the case if a statewide mandate of 33% renewables by 2020 is adopted and fully implemented, as we have recommended and CARB requires in its *Climate Change Scoping Plan*.

We, therefore, do not think it reasonable to impose the “Minnesota approach” offered by Conservation Groups as a solution, at least not on the basis of the CAISO analysis, given the speculative nature of the problem this solution purports to solve. As our discussion of the CAISO’s modeling has shown, the determinant of whether operational GHG emissions reductions will be realized is not how Sunrise is used but whether or not the 33% RPS is met.

We remain fully committed to meeting and exceeding California’s already ambitious renewable energy and climate change related policies and goals. While we decline to mandate specific requirements about what types of energy Sunrise should carry, we believe it is appropriate to adopt measures aimed at ensuring that the investment in Sunrise supports achievement of the RPS and the AB32 GHG reduction targets. The record before us clearly demonstrates that one of the main goals of Sunrise is to access renewable resources – much of which are

A.06-08-010 COM/MP1/tcg

base load geothermal resources – that otherwise would not be available without transmission upgrades. We want to be certain that construction of Sunrise will facilitate the development of renewable resources in the Imperial Valley.

Section 17 outlines our approach, which relies upon three elements. First, we expect SDG&E to follow through on specific commitments made by its CEO Debbie Reed at the November 7, 2008 Oral Argument.⁴⁶⁹ We will also implement increased scrutiny of the renewable procurement process and, if needed, adopt specific requirements to ensure that all of California's IOUs contribute to timely development of Imperial Valley renewables. Finally, we issue a directive to the assigned commissioner in R.08-08-009, the proceeding addressing implementation of the RPS program, to propose programmatic reforms that will support this objective.

12.2. GHG Impacts of the Proposed Alternatives

The Draft EIR/EIS estimates the operational and construction CO₂ emissions associated with the various Sunrise routing alternatives. The Draft EIR/EIS does not provide a reference case for those estimates, other than the environmental baseline required by CEQA, nor does it quantify the GHG impacts of any of the generation alternatives set forth in the Draft EIR/EIS. The Draft EIR/EIS acknowledges that, with regard to the generation alternatives, the total amount of construction, the duration of construction, and the intensity of construction activity would have a substantial effect upon the amount of construction-related CO₂ emissions. It assumes that certain alternatives could be built without exceeding the 109,000 tons of CO₂ emissions estimated for Sunrise,

⁴⁶⁹ SDG&E reiterated these commitments in comments filed November 20, 2008 and December 8, 2008.

A.06-08-010 COM/MP1/tcg

but that other larger-scale projects would trigger comparable or greater emissions.

The Final EIR/EIS includes clarifications to allow a comparison of the alternatives to Sunrise. It shows that while building transmission lines causes significant GHG emissions, building and operating a new fossil fueled power plant would cause substantially more GHG emissions.⁴⁷⁰ Lacking a specific reference case for quantification, the Final EIR/EIS concludes that the All-Source Generation Alternative described in that document would greatly increase GHG impacts compared to Sunrise.

12.2.1. Parties' Positions

SDG&E claims that the All-Source Generation and LEAPS Transmission Plus Generation Alternatives in the Draft EIR/EIS are similar to certain CAISO GridView cases.⁴⁷¹ SDG&E then concludes that the All-Source Generation Alternative in the Draft EIR/EIS emits approximately 200 times more CO₂ than Sunrise, while the LEAPS Generation Plus Transmission Alternative emits approximately 110 times more CO₂ than Sunrise.⁴⁷²

UCAN takes issue with these SDG&E estimates. Among other things, UCAN argues that it is unreasonable to assume an increase in GHG emissions in 2015 associated with the South Bay Repower Project (a potential component of the All-Source Generation Alternative) since SDG&E's analysis fails to quantify GHG emissions associated with generation elsewhere in WECC.⁴⁷³

⁴⁷⁰ Final EIR/EIS, 2-44.

⁴⁷¹ SDG&E Exhibit SD-35, 4.21.

⁴⁷² SDG&E Phase 2 Opening Brief, 90.

⁴⁷³ UCAN Phase 2 Reply Brief, 19.

A.06-08-010 COM/MP1/tcg

12.2.2. Discussion

We agree with the EIR/EIS that it is likely some of the alternatives will have less and some will have more GHG construction-related impacts than Sunrise, and that these emission impacts are difficult to quantify accurately given the number of unknown variables. We also agree with the Final EIR/EIS that the All-Source Generation Alternative will greatly increase GHG impacts relative to Sunrise.

We reject SDG&E's attempts to quantify the GHG emission impacts of the Sunrise alternatives. SDG&E gives no basis for its contentions that the cases analyzed by CAISO are in any way comparable to those defined in the Draft EIR/EIS. CAISO's Part 2 testimony (which SDG&E cites as the source of its estimated emissions levels) does not address GHG emissions, nor does it provide updated GridView modeling. In addition, SDG&E provides no record of conducting the updated production cost modeling that would be necessary to derive WECC-wide estimates of GHG emissions related to Sunrise alternatives.

13. The Northern Routes' Anza-Borrego Link

Because the routing of the Proposed Project, the "Enhanced" Northern Route, and the Final Environmentally Superior Northern Route through Anza-Borrego touches on a host of issues addressed by many of the participants in this proceeding, for increased clarity we address those issues here, apart from the rest of the environmental discussion in Section 15 of this decision.

13.1. Overview of the Proposed Project's Route through Anza-Borrego

One of the most notable and troubling aspects of Sunrise is that SDG&E proposes to site 22.6 miles of the Proposed Project through Anza-Borrego, which

A.06-08-010 COM/MP1/tcg

many consider the “crown jewel” of the California State Park system.⁴⁷⁴ SDG&E’s proposal would route the new transmission line through Anza-Borrego in place of a 69-92 kV line constructed in the 1920s, prior to Anza-Borrego’s designation as a State Park. That existing line is suspended from wood poles with an average height of 60 feet. The Proposed Project would replace the wood poles with 144 500 kV steel towers, each of which averages 130 feet in height and spans 85-105 feet at the base.⁴⁷⁵ The existing 92 kV line (east of Narrows Substation) and 69 kV line (west of Narrows Substation) would be installed underground or would be added to the 500 kV towers as an “underbuild.” The existing wood poles would be removed.⁴⁷⁶

The Proposed Project is significantly larger and more invasive, both physically and visually, than the existing 69-92 kV wood pole line. Siting, construction, and maintenance of the 500 kV line would require de-designation of approximately 50 acres of state wilderness.⁴⁷⁷ Construction and maintenance of the 500 kV line would result in helicopters near or in wilderness areas and would require eight new miles of access roads.⁴⁷⁸ The taller, wider structures

⁴⁷⁴ See public statements quoted in Section 1.

⁴⁷⁵ Draft EIR/EIS, ES-3.1, B.3.1 (Figure B-15 and Figure B-19), D.5-31 (Impact WR-2).

⁴⁷⁶ In order to stay within a narrower right-of-way, SDG&E’s “Enhanced” Northern Route requires more towers than the Proposed Project or the Final Environmentally Superior Northern Route, and the height of those towers is greater. Both factors result in greater environmental impacts than either the Proposed Project or the Final Environmentally Superior Northern Route.

⁴⁷⁷ Draft EIR/EIS, ES-5.3.

⁴⁷⁸ RT 5176; Draft EIR/EIS, ES-3.1.

A.06-08-010 COM/MP1/tcg

would be much more visible from wilderness areas and extremely noticeable in certain campgrounds located in Anza-Borrego.⁴⁷⁹

The path of the Proposed Project follows the right-of-way within Anza-Borrego currently occupied by the wood poles. However, as discussed in Sections 13.3.3, the legal rights to the right-of-way are hotly contested, and it is unclear how much additional right-of-way SDG&E needs to acquire, from whom SDG&E must acquire it, or what additional permits are necessary before the steel towers could be built through the corridor occupied by the old, wood pole line.

13.2. Anza-Borrego's Place in the State Park System

Anza-Borrego was established in 1957, when the former Anza Desert State Park and the Borrego State Park were combined.⁴⁸⁰ This Park of 600,000 plus acres⁴⁸¹ is among the largest state parks in the United States.⁴⁸² It includes about 460,000 acres of state wilderness,⁴⁸³ which not only represents the largest area of state wilderness in California,⁴⁸⁴ but also 80% of all state wilderness within this state. In 1974, the Secretary of the Interior approved Anza-Borrego's designation as a National Natural Landmark⁴⁸⁵ and in 1981 and 1982, the State Parks and Recreation Commission classified approximately two-thirds of the acreage then

⁴⁷⁹ Draft EIR/EIS, ES-5.3, ES-7.1.2; RT 3727-3728, 3765-3766.

⁴⁸⁰ Draft EIR/EIS, Sec. D.2.1.2.1.

⁴⁸¹ State Parks Foundation Exhibit P-1, 5.

⁴⁸² State Parks Phase 2 Opening Brief, 1-2.

⁴⁸³ State Parks Foundation Exhibit P-1, 6.

⁴⁸⁴ State Parks Foundation Exhibit P-2. This exhibit is the internet address for the Anza-Borrego General Plan: http://www.parks.ca.gov/?page_id=21314. The quoted portion refers to Chapter 1 of the Anza-Borrego General Plan, page 1-3.

⁴⁸⁵ Draft EIR/EIS, Sec. D.2.1.2.1.

A.06-08-010 COM/MP1/tcg

comprising the Park as state wilderness⁴⁸⁶ to be held “unimpaired for all generations.”⁴⁸⁷ In 1985, the United Nations named Anza-Borrego a member of the International Biosphere Reserve Program.⁴⁸⁸

The Park consists of washes, alluvial fans, badlands, and vast open spaces. Wildflowers, palm groves, and cacti, along with golden eagles, peninsular bighorn sheep, kit foxes and desert iguanas, as well as numerous other forms of plant and animal life, call Anza-Borrego home.⁴⁸⁹ Two national trails run through Anza-Borrego: the Pacific Crest Trail and the Juan Bautista de Anza National Historic Trail.⁴⁹⁰

Anza-Borrego is also a place of rich cultural heritage. Its valleys were transportation corridors throughout the prehistoric and historic period, and areas with water sources were preferred habitation locales.⁴⁹¹ The Park contains over a hundred archaeological sites, the majority of them prehistoric in nature. Anza-Borrego’s cultural history is still alive -- local Native Americans continue to visit the area because of the extreme importance of the Park’s sites to their culture and history.⁴⁹²

State Parks manages Anza-Borrego.⁴⁹³ Consistent with Anza-Borrego’s General Plan, ongoing management must “preserve the unique and diverse

⁴⁸⁶ Draft EIR/EIS, Sec. D.2.1.2.1.

⁴⁸⁷ State Parks Phase 2 Opening Brief, 1-2.

⁴⁸⁸ Draft EIR/EIS, Sec. D.2.1.2.1.

⁴⁸⁹ Draft EIR/EIS, Sec. D.2.1.2.1.

⁴⁹⁰ Draft EIR/EIS, Sec. D.2.1.2.1.

⁴⁹¹ Draft EIR/EIS, Sec. D.7.3.

⁴⁹² Draft EIR/EIS, Sec. D.7.3.

⁴⁹³ State Parks Phase 2 Opening Brief, 1-2; Pub. Resources Code §§ 5001, 5019.50.

A.06-08-010 COM/MP1/tcg

natural, cultural, and scenic resources of this Western Colorado Desert Region and provide high quality recreation that supports a healthy natural environment.”⁴⁹⁴ One of the General Plan’s stated goals is to continue to expand the amount of state wilderness by adding and designating more land to the Park.⁴⁹⁵

As we have heard in both the formal hearings and the Public Participation Hearings, many people consider Anza-Borrego to be a unique and irreplaceable desert environment. The record is replete with testimony that confirms the strong language in the Vision Statement of Anza-Borrego’s General Plan, a portion of which we quote in Section 1 and which we quote more fully here:

Anza-Borrego is a place of awe, inspiration, and refuge. The vast desert landscape and scenery are preserved in a pristine condition. The full array of natural and cultural resources are cared for so as to perpetuate them for all time while supporting those seeking enjoyment from these resources ...⁴⁹⁶

Emphasis is placed on having park visitors experience the true, real, tangible desert environment, even if it leads to some level of uncertainty or discomfort, because this leads to personal insight and perspective only gained by first-hand knowledge.... The Park is a place where silence can be found and total darkness achieved. At this Park, the forces of nature remain undeniably stronger than human forces, and people, in general, visit, but do not remain.⁴⁹⁷

⁴⁹⁴ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page XII).

⁴⁹⁵ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page XII).

⁴⁹⁶ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page 3-8).

⁴⁹⁷ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page 3-8).

A.06-08-010 COM/MP1/tcg

13.3. Legal Issues Unique to the Anza-Borrego Link

13.3.1. Anza-Borrego's General Plan

Anza-Borrego's General Plan governs State Parks' management of the Park. The General Plan's "Declaration of Purpose" recognizes the special role of the desert park environment, which "nurtures peaceful solitude, astronomical clarity, amazing forms of life, glimpses of the past, and a tremendous scope for the imagination."⁴⁹⁸ The Declaration of Purpose provides that "management of Anza-Borrego Desert State Park will be based upon the goal of preserving, instilling an appreciation for, and making available these treasured qualities and experiences for present and future generations."⁴⁹⁹

SDG&E and State Parks disagree whether State Parks would need to amend the General Plan before SDG&E could construct a 500 kV transmission line through the Park. SDG&E claims that State Parks has overstated alleged inconsistencies between the General Plan and the Proposed Project, and argues that plan amendments are unnecessary. State Parks argues that SDG&E's position is fundamentally at odds with the authority accorded a general plan, which serves as a blueprint for management and development, and requires that subordinate actions be consistent with that blueprint.⁵⁰⁰

State Parks represents that it could determine *any* route through Anza-Borrego to be inconsistent with the existing Anza-Borrego General Plan on any one of three grounds:

⁴⁹⁸ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page XII).

⁴⁹⁹ State Parks Foundation Exhibit P-1, Reference #2 (Anza-Borrego Final General Plan & EIR, page XII).

⁵⁰⁰ State Parks Phase 2 Opening Brief, 5.

A.06-08-010 COM/MP1/tcg

- Conflict with the State Wilderness designation;
- Conflict with the Backcountry Zone designation; and/or
- Overall conflict with General Plan Goals and Guidelines.

If State Parks made such a determination, the State Parks and Recreation Commission would have to exercise its discretionary authority to adopt revisions to the General Plan to allow the siting and construction of such a major transmission line before State Parks could issue any permits.⁵⁰¹

SDG&E challenges State Park's position that routing the transmission line through Anza-Borrego could be inconsistent with the General Plan.⁵⁰² SDG&E relies, in part, on the statement in the General Plan that "[r]econciling the inherent conflicts between the future electrical needs of the State and the protection of Park resources, will require the utility companies and State Parks to work closely together in planning for the size and location of these future facilities."⁵⁰³ It also relies upon one of the General Plan's goals for infrastructure and operations within Anza-Borrego, "Infrastructure Goal 4," which directs State Parks to "work with local agencies, Caltrans, and utility companies to minimize the adverse impacts associated with developments."⁵⁰⁴

State Parks disagrees with SDG&E's interpretation of the General Plan's goals and guidelines, and argues that Infrastructure Goal 4 should be seen "at best, as a modest accommodation for an existing use otherwise at odds with the statutory guidance for management of State Parks."⁵⁰⁵ That statutory guidance

⁵⁰¹ State Parks Phase 2 Opening Brief, 2, 8.

⁵⁰² SDG&E Phase 2 Opening Brief, 42.

⁵⁰³ SDG&E Exhibit SD-35, Attachment 6-3 at 2-96.

⁵⁰⁴ SDG&E Exhibit SD-35, Attachment 6-3 at 3-52.

⁵⁰⁵ State Parks Phase 2 Opening Brief, 14.

A.06-08-010 COM/MP1/tcg

provides that “[i]mprovements that do not directly enhance the public’s enjoyment of the natural, scenic, cultural, or ecological values of the resource ... shall not be undertaken.”⁵⁰⁶ State Parks acknowledges that its General Plan does not exclude all new transmission facilities in the Backcountry Zone, but contends that both the Proposed Project and the “Enhanced” Northern Route could be found inconsistent with the Backcountry Zone due to their size and scope.⁵⁰⁷

The General Plan also requires State Parks to “preserve sensitive species and habitats and encourage their recovery” and “[e]nsure ... that the protection of sensitive species and habitats receives the highest priority.”⁵⁰⁸ This requirement has implications, in particular, for Peninsular bighorn sheep and its critical habitat, which we discuss in greater detail in Section 13.4.1.2. Critical habitat for Peninsular bighorn sheep was certified in order to promote the recovery and survival of a federally endangered species.⁵⁰⁹ Based on the evidence and its own position in this proceeding, State Parks reasonably could conclude that the Proposed Project, and the two other Northern Routes, would significantly harm the Peninsular bighorn sheep’s critical habitat and therefore inhibit the bighorn sheep’s recovery and survival.⁵¹⁰

A number of parties have identified specific General Plan Goals and Guidelines which may be inconsistent with both the Proposed Project and the “Enhanced” Northern Route. We mention of few of these here:

⁵⁰⁶ Pub. Resources Code § 5019.53.

⁵⁰⁷ State Parks Phase 2 Reply Brief, 3.

⁵⁰⁸ Anza-Borrego General Plan, Guidelines – Biota 1a and 1c, 3-24, 3-25.

⁵⁰⁹ Draft EIR/EIS, Sec. D.2.11.

⁵¹⁰ Draft EIR/EIS, Sec. D.2.11, D.16.4.2; Conservation Groups Exhibit C-23, C-24.

A.06-08-010 COM/MP1/tcg

Goal Recreation 1: Maintain the Park's qualities of solitude and wildness. Management decisions will favor the desert environment, promote the health and well being of desert ecosystems, and promote those activities that are sustainable over time in providing for the health, inspiration, and education of Californians.⁵¹¹

State Parks contends that the scope and size of the transmission facilities defeat Recreation Goal 1 since the Proposed Project would be visible from a large portion of state-designated wilderness.⁵¹²

Landscape Linkages Goal Link-1: Maintain and enhance the movement and dispersal of native animals and plants through the Park and the regional ecosystems.⁵¹³

Because the Proposed Project would create new physical barriers, especially in areas like Grapevine Canyon, State Parks reasonably could find that these barriers frustrate native species movement and therefore interfere with Landscape Linkages Goal Link-1.

Cultural Resources Goal 2: Identify, protect, and interpret places within [Anza-Borrego] holding special cultural or religious significance to Native Americans and other ethnic communities.⁵¹⁴

Cultural Resources Goal 3: Protect, stabilize, and preserve cultural resources within Anza-Borrego.⁵¹⁵

Cultural Resources Guideline 4c: Future management plans will identify areas of the Park with highly significant cultural remains that warrant higher levels of protection. Recommended protective

⁵¹¹ State Parks Foundation Exhibit P-2, 3-42.

⁵¹² State Parks Phase 2 Opening Brief, 15.

⁵¹³ State Parks Foundation Exhibit P-2, 3-29.

⁵¹⁴ State Parks Foundation Exhibit P-2, 3-32.

⁵¹⁵ State Parks Foundation Exhibit P-2, 3-32.

A.06-08-010 COM/MP1/tcg

actions may include Superintendent-ordered closures and designation of certain areas as Cultural Preserves.⁵¹⁶

SDG&E has acknowledged that the “Enhanced” Northern Route, which would require installation of 500 kV transmission towers through a Traditional Cultural Property, may be inconsistent with many of the Cultural Resources Goals and Guidelines in the Anza-Borrego General Plan.⁵¹⁷ SDG&E has conceded that the “Enhanced” Northern Route would create a greater adverse impact on the Grapevine Canyon cultural site than would the Proposed Project.⁵¹⁸

We do not presume upon State Parks’ decisionmaking authority, but rather seek to inform our own jurisdictional determination. Both on the facts and on the law, SDG&E’s position is unpersuasive. While we cannot ascertain definitively whether or not State Parks would find the Proposed Project and the two other Northern Routes inconsistent with Anza-Borrego’s General Plan, we conclude that State Parks reasonably could, and likely would, so find based on its own submissions and the evidence in this proceeding.

13.3.2. The California Wilderness Act and Potential Wilderness De-designation

We are bound to consider the exercise of our authority in the context of other law that governs the use of the land at issue -- in this case, the implications of the California Wilderness Act for the Proposed Project and the two other

⁵¹⁶ State Parks Foundation Exhibit P-2, 3-35.

⁵¹⁷ RT 3960:8-13.

⁵¹⁸ RT 3966:1-12.

A.06-08-010 COM/MP1/tcg

Northern Routes.⁵¹⁹ The EIR/EIS does so⁵²⁰ and our Phase 2 hearings also examined pertinent issues.

The California Wilderness Act begins with a declaration of state policy to preserve the “enduring resource of wilderness” against future encroachment:

[It is] the policy of the State of California to secure for present and future generations the benefits of an enduring resource of wilderness... *[i]n order to assure that an increasing population... does not occupy and modify all areas on state-owned lands within California, leaving no areas designated for preservation and protection in their natural condition.*⁵²¹

The Act establishes a California wilderness preservation system composed of state-owned areas designated by the Legislature as "wilderness areas" and units of the state park system classified as "state wilderness" by State Parks. Anza-Borrego contains both types of areas; with the exception of the All Underground Option for the Final Environmentally Superior Northern Route, all Northern Route Alternatives would pass through wilderness lands classified as such by State Parks.

⁵¹⁹ The California Wilderness Act is codified at Pub. Resources Code § 5093.30 et seq.

⁵²⁰ Draft EIR/EIS, Sec. D.5.3.

⁵²¹ Pub. Resources Code § 5093.31 (emphasis added).

A.06-08-010 COM/MP1/tcg

The California Wilderness Act defines state wilderness as:

[A]n area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. A wilderness area... is an area of relatively undeveloped state-owned land which has retained its primeval character and influence or has been substantially restored to a near natural appearance, without permanent improvements or human habitation, other than semi-improved campgrounds and primitive latrines, and which is protected and managed so as to preserve its natural conditions⁵²²

The California Wilderness Act specifically prohibits both temporary and permanent encroachments into state wilderness.⁵²³ Except for property rights that preexist a wilderness designation,

[T]here shall be no commercial enterprise and no permanent road within any wilderness area and, except as necessary in emergencies involving the health and safety of persons within the wilderness area, there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing or hovering of aircraft, no flying of aircraft lower than 2,000 feet above the ground, no other form of mechanical transport, and no structure or installation within any wilderness area.⁵²⁴

Though no other party agrees, SDG&E argues that the land occupied by the 60 foot high wooden poles installed roughly 80 years ago (and prior to the wilderness designation) is already “disturbed” and therefore, that the California Wilderness Act is not at issue.⁵²⁵ We disagree. The record establishes that the

⁵²² Pub. Resources Code § 5093.33(c).

⁵²³ Pub. Resources Code § 5093.36(b).

⁵²⁴ Pub. Resources Code § 5093.36(b) (emphasis added). Limited exemptions from this law exist, such as operating aircraft for the purposes of “the aerial stocking of fish or the conduct of aerial surveys of wildlife species. Pub. Resources Code § 5093.36(c)5.

⁵²⁵ RT 3280.

A.06-08-010 COM/MP1/tcg

wood pole line passes through land that carries a state wilderness designation and the EIR/EIS exhaustively documents the environmental damage to Anza-Borrego that would occur if any of the Northern Routes are constructed, including permanent damage to its historic and aesthetic resources. Impacts of this sort do not meet specified exemption criteria and the magnitude of such impacts cannot be reconciled with the California Wilderness Act's comprehensive charge to protect and preserve wilderness for future generations.

The EIR/EIS concludes that the Proposed Project's Anza-Borrego Link will encroach upon 50.2 acres of state wilderness. Most of this acreage is attributable to the Proposed Project's need to deviate from the existing wood pole line right-of-way in Anza-Borrego by 50 feet in order to address engineering concerns associated with installing taller towers and heavier lines, and to avoid particular environmental impacts in the Park. This deviation encroaches upon 48.1 acres within the Pinyon Ridge Wilderness Area and 1.3 acres within the Grapevine Mountain Wilderness Area. Encroachments require the formal de-designation of state wilderness – something that has never been done in California.⁵²⁶ All of the affected wilderness would have to be de-designated.

In addition, transmission line footings necessitate disturbances, and in some places, encroachments, and construction and maintenance processes will disturb land both inside and outside of the wilderness zone in a manner that has not occurred before in this area. In the Vallecito Mountains Wilderness Area, for example, portions of three temporary pull sites needed to string 500 kV

⁵²⁶ State Parks, Phase 2 Reply Brief, 2; Draft EIR/EIS, Sec. D.5.3.

A.06-08-010 COM/MP1/tcg

conductors for the Proposed Project will result in impacts to nearly another acre of wilderness, which would have to be de-designated.⁵²⁷

We find no support for SDG&E's contention that the Wilderness Act does not apply here. Further, the protections the Act mandates provide no exemption for projects like a major transmission line. As we discuss more fully in Section 13.5, the environmental damage to Anza-Borrego that would result from construction of any of the Northern Routes militates heavily against any order by this Commission that would require de-designation of wilderness.

13.3.3. SDG&E's Right-of-Way through Anza-Borrego

The Proposed Project would require a continuous right-of-way through Anza-Borrego, 150 feet wide. This route requires an expansion in SDG&E's existing right-of-way by at least 50 feet into the designated wilderness area along most of the route. As previously noted, SDG&E developed the "Enhanced" Northern Route primarily to respond to concerns about the Proposed Project's impacts on wilderness lands in Anza-Borrego and purports this new route would keep all transmission facilities within the existing 100-foot right-of-way.

SDG&E, BLM, Imperial Irrigation District and State Parks contest the width and continuity of the existing easement through Anza-Borrego.⁵²⁸ While we agree with SDG&E that this proceeding is not the forum to determine the validity of SDG&E's property rights, the issue is relevant in determining of the

⁵²⁷ In comments on the Draft EIR/EIS, SDG&E modified its "Enhanced" Northern Route to eliminate all pull sites and access roads with direct impacts on wilderness.

⁵²⁸ State Parks Phase 2 Reply Brief, 14.

A.06-08-010 COM/MP1/tcg

feasibility of the line.⁵²⁹ We summarize below the evidence on the problems⁵³⁰ that could arise if we were to grant a CPCN for any Northern Route.

Examination of the land records along the existing wood pole line corridor shows that in some areas there is no recorded right-of-way or reservation of right in SDG&E's favor.⁵³¹ In other areas, there is a recorded right-of-way, but the recorded documents do not specify its width. Additionally, where ownership rights are not at issue, but where SDG&E has no easement, the utility may be unable to acquire the necessary right-of-way. For example, in order to pursue a Northern Route, SDG&E must use right-of-way owned by Imperial Irrigation District and currently occupied, in part, by a 92 kV transmission line. However, Imperial Irrigation District has not agreed to the relocation of its own transmission line or to SDG&E's use of that right-of-way in Anza-Borrego.⁵³² SDG&E has not established that it could condemn Imperial Irrigation District's property.⁵³³

Given these facts, approval of a Northern Route likely would lead, at minimum, to a complex and significant debate among SDG&E, BLM, Imperial Irrigation District and State Parks over the legal status and rights associated with easements through Anza-Borrego and the courts may be called upon to resolve the issue. We cannot rule out the possibility that SDG&E may be unable to

⁵²⁹ SDG&E Phase 2 Opening Brief, 9.

⁵³⁰ State Parks Exhibit PR-10, 1-4.

⁵³¹ Draft EIR/EIS, Sec.B.2.2.

⁵³² Imperial Irrigation District Phase 2 Reply Brief, 7; Imperial Irrigation District Exhibit ID-4, 3:22-4:6.

⁵³³ SDG&E Phase 2 Opening Brief, 33-39. SDG&E has established only that it holds some easements outside the eastern entrance to Anza-Borrego and limited easements within Anza-Borrego.

A.06-08-010 COM/MP1/tcg

obtain the easements needed for a Northern Route. Regardless, this unresolved dispute easily could delay construction of an approved Northern Route and thus influences our view on the feasibility and reasonableness of a Northern Route.

13.4. Overview of the Environmental Impacts on Anza-Borrego

As described in more detail below (and in Section D of the EIR/EIS), all of the Northern Routes traverse Anza-Borrego. Because of the fragile nature of the desert ecosystem, any route through Anza-Borrego will have numerous significant and long-lasting unavoidable environmental impacts on the Park. We review here the specific environmental impacts that would be created by each Northern Route.

13.4.1. Environmental Impacts of the Proposed Project

See Section 3.2.1 for a description of the Proposed Project.

13.4.1.1. Parties' Positions

SDG&E argues the EIR/EIS overstates the environmental impacts of the Proposed Project on biological resources, avian species, cultural resources and agricultural lands. Furthermore, SDG&E contends, that to the extent that the Proposed Project will cause environmental impacts in the Park or elsewhere along the route, the utility has developed a range of comprehensive and effective avoidance and minimization measures to address those impacts.

Other parties disagree. Conservation Groups contend that the Draft EIR/EIS is deficient in many respects and therefore underestimates the environmental impacts of the Proposed Project (and the two other Northern Routes). Conservation Groups assert the deficiencies in the Draft EIR/EIS include failures to conduct a proper survey of plant species, to fully survey bird

A.06-08-010 COM/MP1/tcg

data as a basis for a proper evaluation of risk to avian species, to consider adequately the impacts of roads and other forms of habitat fragmentation, and to consider adequately the impacts to regional conservation plans. Conservation Groups also assert that the Proposed Project will harm the already endangered Peninsular Bighorn Sheep in and near Anza-Borrego and that the GHG emissions from construction will violate state law and policy. Conservation Groups conclude that the Proposed Project (and other Northern Routes) will have significant environmental impacts on parks, forests, wilderness, recreation areas, public lands, public and private preserves, threatened and endangered species, landscape level impacts on the ecosystem, ecosystem services, and regional conservation plans.

UCAN asserts that the Proposed Project's environmental impacts are among the most significant of any of the alternatives. With respect to the Proposed Project's impacts on Peninsular bighorn sheep, UCAN argues that SDG&E has tried to minimize impacts by inaccurately characterizing the way the transmission line would intersect Peninsular bighorn sheep habitat.

13.4.1.2. Discussion

As we discuss in Section 15.1, below, the Final EIR/EIS concludes that the Proposed Project ranks as the sixth worst alternative among the eight alternatives in terms of its environmental impacts. The Proposed Project has 52 significant, unavoidable environmental impacts (in one or more geographic areas) and will create numerous, direct impacts within Anza-Borrego, including de-designation of state wilderness (discussed in Section 13.3.2), degradation of views and recreational opportunities, impacts on Traditional Cultural Properties, and severe visual effects in the Santa Ysabel Valley. The significant unavoidable impacts affect plants and animals (including endangered species), views,

A.06-08-010 COM/MP1/tcg

wilderness and recreation, farms, cultural and paleontological sites, noise, air quality, socioeconomics, public services and utilities, and fire and fuels management. We summarize some of the major impacts below.

Aesthetically, the Proposed Project would create a new row of 130-foot tall steel towers and conductors visible from many locations, including across many acres of state wilderness. The Proposed Project would “result in increased structure contrast, industrial character, view blockage, and skylining from eight locations that represent the majority of public views through the State Route 78 and Grapevine Canyon areas of the Park.”⁵³⁴ In addition, once degradation occurs, repair and restoration of the fragile desert environment can take many years. For example, land scarring from use of staging areas and construction yards, construction of new access and spur roads, and activities adjacent to construction sites and along the right-of-way can last years, if not decades, in arid and semi-arid environments where vegetation recruitment and growth are slow.⁵³⁵ In-line views of linear land scars or newly bladed roads are particularly problematic and introduce adverse visual change and contrast by causing unnatural vegetative lines and soil color contrast from newly exposed soils.⁵³⁶ While mitigation measures could be imposed to reduce this type of impact, some site-specific conditions may dictate that the only way to reduce the impact to a less than significant level is to construct the project by helicopter.⁵³⁷

We disagree with SDG&E’s contention that the scope and scale of the “disturbances” to the desert associated with the building of the wood pole line

⁵³⁴ Draft EIR/EIS, ES-5.2.

⁵³⁵ Draft EIR/EIS, Sec. D.2.5.

⁵³⁶ Draft EIR/EIS, Sec. D.3.6.

⁵³⁷ Draft EIR/EIS, Sec. D.3.6.

A.06-08-010 COM/MP1/tcg

80 years ago are similar to those that will result from construction of a new, permanent and highly visible, 500 kV steel tower transmission line. The EIR/EIS documents that the Proposed Project and the other two Northern Routes will cause numerous and extensive, significant, unmitigable environmental impacts.

The Proposed Project's environmental impacts affect the following special status species⁵³⁸: Peninsular bighorn sheep (a federally and State listed endangered species), flat-tailed horned lizards, golden eagles, quino checkerspot butterflies (a federally listed endangered species), and barefoot banded geckos.⁵³⁹ Among these impacts, the greatest risk is to endangered bighorn sheep in the Peninsular Ranges. Without obtaining a federal permit from United States Fish and Wildlife Services (US Fish and Wildlife), it is illegal to "take" endangered or threatened species. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."⁵⁴⁰ "Harm" includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish and wildlife.

On February 1, 2001, US Fish and Wildlife designated final critical habitat for the Peninsular bighorn sheep on approximately 844,897 acres in Riverside, San Diego, and Imperial Counties.⁵⁴¹ The Proposed Project's Imperial Valley and Anza-Borrego Links pass through an extensive section of bighorn sheep critical

⁵³⁸ As defined in the Draft EIR/EIS, Sec. D.2.

⁵³⁹ Draft EIR/EIS, ES.5.2.

⁵⁴⁰ Draft EIR/EIS, Sec. D.2.3.1.

⁵⁴¹ Draft EIR/EIS, Sec. D.2.1.2.1.

A.06-08-010 COM/MP1/tcg

habitat.⁵⁴² Without obtaining the requisite permit from US Fish and Wildlife, it is illegal to do anything that results in impacts to critically designated habitat.⁵⁴³

In 2004 approximately 700 Peninsular bighorn sheep were living range wide in Southern California, including an estimated 400 to 450 in Anza-Borrego.⁵⁴⁴ Decline of the Peninsular bighorn sheep is attributed to the following factors: habitat loss, degradation, and fragmentation; disease from domestic cattle; low lamb survival rates; and predation coinciding with low population numbers.⁵⁴⁵ In addition, numerous researchers have expressed concern over the impact of human activity on these animals. As a wilderness animal, Peninsular bighorn sheep fail to thrive in contact with urban development.⁵⁴⁶ Installation of transmission towers, stringing the lines (possibly by helicopter), the presence of transmission towers and lines, creation and use of access roads, and maintenance activities in Peninsular bighorn sheep habitat could cause bighorn sheep to avoid affected areas and could interfere with the use of resources such as escape terrain, water, mineral licks, rutting, lambing, or feeding areas, the use of traditional movement routes, and/or could cause physiological stress or increased predation. Based on the high sensitivity of this species and evidence that shows that human activities significantly affect it, the EIR/EIS determines that these impacts would adversely affect survival and recovery of the species. Although the EIR/EIS proposes a number of mitigation measures to help reduce

⁵⁴² Draft EIR/EIS, Sec. D.2.1.2.2.

⁵⁴³ Draft EIR/EIS, Sec. D.2.3.1.

⁵⁴⁴ Draft EIR/EIS, Sec. D.2.11.

⁵⁴⁵ Draft EIR/EIS, Sec. D.2.11.

⁵⁴⁶ Draft EIR/EIS, Sec. D.2.11.

A.06-08-010 COM/MP1/tcg

the impacts to Peninsular bighorn sheep, it finds that the impact would remain significant and unavoidable.⁵⁴⁷

For the reasons described above, Peninsular bighorn sheep may avoid areas near the Proposed Project and not migrate to land below it. If this occurs, transmission line would sever the entire United States population into two separate populations. Field observations and genetic analysis establish that gene flow historically has occurred throughout the range, and that it continues today.⁵⁴⁸ Severing the population may increase the entire population's risk of genetic and demographic extinction, because smaller and isolated populations tend to have a higher risk of extinction than larger and interconnected ones.⁵⁴⁹

Habitat fragmentation also may result in a loss of habitat diversity⁵⁵⁰ by restricting Peninsular bighorn sheep from using the full range of resources they need to survive. Desert bighorn sheep live in a harsh environment and their survival depends on their ability to move among various resources over different time periods, some very short and some much longer. For example, they may need to shift their distribution in response to changes in food quality or abundance as a result of localized summer rain showers, or they may need to shift to a neighboring canyon because a water source has dried up. Fragmentation would cut them off from these crucial resources. For these reasons, habitat fragmentation is seen as a major threat to bighorn sheep⁵⁵¹ and it is particularly risky to bighorn sheep in the Peninsular Ranges because a narrow,

⁵⁴⁷ Draft EIR/EIS, D.2.11.

⁵⁴⁸ Conservation Groups Exhibit C-23, 6.

⁵⁴⁹ Conservation Groups Exhibit C-23, 6.

⁵⁵⁰ Conservation Groups Exhibit C-23, 6.

⁵⁵¹ Conservation Groups Exhibit C-23, 6.

A.06-08-010 COM/MP1/tcg

elevational band of suitable habitat exists in these mountains.⁵⁵² Increased traffic and construction disturbance will not only increase the risk of habitat fragmentation, but will also increase the risk of invasion by exotic invasive plants, such as Saharan mustard (*Brassica tournefortii*), tamarisk (*Tamarix spp.*), and cheatgrass (*Bromus tectorum*), which, over time, will decrease habitat quality for bighorn sheep.⁵⁵³ In addition, ongoing transmission line maintenance activities will result in significant and unmitigable disturbance to the bighorn sheep or even, mortality.⁵⁵⁴ Conservation Groups testified: “[I]t would be unwise to experiment with a Federally endangered population, and we should therefore err on the side of caution to protect bighorn sheep in the Peninsular Ranges . . .”⁵⁵⁵ SDG&E itself presented an unpublished report that states: “[E]mphasis should be placed on siting of project facilities to the extent possible *away* from optimal habitat and other features of high value to sheep.”⁵⁵⁶

UCAN argues that SDG&E has tried to minimize, inaccurately, the Proposed Project’s impacts on Peninsular bighorn sheep by contending that the Proposed Project “primarily follows State Route 78 which, as a paved road, is already a barrier to sheep.”⁵⁵⁷ We agree with UCAN. Use of the adverb “primarily” makes the sentence technically true, since the Proposed Project parallels State Route 78 for about 15 out of 22 miles inside Anza-Borrego. But the

⁵⁵² Conservation Groups Exhibit C-23, 7.

⁵⁵³ Conservation Groups Exhibit C-23, 5-7.

⁵⁵⁴ Draft EIR/EIS, ES-5.3.

⁵⁵⁵ Conservation Groups Exhibit C-23, 7.

⁵⁵⁶ RT 3576 (referring to SDG&E Exhibit SD-59 erroneously; the report is SDG&E Exhibit SD-58 [Impacts of the Palo Verde to Devers 500 kV Transmission Line Final Report]).

⁵⁵⁷ SDG&E Phase 2 Opening Brief, 100.

A.06-08-010 COM/MP1/tcg

characterization is misleading because it ignores the other seven miles through Grapevine Canyon. These are *the* seven miles of Peninsular bighorn sheep habitat, and they are not bisected by State Route 78.⁵⁵⁸ In fact, the Proposed Project affects approximately 147.5 acres of Peninsular bighorn sheep critical habitat (90.3 acres of temporary disturbance and 57.2 acres of permanent impact through habitat removal). The EIR/EIS, in Significance Criterion 1.d., states that the Proposed Project would have a substantial adverse effect on designated critical habitat for a federal listed species through temporary or permanent disturbance.⁵⁵⁹

With respect to Conservation Groups' contention that the Draft EIR/EIS is deficient, we find that the Final EIR/EIS responds adequately and in detail to Conservation Groups argument and expert testimony.⁵⁶⁰

13.4.2. Environmental Impacts of the “Enhanced” Northern Route

See Section 3.2.2 for a description of the “Enhanced” Northern Route.

13.4.2.1. Parties' Positions

SDG&E supports the “Enhanced” Northern Route which, unlike the Proposed Project, would be constrained to a 100-foot right-of-way within Anza-Borrego. Because all of the Northern Routes create similar impacts, opposing parties generally raise the same or similar criticisms against each of them and those concerns are set out in Section 13.4.1.1.

⁵⁵⁸ UCAN Phase 2 Reply Brief, 36.

⁵⁵⁹ Final EIR/EIS, Sec. D.2-111.

⁵⁶⁰ See Final EIR/EIS, Response to Comment Set B0041, and, in particular, Response to Comment B0041-13.

A.06-08-010 COM/MP1/tcg

The “Enhanced” Northern Route has two unique impacts in Anza-Borrego. It would be constructed through Native American cultural sites and a Park campground. SDG&E has offered to work with State Parks on redesigns to minimize these impacts, but such redesigns necessitate leaving the 100-foot right-of-way, and obviate the purported advantage of the “Enhanced” Northern Route, since wilderness encroachment would result.

State Parks cautions that even if SDG&E keeps the “Enhanced” Northern Route within the existing 100-foot right-of-way, for various reasons that route could be found to be incompatible with Anza-Borrego’s General Plan, which would require a Plan amendment.⁵⁶¹

13.4.2.2. Discussion

As set forth in Section 15.1, below, the Final EIR/EIS concludes that the “Enhanced” Northern Route falls next-to-last in the environmental ranking, placing it below both the Final Environmentally Superior Northern Route and the Proposed Project. The “Enhanced” Northern Route has 44 significant, unavoidable environmental impacts (in one or more geographic areas), including numerous impacts on Anza-Borrego.⁵⁶²

The major differences between the environmental impacts attributable to the “Enhanced” Northern Route and the Proposed Project are associated with limiting the path of the 500 kV transmission line through the Park to the 100-foot right-of-way currently occupied by the 69-92 kV wood pole line. It is unclear

⁵⁶¹ State Parks Phase 2 Opening Brief, 20-24.

⁵⁶² The “Enhanced” Northern Route has fewer significant, unmitigable impacts than the Proposed Project only because the CEQA/NEPA review process established fewer “key view points” for visual resources analysis. A key view point is representative of the most critical locations from which a project can be seen. Most of the view points established for the Proposed Project within Anza-Borrego also apply to this alternative.

A.06-08-010 COM/MP1/tcg

that a new 500 kV line can be restricted, successfully, to such a narrow corridor.⁵⁶³ However, were it possible to do so, while that would eliminate direct impacts to state wilderness, the line's greater number of towers, and their increased height, would permanently change the character of Anza-Borrego and decrease its recreational value. Towers would vary in height from 135 to 175 feet, compared to an average height of 130 feet for the structures in this same segment of the Proposed Project. The larger number of towers, the more complex design (known as Delta configuration) of the structures needed to support taller towers, and locating the transmission line closer to State Route 78 (which requires more road spans within Anza-Borrego) all create greater visual impacts.

Constraining the "Enhanced" Northern Route to a 100-foot right-of-way eliminates the ability to avoid significant Native American archaeological sites and the new 500 kV line is forced to cross the large cultural resources complex in the western part of Anza-Borrego, the highly sensitive Angelina Springs Cultural District in Grapevine Canyon.⁵⁶⁴ The line's path passes through the center of the primary site and requires more towers within the boundaries of the complex.

The "Enhanced" Northern Route's new alignment also undoes many of the small route adjustments made to the Proposed Project to avoid or minimize other impacts to Anza-Borrego. For example, the Proposed Project skirts the Tamarisk Grove Campground, avoiding the need to remove the tamarisk trees growing there. The "Enhanced" Northern Route cannot avoid the campground and, in

⁵⁶³ State Parks Phase 2 Opening Brief, 18 ["In two areas along the existing transmission corridor bordered by State Wilderness, the right-of-way is less than 100', necessitating the need for an additional grant by [State Parks] that would result in encroachment into State Wilderness."]

⁵⁶⁴ Draft EIR/EIS, Sec. D.7.19 and Appendix 1-68 and 1-69.

A.06-08-010 COM/MP1/tcg

order to meet the safety requirement of the Commission's General Order 95,⁵⁶⁵ some of the tamarisk trees located there would need to be removed.⁵⁶⁶

Though SDG&E has stated it is willing to work with State Parks on a redesign of the "Enhanced" Northern Route to avoid impacts on the cultural complex and the Tamarisk Grove Campground, such an effort undermines the major reason SDG&E proposed the "Enhanced" Northern Route. Avoiding those impacts requires creating a new or wider right-of-way and locating the 500 kV line on wilderness land, which necessitates de-designation of wilderness.

Finally, even if constrained to the 100-foot right-of-way, the "Enhanced" Northern Route would have significant negative impacts on wilderness. We have described the "Enhanced" Northern Route's greater visual impacts on Anza-Borrego. In addition, during construction, heavy equipment and helicopters could encroach on portions of state wilderness, creating the potential for extended periods of abrasive noise and dust, and risking permanent damage to the land.⁵⁶⁷ Construction of a high voltage transmission line requires significant land for staging, tower assembly, pull sites, and other activities. Individual sites would be cleared to install the transmission line support structures and facilitate access for future maintenance of the transmission line and associated structures. For example, at each structure location, a bulldozer or backhoe would clear an area approximately 100 feet by 100 feet, plus an area adjacent to an access road of approximately 35 feet by 75 feet.⁵⁶⁸ If solid rock is

⁵⁶⁵ General Order 95 sets out rules for overhead electric line construction.

⁵⁶⁶ Draft EIR/EIS, ES-7.1.2.

⁵⁶⁷ Draft EIR/EIS, Sec. D.8.6, D.11.6, and D.3.6.

⁵⁶⁸ Final EIR/EIS, Sec. B.4.1.1.

A.06-08-010 COM/MP1/tcg

encountered at a structure location, additional equipment may be required to blast through the rock.⁵⁶⁹

13.4.3. Environmental Impacts of the Final Environmentally Superior Northern Route

See Section 3.2.3 for a description of the Final Environmentally Superior Northern Route.

13.4.3.1. Parties' Positions

Because the Northern Routes create similar impacts, opposing parties generally raise the same or similar criticisms against each of them and those concerns are set out in Section 13.4.1.1. The Final Environmentally Superior Route differs from the two other Northern Routes primarily in that it would be undergrounded through Anza-Borrego to avoid permanent impacts on wilderness and to mitigate visual impacts.

13.4.3.2. Discussion

As discussed in Section 15.1, below, the Final EIR/EIS concludes that the Final Environmentally Superior Northern Route ranks as the fifth ranked alternative among eight alternatives in terms of its environmental impacts, but above both the Proposed Project and the "Enhanced" Northern Route. The Final Environmentally Superior Northern Route has 37 significant, unavoidable impacts (in one or more geographic areas) and will create numerous direct impacts within Anza-Borrego, though it has no direct effect on state wilderness. The environmental impacts affect biological resources, visual resources, wilderness and recreation, agricultural resources, cultural resources, noise, air quality, socioeconomics, public services and utilities, and fire and fuels management.

⁵⁶⁹ Draft EIR/EIS, Sec. B.4.

A.06-08-010 COM/MP1/tcg

The major advantage of the Final Environmentally Superior Northern Route over both the Proposed Route and the “Enhanced” Northern Route is the underground, rather than overhead, construction of part or all of the Anza-Borrego Link in the State Route 78 roadway. The portion east of San Felipe and Santa Ysabel Valleys also would be undergrounded if the All Underground Option of the Final Environmentally Superior Northern Route were built. Because the new 500/230 kV substation would be located to the east of Anza-Borrego, rather than to the west, the transmission line through the Park would need to be only 230 kV, rather than 500 kV. Undergrounding through Anza-Borrego avoids direct impacts to a one-mile area of state-designated Grapevine Canyon Wilderness and does not permanently diminish the recreational value of Anza-Borrego, the Pacific Crest Trail and the San Dieguito River Park, unlike the Proposed and “Enhanced” Northern Routes. It also avoids significant and unavoidable impacts to rural residences, visual resources, and agricultural resources within San Felipe Valley.

Even though this partial underground alternative creates fewer visual impacts, the Final Environmentally Superior Northern Route has significant, unmitigable impacts on wildlife and its habitat. Construction of an underground line through Anza-Borrego creates a permanent impact on 63.4 acres of flat-tailed horned lizard habitat outside a Management Area through habitat removal at the San Felipe Substation site and the harm, harassment, or direct disturbance of the lizards. The EIR/EIS finds these impacts significant under Significance Criterion 1.f. (directly or indirectly cause the mortality of a special status wildlife species). They are significant and not mitigable to less than significant levels

A.06-08-010 COM/MP1/tcg

(Class I) because land adequate to compensate for the impacts may be unavailable.⁵⁷⁰

The underground line passes through designated critical habitat for Peninsular bighorn sheep, though most of the construction is expected to occur within the existing roadway boundaries. However, tower pads, an access road, and two pull sites for the one-mile overhead segment would create impacts to critical bighorn sheep habitat (3.4 acres of temporary disturbance and 3.6 acres of permanent impacts).⁵⁷¹ Construction in this area would extend outside the existing roadway, and it is possible that blasted rock and/or debris also might end up outside the construction zone. Any impact to critical habitat is significant according to Significance Criterion 1.d. (substantial adverse effect on designated critical habitat for a federal listed species through temporary or permanent disturbance). The impacts would be significant and not mitigable to less than significant levels (Class I) because replacement critical habitat for Peninsular bighorn sheep, or other suitable habitat (as determined by US Fish and Wildlife, BLM, California Department of Fish and Game, and State Parks), may be unavailable.⁵⁷² Even if enough suitable land is available to mitigate habitat impacts to below a level of significance, human and construction activity in Peninsular bighorn sheep habitat could cause the sheep to avoid affected areas, thereby adversely affecting the survival and recovery of the species.⁵⁷³ Other

⁵⁷⁰ Draft EIR/EIS, Sec. D.2.22.1.

⁵⁷¹ Draft EIR/EIS, Sec. D.2.22.1.

⁵⁷² Draft EIR/EIS, Sec. D.2.22.1.

⁵⁷³ Draft EIR/EIS, Sec. D.2.22.1.

A.06-08-010 COM/MP1/tcg

endangered species, like the least Bells vireo, are present along this route, and this undergrounding alternative would create significant impacts for them.⁵⁷⁴

Though undergrounding through Anza-Borrego minimizes or avoids some environmental impacts, it also creates unique impacts. Specifically, it places a double-circuit 230 kV transmission line underground within State Route 78 and County Highway S2, within the Earthquake Valley Fault, which presents a risk of potential, substantial adverse effects from a surface fault rupture. It also results in increased, short-term impacts to traffic and transportation along State Route 78 and County Highway S2, including temporary road and lane closures that would disrupt traffic flow and visitor access to the Park. Additionally, should SDG&E pursue, at some time in the future, a transmission expansion via the San Felipe Substation (a component of the Final Environmentally Superior Northern Route) as many as four additional 230 kV circuits and one additional 500 kV circuit may be required through Anza-Borrego.

Finally, the Final Environmentally Superior Northern Route, compared to the Final Environmentally Superior Southern Route, has greater impacts on biological resources, visual resources, cultural resources, paleontological resources, public health and safety, air quality, geology, mineral resources and soils, socioeconomics, and public services and utilities.⁵⁷⁵

13.5. Conclusions Regarding Any Route Through Anza-Borrego

As § 1002(a)⁵⁷⁶ requires, we have developed a comprehensive record (in the EIR/EIS and in Phase 2 hearings) on the environmental impacts on Anza-

⁵⁷⁴ Draft EIR/EIS, Sec. D.2.22.1.

⁵⁷⁵ Draft EIR/EIS, Sec. H.5.3.

⁵⁷⁶ See Sections 2.2 and 4.2, above.

A.06-08-010 COM/MP1/tcg

Borrogo of any Northern Route. Together with input from speakers at Public Participation Hearings, this comprehensive record likewise documents Northern Route impacts on the three other § 1002(a) factors we must consider – community values, recreational and park areas, historical and aesthetic values.

We find that building any route through Anza-Borrogo, including the Final Environmentally Superior Northern Route, is inconsistent with each of these factors. More specifically, we find that any Northern Route: (1) would have massive significant and unmitigable environmental impacts on Anza-Borrogo; (2) be contrary to community values – both those of the people who visit Anza-Borrogo, as well as the values embodied in our state laws protecting areas like Anza-Borrogo; (3) be permanently detrimental to recreational and park areas within Anza-Borrogo; and (4) would have permanent and negative impacts on historical and aesthetic resources in Anza-Borrogo. The degradation of community, recreational, historical and aesthetic values particular to the Park, together with the well-documented adverse impacts on the Park’s environment, requires that we reject any Northern Route. The evidence developed in this proceeding strongly suggests that our determination is wholly consistent with Anza-Borrogo’s General Plan and the goals and purposes of the California Wilderness Act, both of which are designed to protect such areas.

As discussed above, State Parks reasonably could conclude that construction of any route through Anza-Borrogo would require amendments to the Park’s General Plan, de-designation of wilderness,⁵⁷⁷ and the grant of new right-of-way or right of entry permits, or both. We reject SDG&E’s contention that the Wilderness Act does not apply to the land through which the Northern Routes would pass. The California Wilderness Act requires the protection and

⁵⁷⁷ State Parks Phase 2 Reply Brief, 2.

A.06-08-010 COM/MP1/tcg

management of wilderness “so as to preserve its natural conditions,” prohibits temporary or permanent improvements on wilderness areas such as “structure[s] or installation[s]” and also prohibits the temporary construction activities associated with such “improvements.” Approving a route through Anza-Borrego would not support or preserve recreational opportunities in a “natural environment” or nurture feelings of “peaceful solitude.” The EIR/EIS exhaustively documents the environmental damage to Anza-Borrego, including permanent damage to its historic and aesthetic resources. Where, as here, no exemptions exist, such impacts cannot be reconciled with the charge of the California Wilderness Act.

As far as we know, state wilderness has never before been re-classified or de-designated. No record of re-classification or de-designation of state wilderness has been identified. A determination to de-designate wilderness, and its precedential impact, are very serious matters and approval of a request to construct any of the Northern Routes could be detrimental to this state’s efforts to protect wilderness lands in perpetuity.

We are not alone in reaching the ultimate conclusion that Sunrise should not be built through Anza-Borrego. The Energy Commission, which generally subscribes to using “existing rights-of-way”⁵⁷⁸ when locating new transmission lines, declared this Park to be a “no-touch” zone, due to its environmental sensitivity.⁵⁷⁹

Moreover, where we grant CPCN authority to a public utility, the utility acquires the right, to the extent provided by law, to condemn land in order to build its project. This record does not attempt to establish the extent of SDG&E’s

⁵⁷⁸ SDG&E Exhibit SD-35, 7.10.

⁵⁷⁹ Conservation Groups Exhibit C-26, 2.

A.06-08-010 COM/MP1/tcg

eminent domain rights with respect to any of the Northern Routes. However, we cannot ignore that significant questions exist about whether SDG&E could acquire sufficient right-of-way to build in the Park. This practical matter militates against any Northern Route. SDG&E's construction schedule has made no provision for delays, whether attributable to continuing litigation or to a determination by State Parks that it must prepare amendments to Anza-Borrego's General Plan. Either source of delay is likely if we approve a route through Anza-Borrego. The history of this proceeding strongly suggests that any route through Anza-Borrego likely would be delayed indefinitely while various stakeholders undertook all legal means available to stop construction of a 500 kV transmission line through the Park. Conservation Groups, for example, have made clear their willingness to litigate to protect Anza-Borrego. They have continued to argue that the EIR/EIS is inadequate and they have contended, forcefully, that the Commission has insufficient environmental information to approve any transmission alternative through Anza-Borrego.⁵⁸⁰ They claim that all of the Northern Routes would violate state law protecting parks and wilderness.⁵⁸¹

If changes to the General Plan were to be made, State Parks estimated it would need 395 to 455 days (about 13 to 15 months) to prepare major revisions for consideration by the State Parks and Recreation Commission (this estimate presumes that State Parks' reliance on a Commission-certified EIR/EIS to meet the requirements of CEQA). Even if that timeframe could be compressed further, the delay still would be eight months to a year.⁵⁸²

⁵⁸⁰ Conservation Groups Phase 2 Opening Brief, 5, 51, 54-55, 85-86.

⁵⁸¹ Conservation Groups Phase 2 Reply Brief, 12.

⁵⁸² RT: 4222:5-8.

A.06-08-010 COM/MP1/tcg

14. Wildfire Risks

14.1. Overview

Wildfires pose a significant and continuing risk in California generally, and to Southern California and San Diego County in particular.⁵⁸³ There is evidence from Cal Fire investigation of wildfires that power lines have played a meaningful part in San Diego County's wildfire history. Consequently we discuss here, separate from our review of other environmental impacts of Sunrise in Section 15, both the risk that a new transmission line may ignite a fire under severe wind conditions, and the presence of dense, dry fuels, and the potential damage of such a fire. We also review the possibility of a wildfire-induced dual line failure of the Southwest Powerlink - the largest import line into San Diego - and the Proposed Project or a Northern or Southern Route Alternative.⁵⁸⁴ (See Section 3.2 for a description of the Proposed Project and other Northern Routes and Section 15.7 for a description of the Southern Route Alternatives.)

We reach two key conclusions based on the fire history discussed below. First, lower voltage distribution and sub-transmission lines, not high-voltage transmission lines, have been responsible for most power line related fires in the San Diego area. Second, we conclude that the increased risk of fire, with potential reliability impacts, is not significantly different between the Final Environmentally Superior Southern and Northern Routes, and that for the Final

⁵⁸³ Draft EIR/EIS, Sec. D.15.1. In Section 16 and the related Appendix C, we make no independent assessment of the fire history or determination of the cause of particular fires, but rely on the California Department of Forestry and Fire Protection (Cal Fire).

⁵⁸⁴ See Section 17.6, for a discussion of the LEAPS Transmission-Only Alternative, which has lower wildfire risks than the Northern or Southern Route Alternatives but greater environmental impacts, overall, than the generation based alternatives.

A.06-08-010 COM/MP1/tcg

Environmentally Superior Southern Route in particular, the increased fire risk, including reliability risk, is not significant.

We have reviewed these issues both in the CPCN portion of this proceeding and in the EIR/EIS.

14.2. Risk of Fire Ignition

The presence of dense, dry fuels and periodic Santa Ana winds makes Southern California one of the most fire-prone landscapes in the world.⁵⁸⁵ Although fires are a natural process in the chaparral ecosystems in San Diego County, increased human influence across the Southern California landscape has elevated the frequency and intensity of fires,⁵⁸⁶ and magnified fire damage to communities, firefighters, and natural resources including air quality, biological resources, and water quality. Assisted by high winds, power line ignitions have caused four of the twenty largest wildfires in California's history from 1932 to 2007, measured by acreage burned, according to Cal Fire.⁵⁸⁷ Three of these four fires occurred in SDG&E's service area: the 1970 Laguna and Clampitt Fires and the 2007 Witch Fire. The 2007 Rice Fire, also ignited by a power line in SDG&E's service area according to Cal Fire, is one of the State's twenty largest wildfires by another measurement, number of structures destroyed. Thus, according to Cal Fire, four of the five most destructive California fires caused by power lines occurred in SDG&E's service area. Cal Fire's reports state that three of the four

⁵⁸⁵ Draft EIR/EIS, Sec. D.15.1.

⁵⁸⁶ Draft EIR/EIS, Sec. D.15.2.1.

⁵⁸⁷ Draft EIR/EIS, Sec. D.15.1.1 reviews reports of Cal Fire.

A.06-08-010 COM/MP1/tcg

fires were caused by distribution-level lines, that the fourth was caused by a 69 kV sub-transmission line, and that the specific causes vary:⁵⁸⁸

- 2007 Witch Fire – Failure of 69 kV equipment due to corrosion and high winds combined with an ignition caused by a hanging cable lashing on a 12 kV distribution-level line;
- 2007 Rice Fire – Failure of a 12 kV distribution-level line ignited by improperly maintained vegetation around the distribution facilities;
- 1970 Clampitt Fire – Ignited when high winds blew down a section of the distribution-level line; and
- 1970 Laguna Fire – Ignited when trees fell across the distribution-level lines.

In addition to the serious threat intense wildfires pose to human life and property in San Diego County, they also pose a transmission reliability risk because of the possibility that a wildfire - or group of wildfires - will require an extended shutdown of transmission lines supplying San Diego with energy. Locating transmission lines in areas with high fire risk creates a reliability risk. Dense smoke or heat from wildfires can “trip” a circuit, causing it to go out of service.⁵⁸⁹ A forced outage may be necessary to respond to an emergency line

⁵⁸⁸ In addition to Cal Fire’s July 10, 2008 reports on the Rice and Witch Fires, the Draft EIR/EIS references the September 2, 2008 report of the Commission’s Consumer Protection and Safety Division (CPSD) on the Guejito, Witch and Rice fires. CPSD has asked the Commission to open a formal investigation into, among other things, whether SDG&E (and/or others) bears any responsibility for the fires and whether the rules governing conductor clearances and vegetation management practices should be changed.

⁵⁸⁹ Smoke can cause an outage as a result of a phase-to-phase or phase-to-ground fault because the ionized air in the smoke can become a conductor of electricity, resulting in arcing between lines on a circuit or between a line and the ground. A “trip” of a transmission line occurs when the system’s protective equipment shuts down power flow over a given segment of the line in an effort to mitigate potential damage to the interconnected equipment.

A.06-08-010 COM/MP1/tcg

de-rating, to prevent thermal damage to the line, to prevent a smoke-caused trip, or to meet the safety needs of firefighters.

Power lines can start fires by creating sparks that then ignite combustible material located on or near a power line. Any of the following factors may induce sparking:

- Transformer or capacitor failures that result in arcing, or leaking equipment;
- Floating or wind-blown debris contacting conductors or insulators, including trees, other vegetation, birds, Mylar balloons, and kites;
- Conductor-to-conductor contact;
- Wood support poles being blown down in high winds;
- Dust or dirt on insulators; and
- Bullet, airplane, and helicopter contact with conductors or support structures.

The San Diego County fire history summarized at the beginning of this Section and SDG&E's fire data for the last four years (2004-2007) both confirm that distribution-level and sub-transmission lines have been responsible for the bulk of power line-related ignitions, and all of the significant property damage caused by fires resulting from such ignitions. Between 2004 and 2007, 85.5% of the power line-related fires (89 ignitions) were distribution system ignitions, 11.5% (12 ignitions) were ignitions of sub-transmission systems of 69-138 kV, and 3% (3 ignitions) were 230 kV transmission system ignitions. None of the ignitions was associated with a 500 kV line.⁵⁹⁰ Attachment C to today's decision, entitled "Risk of Fire Ignition," provides a more detailed discussion of this topic.

⁵⁹⁰ Draft EIR/EIS, Sec. D.15.1.1.

A.06-08-010 COM/MP1/tcg

14.3. Risk of Dual Line Failure Due to Wildfire

Given the fire-prone Southern California landscape, wildfire presents an outage risk for any new transmission line, including the Proposed Project and each of the transmission alternatives studied in the EIR/EIS. Both single, isolated fires and conflagrations of multiple fires have the potential to cause an outage. A second issue is reliability-related, that of concurrent failure of the Proposed Project (or other Sunrise transmission alternative) and the existing Southwest Powerlink, due to one fire or simultaneous fires. While the fire history summarized below suggests a concurrent outage involving the Southwest Powerlink and the Environmentally Superior Southern Route is more likely than one involving the Environmentally Superior Northern Route, as we discuss below, a dual line outage could occur whether or not a new transmission line is collocated with the Southwest Powerlink, since spacial proximity is not the only indicator of a concurrent outage.

Wildfires pose a special risk to SDG&E's largest import line, the 500 kV Southwest Powerlink. Roughly 14 wildfire events have caused an estimated 29 outages in the 23 years of the line's operation.⁵⁹¹ Because of concerns about a concurrent outage between the Proposed Project and the Southwest Powerlink, SDG&E's PEA did not fully consider any transmission alternatives located west of Milepost 36 in the Southwest Powerlink corridor. SDG&E was concerned that WECC would rate any line parallel to the Southwest Powerlink past that milepost as a Category C line, and SDG&E wanted the Proposed Project to obtain a Category D rating, which because it represents a higher measure of reliability,

⁵⁹¹ EIR/EIS, Attachment 1A to Appendix 1, Sec. 5, Table 5.

A.06-08-010 COM/MP1/tcg

might provide further justification for the line. Only three sets of collocated high-voltage transmission lines in California have a Category D rating.⁵⁹²

SDG&E filed a Performance Category Upgrade Request (Request) with WECC Reliability Performance Evaluation Work Group (WECC Reliability Work Group) on December 19, 2007, about a year after it filed the 2006 Application. By this time the EIR/EIS process had identified the Northern and Southern Route Alternatives and so the Request evaluated the double-line outage probability for the 500 kV segments of the Northern and Southern Routes that would be collocated with the Southwest Powerlink. SDG&E focused primarily on evaluating the fire-related risks related to the collocated segments but also evaluated the risk of a single fire causing concurrent outages on one of these alternative routes and the Southwest Powerlink, based on the historical fire record. After reviewing SDG&E's Request, WECC Reliability Work Group recommended that the collocated 500 kV segment of the Northern Route (4 miles) be approved as a Category D line and that the collocated segment of the Southern Route (36 miles) be deemed a Category C line.⁵⁹³

However, SDG&E's Request to WECC Reliability Work Group failed to evaluate the risk of multiple simultaneous fires affecting both lines and thus, did not permit a fully comparable analysis. Had SDG&E performed a simultaneous wildfire-reliability analysis on the entire length of each route and not just the co-located portion, and had it included fire history data (discussed below) in the Request, it is not clear that the Northern Route would have received a

⁵⁹² Final EIR/EIS, ES and General Response GR-9.

⁵⁹³ CAISO argues that the Southern Routes' Category C rating would require a remedial action scheme designed to drop up to 100 MW of load in the San Diego area and trip up to 2,000 MW of generation in the Imperial Valley. DRA contends that CAISO's position is flawed.

A.06-08-010 COM/MP1/tcg

Category D rating. Rather, it seems likely both lines would have been deemed to meet Category C requirements and thus, would have been given the same reliability rating.

The fire history record shows that had both lines been present, it is very likely that the Final Environmentally Superior Northern Route would have experienced a concurrent outage with the Southwest Powerlink twice since 1970 (in 2003 and 2007). There also is a very high likelihood that the Environmentally Superior Southern Route would have experienced a concurrent outage with the Southwest Powerlink five times since 1970 (in 1970, 1975, 1995, 2003, and 2007).

WECC's rating criteria assesses whether any contingency (such as fire, lightning, aircraft crash) that could affect two transmission lines is likely to occur at a frequency between one in three to one in thirty years, and if so, classifies the proposed transmission route as "N-2," which falls within the Category C reliability classification. Therefore, because the Northern Route likely would have experienced an outage concurrent with Southwest Powerlink twice in 30 years, a more accurate assessment of the risk of outage due to concurrent fire appears to fall within Category C standards but does not meet the higher standards of Category D.

These conclusions are based on a spatial analysis of the routes and Cal Fire's Fire and Resource Assessment Program fire perimeter database.⁵⁹⁴ However, given frequent experience in Southern California of multiple, large fires during extreme weather conditions, spatial proximity is not the only indicator of concurrent outage due to fire. Even the most spatially removed alternatives from the Southwest Powerlink, the LEAPS Transmission-Only

⁵⁹⁴ See Draft EIR/EIS, Sec. D.15.4.3, which includes the link to <http://frap.cdf.ca.gov/infocenter.html>.

A.06-08-010 COM/MP1/tcg

Alternate and the LEAPS Generation and Transmission Alternative (described in Section 15), would have experienced concurrent outages with the Southwest Powerlink three times since 1970 (in 1975, 1989, and 2003).

14.4. Comparison of Fire Risk Across Transmission Alternatives

In an attempt to more clearly present the fire risk presented by each transmission alternative, both in terms of property damage and potential for a concurrent outage, we include here an excerpt from Table ES-3, included in General Response GR-9 and the Executive Summary of the Final EIR/EIS:

Table ES-3. Fire and Fuels Comparison of Alternatives

Route		A	B	C		D		E	F
		Overhead through high-risk fuels (miles) ^a	High/Very High burn probability (miles)	Homes	Acres	Homes	Acres	Firefighting conflict (miles)	Fire reliability (number outages) ^b
Final Environmentally Superior Northern	230 kV	23	17	400	20,000	770	72,000	11.5	2
	500 kV	0	2	0	0	0	0		
Final Environmentally Superior Southern	230 kV	23	10	150	16,000	560	37,000	8.0	5
	500 kV	62	20	180	36,000	820	161,000		

^a The number of miles of overhead transmission line through High and Very High Fire Severity Zones as identified by Cal Fire, 2006.

^b The number of outages that would have occurred concurrently with SWPL from 1970 to 2007, using MGRA Phase 2 Rebuttal testimony methodology excluding "Type 3" outages.

The assets at risk in columns C and D of the Table are raw numbers based on the modeling results presented in the Final EIR/EIS;⁵⁹⁵ they have not been weighted based on the probability of ignition. However, because the risk of ignition from a 230 kV line is higher than the risk of ignition from a 500 kV line, the 500 kV segments of each of the transmission alternatives (represented by gray shading) are considered to rank lower for ignition risk and potential damage

⁵⁹⁵ Final EIR/EIS, ES and General Response GR-9.

A.06-08-010 COM/MP1/tcg

even though, for example, the raw numbers listed for the 500 kV segment of the Final Environmentally Superior Southern Route are larger than the raw numbers for its 230 kV segment. Likewise, while the Tables list a “zero” in Columns A, C and D for the 500 kV segment of the Final Environmentally Superior Northern Route, which crosses a desert area with a very low fuel load, the comparably low risk of a 500 kV ignition reduces the import of that raw data.

The Table also shows that the 230 kV segment of the Final Environmentally Superior Northern Route places a higher number of assets at risk than the 230 kV segment of the Final Environmentally Superior Southern Route, that the Final Environmentally Superior Northern Route creates more significant barriers to firefighting efforts, and that there is a higher risk of a concurrent outage between the Southwest Powerlink and the Final Environmentally Superior Southern Route than the between the Southwest Powerlink and the Final Environmentally Superior Northern Route.

We include the results of this modeling to show comparative risks between the Northern and Southern Routes. Because modeling the impact of future fires is necessarily imprecise, we rely on this modeling only to provide gross comparisons of fire risk between the two routes.⁵⁹⁶

⁵⁹⁶ The number of “Assets at risk” presented in the table was estimated through the Fire Behavior Trend model described in EIR/EIS, D.15.4.3. The Model attempts to predict how ignitions related to project construction, operation, and maintenance would affect the extent of fire damage by simulating wildfire behavior based on known biophysical conditions in the vicinity of the transmission line. The model generates an estimate of the number of acres that would burn if multiple simultaneous ignitions occurred along the length of the transmission corridor. Fuel characteristics were inventoried within and slightly beyond the fire sheds as defined in the EIR/EIS, D.15, and therefore the fire behavior simulations do not go much beyond the fire shed boundaries. This is a limitation of the model. In addition, because large fires are often sparked by just one or two ignition sources, the outcome of the model is unrealistic, as the transmission line

A.06-08-010 COM/MP1/tcg

14.5. Mitigation to Reduce Risk of Fire Ignition

Given the fire risks associated with any transmission line route in San Diego County, approval of the Final Environmentally Superior Southern Route must be conditioned upon the most rigorous, reasonable mitigation available to reduce the risk of fire ignition. Therefore, we impose all feasible mitigation measures identified in the Final EIR/EIS upon construction of the Final Environmentally Superior Southern Route, including:

- Requiring fire-safe construction practices to reduce the risk of wildfire ignitions during construction;
- Prohibiting construction during extreme weather conditions to reduce the risk of potentially catastrophic wildfire ignitions during construction;
- Ensuring adequate coordination for emergency fire suppression to avoid project personnel and equipment interference with firefighting operations;
- Ensuring adequate removal of hazardous vegetation;
- Requiring annual contributions to a Defensible Space Grants Fund that will assist in the maintenance of defensible space requirements and in the implementation of other fire-safe measures at the private residences most at risk of a project-related wildfire;
- Requiring the replacement of existing 69 kV wood poles that are within 100 feet of the project with steel poles to mitigate the potential fire hazard of a wood pole being knocked into the adjacent conductors;
- Requiring annual contributions to a Firefighting Mitigation Fund that will improve fire prevention measures and help improve fire protection equipment and services;

would never be the cause of simultaneous ignitions along the entire length of the corridor. However, the model provides a useful comparison of the relative risk of various routing alternatives.

A.06-08-010 COM/MP1/tcg

- Requiring a Memorandum of Understanding between SDG&E, Cal Fire, and Cleveland National Forest to coordinate effective fire plans and emergency procedures;
- Requiring weed abatement and controls for invasive weeds to prevent establishment of non-native plants that have a high ignition potential and carry fires at a high rate of spread; and
- Requiring climbing inspections on 10% of the project structures annually to improve detection of imminent component failures that could result in wildfire ignitions.⁵⁹⁷

14.6. Conclusion

The risk posed by wildfires in Southern California is significant both in terms of their impact on the reliability of SDG&E's system, and in terms of the potential that a transmission line might ignite a fire. We find that 230 kV or 500 kV lines placed on steel towers are highly unlikely to ignite fires, and that mitigation of the type described above should ensure this outcome. We find that the risk of a dual line outage is more likely between the Southwest Powerlink and the Final Environmentally Superior Southern Route, as compared with the Environmentally Superior Northern Route, but that the 230 kV segments of the Environmentally Superior Northern Route put more assets at risk of fire.

15. Environmental Review

Both § 1002(a) and CEQA require us to consider Sunrise's influence on the environment. Section 13 discusses the significant, unmitigable environmental

⁵⁹⁷ This mitigation shall require something substantially similar in intent to the following:

Perform climbing inspections. The Applicant shall perform climbing inspections on 10 percent of project structures annually, such that every project structure has been climbed and inspected at the end of a 10-year period, for the life of the project. In addition, SDG&E shall keep a detailed inspection log of climbing inspections, and any potential structural weaknesses or imminent component failures shall be acted upon immediately. The inspection log shall be submitted to CPUC for review on an annual basis.

A.06-08-010 COM/MP1/tcg

impacts the Northern Routes present for Anza-Borrego and Section 14 discusses the increased wildfire risk all Northern and Southern Routes pose. As we discuss in this Section, the Proposed Project and alternatives all have many significant unmitigable environmental impacts, and all of the transmission line alternatives have greater, adverse impacts on the environment than the generation-based alternatives. The Final EIR/EIS ranks three alternatives as environmentally superior to the Final Environmentally Superior Southern Route – the All-Source Generation Alternative, the In-Area Renewable Alternative, and the LEAPS Transmission-Only Alternative. However, we conclude that these alternatives are not feasible for purposes of meeting California’s broader policy goals, including reduction of GHG emissions. The Environmentally Superior Southern Route Alternative is the environmentally superior alternative to meeting SDG&E’s future reliability needs and also accomplishing California’s broader policy goals.

The CEQA and NEPA-mandated EIR/EIS process has been the primary forum for environmental review of the Proposed Project. CEQA imposes a general duty on public agencies to avoid or minimize, to the greatest extent possible, the environmental effects of projects they approve.⁵⁹⁸ This duty generally is implemented by identifying and then adopting mitigation measures and/or alternatives to the project that will avoid or reduce environmental impacts.⁵⁹⁹ To this end, CEQA requires that an EIR identify an environmentally

⁵⁹⁸ *County of San Diego v. Grossmont-Cuyamaca Community College Dist.* (2006) 141 Cal.App.4th 86, 98; Pub. Res. Code § 21002; 14 Cal. Code Regs. (“CEQA Guidelines”) § 15021.

⁵⁹⁹ Pub. Resources Code §§ 21100(b)(3), (4), 21003(c) [EIR should emphasize feasible mitigation measures and alternatives]; CEQA Guidelines §§ 15002(f), (h), 15126.4, 15126.6; *Laurel Heights Improvement Assn. v. The Regents of the University of California* (1988) 47 Cal.3d 376, 400-403.

A.06-08-010 COM/MP1/tcg

superior alternative among the alternatives evaluated.⁶⁰⁰ In addition, the lead agency is required to respond to public comments on a Draft EIR that suggest additional mitigation measures or alternatives to the Proposed Project.

The EIR and EIS are informational documents prepared by the state and federal lead agencies. The Final EIR/EIS, which totals over 4,500 pages in addition to the 7,000 page Draft EIR/EIS, has been jointly prepared by Commission staff and BLM, in consultation with numerous other local, state and federal agencies, and with voluminous public input. Below we summarize, in a necessarily abbreviated form, the most significant aspects of the EIR/EIS and the comments made on it during the CPCN proceeding and in the course of the EIR/EIS process. The EIR/EIS provides more extensive descriptions of the Sunrise alternatives considered and the significant environmental impacts of each. The Final EIR/EIS addresses in detail every public comment received during the Draft EIR/EIS and Recirculated Draft EIR/Supplemental Draft EIR review process.⁶⁰¹ Consequently, we provide below specific cross-references to the EIR/EIS, which we certify in Section 18.1 of this decision.

⁶⁰⁰ CEQA Guidelines §§ 15126.6(a) and (e)(2).

⁶⁰¹ The EIR/EIS does not accept every mitigation measure suggested in the public comments and need not do so. See *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1989) 209 Cal.App.3d 1502, 1519; see also *Concerned Citizens of South Central L.A. v. Los Angeles Unified School Dist.* (1994) 24 Cal.App.4th 826, 841 [discussion of mitigation measures is subject to the “rule of reason” and does not require consideration of every “imaginable” mitigation measure]. However, the EIR/EIS indicates reasons why the rejected mitigation measures will not be incorporated (e.g., that the mitigation measures are infeasible; will not be as effective as mitigation measures already recommended in the EIR/EIS; or will not have any substantial mitigating effect in practice).

A.06-08-010 COM/MP1/tcg

15.1. Alternatives Analyzed in the EIR/EIS

The Final EIR/EIS evaluates and compares the environmental impacts of the eight transmission and/or generation alternatives analyzed in that document. The results of this comparison appear below, with the overall environmentally superior alternative listed first and the lowest ranked alternative listed eighth:

1. New In-Area All-Source Generation Alternative (All-Source Generation Alternative), one of the two generation based alternatives;
2. New In-Area Renewable Generation Alternative (In-Area Renewable Alternative), the second generation based alternative;
3. LEAPS Transmission-Only Alternative;
4. Environmentally Superior Southern Route;
5. Environmentally Superior Northern Route;
6. Proposed Project;
7. "Enhanced" Northern Route; and
8. LEAPS Transmission Plus Generation Alternative.

The Final EIR/EIS does not list the No Project Alternative in this environmental ranking, but explains that, because the No Project Alternative contains aspects of the first three alternatives, its environmental impacts are "equivalent to the alternatives ranked first, second, and third..."⁶⁰² and it has fewer impacts than any of the transmission alternatives.

The Final EIR/EIS incorporates and expands upon the analyses in the Draft EIR/EIS and the Recirculated the Draft EIR/Supplemental Draft EIS. The Draft EIR/EIS, the initial document, reports upon the environmental impacts of

⁶⁰² Draft EIR/EIS, ES.2.

A.06-08-010 COM/MP1/tcg

the Proposed Project and a wide range of alternatives (including alternative routing segments), which were identified because they would attain most of the Basic Project Objectives,⁶⁰³ be potentially feasible, and avoid or substantially lessen one or more of the significant environmental impacts of the Proposed Project. As documented in detail in the Alternatives Screening Report,⁶⁰⁴ we initially considered over one hundred re-routes and other alternatives to the Proposed Project. Eventually, we eliminated seventy of these from detailed consideration because they would not reduce significant impacts of the Proposed Project, did not meet Basic Project Objectives, and/or were not feasible.⁶⁰⁵

The Draft EIR/EIS analyzes 27 separate alternatives, including 18 alternative route segments for the Proposed Project, four routes following portions of the Southwest Powerlink, two alternatives including components of the LEAPS Project, two generation-based (or non-wires) alternatives, and the No Project/No Action Alternative (referred to as the “No Project Alternative”). The multiple alternative route segments were assembled to create several complete (or “composite”) transmission line routes, which were then compared to the other alternatives.

After the Draft EIR/EIS was published, SDG&E proposed an “Enhanced” Northern Route, as discussed in Section 3.2.2. Certain portions of this route have been incorporated in the “Final Environmentally Superior Northern Route.” SDG&E also suggested a “Modified Southern Route” to resolve some of the feasibility issues and/or reduce impacts raised by the Draft Environmentally

⁶⁰³ Section 3.1 contains a complete description of the three Basic Project Objective.

⁶⁰⁴ Draft EIR/EIS, Appendix 1; see also Draft EIR/EIS, ES.2.

⁶⁰⁵ For a complete explanation, see Draft EIR/EIS, Appendix 1, 1.4.2.2.

A.06-08-010 COM/MP1/tcg

Superior Southern Route. The “Final Environmentally Superior Southern Route” incorporates portions of SDG&E’s proposal.

UCAN proposed two revisions to the Environmentally Superior Southern Route in comments on the Draft EIR/EIS and in its Phase 2 brief: “UCAN’s Modified Southern Route” and “UCAN’s Jacumba to Sycamore Canyon Route.” Like SDG&E’s “Enhanced” Northern Route, UCAN’s alternatives are composed of route segments that were evaluated in the Draft EIR/EIS. UCAN’s Modified Southern Route follows a different path through the Cleveland National Forest than the Environmentally Superior Southern Route.⁶⁰⁶ However, since the Forest Service has determined that the types of crossings proposed by UCAN are inconsistent with its Land Use Plan, UCAN’s Modified Southern Route is impractical. The Final Environmentally Superior Southern Route avoids these conflicts with Forest Service lands.

UCAN’s Jacumba to Sycamore Canyon Route follows the same route as UCAN’s Modified Southern Route but excludes the easternmost 35 miles of new 500 kV line between the proposed Jacumba Substation and the Imperial Valley Substation. Even in comparison to the Final Environmentally Superior Southern route through the Cleveland Forest, UCAN’s Jacumba to Sycamore Canyon Route is not an adequate alternative because it does not meet at least two Basic Project Objectives.⁶⁰⁷

The Recirculated Draft EIR/Supplemental Draft EIS contains significant, new information which became available after release of the Draft EIR/EIS and which required recirculation under CEQA and NEPA. Among other things, the document contains:

⁶⁰⁶ Recirculated Draft EIR/Supplemental Draft EIS, Sec. 5.3.3. and Figure, 5-2.

⁶⁰⁷ Recirculated Draft EIR/Supplemental Draft EIS, Sec. 5.3.3.

A.06-08-010 COM/MP1/tcg

- New and revised analysis of the La Rumorosa Wind Project in Mexico (an indirect effect of the Proposed Project, discussed in Section 15.2, below) and associated transmission/substation upgrade in the United States;
- Description and analysis of the “Enhanced” Northern Route and other route modifications; and
- Revision of components of the Environmentally Superior Northern Route and the Environmentally Superior Southern Route.⁶⁰⁸

15.2. Connected Actions

The EIR/EIS evaluated four projects that are so closely related to the Proposed Project as to be considered part of the project: (1) the Stirling Energy Systems solar facility; (2) the Esmeralda–San Felipe Geothermal Project; (3) the Jacumba 230/500 kV Substation; and (4) a 1,250 MW wind project in northern Mexico’s La Rumorosa area. These projects are unlikely to proceed unless either a Northern or Southern Route is constructed first or simultaneously. The first three are part of the “whole of the action” as that term is used in CEQA and are “connected actions” under NEPA.⁶⁰⁹ Because the La Rumorosa wind project would be located primarily outside of the United States, it is identified as an “indirect effect” of the Proposed Project.

The EIR/EIS evaluates the environmental impacts of these four projects to educate decision makers and the public about the full impacts of the various Northern and Southern Routes.⁶¹⁰ The Commission must consider this

⁶⁰⁸ Recirculated Draft EIR/Supplemental Draft EIS, Sec. 1.2.

⁶⁰⁹ See CEQA Guidelines § 15378; 40 C.F.R. § 1508.25(a)(1).

⁶¹⁰ Draft EIR/EIS, Figures B-44 through B-46 show the locations of the various connected actions. Recirculated Draft EIR/Supplemental Draft EIS, Figures 2-1, 2-2, 2-3, 2-4 and 2-5 illustrate the Jacumba 230/500 kV Substation and the La Rumorosa Wind Energy Project as revised in that document.

A.06-08-010 COM/MP1/tcg

information as part of its decisionmaking process. However, these actions are not before the Commission for approval at this time, and today's decision does not in any way approve or guarantee approval of any of these projects. Each of them would be subject to separate environmental review by a lead agency with permitting authority.

The major environmental impacts of these four projects include the following:⁶¹¹

- The La Rumorosa wind and Stirling solar thermal projects would create thousands of acres of ground disturbance in sensitive desert ecosystems. Stirling components would cover as many as 8,000 acres and result in permanent loss of 2,500 acres of habitat.
- Because all four projects require new transmission lines, generally the same types of impacts identified for the Proposed Project (and its transmission alternatives) would affect the new lines to these facilities.

We have considered the environmental impacts of these projects as part of the whole of the Northern and Southern Route Alternatives.

15.3. Future Transmission Expansion

Expansion potential is one of SDG&E's objectives for any Northern or Southern Route, including both the 230 kV and the 500 kV components.⁶¹² Figures B-12a and B-12b in the Project Description of the EIR/EIS illustrate the locations of the potential routes for future expansions interconnecting either with Edison and/or Imperial Irrigation District. SDG&E has indicated that the Proposed Project could lead to development of a 500 kV line from the proposed

⁶¹¹ The impacts of these projects are described in greater detail in the Draft EIR/EIS, Sec. D.2 through D.15 and in the Recirculated Draft EIR/Supplemental Draft EIS, Sec. 2.

⁶¹² See Section 3.1 for the complete list of SDG&E objectives.

A.06-08-010 COM/MP1/tcg

Central East substation or from the alternative Central South Substation (in Santa Ysabel) to Edison's existing Valley-Serrano 500 kV transmission line.⁶¹³

SDG&E also has indicated that a Southern Route could lead to future 230 and 500 kV line development. The Draft EIR/EIS identifies potential routes including 230 kV routes (following existing SDG&E corridors) to reach the substation endpoints identified by SDG&E for the Proposed Project, and a potential 500 kV route from the Modified Route D Substation site south of Interstate 8 or from the Interstate 8 Alternative substation site to connect with the existing Edison Valley-Serrano line.

As a result of the relatively detailed route descriptions provided by SDG&E, the Commission determined that these routes are reasonably foreseeable future expansions of Sunrise and accordingly, analyzed them in the Draft EIR/EIS. The EIR/EIS discloses the reasonably foreseeable impacts of these expansions for each resource area analyzed. The environmental impacts are similar in nature to the impacts of the various transmission routes analyzed in the EIR/EIS, but occur in different locations. However, these expansion projects are not before us for approval at this time, and today's decision does not in any way approve or guarantee approval of any of these projects. If and when they are proposed, these projects will require a separate application and will be subject to separate environmental review. Therefore, we do not discuss their impacts in this decision in detail; however, in making our final determination we have considered the assessment in the EIR/EIS of the likelihood of such future expansion and its environmental impacts.⁶¹⁴

⁶¹³ SDG&E Exhibit SD-15, Vol. 1 of 2, 42:15-17.

⁶¹⁴ Draft EIR/EIS, ES-5.8.

A.06-08-010 COM/MP1/tcg

15.4. All-Source Generation Alternative

15.4.1. Description

The EIR/EIS determines that the All-Source Generation Alternative is environmentally superior to all of the alternatives evaluated in the EIR/EIS, including the Proposed Project. This alternative assumes at least 1,703 MW of power can be developed in the San Diego area in lieu of the Proposed Project through a mix of fossil fuel generation and renewable generation, including some distributed generation.⁶¹⁵ Though the All-Source Generation Alternative identifies specific projects that could be online by 2010, these projects serve as proxies for a wide range of potential development scenarios. Further, because this alternative proposes more generation than needed to meet SDG&E's reliability needs until at least 2016, and because the proposed projects are proxies for the types of projects likely to be developed, no one project in this alternative is essential to the feasibility of the whole of this alternative.⁶¹⁶

The components of the All-Source Generation Alternative include one gas fired baseload and four gas fired peaking power plants (all proposed by various developers for the San Diego area), as well as a small amount of wind, solar PV, and biomass/biogas. The proxy projects include:⁶¹⁷

- The South Bay Replacement Project – a 620 MW gas fired, combined cycle power plant;

⁶¹⁵ Distributed generation, in contrast to generation built to provide power to the grid, refers to small-scale power generation technologies (typically in the range of 3 kW to 10 MW) designed to meet onsite or local load. Distributed generation can be either renewable, such as solar PV, small wind turbines, and small bio-fueled generators, or fossil-fueled, such as natural gas-powered engines and fuel cells.

⁶¹⁶ Compliance Exhibit, SDG&E LnR Table – All Source cases (adjusted to remove 48 MW of wind, 50 MW of biomass, and 240 MW of solar thermal).

⁶¹⁷ Several of these proxy projects are described in more detail in Section 5.3 above.

A.06-08-010 COM/MP1/tcg

- The San Diego Community Power Project – a 750 MW gas fired, combined cycle power plant;
- The Encina Power Plant Repowering – a 450 MW gas fired, combined-cycle power plant;
- A variety of peaking gas turbines totaling 250 MW. Potential projects include the Pala and Margarita Peakers already under contract, Miramar II, and a 15 MW proposal for a fee-for-service development at Borrego;
- A variety of fossil fuel-fired distributed generation facilities totaling 35 MW installed at or near consumer sites such as hospitals and industrial facilities; and
- Renewable distributed generation totaling 203 MW including solar PV installation on residential, commercial and/or industrial building rooftops.

Additional description of this alternative can be found in the EIR/EIS.⁶¹⁸

15.4.2. Parties' Positions

SDG&E asserts that the All-Source Generation Alternative is infeasible because permits cannot be obtained on a timely basis, the projects are speculative and cost prohibitive, and the projects would not meet reliability and RPS goals.

According to SDG&E, the All-Source Generation Alternative inaccurately assumes timely construction and start up of these future generation facilities. SDG&E claims the need for various regulatory approvals and the construction processes will prevent these projects from coming online before 2012. Further, SDG&E argues the All-Source Generation Alternative's construction assumptions are improper under CAISO Grid Planning Committee Guidelines, as well as past Commission decisions. SDG&E contends CAISO guidelines suggest a five-year planning horizon should count facilities that are under construction and a ten-year planning horizon should count facilities that have an application under

⁶¹⁸ Draft EIR/EIS, Sec. C.4.10.2, E.6; Final EIR/EIS, General Response-1.

A.06-08-010 COM/MP1/tcg

review, have obtained regulatory approval, or are under construction. SDG&E claims the Commission's decisions on the Valley Rainbow⁶¹⁹ and Jefferson-Martin⁶²⁰ transmission line CPCN proceedings support CAISO guidelines.⁶²¹ SDG&E states that neither the South Bay Replacement Project, the San Diego Community Power Project, the Encina Power Plant Repowering, nor the Pala Peaker Plant meet the requirements for five-year planning, and that the Encina Power Plant Repowering is the only one that meets the ten-year planning requirement. SDG&E states, moreover, that the Commission's most recent Long Term Procurement Plan decision⁶²² finds that procurement decisions should be made up to seven years in advance of when the resource is needed.

SDG&E also asserts that in basin renewables do not exist to the extent detailed in the All-Source Generation Alternative and, in particular, that the use of solar PV is unrealistic at the build-out levels contemplated; that the use of renewable energy credits (also known as "RECs") to fulfill its RPS goals is not allowable; and that this alternative is economically infeasible because it will require additional transmission facilities to meet reliability criteria. SDG&E claims that this alternative will cost \$420 million and that over twenty years the incremental costs of this alternative, compared to out-of-basin generation with Sunrise in-service, ranges from \$444 million to \$1.8 billion. Given this alleged infeasibility, SDG&E states it is highly unlikely this alternative will meet SDG&E's post- 2010 reliability needs.

⁶¹⁹ D.02-12-066, 33.

⁶²⁰ D.04-08-046, 43.

⁶²¹ SDG&E Phase 2 Opening Brief, 170-173.

⁶²² D.07-12-052, 21.

A.06-08-010 COM/MP1/tcg

CAISO concludes, similarly, that the generation projects within this alternative will not be built within the timeframe necessary to meet SDG&E's reliability requirements. Consequently, like SDG&E, CAISO finds it imprudent to rely upon these projects to meet SDG&E's needs. Additionally, CAISO notes that the Encina Power Plant Repowering will result in an increase of 220 MW, not the 540 MW that the EIR/EIS assumes, because the project replaces existing capacity rather than adding only new capacity. CAISO states it already has accounted for much of the power from certain peaker plant components of this alternative and regarding the renewable components, contends that certain projects are highly speculative for a variety of reasons, such as land use issues and time constraints. CASIO also argues that some projects, even if constructed, would have limits (e.g., the intermittent nature of some renewables or the 1,150 MW dispatch limit on the Imperial Valley to Miguel Substation portion of the Southwest Powerlink) such that only a portion of the generation could be counted for SDG&E's needs.

DRA points out that the existing South Bay Power Plant may not be retired and, while that makes the South Bay Replacement Project questionable, it also means that the existing facility's 700 MW capacity would remain available to meet SDG&E's reliability needs.

Powers Engineering argues that the All-Source Generation Alternative's peaker plant component should be replaced with solar PV because: (1) solar PV is more reliable due to its distributed nature; and (2) if battery storage is attached, solar PV can be used to provide firm on-peak capacity at or near the nameplate rating. Powers Engineering points out that the Draft EIR/EIS⁶²³ shows that 105 MW of solar PV is possible and that such a program would meet

⁶²³ Draft EIR/EIS, Sec. E.5.1.2.

A.06-08-010 COM/MP1/tcg

SDG&E's alleged 2010 capacity need. Further, Powers Engineering contends that the EIR/EIS fails to account properly for energy savings due to energy efficiency and demand response measures and that increased energy efficiency savings could completely eliminate SDG&E's projected shortfalls beyond 2015. Powers Engineering asserts that demand response from air conditioner cycling programs, in conjunction with advanced metering and education about proper air conditioner installment, can reduce peak demand by 350-450 MW. According to Powers Engineering, additional distributed generation subsidies (for combined heat and power) and smaller distributed generation units could substitute for the All-Source Generation Alternative's 620 MW combined cycle plant.

The City of Santee argues that the San Diego Community Power Project component of the All-Source Generation Alternative is infeasible because it is inconsistent with: (1) existing federal, state, and local plans; (2) a wildlife mitigation corridor required under the Fanita Project; and (3) San Diego recreational trail plans. For these reasons, the City of Santee contends the project could not be permitted and constructed by 2010. Furthermore, the City of Santee asserts the EIR/EIS fails to fully analyze the impacts of the San Diego Community Power Project.

UCAN argues that the No Project Alternative is superior to the All-Source Generation Alternative, but contends that the All-Source Generation Alternative is economically superior to the Proposed Project and would meet and exceed SDG&E's reliability needs through 2022. UCAN asserts that 40% of the All-Source Generation Alternative's costs are due to the 10% that comes from solar PV. UCAN claims that since this alternative provides more MW than needed, the solar PV component could be eliminated to make this alternative less

A.06-08-010 COM/MP1/tcg

costly than the Proposed Project or other Northern Routes. However, if the solar PV component is retained, UCAN characterizes SDG&E's solar PV cost estimates as grossly inflated, claims the utility has disproved its own energy conversion factor, and asserts that ample commercial rooftop exists in San Diego to support large scale solar PV deployment.

Conservation Groups argue that the All-Source Generation Alternative and the In-Area Renewable Alternative are inherently more reliable than any project that requires transmission lines through remote, fire-prone, seismically unstable, and extremely windy areas. Likewise, Conservation Groups state that in basin alternatives do not rely on centralized substations, which are prone to the same risks. Additionally, Conservation Groups assert that the in basin generation alternatives avoid many of the environmental impacts posed by wires and substations. According to Conservation Groups, solar PV is less costly than SDG&E claims. Furthermore, Conservation Groups claim that the renewable portions of both in basin alternatives guarantee renewable power, whereas the Proposed Project and the other transmission alternatives could deliver non-renewable energy, and likely will. Lastly, Conservation Groups state that the transmission alternatives have serious permitting issues with the Park Service, Forest Service, and potentially affected tribal governments.

15.4.3. Discussion

The All-Source Generation Alternative meets the first Basic Project Objective, to maintain reliability, and the third, to promote renewable energy development. While the EIR/EIS indicates that this alternative also meets the second Basic Project Objective, to reduce energy costs, because no party modeled the energy benefits of this alternative in the CPCN portion of the proceeding, that outcome is not clear.

A.06-08-010 COM/MP1/tcg

With respect to the first Basic Project Objective, the All-Source Generation Alternative maintains SDG&E's reliability needs as determined in Section 7. With respect to the Second Basic Project Objective, the All-Source Generation Alternative delivers a generation portfolio similar to the Proposed Project without that transmission alternative's environmental impacts. However, while this alternative adds newer, more efficient in area generation to the existing generation mix in SDG&E's service territory, the cost of these additions may not be competitive with the out of area resources that could be accessed via a new, high-voltage transmission line. Thus, the cost impacts are highly dependent upon assumptions about the costs of imported power and the cost of the new transmission line. With respect to the Third Basic Project Objective, even though the All-Source Generation Alternative does not facilitate delivery of power from new renewable sources in the Imperial Valley, it promotes renewable power development in the local San Diego area.

By definition, the All-Source Generation Alternative's environmental impacts generally occur in the more developed San Diego area, rather than in the remote and scenic areas through which the Proposed Project or other transmission alternatives would pass. The All-Source Generation Alternative results in reduced ground disturbance largely because gas fired generation would occur at sites already disturbed and only 11 miles of new transmission line would be built. This alternative minimizes environmental impacts to biological resources, visual resources, and wilderness and recreation. It has no impact on state parks or National Forest lands.

Significant, unmitigable impacts occur to water resources and public services due to use of water for evaporative cooling (unless dry cooling is used) and for particulate matter, ozone, and GHG emissions from natural gas

A.06-08-010 COM/MP1/tcg

combustion. Public health and safety impacts occur due to air emissions and use and storage of hazardous materials, including aqueous ammonia.

As the GHG discussion in Section 14 reflects, the Final EIR/EIS concludes that the All-Source Generation Alternative would cause substantially more GHG emissions than the Proposed Project and other transmission proposals. The Final EIR/EIS does not quantify these emissions and recognizes that the GHG impacts of generation alternatives will depend upon the type of projects developed (for example, new fossil fuel facilities will exceed the GHG emissions associated with the construction of transmission alternatives).

SDG&E points to evidence that the Imperial Valley has a large potential for renewable energy projects,⁶²⁴ contends it expects to meet RPS goals by contracting for renewable power there, and asserts that it has 731 GWh reliant upon Sunrise. As described in Section 12, SDG&E's Imperial Valley procurement is heavily dependent upon the success of the Stirling project, which has not yet been permitted. Consequently, SDG&E's argument that the generation facilities identified in the All-Source Generation Alternative are too uncertain applies also to the viability of the Stirling project. Moreover, the 300 MW that Stirling must produce to meet the first part of its contractual obligation is not significantly more than the 203 MW of renewable energy proposed under the All-Source Generation Alternative.

Some parties criticize all or parts of the All-Source Generation Alternative as being infeasible to permit. However, the EIR/EIS recognizes that these generation projects are representative and concludes that these projects or other, similar projects can be permitted in sufficient numbers and on a timely basis. Additionally, the in basin nature of this power removes much of the reliability

⁶²⁴ SDG&E Phase 2 Opening Brief, 68-71.

A.06-08-010 COM/MP1/tcg

concern that comes with long distance transmission lines, such as risks of multiple outages due to wildfires.⁶²⁵

Criticisms of the viability of specific projects in the All-Source Generation Alternative are over-stated. While the South Bay Replacement Project has been removed from the Energy Commission review process, the project proponent remains committed to the project and to its advancement.⁶²⁶ Meanwhile, the existing South Bay Power Plant continues to provide 700 MW to meet SDG&E's reliability needs and it will continue to do so until CAISO releases it from Must Run obligations. The San Diego Community Power Project is in CAISO's interconnection queue; the biggest hurdle to its development is SDG&E's refusal to sign a power purchase contract with that project's proponents, despite their lowest cost bid in SDG&E's solicitation.⁶²⁷ We find the Carlsbad Energy Center described in Section 6.7 to be viable and assume it will be online before Summer 2013 in our Analytical Baseline. Various peaker plants are at different stages of permitting and review, and while not all of them may be constructed, our findings regarding SDG&E's reliability needs confirm that SDG&E does not need any peakers to be online before 2017, assuming the Carlsbad Energy Center is online by Summer 2013 - if it does not come online then, there will be a need for 222 MW of new peakers by 2013. The potential for timely, incremental generation additions under this alternative minimizes permitting concerns.

⁶²⁵ Draft EIR/EIS, E.6; Final EIR/EIS, General Response GR-1.

⁶²⁶ South Bay Phase 2 Opening Brief, 5.

⁶²⁷ Final EIR/EIS, General Response GR-1.

A.06-08-010 COM/MP1/tcg

15.5. In-Area Renewable Alternative

15.5.1. Description

The EIR/EIS determines that the In-Area Renewable Alternative is the second ranked alternative among the eight alternatives to the Proposed Project in terms of environmental impacts. This alternative is a combination of various San Diego area renewable projects that collectively could provide up to 1,000 MW of nameplate capacity generation by 2016. The renewable projects identified for the In-Area Renewable Alternative are illustrative of the types of projects that might be developed in the San Diego area, and the types of environmental impacts associated with such development. Like the All-Source Generation Alternative, because the In-Area Renewable Alternative analyzes more generation than needed to meet SDG&E's reliability needs until at least 2020, and because the proposed projects are proxies for other, similar projects of the type likely to be developed, no one project in this alternative is essential to the feasibility of the whole of this alternative.⁶²⁸

Four renewable sources comprise the alternative and the EIR/EIS identifies potential projects and potential locations for those projects based on a variety of assumptions:

- Solar thermal (290 MW) – potential development in the Borrego Springs vicinity; projected to be a parabolic trough plant design with a heat transferring fluid used to generate steam that is sent to a conventional steam turbine/generator;
- Solar PV (210 MW) – installation on residential, commercial and industrial building rooftops in San Diego County (approximately 60,000 residential systems and 255 commercial systems);

⁶²⁸ Compliance Exhibit, SDG&E LnR Table – All-Source cases.

A.06-08-010 COM/MP1/tcg

- Wind (400 MW) – one component of this source, the Kumeyaay project (46 MW), already is operational; the EIR/EIS estimates that approximately 7,263 acres on reservation and BLM lands in the San Diego area are available for additional wind development; and
- Biomass/biogas resources⁶²⁹ (100 MW) – this source includes three projects: expansion of existing biogas production at the Miramar Landfill Cogeneration Facility (for an additional 3 MW), construction of a biomass facility near the Miramar Landfill (for an additional 26 MW), and construction of a biomass facility near Fallbrook (67 MW).⁶³⁰

15.5.2. Parties' Positions

SDG&E asserts that the In-Area Renewable Alternative is infeasible because it is unduly speculative and cost prohibitive, because timely permits cannot be obtained, and because it will not meet reliability or RPS goals. SDG&E asserts that this alternative, like the All-Source Generation Alternative, is contrary to planning principles articulated by CAISO and past Commission decisions and will require major new transmission system upgrades.

More particularly, SDG&E claims that: the San Diego area only holds 155 MW of dependable renewable energy potential; this alternative's solar thermal component would require a new 230 kV transmission line through Anza-Borrego; solar PV cannot be installed at the rate detailed in the EIR/EIS and is unrealistic; wind resources are speculative and hard to site and develop; and the biomass component is doubtful at best. Given that 80% of the energy from the In-Area Renewable Alternative comes from intermittent technologies, SDG&E claims that it cannot be used to meet reliability needs. SDG&E asserts that providing firm capacity would require either expanding the In-Area

⁶²⁹ Draft EIR/EIS, Sec. E.5.1.3.

⁶³⁰ Draft EIR/EIS, Sec. E.5.1.3.

A.06-08-010 COM/MP1/tcg

Renewable Alternative or building back up generation plants. Finally, SDG&E claims the In-Area Renewable Alternative costs too much. SDG&E estimates the cost to include over \$1 billion in transmission upgrades alone, plus the need to purchase backstop generation and claims the renewable generation portion of the alternative will cost between \$661 million to \$2.1 billion over the purchase price of out-of-basin renewable projects utilizing the Proposed Project.

CAISO's criticisms of the In-Area Renewable Alternative are similar to its criticism of the All-Source Generation Alternative. CAISO contends the alternative is too speculative, will not meet reliability goals, is infeasible due to a 1,150 MW dispatch limit for generation on the Imperial Valley to Miguel Substation portion of the Southwest Powerlink, and fails to meet project objectives.

Powers Engineering supports, in concept, the feasibility of the In-Area Renewable Alternative, but proposes a different mix of resources that promotes additional local solar PV. Whereas SDG&E estimates the San Diego area's dependable renewable energy potential at only 155 MW, Powers Engineering asserts San Diego has 7,400 MW of solar PV alone and argues that the projections in the In-Area Renewable Alternative should be expanded, given the large number of available solar PV business/industrial sites in San Diego. Powers Engineering also proposes a renewable energy park, containing 1 to 10 MW solar PV systems at or near existing or future transmission lines and substations. Powers Engineering claims such energy parks could lead to development of 290 MW of concentrated solar PV; this amount, together with 920 MW of solar PV from commercial and residential installations, provides a viable substitute for the Proposed Project, Powers Engineering argues.

A.06-08-010 COM/MP1/tcg

Powers Engineering characterizes SDG&E's solar PV cost estimates as outdated and highly inaccurate, and contends that the true cost of solar PV is one third the utility's estimate. Moreover, Powers Engineering states the existing 69 kV rural grid in San Diego County could accommodate this generation without new lines or upgrades. In addition, Powers Engineering argues this resource is CEQA exempt, would not require construction of transmission facilities, and does not have large land use or recreational impacts. Powers Engineering also claims that 920 MW of solar PV can be online by 2016 and that battery storage for this increment will allow nameplate capacity to be firm on-peak capacity, add only about 10% to the cost, and replace the geographically remote renewable projects in this alternative, thereby avoiding the need for new transmission facilities to reach those distant sites. According to Powers Engineering, energy efficiency, demand response, and other in basin generation projects can address SDG&E's reliability needs. Finally, Powers Engineering argues that the solar thermal plant component of the In-Area Renewable Alternative is infeasible due to its water usage needs which would increase the local, already over-drafted, aquifer withdrawal by around 10%.

UCAN contends that the No Project Alternative is superior to the In-Area Renewable Alternative but notwithstanding this position, UCAN reiterates the concerns it raises about the solar PV portion of the All-Source Generation Alternative -- SDG&E's cost estimates for solar PV are grossly inflated, its energy conversion factor is wrong, and contrary to SDG&E's assertions, San Diego has sufficient commercial rooftop to support large scale solar PV deployment.

Conservation Groups contend that the In-Area Renewable Alternative is inherently more reliable than any project that requires transmission lines through remote areas, avoids many of the environmental impacts of the Proposed Project,

A.06-08-010 COM/MP1/tcg

guarantees renewables will be developed, and is less costly than the Proposed Project.

15.5.3. Discussion

The In-Area Renewable Alternative, like the All-Source Generation Alternative, largely meets the first and third Basic Project Objectives - reliability and renewables development, respectively. While the EIR/EIS indicates that this alternative also meets the second Basic Project Objective, to reduce energy costs, because no party modeled the energy benefits of this alternative in the CPCN portion of the proceeding, the outcome is not clear. With respect to the third Basic Project Objective, though this alternative promotes renewable power development in the in basin San Diego area, it does not facilitate delivery of power from new Imperial Valley renewables.

The In-Area Renewable Alternative creates fewer environmental impacts than the Proposed Project or other transmission alternatives but significant impacts result from extensive ground disturbance, habitat loss, and the visibility of the large wind and solar thermal components. Ground disturbance and habitat loss result from project construction, as well as construction of 47 miles of associated, new transmission lines. The solar thermal component creates significant visual and recreation impacts on the Borrego Springs, which is highly visible from surrounding Anza-Borrego Wilderness areas. The In-Area Renewable Alternative has no impact on National Forest lands. Because this alternative consists solely of renewables, it would result in substantial GHG emission reductions compared to the transmission alternatives, though the Final EIR/EIS does not quantify those differences.

San Diego's service area contains sufficient renewable resources to pursue this alternative. Aggressive projections show that the San Diego region has

A.06-08-010 COM/MP1/tcg

approximately 7,400 MW of solar PV potential on commercial and residential structures;⁶³¹ more modest projections show a potential for over 4,100 MW of solar rooftop PV.⁶³² Regardless of the wide range between these estimates, even the low end represents substantial potential. As of January 2006, SDG&E had 18 MW of solar PV installed in its service area;⁶³³ SDG&E's recently filed solar PV application seeks authority for 77 MW,⁶³⁴ and SDG&E has acknowledged that its service area could support a program similar to one that Edison has proposed (250 MW, with the potential to expand to 500 MW).⁶³⁵

In response to parties' claims that in-area renewable development is not feasible within the time frame required to meet SDG&E's reliability needs, our reliability findings conclude that SDG&E does not need the generation in this alternative to be online until 2014, at the earliest. The In-Area Renewable Alternative's potential for timely, incremental generation additions as early as 2010 minimizes permitting concerns.

15.6. LEAPS Transmission-Only Alternative

15.6.1. Description

The EIR/EIS evaluates two LEAPS projects as alternatives to the Proposed Project: the LEAPS Transmission-Only Alternative⁶³⁶ and the LEAPS Generation Plus Transmission Alternative, which is the subject of Section 15.9, below. The LEAPS Transmission-Only Alternative is identical to the TE/VS project proposed

⁶³¹ Powers Engineering Phase 2 Opening Brief, 7.

⁶³² UCAN Exhibit U-93, 1.

⁶³³ UCAN Exhibit U-93, 1.

⁶³⁴ A.08-07-017.

⁶³⁵ SDG&E Exhibit SD-115; SDG&E Exhibit SD-116.

⁶³⁶ Evaluated in Section E.7.1 of the Draft EIR/EIS.

A.06-08-010 COM/MP1/tcg

by the Elsinore Valley Municipal Water District and Nevada Hydro, which is pending at the Commission as A.07-10-005. We describe the TE/VS project, and its companion generation proposal, the Lake Elsinore Pumped Storage Project, in greater detail in Section 6.14.4.

The EIR/EIS concludes that the LEAPS Transmission-Only Alternative is the third most environmentally superior alternative to the Proposed Project. It is the shortest transmission alternative, consisting of 32 miles of new 500 kV line connecting SDG&E and Edison service areas, as well as upgrades to 48 miles of 230 kV line; the interconnection with Edison would create a second extra-high voltage link between SDG&E's system and the CAISO grid.

15.6.2. Parties' Positions

SDG&E contends that a number of factors make the LEAPS Transmission-Only Alternative infeasible or even illusory; CAISO and Jacqueline Ayers echo these criticisms. Some parties also argue that the EIR/EIS understates the environmental impacts of the LEAPS Transmission-Only Alternative or that the EIR/EIS fails to fully analyze those impacts. Though the premises are different, both arguments lead to the same claim - that the comparative impact analysis among the various project alternatives is skewed by the analysis of this alternative. Nevada Hydro asserts that the LEAPS Transmission-Only Alternative will provide a viable conduit for delivery of geothermal energy produced in the Imperial Valley once other, pending transmission line projects have been completed and that therefore, this alternative adequately addresses all Basic Project Objectives.

On the issue of feasibility, SDG&E points to several factors: uncertainty over Nevada Hydro's intentions regarding the larger proposed LEAPS Project (i.e., the LEAPS Generation and Transmission Alternative); potential delays and

A.06-08-010 COM/MP1/tcg

uncertainties in the state and federal permitting processes, which now will not allow start-up before 2011 or 2012 at the earliest; and the costs of the LEAPS Transmission-Only Alternative, which SDG&E estimates to approach \$968 million.⁶³⁷ SDG&E and CAISO also contend that additional costs will be incurred to accommodate this alternative because technical factors and existing system parameters within SDG&E's service area severely limit the alternative's actual import capacity. SDG&E claims that these system limitations can be overcome only by upgrades costing in the range of \$1.5 billion (for 500 MW capacity) to \$1.8 billion (for 1,000 MW capacity). Jacqueline Ayers advances variations of some of these arguments.

Nevada Hydro disputes the foregoing contentions and estimates the actual cost of the LEAPS Transmission-Only Alternative at approximately \$350 million in 2006 dollars. Nevada Hydro further argues that the evidence does not support the contentions of the other parties concerning costs and technical issues, or is refuted by other evidence, including evidence offered by Nevada Hydro. SDG&E and other parties point out that Nevada Hydro's own contentions lack detailed factual or analytical support.

Jacqueline Ayers, in particular, contends that the EIR/EIS understates the wildfire impacts of the LEAPS Transmission-Only Alternative and fails to consider impacts beyond fire shed boundaries. SDG&E contends that the EIR/EIS overstates the actual impacts (particularly after application of proposed mitigation measures) of both the Proposed Project and the "Enhanced" Northern Route, which causes the LEAPS Transmission-Only Alternative to be ranked too highly.

⁶³⁷ See SDG&E Phase 2 Opening Brief, 205-210.

A.06-08-010 COM/MP1/tcg

Finally, on the issue of deliverability of renewables, Nevada Hydro contends that once Imperial Irrigation District completes the proposed Coachella Valley-Devers 2 project, which will increase the transfer capability with the Edison system, the LEAPS Transmission-Only Alternative could deliver geothermal energy from the Imperial Valley. Imperial Irrigation District generally supports this argument. Nevada Hydro also contends that the new LEAPS interconnection would facilitate the delivery to SDG&E of energy from Edison's proposed Tehachapi Renewable Transmission Project, but SDG&E and other parties disagree. They stress that even assuming these connections to renewable resources are made, the LEAPS Transmission-Only Alternative at best would be an unsatisfactory substitute for direct, immediate connection to Imperial Valley and other renewable energy sources – a connection which the Northern and Southern Routes provide.

15.6.3. Discussion

As well as being ranked third in terms of environmental superiority overall, the LEAPS Transmission-Only Alternative is the environmentally superior transmission alternative. With its new 500 kV transmission component limited to 31.8 miles, the LEAPS Transmission-Only Alternative is substantially shorter than the other transmission alternatives. Overall, the LEAPS Transmission-Only Alternative requires almost 100 fewer miles of new transmission line construction than the Final Environmentally Superior Northern Route and approximately 60 miles less than the Final Environmentally Superior Southern Route. Compared to these and the other transmission alternatives, the LEAPS Transmission-Only Alternative minimizes biological, visual, agricultural,

A.06-08-010 COM/MP1/tcg

cultural/historical, paleontological, transportation/traffic, air quality, water resources, geology/soils, socioeconomic and wildfire impacts.⁶³⁸

Like all of the transmission alternatives, the LEAPS Transmission-Only Alternative will have significant and unavoidable adverse impacts in some of these areas. In addition to more obvious construction-related impacts, for example, socioeconomic impacts occur when private properties along the right-of-way are acquired and impacts to cultural resources occur when Native American burial sites, currently unknown, are discovered during construction. While the majority of these unavoidable, significant impacts are temporary impacts associated with construction, some major impacts, particularly biological and visual resource impacts, would be permanent. For example, the LEAPS Transmission-Only Alternative would be highly visible in Cleveland National Forest. In some other areas (land use, wilderness and recreation, noise, and public health and safety), this alternative ranks only second or third among all transmission alternatives. Nevertheless, on the whole, the balance of environmental considerations favors the LEAPS Transmission-Only Alternative over other transmission alternatives.

However, the LEAPS Transmission-Only Alternative still has a greater impact on the environment than the two generation-only or non wires alternatives. Specifically, this alternative has substantially greater wildfire risk. We disagree, however, with parties' contentions that the EIR/EIS understates the wildfire impacts of the LEAPS Transmission-Only Alternative. Even assuming greater weight were given to wildfire impacts and allowance were made for allegedly overstating the impacts of the Northern Route Alternatives, the LEAPS

⁶³⁸ Draft EIR/EIS, Sec. H.5.3 and Table H-25.

A.06-08-010 COM/MP1/tcg

Transmission-Only Alternative remains the environmentally superior transmission line alternative among all those analyzed in the EIR/EIS.

The EIR/EIS concludes, based on the information available at the time of its preparation, that the LEAPS Transmission-Only Alternative meets the first and second Basic Project Objectives, (to increase reliability and to reduce energy costs). It also concludes that the LEAPS Transmission-Only Alternative partially meets the third Basic Project Objective (promote renewable energy development). Based on our review of the record in the CPCN portion of this proceeding, we find that the LEAPS Transmission-Only Alternative only minimally meets the first and second Basic Project Objectives and does not meet the third.

Regarding the first Basic Project Objective (to increase reliability), while the alternative would contribute to maintaining reliability in the San Diego area, it would be at the expense of the Los Angeles area. Further, it does not provide the same degree of reliability contemplated by the Proposed Project. The transfer capability will be something significantly less than 1,000 MW without substantial additional network upgrades.⁶³⁹

Regarding the second Basic Project Objective (to reduce energy costs), while all transmission lines theoretically reduce the cost of energy, there is no credible evidence in the record to suggest that the LEAPS Transmission-Only Alternative will generate sufficient energy cost savings that result in net savings to customers in the region.

With regard to the third Basic Project Objective, the EIR/EIS concludes that the LEAPS Transmission-Only Alternative will only partially meet the objective to accommodate the delivery of Imperial Valley or San Diego County

⁶³⁹ See, e.g. discussion at Section 9 above.

A.06-08-010 COM/MP1/tcg

renewable resources absent several other, unrelated transmission upgrades. However, based on the CPCN record, we find that the LEAPS Transmission-Only Alternative does not meet the third Basic Project Objective. While this alternative may facilitate the flow of power among service areas, any transmission line that connects two service areas accomplishes this. Because the LEAPS Transmission-Only Alternative does not terminate in a transmission-constrained area with undeveloped renewable resource potential, it does not facilitate the development of renewable energy. The LEAPS Transmission-Only Alternative is not an appropriate substitute for a direct connection from the Imperial Valley to a load center.

Therefore, upon consideration of the record as a whole, we do not find substantial evidence that this alternative adequately can meet at least two of the Basic Project Objectives, as proposed for the Sunrise project. The LEAPS Transmission-Only Alternative is best considered as a potential, future, additional regional project, and we reach no conclusion today about its technical, economic and environmental merits.

Further, this proceeding is not the proper forum for a complete evaluation of TE/VS, thus, our decision does not prejudge any portion of the project, which is the subject of A.07-10-005. We will evaluate the LEAPS Transmission-Only Alternative in its own CPCN proceeding, on its own merits, and our findings here do not pre-judge any issue in the CPCN proceeding for the LEAPS Transmission-Only Alternative.

15.7. Final Environmentally Superior Southern Route

The EIR/EIS evaluates a number of alternatives that parallel a portion of the Southwest Powerlink in order to bring Imperial Valley renewables to San

A.06-08-010 COM/MP1/tcg

Diego from the south. These alternatives completely avoid Anza-Borrego, while providing a transmission-based approach to meeting all Basic Project Objectives. We refer to these routes collectively as the “Southern Route Alternatives” or “Southern Routes” to identify the transmission “spine” that, if built, would bring power from the Imperial Valley to San Diego via a southern path that avoids Anza-Borrego. The Final EIR/EIS determines the Final Environmentally Superior Southern Route to be the preferred Southern Route.⁶⁴⁰

Commission staff and BLM identified a series of potentially feasible Southern Routes and alternatives to certain segments of these routes for analysis in the EIR/EIS. The process involved consultation with SDG&E, numerous federal, state and local agencies, Native American tribes, and members of the public. The Final Environmentally Superior Southern Route, like all of the Southern Routes analyzed in the EIR/EIS, begins at the Imperial Valley Substation and ends at Proposed Project Milepost 131, where it then follows the Proposed Project west to the Sycamore Canyon Substation. West of that substation, the Final EIR/EIS replaces the Proposed Project with the environmentally superior Coastal Link Upgrades Alternative Revision.⁶⁴¹ There are many hybrid routing combinations that could constitute a Southern Route.

15.7.1. Parties’ Positions

SDG&E raises numerous concerns about any Southern Route that requires the crossing of tribal lands or incompatible Forest Service land use zones.⁶⁴² Conservation Groups contends that a finding of infeasibility for a route across

⁶⁴⁰ For a detailed description of the Final Environmentally Superior Southern Route, see Final EIR/EIS, ES.7.2.

⁶⁴¹ Recirculated Draft EIR/Supplemental Draft EIS, Sec. 3.2.3, Sec 5.2.

⁶⁴² SDG&E Phase 2 Opening Brief, 141-143.

A.06-08-010 COM/MP1/tcg

the Campo Reservation must be supported by evidence of a good faith effort to pursue all reasonable negotiation options between SDG&E and the Tribe.⁶⁴³ SDG&E also expresses concern about the potential for any Southern Route to have an environmental impact on cultural resources along the segment referred to as the Interstate 8 Alternative.

15.7.2. Discussion

The Final EIR/EIS ranks the Final Environmentally Superior Southern Route fourth among all the alternatives studied, below the LEAPS Transmission-Only Alternative but above the Final Environmentally Superior Northern Route and other Northern Routes. Running a total of 123 miles, this alternative is substantially shorter than the Proposed Project or other Northern Routes and avoids Anza-Borrego. It crosses 19.2 miles of National Forest land but does so within acceptable land use zones and makes use of a Draft Department of Energy Section 368 West-wide Energy corridor.⁶⁴⁴ In addition, the alternative is collocated with the Southwest Powerlink for only 36 miles, in an area of comparatively low fire risk.

The Final EIR/EIS modifies the route proposed in the Draft EIR/EIS to avoid both the Campo and La Posta Reservations.⁶⁴⁵ Having reviewed the requirements for finding a route through the Campo Reservation infeasible and

⁶⁴³ Conservation Groups Phase 2 Reply Brief, 15.

⁶⁴⁴ The Energy Policy Act of 2005, Section 368, required designation of energy corridors on federal lands.

⁶⁴⁵ The Final Environmentally Superior Southern Route could still cross Viejas land if any additional concerns about the eastern end of Alpine Boulevard are identified through additional tribal consultation between the Viejas Tribe and BLM prior to construction based on preliminary cultural resources investigations. (See additional explanation in Draft EIR/EIS, Sec. H.4.5.)

A.06-08-010 COM/MP1/tcg

the case cited by Conservation Groups to support their argument,⁶⁴⁶ we have determined that routing a transmission line across the Campo Reservation is legally infeasible given the Campo Tribe's refusal to grant the necessary easement and the fact that neither SDG&E nor the Commission has the authority to impose or implement a route through this land.⁶⁴⁷

The Final Environmentally Superior Southern Route also contains modifications to avoid Forest Service land use zones that do not allow transmission lines or new access roads. Commission staff and BLM consulted extensively with the Forest Service and SDG&E to identify route modifications within Cleveland National Forest to minimize impacts to Forest Service resources and avoid incompatible land use zones.

Though the Final EIR/EIS acknowledges SDG&E's concern about the potential for cultural resource impacts along the Interstate 8 Alternative segment, further research into the site descriptions and boundaries of the cultural site previously identified as being within Alpine Boulevard show that the site does not extend south of Interstate 8, and would not be affected.⁶⁴⁸ As a result, the Star Valley Option, which would have significant visual impacts, would not be included as part of the Final Environmentally Superior Southern Route. However, the Star Valley Option (as modified by SDG&E reroutes described in the Star Valley Option Revision) still could be used if additional concerns about the eastern end of the Alpine Boulevard are identified through any additional tribal consultation prior to construction based on the preliminary cultural

⁶⁴⁶ The opinion cited by the Conservation Groups, *Center for Biological Diversity v. Rey* (9th Cir. 2008) 2008 WL 2051072, has been amended and superseded by *Sierra Forest Legacy v. Rey* (9th Cir. 2008) 526 F.3d 1228. We have considered both of these opinions.

⁶⁴⁷ See Pub. Resources Code § 21004.

⁶⁴⁸ Final EIR/EIS, Sec. 4, responses to Comment Set F008 (Viejas Tribe).

A.06-08-010 COM/MP1/tcg

resources investigations. Therefore, the Final Environmentally Superior Southern Route retains the entire Interstate 8 Alternative segment underground in Alpine Boulevard.

15.8. Northern Routes

We describe the Proposed Project, “Enhanced” Northern Route, and the Final Environmentally Superior Northern Route in Section 3.2, and discuss the environmental impacts of each of these Northern Routes in Section 13. We find that the unmitigable significant, environmental impacts of the three Northern Routes on Anza-Borrego cannot justify their construction.

15.9. LEAPS Transmission Plus Generation Alternative

As described more fully in Section 6.14.4 and noted in Section 15.6, the LEAPS Generation and Transmission Alternative⁶⁴⁹ includes the LEAPS Transmission-Only Alternative, also known as the TE/VS project and the Lake Elsinore Pumped Storage Project.

Based on its environmental impacts, the LEAPS Generation and Transmission Alternative is the lowest ranked of all the alternatives -- the EIR/EIS ranks it below the Proposed Project. This alternative has the same environmental impacts as the LEAPS Transmission-Only Alternative, with the added impacts created by the construction and operation of the proposed 500 MW pumped storage facility. Consequently, given the record as a whole, and our decisions here regarding the LEAPS Transmission-Only Alternative, we do not address this alternative further.

⁶⁴⁹ Evaluated in Section E.7.2 of the Draft EIR/EIS.

A.06-08-010 COM/MP1/tcg

15.10. No Project Alternative

15.10.1. Description

The No Project Alternative envisions a range of options likely to occur in the event Sunrise is not built and identifies the environmental impacts of the No Project Alternative based on that range of options. The EIR/EIS concludes that without Sunrise, the following actions are likely to occur in the foreseeable future:

- Existing transmission and generation facilities will continue to operate until other major generation or transmission projects can be developed.
- Electricity consumption and peak demand within the SDG&E service territory will continue to grow. To serve this growth, additional electricity will need to be generated within San Diego County or imported by existing or modified facilities.
- Certain demand-side or supply-side actions likely will occur beyond the levels currently planned by SDG&E. Demand-side actions include increased levels of energy conservation (energy efficiency) or load management (demand response). Supply-side actions include development of new generation, whether conventional, renewable, or distributed generation, as well as construction of other major transmission projects.

Thus, the EIR/EIS assumes that, in the absence of Sunrise, the San Diego area will see the pursuit of a combination of generation and transmission actions, which likely will include components of the All-Source Generation, In-Area Renewable, and LEAPS Transmission-Only Alternatives.

15.10.2. Parties' Positions

SDG&E recognizes that the No Project Alternative contains aspects of the In-Area Renewable, All-Source Generation, and LEAPS Transmission-Only Alternatives and consequently states the same concerns about the No Project Alternative, characterizing it as infeasible, overly costly, unable to meet

A.06-08-010 COM/MP1/tcg

reliability needs, and likely to create more environmental damage than the Propose Project with regard to GHG emission impacts.

Like SDG&E, CAISO states that the No Project Alternative contains many of the drawbacks of the All-Source Generation, In-Area Renewable, and LEAPS Transmission-Only Alternatives, including an inability to deliver renewable energy to SDG&E or to meet reliability needs.

UCAN states that the EIR/EIS fails to identify and consider factors that would reduce the environmental impacts of the No Project Alternative. According to UCAN, upgrades to Path 44, modifications at the Miguel Substation, and increases in energy efficiency and distributed generation beyond that envisioned in the Draft EIR/EIS are realistic assumptions, and would minimize the No Project Alternative's environmental consequences. More particularly, UCAN argues that a Path 44 upgrade is likely to occur due to other already proposed system upgrades and will increase SDG&E import capacity by 350 MW and that increasing the Miguel Substation capability to 1,900 MW would increase SDG&E's ability to import renewables from the Imperial Valley.

15.10.3. Discussion

Our conclusions with respect to the All-Source Generation and In-Area Renewables apply here. The fossil fired and renewable in-area generation identified in these EIR/EIS alternatives is neither unrealistic nor unduly speculative and sufficient levels of both can be brought online in time to meet SDG&E's reliability needs, which we find to be less urgent than SDG&E asserts. Since only about 1,000 MW of in basin generation or transmission import capacity is necessary to replace the Proposed Project, and since a combination of the two top ranked alternatives can provide that amount, the No Project Alternative has adequate resources. Therefore, it meets the first and third Basic

A.06-08-010 COM/MP1/tcg

Project Objectives. Given the CPCN record, however, the No Project Alternative may not reduce the cost of energy in the region, which is the second Basic Project Objective. Unlike the parties, we do not factor development of the LEAPS Transmission-only Alternative into our assessment of likely development under the No Project alternative because as discussed in Section 17.6, we find that the CPCN record renders the LEAPS Transmission-only Alternative less attractive economically than the EIR/EIS suggests.

15.11. Conclusions Drawn from Environmental Review

The EIR/EIS evaluated a range of alternatives to identify potentially feasible ways to achieve the Basic Project Objectives at a lower environmental cost. We have carefully scrutinized the information in the EIR/EIS, and we rely on its conclusions with respect to the environmental impacts of the various alternatives and its ranking of the environmental superiority of these alternatives. We have also examined the extent to which each of these alternatives can feasibly meet the Basic Project Objectives, informed by the record in the CPCN portion of the proceeding.

The Proposed Project and all of the alternatives would create many significant, unmitigable impacts on the environment. The Final EIR/EIS concludes that three alternatives - the All-Source Generation Alternative, the In-Area Renewable Alternative, and the LEAPS Transmission-Only Alternative - have fewer significant unmitigable impacts than the Final Environmentally Superior Southern Route. However, we find that the three alternatives that the Final EIR/EIS determines to be environmentally superior to the Final Environmentally Superior Southern Route are not feasible when we consider certain other considerations, including meeting California's broader policy goals.

A.06-08-010 COM/MP1/tcg

As discussed in Section 14 above, AB 32 requires that California reduce its GHG emissions to 1990 levels by 2020. The energy sector is expected to contribute a significant amount to those reduction goals. Our recent GHG decision⁶⁵⁰ making recommendations to the CARB on its Assembly Bill 32 *Climate Change Scoping Plan*⁶⁵¹ commits this Commission to achieving 33% RPS, assuming certain safeguards. Thus, this Commission is committed to achieving GHG reductions in the energy sector, in part, through renewable procurement at 33% RPS levels.

The Final Environmentally Superior Southern Route is the highest ranked Alternative that will facilitate our policy to achieve GHG reductions through renewable procurement at 33% RPS levels in the shortest time possible with the greatest economic benefits. The three top ranked alternatives would not facilitate even half the amount of renewable development that the Final Environmentally Superior Southern Route will facilitate. In our Analytical Baseline, we assume, consistent with CAISO, that construction of a Northern or Southern Route Alternative will facilitate the development of over 1,900 MW of Imperial Valley renewables between 2011 and 2015. In contrast, the All-Source Generation Alternative proposes the development of 203 MW of solar PV in San Diego's service area. The In-Area Renewable Alternative proposes the development of a total of 1,000 MW of renewable resources in San Diego's service area, 900 MW of which are intermittent solar and wind resources. Thus, both the All-Source Generation Alternate and the In-Area Renewable Alternative propose to develop

⁶⁵⁰ *Greenhouse Gas Regulatory Strategies*, D.08-10-037.

⁶⁵¹ CARB included this recommendation in the Scoping Plan, which was unanimously adopted at its December 11, 2008 board meeting. See <http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>.

A.06-08-010 COM/MP1/tcg

substantially less renewable energy than will be facilitated by Sunrise. Further, neither alternative will facilitate the development of geothermal resources, which are a high capacity renewable resource that will flow more often than wind or solar resources. CAISO projects that the Environmentally Superior Southern Route would facilitate the development of 1,600 MW of geothermal resources in the Imperial Valley. The LEAPS Transmission-Only Alternative is only projected to facilitate the flow of power between the Edison and SDG&E service areas, but not to actually increase the development of renewables in the Imperial Valley or elsewhere.⁶⁵²

The All-Source Generation Alternative is not likely to off-set its construction-related GHG emissions. The Final EIR/EIS recognizes that construction and operation of the fossil fueled generation component of the All-Source Generation Alternative will generate substantially more GHG emissions than the construction-related emissions associated with Sunrise. The Final EIR/EIS concludes that the All-Source Generation Alternative (which is considered equivalent to the No Project Alternative) would greatly increase GHG impacts compared to Sunrise.⁶⁵³ CAISO modeling found that Sunrise's construction-phase GHG emissions will be offset by lower operations phase emissions, provided that the 33% RPS goal is achieved. It is important to note, however, that the CAISO neither quantified nor attributed to Sunrise any of the significant GHG emissions reductions projected to result from meeting the 33% RPS target.⁶⁵⁴

⁶⁵² See Section 17.6 above.

⁶⁵³ See discussion at Section 14.3.

⁶⁵⁴ Section 18 outlines a set of Imperial Valley renewable energy development requirements and recommended enhancements to the RPS program intended to ensure

A.06-08-010 COM/MP1/tcg

The Final Environmentally Superior Southern Route will generate more economic benefits to ratepayers than the top ranked alternatives. The record shows that if Sunrise operates under a renewable procurement framework that reaches 33% RPS levels, it is estimated to generate net benefits of over \$115 million per year.⁶⁵⁵ In contrast, the All-Source Generation Alternative is estimated to generate net benefits of \$93 million. While the In-Area Renewables Alternative was not modeled in the Compliance Exhibit and the Update, earlier estimates projected significantly lower net benefits given the higher level of renewable resources in that alternative.⁶⁵⁶ Thus, we reject the All-Source Generation, In-Area Renewable, and LEAPS Transmission-Only Alternatives and find them infeasible for the reasons discussed above.

We find that the Final Environmentally Superior Southern Route will facilitate our policy goal of renewable procurement at 33% RPS levels within a reasonable period of time with the greatest economic benefits at the lowest environmental cost. While the Northern Routes analyzed in the EIR/EIS could achieve these benefits, they would do so at significantly greater environmental expense.⁶⁵⁷ We therefore reject the Proposed Project, SDG&E's "Enhanced" Northern Route, and the Final Environmentally Superior Northern Route as environmentally infeasible.

that the investment in Sunrise is leveraged to maximize its contribution to meeting the 33% RPS target.

⁶⁵⁵ See Table 14, Section 11.4.

⁶⁵⁶ SDG&E estimates that the net benefits for the In-Area Renewable Alternative would be approximately \$180 million per year less than the All-Source Generation Alternative. See SDG&E Exhibit SD-142, Table 11-6, 14.

⁶⁵⁷ EIR/EIS, Section H.

A.06-08-010 COM/MP1/tcg

16. Community Values and Other Requirements Pursuant to Public Utilities Code Section 1002(a)

As discussed above in Section 4.2, in addition to the effect of a project on the environment, and park and recreation values, Public Utilities Code Section 1002(a) requires us to consider community values and historical and aesthetic values. The most extensive record on these issues, apart from the impacts on Anza-Borrego which we discuss in Section 13, concerns the impacts that would result from siting the Inland Valley Link of the Northern Route Alternatives near Mussey Grade Road (in the vicinity of Ramona), and impacts that other routing Links (see Section 3.2.1) would have on agricultural communities. We also address community values articulated at Public Participation Hearings by residents of the San Diego back country.

16.1. Mussey Grade Road and Backcounty Areas

The record on community values has been developed largely through public input – testimony at Public Participation Hearings and written comment (letters and emails), the latter generally sent to the Commission’s Public Advisor’s Office or provided through the EIR/EIS process. Mussey Grade, an association of people who live in the Mussey Grade Road area near Ramona, in West-Central San Diego County, participated in the Phase 1 and Phase 2 hearings as a party. Overwhelmingly, the public statements, like Mussey Grade’s participation, register opposition to the Proposed Project and other transmission alternatives. Many have asked whether SDG&E was not seeking to apply a 20th century solution to a 21st century problem.

Understandably, people are interested in protecting their local environment, the quality of its aesthetic experience and, in some instances, the value of their property. However, while self-interest may motivate some of the

A.06-08-010 COM/MP1/tcg

opposition to the Proposed Project, much of the opposition has arisen from an altruistic spirit, environmental concerns going beyond immediate locales, and deep reverence for nature. For example, Mussey Grade, which strongly protests construction of the Proposed Project's Inland Valley Link, argues that "[t]he community values of Mussey Grade Road are antithetical to this proposed massive power line project and it is inappropriate to route a transmission line through historic rural communities.⁶⁵⁸ Mussey Grade offered testimony of several long-time residents about the community, historical and aesthetic values of the area. One person stated:

Life here is uncomplicated. The people I know along Mussey Grade Road all have this common sense of possessiveness about the road, about the land and about the way we live. There's much more involvement in nature and in the preservation of the wild areas and the wild animals. There's a love for the land and a respect - I have the sense that there are roots growing into the ground from my feet - a sense of being rooted and loved altogether. And regarding the landscape, as one of our friends said, 'There's an Ansel Adams out every window.'⁶⁵⁹

Another person described the people who are attracted to the area:

The people are individualist, yet interested in maintaining a closer-knit group, especially in regard to the preservation of Mussey Grade and its environment. The residents have common causes such as wildland fire protection and deep environmental concerns.⁶⁶⁰

Another individual described the strong community involvement in issues that affect the area:

⁶⁵⁸ Mussey Grade Phase 1 Opening Brief, 37-39.

⁶⁵⁹ Mussey Grade Exhibit MG-3, 3:4-10.

⁶⁶⁰ Mussey Grade Exhibit MG-4, 2:5-8.

A.06-08-010 COM/MP1/tcg

Whenever an issue arose, like the proposed off-road vehicle park that a group wanted to put in, we fought it and won and then the land it was going to be on became part of the Boulder Oaks County Open Space Preserve. When there was a road proposed to go to Barona Indian Reservation, we fought the idea and prevailed. When it was determined that people were speeding on Mussey Grade Road, we got the speed limit reduced. When we felt there was a threat to the historic oak trees along the road that might be cut down, we got the road designated as a historical point of interest by the state. This road used to be a stagecoach road from San Diego to the gold mines in Julian. And now we are fighting the Sunrise Powerlink.⁶⁶¹

The website maintained by the Mussey Grade Road community at www.musseygraderoad.org, provides a tangible example of “community values” and includes photographs of community landmarks and scenic areas.

SDG&E has stated that it considered various community values in the siting and development of the Proposed Project.⁶⁶² SDG&E contends that it has undertaken a comprehensive and extensive public outreach plan, seeking input from both the public and project stakeholders, including residential and commercial customers, community and business leaders, environmental groups, and elected officials.⁶⁶³ SDG&E states that these efforts sufficiently addressed community values pursuant to § 1002 and notes that from a procedural perspective, the 2006 Application has involved an extensive community outreach process.⁶⁶⁴

⁶⁶¹ Mussey Grade Exhibit MG-2, 4:1-10.

⁶⁶² SDG&E Phase 1 Reply Brief, 132.

⁶⁶³ SDG&E Phase 1 Opening Brief, 176-177; SDG&E Exhibits SD-11, Ex. SD-12.

⁶⁶⁴ SDG&E Phase 1 Opening Brief, 6, 7, 27-30, 176 and 177. SDG&E’s PEA includes information regarding the approximately 350 communications and presentations SDG&E made to federal, state and local agencies, elected officials, community groups and the public prior to date, when the PEA was filed.

A.06-08-010 COM/MP1/tcg

Regardless of the extent of SDG&E's outreach program, the Proposed Project is very much at odds with the community values of the residents who live near Mussey Grade Road and other backcountry areas. There always will be trade-offs between the desire to protect such communities and the need to expand infrastructure. For the reasons set forth in Section 17.11 above, we conclude that the Final Environmentally Superior Southern Route is the superior alternative. However, we require mitigation to address concerns raised by Mussey-Grade and others.

16.2. Agricultural Community Values

Imperial Irrigation District and Farm Bureau focus on Northern Route segments outside Anza-Borrego and express concern about impacts to agricultural lands in Imperial Valley.⁶⁶⁵ They argue it is wrong to harm the Imperial Valley agricultural community by siting a 500 kV transmission line on valuable agriculture land when less harmful alternative routes available. They contend the Proposed Project (and two other Northern Routes) cut through some of the Imperial Valley's most productive farmlands and would impose severe impacts upon farms, dairies, irrigation systems and other agricultural operations. Imperial Irrigation District and Farm Bureau argue that SDG&E has not adequately analyzed the true impact to farming in the Imperial Valley given the unique and complex system of irrigation canals and drains used there. Imperial Irrigation District supports only a Southern Route or alternatively, a route that was eliminated from further study early on, the Western Route in the Desert Link.⁶⁶⁶ Imperial Irrigation District contends that the Eastern Route in the Desert

⁶⁶⁵ Farm Bureau Phase 2 Opening Brief, 7-8.

⁶⁶⁶ Imperial Irrigation District Phase 1 Opening Brief, 15-20.

A.06-08-010 COM/MP1/tcg

Link unnecessarily affects farmlands, dairies and irrigation facilities in the community.⁶⁶⁷

SDG&E does not dispute that agricultural lands, dairies and irrigation systems have value or that we should consider this value along with other resources and values as we assess the merits of competing transmission route alternatives.⁶⁶⁸ In fact, SDG&E claims that it “attempted to site the project to avoid impacting agricultural lands to the extent feasible.”⁶⁶⁹ To this end, SDG&E classified agricultural lands as a high to moderate constraint during its study of siting opportunities,⁶⁷⁰ and the Proposed Project follows property boundaries and section lines of agricultural lands.⁶⁷¹ Also, in agricultural areas SDG&E switched structure types from lattice towers to steel poles to reduce impacts.⁶⁷² As a result, impacts to agricultural land use are limited to structure footprints, access roads, and pull sites, not the entire right-of-way.

Gov. Code § 51238, also known as the Williamson Act, is in effect in Imperial County and provides that, unless otherwise specified by local regulations, plans or standards, the construction, operation and maintenance of electric facilities are compatible with other uses under the Williamson Act, including agricultural uses.⁶⁷³ The applicable Imperial County plans and ordinances provide that electric facilities are either permitted uses or

⁶⁶⁷ Imperial Irrigation District Phase 1 Opening Brief, 36.

⁶⁶⁸ SDG&E Phase 1 Reply Brief, 138.

⁶⁶⁹ SDG&E Phase 1 Reply Brief, 138.

⁶⁷⁰ SDG&E Exhibit SD-11, Figures 18, 20 and 21.

⁶⁷¹ SDG&E Exhibit SD-9, 2-23 and Figure 4.1-1A; SDG&E Exhibit SD-11, Figure 16.

⁶⁷² SDG&E Exhibit SD-9, 2.3-1.

⁶⁷³ SDG&E Exhibit SD-10, 5-1.7.

A.06-08-010 COM/MP1/tcg

conditionally allowed uses in agricultural lands.⁶⁷⁴ Moreover, SDG&E's prior projects, like the Southwest Powerlink in the Imperial Valley, demonstrate that linear transmission lines can be compatible with agricultural uses. Imperial Irrigation District itself owns transmission lines, maintains transmission lines, and has proposed transmission line upgrades through similar agricultural areas in Imperial County.

We find that the EIR/EIS has adequately considered the concerns of the affected agricultural communities in siting the Final Environmentally Superior Southern Route and that the impacts on agricultural lands are significantly mitigated because of our approval of the Final Environmentally Superior Southern Route rather than a Northern Route.

17. Developing the Renewable Potential of the Imperial Valley

Approval of Sunrise will help to unlock the potential of one of the richest renewable energy regions in California. However, the Commission's decision in this case is only the first step toward fully developing renewable energy in the Imperial Valley region. We intend to use all of the regulatory tools at our disposal so that the renewable resources enabled by Sunrise are developed.

The Commission will continue to exercise vigilant oversight of the IOUs' procurement practices. Pursuant to AB 57,⁶⁷⁵ SDG&E and the two other large IOUs are required to file bi-annual long-term procurement plans. Subject to those procurement plans the IOUs must submit all long-term power contracts for

⁶⁷⁴ SDG&E Exhibit SD-10, 5-1.7 to 5-1.8.

⁶⁷⁵ AB 57 (Stats. 2002, c. 850, Sec. 3) is codified at § 454.5.

A.06-08-010 COM/MP1/tcg

Commission approval.⁶⁷⁶ Through this process, the Commission will continue to ensure that utility procurement follows the Loading Order and that SDG&E and the other IOUs exhaust opportunities to procure higher priority resources, such as energy efficiency and renewable energy, before purchasing fossil fuel generation.

In addition to the long-term procurement plans the Commission requires each IOU to file an annual renewable procurement plan for Commission approval. Each renewable procurement plan details how that specific utility plans to solicit renewable power to ensure it meets the state's RPS requirements. The Commission then reviews each renewable power contract submitted by a utility for consistency with the renewable procurement plan and all applicable laws and policies. We expect that at such time that the Commission authorizes the use of tradable renewable energy credits (TRECS) for RPS compliance that the Commission's review and approval of renewable procurement shall include TREC contracts.⁶⁷⁷

The Commission's broad authority over the procurement process is guided by the State's aggressive greenhouse gas abatement mandates contained in SB 1368⁶⁷⁸ and AB 32, which collectively require that SDG&E and the other IOUs continue to aggressively procure renewable resources and limit their use of fossil-fired (and especially coal-fired) energy. If a utility fails to meet the RPS

⁶⁷⁶ In addition, any short term contract/purchase entered into, in compliance with a Commission-approved procurement plan by an IOU, must be reported in Quarterly Procurement Transactions Reports.

⁶⁷⁷ See, for example Section 4.4.4.1 in the proposed decision in R.06-02-012 on the Commission's December 18, 2008 agenda.

⁶⁷⁸ SB 1368 (Stats. 2006, c. 598) prohibits IOUs from entering into long-term contracts (greater than five years in duration) with any resource that has an emission rate greater than 1,100 lbs/MWh.

A.06-08-010 COM/MP1/tcg

goals, or disobeys any other relevant law or procurement policy, it will be subject to penalties and/or sanctions imposed by this Commission.

For the reasons stated above, we are confident that there are strong incentives for all the IOUs and power plant developers to develop renewable energy projects in the Imperial Valley once increased transmission becomes available. There are also sufficient existing safeguards, as described above, to prevent the utilities from using Sunrise to develop new high emitting fossil fuel power plants.⁶⁷⁹

Nonetheless, the record in this proceeding demonstrates that several parties are concerned that SDG&E will not follow through on its stated commitment to develop solar and geothermal resources in the Imperial Valley. In response to these concerns SDG&E CEO Debbie Reed stated that the utility would make three voluntary commitments if Sunrise is approved. She stated that SDG&E would: (1) not contract, for any length of term, with conventional coal generators that deliver power via Sunrise, (2) replace any currently approved renewable energy contract deliverable via Sunrise that fails with a viable contract with a renewable generator located in Imperial Valley,⁶⁸⁰ and (3) voluntarily raise SDG&E's RPS goal to 33 percent by 2020. We do not take SDG&E's commitments lightly and fully expect the utility to follow through.

⁶⁷⁹ This decision also imposes substantial mitigation measures directly on SDG&E to address the impacts of Sunrise. Included among these measures is the requirement that SDG&E fully offset the greenhouse gas emissions generated by the construction and operation of Sunrise. (Appendix D, D-52-D-53; Appendix E, E-190-E-194.)

⁶⁸⁰ We understand SDG&E's commitment to include contracts with the following projects, which would together deliver a minimum of 2,253 GWh per year. Following each project we list the associated GWh per year and the Commission resolution that approved the project: Stirling (including SDG&E's option: 1296 GWh per year, E-3965), MMR I (304 GWh per year, E-4176), MMR II (168 GWh per year, E-4073), Esmeralda I (319 GWh per year, E-4171), Esmeralda 2 (166 GWh per year, E-4073).

A.06-08-010 COM/MP1/tcg

We acknowledge that additional steps are necessary to ensure that renewable energy is developed in the Imperial Valley. Under the RPS program, utilities and other LSEs can meet their obligations by purchasing renewable energy either within or outside of their service territories. That means that utilities such as Pacific Gas & Electric and Southern California Edison can also play an important role in the development of Imperial Valley renewable energy. In fact, given the relatively small size of SDG&E and the large potential of the Imperial Valley, we expect that other utilities will be significant buyers of renewable energy from the region.

In order to maximize the potential of the Imperial Valley, therefore, the Commission will need to take a statewide approach. We also note that many of the concerns that parties have raised specific to the Sunrise Powerlink and Imperial Valley renewables currently under contract to SDG&E are not unique to these projects but instead reflect broader concerns about the RPS program itself. These matters are best considered in the context of R.08-08-009, the RPS implementation proceeding. Therefore, we direct the assigned Commissioner in R.08-08-009, within 60 days of the effective date of this decision, to issue an Assigned Commissioner Ruling putting forth proposals, as discussed in the following paragraphs, so that the renewable resources that are facilitated by Sunrise are in fact developed on a timely basis.

The principal means through which the Commission can ensure that Imperial Valley renewable resources are developed is through the annual RPS procurement plans that the utilities are required to file pursuant to SB 107.⁶⁸¹ Our expectation is that as a result of the Commission's approval of Sunrise, renewable developers will propose viable, competitively priced projects in the

⁶⁸¹ Stats. 2006, c. 464.

A.06-08-010 COM/MP1/tcg

Imperial Valley in the utilities' upcoming 2009 RPS solicitations. To increase the likelihood of this outcome and highlight the opportunities for the Imperial Valley created by Sunrise, the Ruling shall propose that each utility hold a special bidders conference in Imperial County.

Furthermore, to determine whether attractive Imperial Valley projects do in fact make it through the utilities' RPS procurement process, the Ruling shall propose that the Commission's Energy Division specifically monitor Imperial Valley proposals that are submitted in each IOU's 2009 solicitation.

The Ruling shall propose that if Imperial Valley renewable projects are not approved by the Commission as a result of the 2009 RPS solicitations, then the Commission will consider some or all of the following remedial measures for the 2010 RPS solicitation cycle:

- Require utilities to automatically shortlist all Imperial Valley proposals that are received in the solicitation so that the projects receive special consideration,
- Include an Imperial Valley bid evaluation metric in the least cost-best fit methodology to give preference to Imperial Valley resources, and
- Require each utility to conduct a special Imperial Valley RPS solicitation.

The Ruling will also propose to address issues that more generally apply to renewable resource procurement throughout the state, but could encourage the development of renewable projects that are facilitated by Sunrise.

Specifically, the Ruling should seek comments on the following:

- What changes should the Commission make to its existing rules that pertain to situations in which a renewable contract fails?
- What criteria should the Commission use to assess the continuing viability of a contract once it has been approved,

A.06-08-010 COM/MP1/tcg

including criteria that can be used to determine whether a contract has failed?

- What changes in RPS rules need to be made to ensure that projects with demonstrated indicia of viability, including site control and sufficient financing, are given appropriate greater weight in the procurement selection process?
- What changes to RPS rules should be made to existing milestone requirements or credit, collateral, and deposit provisions to ensure that the most viable projects are awarded power purchase agreements?

The ruling shall request that parties comment on these proposals, and we expect the assigned ALJ and assigned Commissioner to expeditiously bring a proposed decision to the Commission addressing these proposals so that the full Commission can act.

18. Certification of Final EIR, Project Authorization, Statement of Overriding Considerations, and Related Issues

18.1. Certification of Final EIR

Before approving an application for a CPCN, the Commission must certify the Final EIR.⁶⁸² We hereby certify that:

- The Final EIR/EIS has been completed in compliance with CEQA.
- The Final EIR/EIS was presented to the Commission, and the Commission has received, reviewed, and considered the information contained in the Final EIR/EIS.
- The Final EIR/EIS reflects the Commission's independent judgment and analysis.

The certification extends to the EIR/EIS's analysis of connected actions, indirect effects, and potential future transmission expansion, which we have

⁶⁸² CEQA Guidelines § 15090.

A.06-08-010 COM/MP1/tcg

received, reviewed, and considered in making our decision on this project. However, as explained above, none of the connected actions, indirect effects, or potential future transmission expansion projects are before us for approval at this time, and our action on SDG&E's CPCN application does not approve or guarantee any future approval of any of these projects.

18.2. Authorization of the Final Environmentally Superior Southern Route

Based on the considerations above, we authorize SDG&E to construct the Final Environmentally Superior Southern Route as set forth in and described in the CEQA Findings of Fact (Exhibit E). In connection with this authorization, we adopt the findings set forth in Exhibit E, pursuant to CEQA Guidelines § 15091.

18.3. Statement of Overriding Considerations

The Commission recognizes that significant and unavoidable environmental impacts will result from construction and operation of the Final Environmentally Superior Southern Route. Having (1) adopted all feasible mitigation measures; (2) adopted certain alternatives that reduce the impacts of the Final Environmentally Superior Southern Route; (3) rejected as infeasible alternatives to the Final Environmentally Superior Southern Route; (4) recognized all significant, unavoidable impacts; and (5) balanced the benefits of the Final Environmentally Superior Southern Route against its significant and unavoidable impacts, the Commission hereby finds that the benefits outweigh and override the significant unavoidable impacts for the reasons stated below.

The Commission adopts and makes this statement of overriding considerations concerning the Final Environmentally Superior Southern Route's unavoidable significant impacts to explain why its benefits outweigh its unavoidable impacts.

A.06-08-010 COM/MP1/tcg

Sections 15 and 17 describe each alternative that was considered in the Final EIR/EIS and explain why each one has been included in the Final Environmentally Superior Southern Route, or rejected.

As we conclude in Section 17.11 above, the Final Environmentally Superior Southern Route will provide substantial benefits, in that it will facilitate our policy goal of renewable procurement at 33% RPS levels within a reasonable period of time with the greatest economic benefits at the lowest environmental cost. As described in Section 9, it will also provide unquantifiable benefits, including a more robust southern California transmission system, long-term improvement of California's aging energy infrastructure, and insurance against unexpected high load growth in SDG&E's service area. We set forth the reasons for finding these substantial benefits, with citations to the record, throughout this decision. The Commission finds that the Final Environmentally Superior Southern Route's unavoidable impacts are acceptable in light of these substantial benefits, which constitute an overriding consideration warranting approval of the project, despite each and every unavoidable impact. Each benefit set forth above and throughout this decision constitutes an overriding consideration warranting approval of the project, independent of the other benefits, despite each and every significant unavoidable impact.

While the GHG emissions anticipated to result from Sunrise's construction have been classified as unavoidable and significant, we believe that they will be fully offset by the Imperial Valley renewable energy development measures set forth in Section 18.⁶⁸³ These measures are aimed at ensuring that the investment

⁶⁸³ This position does not conflict with the CEQA findings of a significant and unmitigable impact because while CEQA focuses on the specific known facts at the time of analysis, the Commission has the responsibility to consider broad and more inclusive review of the evidentiary record.

A.06-08-010 COM/MP1/tcg

in Sunrise is fully leveraged to maximize the potential of the Imperial Valley to contribute to realizing the 33% RPS target.

18.4. Mitigation Monitoring

The Final EIR/EIS includes a proposed Mitigation Monitoring, Compliance, and Reporting Program (MMCRP or Mitigation Monitoring Program) for the mitigation measures it recommends for the proposed project and all alternatives. MMCRP tables are presented at the end of each issue area section in the Final EIR/EIS (Sections D.2 through D.15). These tables, along with the full text of mitigation measures applicable to the Environmentally Superior Southern Route Alternative, form the Mitigation Monitoring Program. The Mitigation Monitoring Program is designed to ensure compliance with the changes in the project and mitigation measures imposed on the authorized project during implementation and recommends a framework for implementation of the Mitigation Monitoring Program by this Commission as the CEQA lead agency. We adopt the Mitigation Monitoring Program.

18.5. Electro Magnetic Field (EMF) Issues

The Commission has examined EMF impacts in several previous proceedings.⁶⁸⁴ We found the scientific evidence presented in those proceedings was uncertain as to the possible health effects of EMFs,⁶⁸⁵ and we did not find it appropriate to adopt any related numerical standards. Because there is no agreement among scientists that exposure to EMF creates any potential health risk, and because CEQA does not define or adopt any standards to address the potential health risk impacts of possible exposure to EMFs, the Commission does

⁶⁸⁴ D.06-01-042 and D.93-11-013.

⁶⁸⁵ EIR/EIS Section D.10.21.

A.06-08-010 COM/MP1/tcg

not consider magnetic fields in the context of CEQA and determination of environmental impacts.

However, recognizing that public concern remains, we do require, pursuant to GO 131-D, Section X.A, that all requests for a CPCN include a description of the measures taken or proposed by the utility to reduce the potential for exposure to EMFs generated by the proposed project. We developed an interim policy that requires utilities, among other things, to identify the no-cost measures undertaken, and the low-cost measures implemented, to reduce the potential EMF impacts. The benchmark established for low-cost measures is 4% of the total budgeted project cost that results in an EMF reduction of at least 15% (as measured at the edge of the utility right-of-way). Section D.10.22.3 of the EIR/EIS sets forth the no- and low-cost mitigation SDG&E proposed to implement to mitigate EMFs for the Proposed Project. Consistent with its obligations under GO 131-D, SDG&E included, with its application and Proponent's Environmental Assessment, an EMF Field Management Plan.⁶⁸⁶ In this plan, SDG&E proposes to incorporate various no-cost mitigation measures to reduce field levels. It also considers, but does not propose to adopt, certain low-cost mitigation measures. The proposed plan does not analyze potential impacts across each of the various alternative route alignments identified in the Draft EIR/EIS and carried forward in the Final EIR/EIS.

As discussed elsewhere in this order, we authorize SDG&E to construct the Final Environmentally Superior Southern Route along an alignment that differs significantly from that originally proposed by the utility in the Proposed Project. Given these modifications, SDG&E shall amend its EMF management plan as

⁶⁸⁶ A.06-08-010, PEA Appendix G and EIR/EIS Appendix 7.

A.06-08-010 COM/MP1/tcg

needed to apply its no-cost EMF management techniques to the Final Environmentally Superior Southern Route.

19. Compliance with Public Utilities Code Section 625

Section 625 provides that a public utility that offers competitive services may not condemn any property for the purpose of competing with another entity unless the Commission finds that such an action would serve the public interest based on a hearing for which the owner of the property to be condemned has been noticed and the public has an opportunity to participate (§ 625(a)(1)(A)). However, an exception is made for condemnation actions that are necessary solely for an electric or gas company to meet a Commission-ordered obligation to serve. In that circumstance, the electric or gas company is required to provide notice on the Commission Calendar if and when it pursues installation of facilities for the purpose of providing competitive services (§ 625(a)(1)(B)).

SDG&E proposed Sunrise to meet its obligation to serve its electric customers, and we authorize it for that purpose. In D.01-10-029, the Commission addressed the applicability of § 625 where the utility is implementing a project to meet its obligation to serve, but aspects of the project may have a competitive purpose later. We described that § 625 provides two different levels of notice and oversight and that, “The lesser standard requires that when condemning properties to carry out a commission-ordered obligation, § 625(a)(1)(B) is applicable, which only requires notice be provided to the Commission Calendar.” We conclude that the lesser standard of notice applies for Sunrise.

20. Specification of Maximum Reasonable Cost

While FERC ultimately will decide how much of the costs for this project SDG&E may recoup in transmission rates, we have jurisdiction pursuant to § 1005.5(a) and the responsibility to specify in the CPCN a “maximum cost

A.06-08-010 COM/MP1/tcg

determined to be reasonable and prudent” for the Sunrise project, commonly referred to as a cost cap. We believe our cost cap has bearing on the amount SDG&E may ultimately seek from FERC.

In setting the maximum reasonable cost, the Commission must take several factors into consideration, including the design of the project, the expected duration of construction, an estimate of the effects of economic inflation, the level and complexity of necessary environmental mitigation, and any known engineering difficulties associated with the project.

We adopt a maximum cost for the Final Environmentally Superior Southern Route pursuant to § 1005.5(a) of \$1.883 billion (\$2012).⁶⁸⁷ Based on our assessment, this amount includes the capital costs of the Final Environmentally Superior Southern Route and the mitigation⁶⁸⁸ prescribed in the Final EIR/EIS. It also covers direct labor and construction contracts, materials and equipment, land and land rights, indirect costs and overheads (which include but are not

⁶⁸⁷ To arrive at this estimate, we started with construction costs and AFUDC of \$1.674 billion (\$2012) for SDG&E’s Modified Southern Route (SDG&E Chapter 8, page 8.1) and added \$91 million for additional undergrounding along Alpine Boulevard (SDG&E Ex – 35 Attachment 3-4) for a total of \$1.765 billion, which includes SDG&E’s proposed Coastal Link. To adjust for the adopted Coastal Link Alternative, we deduct \$156.2 million (\$2012), which is SDG&E’s assumed cost of its proposed Coastal Link, and add in the estimated cost of the adopted Coastal Link Alternative of \$84 million (\$2012) (U-101, page 39). Finally, we add in mitigation costs of \$190 million (\$2012) (SDG&E Exhibit 142). Construction costs are based on workpapers provided by SDG&E for its Phase 2 cost estimates (see Workpapers in Support of Phase 2 Direct Testimony Regarding Estimates for the Modified Southern Route and Submitted to Interested Parties). Costs of additional undergrounding along Alpine Boulevard are derived from SDG&E Exhibit SD-35, Attachment 3-4. Mitigation costs are derived from SDG&E Exhibit SD-142. We acknowledge UCAN’s concerns regarding the Alpine Boulevard undergrounding, and we will carefully review these costs in SDG&E’s project status reports.

⁶⁸⁸ Mitigation includes environmental mitigation measures, construction mitigation measures, and compliance monitoring. See SDG&E Exhibit SD-35, 3.18-3.25.

A.06-08-010 COM/MP1/tcg

limited to EMF mitigation), allowance for funds used during construction (also known as AFUDC), a contingency amount, and escalation to 2012 dollars.

We believe the maximum cost deemed reasonable of \$1.883 billion (\$2012) has included a sufficient allowance for contingency costs to accommodate final design changes, increases in mitigation costs throughout the development of the final proposed project, and overall uncertainty in mitigation costs.

RPCC argues that the \$33.8 million (\$35.5 million (\$2012)) Encina transformer included in SDG&E's plan of service for the Coastal Link Alternative is not necessary if CAISO will approve a remedial action scheme.⁶⁸⁹ CAISO is responsible for making the final determination regarding whether the Encina transformer is necessary. Given the uncertainty associated with the need for the Encina transformer, which will not be resolved until CAISO speaks to this issue, we include it in the maximum reasonable cost we adopt here today. However, the maximum reasonable cost shall be reduced by \$35.5 million (2012\$) if the CAISO finds that the Encina transformer is unnecessary.

We also understand that the Forest Service may not allow all of the undergrounding in Alpine Boulevard that we include in this cost cap. We include \$91 million in this maximum reasonable cost assuming approximately 8 miles of undergrounding (i.e., the original 6 miles in SDG&E's estimate for the Modified Southern Route and 2 additional miles). The maximum reasonable cost shall be reduced by \$11.33 million (2012\$) per quarter mile for that portion of the authorized undergrounding that is not performed.⁶⁹⁰

⁶⁸⁹ RPCC Phase 2 Opening Brief, 19.

⁶⁹⁰ As noted above, we added \$91 million (2012\$) to the cost cap to account for two additional miles (i.e., 8 additional quarter miles) of undergrounding. \$91 million / 8 = \$11.33 million.

A.06-08-010 COM/MP1/tcg

In determining the maximum cost deemed reasonable, the Commission has previously recognized the need for adjustments to cost caps in other decisions granting CPCNs.⁶⁹¹ However, our ability to examine potential future cost increases for Sunrise does not translate into an approval at any cost, as discussed below. Further, given that Sunrise is one of the largest and most complicated transmission projects in California's history, we shall require SDG&E to file quarterly Sunrise project status updates. Contained in these status reports shall be, at minimum:

- Comprehensive project development schedule, including estimated project in-service date;
- Any changes in project scope and schedule, including the reasons for such changes;
- Specifically address the need for the Encina transformer, the cost of undergrounding in Alpine Boulevard, and the amount of undergrounding contemplated;
- Any engineering difficulties encountered in constructing the project;
- Total estimated project costs;
- Actual spending to date;
- Any and all filings submitted to FERC for ultimate cost recovery through transmission rates; and
- Any additional information SDG&E believes relevant and necessary to accurately convey the status of the Sunrise project.

⁶⁹¹ For example, several decisions adopting an estimate of the maximum reasonable and prudent cost allowed for adjustments to the estimated cost cap e.g., the Devers-Palo Verde 2 project (D.88-12-030), Otay-Mesa Transmission Project (D.05-06-061), Silvergate Substation Project (D.06-09-022), and the Jefferson-Martin 230 kV transmission project (D.04-08-046).

A.06-08-010 COM/MP1/tcg

This quarterly report shall be served (but not filed) on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

Upon completion of the final, detailed engineering design-based construction estimates for the authorized project, SDG&E may apply for a higher maximum cost if it can provide adequate justification, and must apply for a lower maximum if it appears that actual cost will be lower than the adopted estimate by at least 1%. We believe this requirement assures that SDG&E shall only recover the actual cost of the project, so if events reduce costs or the predicted scope of work, any cost reductions will be reflected in rates. We do want to emphasize that we have required SDG&E to provide a good faith estimate of the costs of Sunrise in this proceeding. We are operating under the assumption that SDG&E has operated in good faith, and we will be vigilant in monitoring the actual costs of the Sunrise transmission line.

21. Miscellaneous Procedural Matters

We resolve all pending motions in the ordering paragraphs. Likewise, on our own motion, we formally receive in evidence certain exhibits that were overlooked during the press of hearing as well as additional, specified CAISO workpapers and a data request response, and we receive as reference exhibits, the Draft EIR/EIS, the Recirculated Draft EIR/Supplemental Draft EIS, the Final EIR/EIS, and the Revisions to the Final EIR/EIS, which constitute the complete EIR/EIS prepared for Sunrise.

22. Comments on Alternate Proposed Decision

The alternate proposed decision of the assigned Commissioner in this matter was mailed to the parties in accordance with Section 311 of the Public

A.06-08-010 COM/MP1/tcg

Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure.

On November 7, the Commission heard oral argument. On November 18, Commissioner Peevey mailed an alternate proposed decision for comment. Comments on the alternate proposed decision were filed on December 8, 2008 by CAISO, Conservation Parties, DRA, Edison, Geothermal Energy Association, JAM Investments, Mussey Grade, Nevada Hydro, Rancho Peñasquitos, SDG&E and UCAN, and also (pursuant to a motion granted to afford them limited party status) by PG&E. Reply comments were filed on December 15 by DRA, SDG&E, Conservation Groups, Zemer Energia, and CAISO. We have carefully weighed parties' comments and in situations deemed appropriate have modified our proposed decision.

Conservation Parties argue that we have failed to fully consider in this record the implications for Sunrise of the Cal Fire and CPSD investigations and reports on the 2007 San Diego wildfires. They request that we expressly rule on the January 18, 2008 *Motion of the Center for Biological Diversity, Sierra Club, Mussey Grade Road Alliance, and UCAN for Inclusion of the Fire Investigation Results in the Record*. Section 15 and Appendix C of today's decision, which discuss wildfire risks extensively, recognize both the Cal Fire and CPSD reports, and the EIR/EIS also references them. We are examining in three other, pending dockets whether any entity subject to our jurisdiction bears responsibility for those fires by failure to comply with existing laws, such as rules on vegetation maintenance, and whether prospective rules changes are necessary. See Investigation (I.) 08-11-006 and I.08-11-007 and Rulemaking 08-11-005. Any rule changes would apply to all applicable transmission lines. There is no need to include the results of those ongoing investigations into the record of this proceeding or

A.06-08-010 COM/MP1/tcg

otherwise consolidate those dockets with this application. The draft decision denies Conservations Groups' motion as moot and there is no need to revise that disposition.

Conservation Groups argue that requiring a performance bond is not sufficient to ensure that mitigation land is available.⁶⁹² The mitigation measure referenced by Conservation Groups requires more than a performance bond to ensure that mitigation land will be purchased. Specifically, it requires that all offsite mitigation parcels "must be acquired or their acquisition must be assured before the line is energized." This is a legally valid performance standard; a performance bond is cited as one example of how SDG&E could meet this standard. Critically, SDG&E must also show, at a minimum, legal descriptions and maps of all parcels to be acquired, a schedule that includes phasing relative to impacts, the timing of conservation easement recording, and the initiation of habitat management activities relative to acquisition. Moreover, this Commission, BLM, and a number of other land management agencies would have to approve any assurance plan proposed by SDG&E for any parcels not actually acquired prior to vegetation disturbing activities to ensure SDG&E meets this standard.

Conservation Groups claim our CEQA findings will lead to violation of Section 7 of the Federal Endangered Species Act (ESA).⁶⁹³ We find that Conservation Groups' claim has no merit. The Final EIR/EIS thoroughly discloses the impacts the Final Environmentally Superior Southern Route will have on protected species, including the golden eagle. Pages E.1-29 - E.1-30 of the Final EIR/EIS discuss the impact of the project on the golden eagle and its

⁶⁹² Conservation Groups Opening Comments, 18-19.

⁶⁹³ Conservation Groups Opening Comments, 21-22.

A.06-08-010 COM/MP1/tcg

habitat and disclose that the impact would be significant and unavoidable for golden eagle nests within 4,000 feet of project activity. Thus, we adopt mitigation requiring: “No construction or maintenance activities shall occur within 4,000 feet of an eagle nest during the eagle breeding season (December through June).”

Conservation Groups also claim that approval of a Southern Route will place BLM in violation of Section 7. This claim fails to recognize that BLM will conduct the required consultation under Section 7 of the ESA.⁶⁹⁴ The U.S. Fish and Wildlife Service is expected to publish a Biological Opinion in January 2009 that will define the requirements for compliance with the ESA.

Because the Final EIR/EIS both discloses the impacts the Final Environmentally Superior Southern Route could have on golden eagles and provides for the required Section 7 consultation process, Conservation Groups’ claim that our CEQA findings will lead to violations of the ESA is without merit.

UCAN claims we have failed to consider the risks presented by SDG&E’s reliance upon the Imperial Valley Substation for 70% of its import capacity, as the substation is located in a seismically active area.⁶⁹⁵ We disagree. The Final

⁶⁹⁴ See Final EIR/EIS at D.2-10:

Protocol survey reports will be prepared in accordance with USFWS protocol for use by the BLM and USFWS as part of the Section 7 consultation. A Section 7 consultation is a process during which the lead federal agency, in consultation with the Secretary of the Interior/Secretary of Commerce, ensures that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction of, or adverse modification of, designated critical habitat. The lead federal agency for the SRPL Project is the BLM. The BLM will likely initiate the Section 7 consultation after selection of the preferred project route.

⁶⁹⁵ UCAN Opening Comments at 4.

A.06-08-010 COM/MP1/tcg

EIR/EIS addresses seismic risk impacts at Imperial Valley Substation in Section D.13.5 and makes the following conclusion:

Although the Imperial Valley Substation is subject to seismic risks related to groundshaking from the nearby active San Andreas and San Jacinto fault zones, and the Brawley seismic zone, no new geologic or seismic impacts would result at the existing Imperial Valley Substation due to the operation of new line structures and equipment similar to the respective structures already in place within the existing fenced area of the substation.

23. Assignment of Proceeding

Dian M. Grueneich is the assigned Commissioner. Steven Weissman was assigned as the ALJ in this proceeding in August 2006 and Jean Vieth was co-assigned in August 2008.

24. Conclusion

After review of the entire record and for all the reasons discussed above, we conclude that we should grant SDG&E's request for a CPCN to construct Sunrise using the Environmentally Superior Southern Route.

Findings of Fact

1. At the time the Commission's *Economic Methodology Decision* issued, SDG&E's 2005 Application had been pending for almost one year and CAISO's Board already had approved CAISO's economic evaluation of the Proposed Project. The assigned Commissioner never issued a ruling that elected to apply the rebuttable presumption in the *Economic Methodology Decision* to the economic analysis approved by CAISO's Board.

2. In the CPCN review at the Commission, CAISO has not relied upon the economic evaluation presented to its Board but has presented an entirely new economic analysis, which it developed during Phase 1 and 2 hearings. The assigned Commissioner never issued a ruling that elected to apply the rebuttable

A.06-08-010 COM/MP1/tcg

presumption in the *Economic Methodology Decision* to this new economic analysis by CAISO.

3. The CAISO Board-approved economic evaluation has become irrelevant. The subsequent CAISO economic evaluation does not fulfill the streamlining purpose of the *Economic Methodology Decision*, does not comply with CAISO's own TEAM criteria or with the principles and minimum requirements of the *Economic Methodology Decision*, and granting a rebuttable presumption at this stage would be fundamentally unfair to the other parties.

4. For purposes of developing an Analytical Baseline for determining the energy benefits, reliability benefits, and potential savings from accessing least cost renewable resources for the Sunrise alternatives, it is reasonable to adopt CAISO's modeling approach to quantifying energy benefits, reliability benefits, and renewable resource savings and to use CAISO's final Phase 2 modeling assumptions with the following deviations:

- (a) use the Energy Commission staff's November 2007 Forecast of 1-in-10 peak demand, including its embedded assumptions for the California Solar Initiative, energy efficiency, and other distributed generation;
- (b) adjust the November 2007 Forecast by including the demand response savings we approved in SDG&E's most recent Long Term Procurement Plan;
- (c) assume that the existing South Bay Power Plant will retire by December 31, 2012 or the end of the year in which Sunrise comes online, whichever is earlier;
- (d) assume 540 MW from the Carlsbad Energy Center will come online in the summer of 2013, resulting in a net increase of 222 MW;
- (e) assume only 25% of the new coal fired generation identified in the SSG-WI database will come online and that combined

A.06-08-010 COM/MP1/tcg

cycle resources will be used to replace the canceled coal plants;

- (f) assume that at least 50% of the out-of-state renewables identified by CAISO for its RPS Cost Savings modeling will be available to California;
- (g) adopt CAISO's initial renewable cost estimates;
- (h) assume the implementation of UCAN's Miguel Import Limit Upgrade;
- (i) assume Imperial Irrigation District's Path 42 increased rating and upgrades (reflecting a transfer capability of 1,200 MW) and its Dixieland-Imperial Valley line;
- (j) assume Rancho Peñasquitos' proposed Coastal Link Alternative; and
- (k) assume SDG&E's estimated capital costs for all of the Sunrise alternatives, and SDG&E's 58-year amortization period for the Sunrise transmission alternatives.

5. Given its relative low cost and apparent feasibility, SDG&E should pursue implementation of UCAN's Miguel Import Limit Upgrade proposal and accordingly, UCAN's motion should be granted as specified herein.

6. A review of Path 44's rating is warranted given the passage of time since the last review and given UCAN's credible evidence that an increase in Path 44's rating may be possible.

7. Table 5 in Section 7.1.2 of this decision reasonably projects, based on our adopted Analytical Baseline assumptions, the "reliability need" for SDG&E's service area by 2014 and perhaps sooner given the many uncertainties inherent in these assumptions.

8. The Compliance Exhibit energy benefits estimates of \$5 million per year under 20% RPS and \$18 million per year under 33% RPS are the most reasonable estimates in the record.

A.06-08-010 COM/MP1/tcg

9. We find that the combustion turbine costs assumed by CAISO are reasonable; we adopt CAISO's modeling methodology for reliability benefits with our adopted Analytical Baseline assumptions.

10. CAISO's renewable resource savings model implies that Sunrise will not generate renewable resource savings assuming a 20% RPS. Under 33% RPS, Sunrise generates significant potential renewable resource savings.

11. CAISO's renewable resource savings modeling does not reflect the way in which the RPS program currently operates in California. However, CAISO's model is a useful tool to identify potential cost savings from the construction of Sunrise.

12. Since 2002, the Commission has approved at least 95 contracts with renewable resources for 5,900 MW including 61 contracts with new renewable projects, totaling 4,480 MW, all under the existing RPS framework. These contracts have not been the same as the lowest cost resources identified in CAISO's analysis.

13. Our Update to the Compliance Exhibit corrects for discovered errors and makes adjustment in response to comments by parties in order to reasonably analyze the Compliance Exhibit's four cases against the Analytical Baseline assumptions. The Update reasonably makes the following adjustments to the Compliance Exhibit:

- (a) assumes CAISO's Phase 2 combustion turbine costs for all cases;
- (b) adjusts the amount of in-area renewables in the All-Source Generation Alternative, thereby changing the distribution of renewables throughout the WECC, consistent with CAISO's assumed supply curves;
- (c) subtracts \$367 million per year from the assumed capital cost of the All-Source Generation Alternative in each scenario to

A.06-08-010 COM/MP1/tcg

address the 37 MW of solar PV already paid for in the California Solar Initiative program;

- (d) adjusts the treatment of renewable resource savings for the All-Source Generation Alternative so that least cost renewable resources are delivered in all cases; and
- (e) updates the capital cost estimate for the Modified Southern Route to match the revised cost estimate of \$1.883 billion adopted in this decision.

14. Modeling performed by the CAISO, updated for our baseline assumptions, demonstrates total projected reliability benefits of the Environmentally Superior Southern Route to be \$214 million per year.

15. Sunrise will not only meet SDG&E's reliability needs, but it will facilitate the development of renewable resources, thus advancing state policy to reduce GHG emissions.

16. Sunrise will provide a number of desirable, but unquantifiable, reliability benefits. Among other things, Sunrise will create a more robust southern California transmission system, and provide insurance against unexpected high load growth in SDG&E's service area.

17. Assuming a 20% RPS, Sunrise will result in approximately \$40 million per year in net benefits.

18. Assuming a 20% RPS, the All-Source Generation Alternative results in higher net benefits than Sunrise, under two different renewable cost scenarios.

19. Assuming 33% RPS and CAISO Phase 2 combustion turbine costs, Sunrise will generate over \$115 million per year in net benefits, which significantly exceeds the \$93 million per year of net benefits estimated for the All-Source Generation Alternative.

20. Anza-Borrego's General Plan, which governs State Parks' management of the Anza-Borrego, does not provide an exemption from its mandate for

A.06-08-010 COM/MP1/tcg

construction and maintenance of a major transmission line like the Proposed Project.

21. If State Parks determined that any Northern Route through Anza-Borrego was inconsistent with the existing Anza-Borrego General Plan, the State Parks and Recreation Commission would have to exercise its discretionary authority to adopt revisions to the General Plan to allow the siting and construction of this kind of project before State Parks could issue any permits, which would cause substantial delay.

22. The Proposed Project's Anza-Borrego Link will require de-designation of 50.2 acres of state wilderness; other Northern Routes would have a lesser, direct impact on wilderness but still might require de-designation of some wilderness land.

23. Because SDG&E, BLM, Imperial Irrigation District and State Parks contest the width and continuity of the existing easement through Anza-Borrego, any approval of a Northern Route likely would lead, at minimum, to a complex and significant debate over the legal status and rights associated with easements through Anza-Borrego, and would cause substantial delay.

24. Any Northern Route would have massive significant and unmitigable environmental impacts on Anza-Borrego; be contrary to community values – both those of the people who visit Anza-Borrego, as well as the values embodied in our state laws protecting areas like Anza-Borrego; be permanently detrimental to recreational and park areas within Anza-Borrego; and have permanent and negative impacts on historical and aesthetic resources in Anza-Borrego.

25. Based on the fire history reviewed herein, 230 kV and 500 kV lines placed on steel towers are highly unlikely to ignite fires. However, given the fire risks associated with any transmission line route in San Diego County, approval of the

A.06-08-010 COM/MP1/tcg

Final Environmentally Superior Southern Route must be conditioned upon the most rigorous, reasonable mitigation available to reduce the risk of fire ignition; therefore, this Commission should impose all feasible mitigation measures specified in the ordering paragraphs.

26. While the fire history reviewed herein suggests a concurrent outage involving the Southwest Powerlink and the Environmentally Superior Southern Route is more likely than one involving the Environmentally Superior Northern Route, a dual line outage could occur whether or not a new transmission line is collocated with the Southwest Powerlink, since special proximity is not the only indicator of a concurrent outage. Moreover, the 230 kV segments of the Environmentally Superior Northern Route put more assets at risk of fire.

27. The All-Source Generation Alternative, the In-Area Renewable Alternative, and the LEAPS Transmission-Only Alternative – the three alternatives that the Final EIR/EIS determines to be environmentally superior to the Final Environmentally Superior Southern Route, are not feasible when the Commission factors in certain other considerations, including meeting California’s broader policy goals.

28. The Final Environmentally Superior Southern Route is the highest ranked Alternative that will facilitate Commission policy to achieve GHG reductions through renewable procurement at 33% RPS levels in the shortest time possible with the greatest economic benefits; therefore, the Final Environmentally Superior Southern Route is necessary to meet California’s GHG goals by facilitating increased levels of renewable development.

29. The Final EIR/EIS Environmentally Superior Southern Route does not include, as part of the Coastal Link Alternative, reconductoring of the Poway - Pomerado 69 kV transmission line.

A.06-08-010 COM/MP1/tcg

30. The EIR/EIS has adequately considered the concerns of the affected agricultural communities in siting the Final Environmentally Superior Southern Route; moreover, approval of the Final Environmentally Superior Southern Route rather than a Northern Route significantly mitigates impacts on agricultural lands.

31. SDG&E should notify the Commission of any changes in the final project development schedule for the Final Environmentally Superior Southern Route.

32. The Final EIR/EIS was presented to the Commission, and the Commission has received, reviewed, and considered the information contained in the Final EIR/EIS.

33. The Final EIR/EIS reflects the Commission's independent judgment and analysis.

34. Significant and unavoidable environmental impacts will result from construction and operation of the Final Environmentally Superior Southern Route; however, the Commission has adopted all feasible mitigation measures; adopted certain alternatives that reduce the impacts of the Final Environmentally Superior Southern Route; rejected as infeasible alternatives to the Final Environmentally Superior Southern Route; recognized all significant, unavoidable impacts; and balanced the benefits of the Final Environmentally Superior Southern Route against its significant and unavoidable impacts.

35. The benefits of the Final Environmentally Superior Southern Route outweigh and override its significant and unavoidable impacts, for the reasons set forth in the statement of overriding considerations in Section 18.3 of today's decision.

36. The proposed Mitigation Monitoring, Compliance, and Reporting Program (Mitigation Monitoring Program) in the Final EIR/EIS is designed to

A.06-08-010 COM/MP1/tcg

ensure compliance with the changes in the project and mitigation measures imposed on the authorized project during implementation and recommends a framework for implementation of the Mitigation Monitoring Program by this Commission as the CEQA lead agency.

37. SDG&E should amend its EMF Management Plan as needed to apply its no-cost EMF management techniques to the Final Environmentally Superior Southern Route.

38. The Commission's broad authority over the procurement process is guided by the greenhouse gas abatement mandates contained in SB 1368 and AB 32, which collectively require that SDG&E and the other IOUs aggressively procure renewable resources and limit their use of fossil-fired energy.

39. SDG&E has committed to (1) not contract, for any length of term, with conventional coal generators that deliver power via Sunrise, (2) replace currently approved renewable energy contract deliverable via Sunrise that fails with a viable contract with a renewable generator located in Imperial Valley, and (3) voluntarily raising SDG&E's RPS goal to 33 percent by 2020.

40. PG&E, Edison, and SDG&E can all play an important role in the development of Imperial Valley renewable energy.

41. Broad concerns about the RPS program are best considered in the context of R.08-08-009.

42. The reasonable maximum cost for the Final Environmentally Superior Southern Route pursuant to § 1005.5(a) is \$1.883 billion (\$2012), as calculated in Section 20 of today's decision.

43. SDG&E shall only recover the actual cost of the project; if events reduce costs or the predicted scope of work, any cost reductions will be reflected in rates.

A.06-08-010 COM/MP1/tcg

44. Sunrise is one of the largest and most complicated transmission projects in California's history; therefore we shall require SDG&E to file quarterly Sunrise project status updates, as discussed herein.

45. SDG&E should take the necessary steps to institute a review of Path 44's rating, should report within 60 days of the effective date of this decision on the status of the review and should serve the report on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

46. The exhibits specified in the ordering paragraphs were identified at hearing but inadvertently, were not received in evidence. The CAISO Workpapers and data request response specified in the ordering paragraphs should be identified and received in evidence, respectively, as CAISO Exhibit I-15 and CAISO Exhibit I-16. To ensure the completeness of the record, the complete EIR/EIS should be made a reference exhibit as indicated in the ordering paragraphs.

Conclusions of Law

1. The Commission has jurisdiction over the proposed transmission project pursuant to § 1001 et seq.
2. The preponderance of the evidence standard, the default standard in civil and administrative law cases, is the applicable standard of review here.
3. Neither the CAISO Board-approved economic evaluation nor the subsequent CAISO economic evaluation should be granted a rebuttable presumption under the Commission's *Economic Methodology Decision*.
4. Sunrise is the best solution to meeting SDG&E's current and future resource and reliability needs.
5. Anza-Borrego is subject to the California Wilderness Act.

A.06-08-010 COM/MP1/tcg

6. The Final EIR/EIS has been completed in compliance with CEQA and should be certified.

7. The Mitigation Monitoring Program in the Final EIR/EIS should be adopted.

8. Consistent with our interpretation of § 625 in D.01-10-029, the appropriate standard of notice for Sunrise is that prescribed by § 625(a)(1)(B), which only requires notice to the Commission Calendar.

9. The Commission has jurisdiction and responsibility pursuant to § 1005.5(a) to specify a “maximum cost determined to be reasonable and prudent” for the Sunrise project. If, as specified in the ordering paragraphs, the cost estimates for the Final Environmentally Superior Southern Route should prove to be materially lower than or higher than the adopted cost cap, SDG&E shall request an adjustment to the cost cap.

10. Since no party will be prejudiced thereby, the exhibits specified in the ordering paragraphs should be received in evidence and the complete EIR/EIS should be made a reference exhibit.

11. UCAN’s motion regarding its Miguel Import Limit Upgrade proposal should be granted as specified in the ordering paragraphs. Since no party will be prejudiced thereby, these motions should be granted: all pending motions of the CAISO for leave to file late and leave to submit additional testimony; all pending motions to adopt transcript corrections; the motion of Powers Engineering Requesting Permission for Late Filing of Brief and Reply Brief. Today’s decision on the merits of Sunrise renders all other pending motions moot.

A.06-08-010 COM/MP1/tcg

O R D E R

IT IS ORDERED that:

1. The request of San Diego Gas & Electric Company (SDG&E) for a certificate of public convenience and necessity to construct the proposed Sunrise Powerlink Transmission Project (Sunrise) is granted for the routing alternative identified in the Final Environmental Impact Report/Final Environmental Impact Statement (Final EIR/EIS) as the Final Environmentally Superior Southern Route, subject to the requirements in Ordering Paragraphs 3 through 6. The Final EIR/EIS Environmentally Superior Southern Route does not include, as part of the Coastal Link Alternative, reconductoring of the Poway - Pomerado 69 kV transmission line.

2. The Final EIR prepared for Sunrise is certified.

3. SDG&E shall notify the Commission of any changes in the final project development schedule for the Final Environmentally Superior Southern Route.

4. The Mitigation Monitoring Program for the Final Environmentally Superior Southern Route in the Final EIR/EIS is adopted and all feasible mitigation measures identified in the Final EIR/EIS are imposed upon construction of the Final Environmentally Superior Southern Route, including:

- (a) requiring fire-safe construction practices to reduce the risk of wildfire ignitions during construction;
- (b) prohibiting construction during extreme weather conditions to reduce the risk of potentially catastrophic wildfire ignitions during construction;
- (c) ensuring adequate coordination for emergency fire suppression to avoid project personnel and equipment interference with firefighting operations;
- (d) ensuring adequate removal of hazardous vegetation;

A.06-08-010 COM/MP1/tcg

- (e) requiring annual contributions to a Defensible Space Grants Fund that will assist in the maintenance of defensible space requirements and in the implementation of other fire-safe measures at the private residences most at risk of a project-related wildfire;
- (f) requiring the replacement of existing 69 kV wood poles that are within 100 feet of the project with steel poles to mitigate the potential fire hazard of a wood pole being knocked into the adjacent conductors;
- (g) requiring annual contributions to a Firefighting Mitigation Fund that will improve fire prevention measures and help improve fire protection equipment and services;
- (h) requiring a Memorandum of Understanding between SDG&E, Cal Fire, and Cleveland National Forest to coordinate effective fire plans and emergency procedures;
- (i) requiring weed abatement and controls for invasive weeds to prevent establishment of non-native plants that have a high ignition potential and carry fires at a high rate of spread; and
- (j) requiring climbing inspections on 10% of the project structures annually to improve detection of imminent component failures that could result in wildfire ignitions.

5. SDG&E shall amend its Electro Magnetic Field (EMF) Management Plan as needed to apply its no-cost EMF management techniques to the Final Environmentally Superior Southern Route.

6. A cost cap of \$1.883 billion (\$2012) is adopted for the Final Environmentally Superior Southern Route. SDG&E shall apply to the Commission for an adjustment of the cost cap in the following instances:

- (a) Once SDG&E has developed a final, detailed engineering design-based construction estimate for the Final Environmentally Superior Southern Route, if this estimate is one percent or more lower than the authorized maximum reasonable and prudent cost identified, SDG&E shall, within 30 days, file an advice letter to show cause why the

A.06-08-010 COM/MP1/tcg

Commission should not adopt a lower amount as the maximum reasonable and prudent cost to reflect the final estimate.

- (b) If SDG&E's final, detailed engineering design-based construction estimate for the authorized project exceeds the authorized maximum cost, SDG&E shall, within 30 days, file an advice letter to seek an increase in the approved maximum cost pursuant to § 1005.5(b).

7. The documents that constitute the Final EIR/EIS are received as Reference Exhibits on the effective date of this decision, as follows:

- (a) Draft EIR/EIS – Reference Exhibit A;
- (b) Recirculated Draft EIR/Supplemental Draft EIS – Reference Exhibit B;
- (c) Final EIR/EIS – Reference Exhibit C; and
- (d) Revisions to the Final EIR/EIS – Reference Exhibit D.

8. The following exhibits are received in evidence on the effective date of this decision: Conservation Groups Exhibit C-15; Imperial Irrigation District Exhibit ID-4; Mussey Grade Exhibit MG-32; Powers Engineering Exhibit Powers-1; and Rancho Peñasquitos Exhibits R-9, R-10, R-11, R-12, R-13, and R-14.

9. The workpapers of the California Independent System Operator (CAISO) with the file names CAISO3 SD&LA v5.xls, CAISO3 SD&LA v5 less LCR case.xls, and CAISO3 SD&LA v4.xls are identified as CAISO Exhibit I-15 and received in evidence on the effective date of this decision.

10. CAISO's data request response to the Commission's environmental consultant, entitled "Information Request #2 to California Independent System Operator," as subsequently updated by CAISO to correct fuel oil emissions rates and then served on the parties to this proceeding by email on August 4, 2008, is identified as CAISO Exhibit I-16 and received in evidence on the effective date of this decision.

A.06-08-010 COM/MP1/tcg

11. Pending motions are resolved as follows:

- (a) All pending motions of CAISO for leave to file late and leave to submit additional testimony are granted;
- (b) All pending motions to adopt transcript corrections are granted;
- (c) The June 5, 2007 *Motion to Compel SDG&E to Upgrade its Import Capability at Miguel Substation* filed by Utility Consumer's Action Network (UCAN) is granted as specified herein and within 60 days of the effective date of this decision, SDG&E shall serve (but not file) a status report on all Commissioners, the Director of the Commission's Energy Division, and the service list for Application (A.) 06-08-010;
- (d) The September 24, 2008 motion of Powers Engineering *Requesting Permission for Late Filing of Brief and Reply Brief* is granted;
- (e) UCAN's June 5, 2007 Motion to Enjoin SDG&E from Entering Into a Permanent Cross-Trip Arrangement with CFE is denied as moot; and
- (f) All motions or portions of motions that have not otherwise been resolved are denied as moot.

12. SDG&E shall take the necessary steps to institute a review of Path 44's rating and, within 60 days of the effective date of this decision, shall report on the status of that review and shall serve (but not file) the report on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

13. SDG&E shall file quarterly Sunrise project status updates. Contained in these status reports shall be, at minimum, a comprehensive project development schedule, including estimated project in-service date; any changes in project scope and schedule, including the reasons for such changes; any engineering difficulties encountered in constructing the project; the need for the Encina transformer, the cost of undergrounding in Alpine Boulevard, and the amount of

A.06-08-010 COM/MP1/tcg

undergrounding contemplated; total estimated project costs; actual spending to date; any and all filings submitted to FERC for ultimate cost recovery through transmission rates; and, any additional information SDG&E believes relevant and necessary to accurately convey the status of the Sunrise project. This quarterly report shall be served (but not filed) on each Commissioner, the Director of the Commission's Energy Division, and the service list for A.06-08-010.

14. The assigned Commissioner in R.08-08-009 shall issue an Assigned Commissioner Ruling putting forth proposals, as discussed in this decision, within 60 days of the effective date of this decision.

A.06-08-010 COM/MP1/tcg

15. The issues in the *Assigned Commissioner and Administrative Law Judge's Scoping Memo and Ruling*, November 1, 2007, and *Revised Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge*, June 20, 2008, have been addressed and this proceeding is resolved for the purpose of compliance with Public Utilities Code Section 1705.1. However, the proceeding remains open to address, as an adjudication, the issues raised by the *Assigned Commissioner's Revised Scoping Memo and Ruling Regarding Possible Rule 1.1 and Rule 8.3 Violations; Order to Show Cause*, August 1, 2008.

This order is effective today.

Dated December 18, 2008, at San Francisco, California.

MICHAEL R. PEEVEY
President
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY ALAN SIMON
Commissioners

I will file a dissent.

/s/ DIAN M. GRUENEICH
Commissioner

I reserve the right to file a concurrence.

/s/ RACHELLE B. CHONG
Commissioner

I reserve the right to file a concurrence.

/s/ JOHN A. BOHN
Commissioner

I reserve the right to file a concurrence.

/s/ TIMOTHY ALAN SIMON
Commissioner

D.08-12-058
A.06-08-010

Dissent of Commissioner Dian M. Grueneich

Overview

I dissent from today's majority decision to approve the \$2 billion Sunrise Powerlink Transmission Project (Sunrise) because it fails to include a clean energy guarantee even though the legal, factual, and policy basis for Sunrise is to deliver renewable resources. My Alternate proposed decision contained such a provision and explained in detail why this requirement was both workable and necessary. The text of that renewable requirement is attached hereto as Attachment A.

Because the majority decision does not include such a renewable requirement, I cannot support it. Without a renewable requirement, we spend billions of ratepayer money on a new transmission line that provides no guarantee of benefits to San Diego Gas and Electric Company (SDG&E) ratepayers, can be used to transmit non-renewable energy, and may well undercut the state's global warming goals. We also miss a major opportunity to create a vibrant green collar economy in Imperial Valley, and risk exporting these skilled jobs across our borders.

The majority decision puts its faith – and ratepayer money - in expectations for the invisible hand of market forces to produce the results the Commission desires, in promises of possible reforms, and in waiting to see what happens while hoping for the best. As the Assigned Commissioner to this case, this “just trust us” approach is one I cannot support.

Discussion

The majority decision finds that Sunrise is not needed for reliability in San Diego until at least 2014 nor is it needed to meet a 20% Renewable

D.08-12-058
A.06-08-010

Portfolio Standard (RPS). I agree. SDG&E has already received more than enough offers for renewable projects that do not need Sunrise to fulfill its entire RPS obligation of 20% by 2010.¹ The record for this case also shows that Sunrise would actually increase costs to meet the RPS target of 20% by approximately \$90 million. In sum, the majority decision agrees with my Alternate proposed decision that this massive investment of ratepayer money cannot be justified based on near term reliability or 20% RPS needs.

The basis for the majority decision's approval of Sunrise is that the line is needed to meet a 33% RPS and that doing so provides significant economic, reliability and greenhouse gas (GHG) reduction benefits. The California Independent System Operator (CAISO) projects that Sunrise can facilitate development of over 1,900 MW of Imperial Valley renewable resources between 2011 and 2015, including 1,000 MW of high capacity-factor geothermal resources. According to the record in this case, if these resources are developed and delivered on Sunrise, Sunrise will generate \$94 million per year in net benefits for ratepayers.

However, the majority decision does not impose any enforceable obligations on SDG&E to develop renewable resources or to carry them over Sunrise. The Commission's decision is silent regarding any requirements for SDG&E to develop any renewables to be transmitted over Sunrise, to contract for any new Imperial Valley renewable resources, or to conduct any procurement activities specific to Imperial Valley. It does not state any commitment by this Commission, or for SDG&E, to

¹ For example, SDG&E has placed enough in-state projects north of the San Onofre Nuclear Generating Station (SONGs) on its short list to meet its full 20% RPS obligation. These projects do not require Sunrise.

D.08-12-058
A.06-08-010

ensure a specific level of renewable development in the Imperial Valley will be carried over Sunrise, even though the legal, factual, and policy rationale for approving Sunrise hinges on success in these matters. In these difficult times, where regulators' failure to regulate has contributed to major financial crises, the majority decision to trust instead of imposing meaningful requirements is inappropriate.

With the majority decision, this Commission will wait and see what happens in our usual procurement process for 2009. If there are no or few bids from Imperial Valley developers, we will consider proposals that our staff monitor what is happening in the Imperial Valley and that the utilities hold bidders conferences in their procurement processes, and perhaps require that the utilities short list any Imperial Valley bids that they receive in 2010, if they do receive any at all.

The California ratepayers who will fund Sunrise cannot afford "trust us" as a business justification for this hugely expensive line. The history of our RPS procurement to date, and for SDG&E in particular, has been criticized by many as too slow and based more on contracts - or promises of contracts - than renewable delivery. In addition, CAISO itself states that delay in procurement of Imperial Valley renewables by only one year will reduce Sunrise's benefits by \$11 million per year. Further, the RPS statute clearly intended that the majority of the renewable resources would be in state. Public Utilities Code Section 399.11 specifies that the RPS can protect public health and improve environmental quality throughout the state, stimulate sustainable economic development, create new employment opportunities, and reduce reliance on imported fuels. According to a recent study on green energy jobs, a full build out of renewable potential

D.08-12-058
A.06-08-010

in Imperial Valley could result in thousands of new jobs in Imperial County.² Imperial County had a 22.6 percent unemployment rate in June, the highest in California.

There are three things that needed to have been included in the Sunrise decision to meet the promise of Sunrise as a renewable line. First, the decision needed to include specific requirements for SDG&E to develop Imperial Valley renewables. That is missing from the majority decision. Second, the decision needed to include firm commitments from this Commission to expand Imperial Valley renewable development to our other electric investor-owned utilities at a specified level consistent with the record in this decision. That is also missing from the majority decision. And, finally, the decision needed to mandate the first two items starting with procurement requirements in 2009. And, that too is missing from the majority decision.

The Commission's decision cites the off-the-record representations of SDG&E's Chief Executive Officer that SDG&E will voluntarily set a 33% RPS standard for itself, replace failed existing Imperial Valley contracts with new Imperial Valley renewables, and refrain from using Sunrise for coal fired generation contracts. However, the majority decision does not mandate that SDG&E comply with its own representations.

At a 33% RPS, Sunrise will generate \$94 million per year in ratepayer benefits. However, the major assumption underlying this net benefit calculation is the development of new, high capacity renewable

² "Harvesting California's Renewable Energy Resources: A Green Jobs Business Plan," by Peter Asmus, Center for Energy Efficiency and Renewable Technologies, August 15, 2008, p. 23, www.cleanpower.org.

D.08-12-058
A.06-08-010

resources – 1,900 MW operational by 2015 - in the Imperial Valley. Without this development, the economic benefits of Sunrise disappear. The linkage is simple –SDG&E ratepayers and Californians as a whole will receive the economic, reliability and GHG emission benefits of Sunrise if – but only if -- Imperial Valley renewables are developed at the levels and within the timeframe projected by the CAISO. Further, the distinction between Imperial Valley resources and resources in other states or outside the United States is important. With Sunrise, the San Diego local reliability area will include the Imperial Valley substation; therefore, SDG&E's ratepayers will receive free reliability benefits from renewables that connect to that substation that they would otherwise have to purchase from other resources.

SDG&E's current contracts for Imperial Valley will only generate about 20% of the energy that Sunrise is capable of delivering, assuming these projects are successfully developed, constructed, and operate as proposed. These proposed Imperial Valley renewable projects, which would generate 459 MWs, are far less than the 1,900 MW of Imperial Valley renewable development that the CAISO assumed would be operational by 2015. Of the amount under contract, only 60 MW is high capacity-factor geothermal resources, compared to development of the 1,000 MW of geothermal upon which the CAISO analysis – and Sunrise approval – is based.

Specific requirements to develop renewables are also needed because the record shows that Sunrise could carry existing fossil-fired generation and facilitate the development of new fossil-fired resources outside the state. Existing transmission lines will connect Sunrise to out-of

D.08-12-058
A.06-08-010

state resources, not only in the Southwestern U.S. but also to two existing gas fired plants totaling over 1,000 MW of capacity in Baja California in Mexico. Sempra Energy through its unregulated affiliates owns and operates one of these facilities and also owns the Liquified Natural Gas (LNG) facilities that can provide natural gas to these plants.

As set forth in Attachment A hereto, my Alternate proposed decision would have imposed a 3,500 GWH/year procurement requirement on SDG&E to be acquired through existing contracts, bilateral negotiations, and a 2009 request for offers (RFO) in Imperial Valley. This amount is well within the amount of Imperial Valley renewables identified by the CAISO. My Alternate proposed decision also committed this agency to require Southern California Edison Company and Pacific Gas and Electric Company to issue Imperial Valley RFOs in 2010 in a combined amount of approximately 6,000 GWH/year, enough to achieve the level of renewable projects that the CAISO has claimed will be facilitated by Sunrise and is necessary to achieve ratepayer benefits from Sunrise. My Alternate proposed decision provided flexibility in procurement and also committed to include measures and conditions for the Imperial Valley RFOs to mitigate market power, protect ratepayers from unreasonable costs, and apply any newly developed contract viability rules to these resources.

All of these requirements are reasonable, all are workable, and most importantly they are not based on statements of hoped for outcomes, consideration of possible future regulatory actions, and undefined and unenforceable promises.

D.08-12-058
A.06-08-010

However, under any scenario that approves Sunrise, one group will still get benefits - SDG&E shareholders. They will receive approximately \$1.5 billion over the lifetime of Sunrise as their rate of return for the ratepayer funded capital investment, whether or not Sunrise is ever used to deliver any renewable power.

Conclusion

Despite the deepening recession, the foreclosure crisis, growing unemployment rates, and steadily increasing electric service shut off rates, the majority decision imposes a requirement on SDG&E ratepayers to fund the \$2 billion cost of Sunrise and the 11.5 percent rate of return for SDG&E shareholders. This is not our money, it is not SDG&E's money, it is ratepayer money. We have an obligation to ensure that SDG&E ratepayers, and not just shareholders, see a return on their investment. I am not willing to risk billions of ratepayer money to the invisible hand of the market. I cannot, in good conscience, rely on promises to consider possible proposals for reform in our procurement process in the future, when the evidentiary basis for our decision so clearly depends upon development of Imperial Valley renewables at specific levels in specific timeframes.

Consequently, I dissent.

Dated December 18, 2008, at San Francisco, California.

/s/ DIAN M. GRUENEICH
Dian M. Grueneich
Commissioner

D.08-12-058
A.06-08-010

ATTACHMENT A

Commissioner Grueneich Alternate Section 19 – Renewable Requirement

19. Requirements to Ensure Imperial Valley Renewable Development

This decision finds, based on the evidentiary record, that Sunrise is justified on reliability, economic, and 33% RPS grounds *provided that actual Imperial Valley renewable development occurs at the levels projected by CAISO*. This decision also finds, however, that Sunrise could facilitate the development of new fossil fueled generation in the western United States.⁶⁹⁸ Hence, we must take affirmative action to ensure Imperial Valley renewable development at meaningful levels.

CAISO estimates Sunrise will facilitate the development of over 1,900 MW of Imperial Valley renewables - 1,000 MW of high capacity geothermal generation and 900 MW of solar thermal generation, as shown in Table 2 in Section 6.10, above. The modeling we rely upon to reach our decision is based on this CAISO estimate of Imperial Valley renewable development. We find in Section 11.4 above that Sunrise will generate \$94 million per year in economic benefits *if* the projected 1,900 MW of new Imperial Valley renewable resources are developed and flow over Sunrise. Specifically, CAISO's projected level of Imperial Valley renewable development will generate RPS compliance benefits of approximately \$60 million per year and significant local area reliability benefits. We also find in Section 14 of this decision that development of Imperial Valley renewables will offset the construction-related GHG emissions of Sunrise

⁶⁹⁸ SDG&E Exhibit SD-5, I-21 to I-22.

D.08-12-058
A.06-08-010

and will contribute to meeting this state's carbon reduction goals. For these reasons, we find in Section 4.3 above that Sunrise is needed for 33% RPS compliance. Development of Imperial Valley renewables will also raise tax revenues and create construction and other long-term skilled jobs in the Imperial Valley, an economically depressed area. Absent CAISO's projected level of Imperial Valley renewable development, ratepayers have no assurance that their \$1.9 billion investment in Sunrise will produce economic, reliability and environmental benefits.

SDG&E claims that one of Sunrise's objectives is to provide transmission from Imperial Valley renewable resources to SDG&E's service area to assist in meeting or exceeding California's 20% RPS and the governor's proposed 33% RPS.⁶⁹⁹ However, currently SDG&E is not legally obligated to procure renewables at a 33% RPS level. Because Sunrise could be used to import fossil fired generation into California, we have no assurance that Sunrise will deliver substantial amounts of renewable generation from the Imperial Valley. If this Commission adopts the October 29, 2008 proposed decision in R.06-02-012 (Renewable Portfolio Standard proceeding) that allows utilities to purchase tradable renewable energy credits (TRECs) in lieu of entering into contracts with renewable generators, there is even less assurance that significant amounts of renewable generation in the Imperial Valley will be developed.

Consequently, to ensure the development of CAISO's projected level of Imperial Valley renewables, which will provide ratepayers the economic and

⁶⁹⁹ PEA, Section 3.1. The EIR/EIS distilled this objective into Basic Project Objective 3: to accommodate the delivery of renewable energy to meet state and federal renewable energy goals from geothermal and solar resources in the Imperial Valley and wind and other sources in San Diego County.

D.08-12-058
A.06-08-010

reliability benefits and GHG emission reductions that form the basis for this decision, we require the following:

1. SDG&E shall procure a minimum cumulative total of 3,500 GWh/year of Imperial Valley renewables⁷⁰⁰ to be delivered over Sunrise upon energization or soon thereafter, but no later than 2015.
2. SDG&E shall adjust its current compliance filings in the Long Term Procurement Plan and RPS proceedings to reflect a 33% RPS by 2020 goal within 60 days of the effective date of this decision. SDG&E shall also reflect this new RPS goal in its future procurement efforts.⁷⁰¹
3. SDG&E shall refrain from procuring contracts for coal fired generation of any length. This condition shall not apply to spot market purchases of system power.

With regard to the first requirement, we find it is reasonable and appropriate to require a significant Imperial Valley renewable procurement obligation from SDG&E for several reasons. First, absent the level of Imperial Valley renewable development within the time frame projected by CAISO, Sunrise will not generate the economic benefits projected by CAISO or this decision, and will likely result in significant ratepayer costs.⁷⁰² Second, SDG&E has claimed throughout this proceeding that Sunrise is needed to ensure

⁷⁰⁰ For purposes of this Section 19, we consider "Imperial Valley renewables" to be limited to renewables located in either Imperial County or in San Diego County that access the Sunrise line through either the Imperial Valley substation, or connections to Sunrise or to the Southwest Powerlink west of the Imperial Valley substation.

⁷⁰¹ SDG&E voluntarily offered to comply with Conditions 2 and 3 during our November 7, 2008 oral argument (Tr. 6244) and the November 13, 2008 All Party meeting with Commissioner Grueneich (Tr. 20-21).

⁷⁰² CAISO estimates ratepayer costs of \$11 million per year resulting from delayed development of Imperial Valley renewables. CAISO Exhibit I-13, 19.

D.08-12-058
A.06-08-010

development of Imperial Valley renewable resources and that it desires to purchase Imperial Valley renewables. This requirement memorializes SDG&E's claims. Third, SDG&E will earn a return on equity for its investment in Sunrise, and SDG&E's ratepayers will enjoy the reliability benefits of Imperial Valley renewable development at no additional cost – including reliability benefits from those projects under contract to other utilities.

The 3,500 GWh/year amount is significantly less than the almost 10,000 GWh of Imperial Valley renewable development the CAISO projects will occur as a result of Sunrise between 2011 and 2015, and is just over one-half of SDG&E's projected need to meet 33% RPS.⁷⁰³ The amount is reasonable given that SDG&E already has approximately 1,600 GWh/year of Imperial Valley renewable resources under Commission-approved contracts and approximately 1,300 GWh/year in additional options or rights.

⁷⁰³ We project SDG&E's 33% RPS need will be 6,540 GWh by 2020. This assumes SDG&E's forecast of sales from Phase 1 for 2009 (17,418 GWh for bundled service customers) and 1.3% annual growth in sales (per the November 2007 CEC demand forecast).

D.08-12-058
A.06-08-010**Table 14: SDG&E Imperial Valley Renewable Resources⁷⁰⁴**

Project	Status	GWh/year	Cumulative GWh/year
Esmeralda Geothermal	60 MW under contract	485	485
Bethel Solar	99 MW under contract	472	957
Stirling Solar	300 MW under contract	648	1,605
Stirling Solar	300 MW option	648	2,253
Stirling Solar	300 MW right of first refusal	648	2,901

SDG&E's signed contracts, totaling 1,605 GWh/year, may count toward the 3,500 GWh/year requirement, provided that the viability of these contracts is verified in R.08-08-009.⁷⁰⁵ Such contracts with material breaches shall be cured within a reasonable period of time or shall not be considered viable for purposes of counting towards SDG&E's procurement requirement set forth herein.⁷⁰⁶

SDG&E may pursue its procurement of incremental Imperial Valley renewables via three mechanisms. First, SDG&E may procure additional Imperial Valley renewables by successfully concluding by December 31, 2009 (as evidenced by executed power purchase agreements) any ongoing bi-lateral

⁷⁰⁴ See Table 2 in Section 6.10, above. 1,000 MW of geothermal are equal to 7971 GWh/year assuming 91% capacity. 900 MW of solar thermal are equal to 1892 GWh/year assuming 24% capacity. See, e.g., CAISO Exhibit I-2, Table 4.3.

⁷⁰⁵ SDG&E has only committed to replace the first 300 MW portion of its Stirling Solar contract, and so we only count that portion as committed under contract. Transcript from November 13, 2009 All Party Meeting, 36, 39.

⁷⁰⁶ Closing the gap between Commission-approved contracts and viable projects that will come on-line within the RPS time frame is an increasingly critical item that we and the utilities must address. We undertake review of these SDG&E contracts as a first step in a broader review of Commission-approved RPS contracts and changes to our RPS process.

D.08-12-058
A.06-08-010

negotiations commenced prior to the issuance of this decision for renewable energy deliveries upon energization of Sunrise (or soon thereafter), but no later than 2015.

Second, to ensure opportunities for an open, competitive procurement process, SDG&E shall also conclude an Imperial Valley Request for Offers by no later than December 31, 2009 (SDG&E 2009 Imperial Valley RFO). The SDG&E 2009 Imperial Valley RFO shall solicit the amount of incremental GWh that is necessary to meet the 3,500 GWh/year target upon energization of Sunrise, but no later than 2015. The RFO responses will be reviewed by this Commission in accordance with our RPS requirements, including least-cost/best-fit principles. We do not intend to procure Imperial Valley renewables at any cost and will take steps in R.08-08-009 to ensure that our commitment to develop Imperial Valley renewable will not impose unreasonable costs on ratepayers.

Third, to the extent that the above measures do not result in SDG&E's procurement of Imperial Valley renewables sufficient to meet the minimum 3,500 GWh/year target upon energization of Sunrise (or soon thereafter), but no later than 2015, SDG&E shall procure additional Imperial Valley renewables sufficient to meet the 3,500 GWh/year target through its future annual RPS solicitations.

In addition to the foregoing, in order to ensure the economic benefits of Sunrise pursuant to CAISO's projections, it is our intent that the Commission (through R.08-08-009) will direct Southern California Edison Company (SCE) and Pacific Gas and Electric Company (PG&E) to each issue a 2010 Imperial Valley RFO (SCE and PG&E 2010 Imperial Valley RFOs) to assure that the remainder of CAISO's projected Imperial Valley renewables will be developed if sufficient amounts have not been contracted for in 2009. The SCE and PG&E 2010 Imperial

D.08-12-058

A.06-08-010

Valley RFOs shall each solicit a cumulative total target of 3,182 GWh/year of Imperial Valley renewables.⁷⁰⁷ This amount may be decreased by SCE and PG&E's Imperial Valley renewable contracts executed prior to their 2010 Imperial Valley RFOs.

Further, we will use all reasonable authority to require the procurement of Imperial Valley renewables in R.08-08-009, consistent with the CAISO's projections that 9,864 GWh of Imperial Valley renewable development are necessary for Sunrise to produce the economic benefits upon which this decision rests. We will consider all appropriate measures and conditions for the Imperial Valley RFOs to mitigate market power concerns, protect ratepayers from unreasonable costs, and apply any newly developed contract viability rules to these resources. We will also ensure that terminated contracts for Imperial Valley renewables shall be replaced with other Imperial Valley renewable contracts as soon as practicable. We require each of the utilities to file reports in R.08-08-009 every six months addressing the status of their Imperial Valley procurement efforts.

SDG&E's failure to comply with the conditions set forth herein shall be deemed a violation of this decision, and SDG&E shall be subject to remedies available to the Commission to enforce the Commission's intent.

We delegate the responsibility for implementation of the requirements set forth herein to the Assigned Commissioner in R.08-08-009.

⁷⁰⁷ This amount is equal to 50% of the difference between the amount of renewable generation projected by CAISO to be developed because of Sunrise (i.e., 9,864 GWh) and SDG&E's minimum procurement obligation from the Imperial Valley pursuant to this decision (3,500 GWh). $(9,864 \text{ GWh} - 3,500 \text{ GWh}) * 0.5 = 3,182 \text{ GWh}$.

D.08-12-058
A.06-08-010

Concurrence of Commissioner Rachelle Chong
Decision Granting Certificate of Public Convenience and Necessity for
the Sunrise Powerlink Transmission Project
A.06-08-010
December 18, 2008

I strongly support the Alternate Proposed Decision of President Michael Peevey, and write separately to set forth my reasons.

California leads the nation in its strong commitment to tackle climate change, as reflected by Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006. The California Public Utilities Commission (CPUC) and the California Energy Commission jointly concluded that cutting greenhouse gas emissions from the electricity sector will require that at least a third of the state's electricity comes from renewable sources. The Air Resource Board agreed and has included a 33 percent renewable energy goal in the Final Scoping Plan to implement AB 32.

Fortunately, California is blessed with some of the best renewable resource regions in the country. No one disputes that the Imperial Valley is near the top of the list. An Energy Commission-funded study identified up to 2,000 MW of undeveloped geothermal potential in the Imperial Valley. Nearby Baja California is the home to one of Mexico's top two wind resource areas. That wind potential stretches north into eastern San Diego County. The potential for solar energy in the Imperial Valley is also substantial.

This Sunrise Powerlink Transmission project will bring clean, green renewable energy from the Imperial Valley to the cities where the energy is needed. The evidence in this case clearly shows that more transmission is needed to develop and bring to an optimal level the renewable energy

D.08-12-058
A.06-08-010

potential of the Imperial Valley. To that end, after review of the voluminous record, I am strongly convinced that the Sunrise Powerlink is a transmission project this Commission should approve. Thus, I could not support Administrative Law Judge's decision rejecting the project.

Not only will Sunrise support the state's greenhouse gas and renewable energy goals, but it will also address a reliability need in the San Diego area. Building Sunrise will avoid the need to build new fossil fuel power plants within the San Diego region to keep the lights on. Sunrise may also create an opportunity to retire older, power plants in San Diego, thus improving local air quality in the region.

When evaluating new transmission lines, the Commission is required to thoroughly consider the environmental impacts and minimize the impacts to the extent feasible. We have done that here.

Numerous potential routes were extensively reviewed for the line. The extensive environmental review that was conducted in this case identified a southern route as the best option. I agree. I do not think the northern route going through the Anza-Borrego Desert State Park was as optimal for two reasons: (1) the route through the State Park is longer and (2) the route negatively impacts wilderness areas and recreational opportunities.

It is also notable that both the alternate proposed decisions of Commissioner Grueneich and President Peevey impose very significant mitigation measures on San Diego Gas & Electric Company (SDG&E). For example, SDG&E cannot construct the project in bighorn sheep critical habitats during lambing season. The utility is also required to acquire land in other locations to mitigate land that is impacted by the Sunrise

D.08-12-058**A.06-08-010**

transmission line. Mitigation measures such as these will provide important environmental protections.

If the Commission is going to approve the construction of Sunrise, I agree that we need to do it in a way that will unlock the potential of the Imperial Valley as to renewable energy. That is why I support the alternate decision of President Peevey, and not the alternate decision of Commissioner Grueneich.

President Peevey's decision rightly recognizes that developing the Imperial Valley is a *statewide* responsibility which should be borne by all California utilities and not just by one small utility. Conditions as to procurement of renewable energy should not be layered onto a transmission line approval, but should properly be dealt with in the context of our broader Renewable Portfolio Standard (RPS) policies. The renewable energy developed in Imperial Valley may flow to any electric utility in the state. The President's decision clearly explains how we will closely monitor the utilities' renewable energy solicitations, via our oversight of the RPS program. If the Sunrise Powerlink is built and new renewable power development does *not* occur in the Imperial Valley, then we will consider measures that focus the utilities on the potential for renewable energy from the Imperial Valley. Where parties have identified problems with the existing RPS program, President Peevey recommends sensible fixes.

Commissioner Grueneich's alternate, on the other hand, layers on unnecessary regulatory requirements that, in my view, will raise costs for consumers, complicate the RPS program, and thus discourage future transmission projects. First, requiring SDG&E to buy a very large, specific

D.08-12-058
A.06-08-010

amount of Imperial Valley renewable energy by a date certain, as required by Commissioner Grueneich's decision, will drive up the price of Imperial Valley renewable resources. A low cost region will become a high cost region. I have a duty to bring ratepayers affordable energy rates.

Second, the RPS program is already quite complex. Nonetheless, Commissioner Grueneich's alternate would create special RPS requirements for just one utility, and no others. I do not think that is fair.

Third, while the CPUC and California Energy Commission have been highlighting the need for more transmission to access renewable energy for years, the onerous conditions in the Grueneich alternate will have the effect of discouraging utilities and independent developers from proposing transmission projects in our state in the future. If we want to encourage the development of renewable energy in California, we should not place unnecessary requirements on transmission projects. It is time to stop talking and time to commence building transmission lines that unlock California's renewable energy potential.

For all of these reasons, I support President Peevey's alternate proposed decision.

Dated December 18, 2008, at San Francisco, California.

/s/ RACHELLE B. CHONG
RACHELLE B. CHONG
Commissioner

D.08-12-058
A.06-08-010

Concurrence of Commissioner Bohn on D.08-12-058

I concur in President Peevey's decision. This case represents a very close call. This Commission is asked to balance long-term development prospects against the reality of immediate job loss and uneconomic uncertainty facing those who will ultimately pay for the construction of this controversial transmission line. It is expensive and, as originally proposed, was determined to go through the largest State Park in California. We are making this decision, in part, in order to encourage the development of renewable energy in the Imperial Valley, relying on the market to provide that development. It is a time of great economic uncertainty so it is not surprising that there is more than a little cynicism about the effectiveness of market solutions. We are valuing the potential long-term impact of greenhouse gases on the future against community economic decline in the near term. Finally, we are ascribing to a transmission solution greater immediate value than possible distributed generation solutions within the community user area itself.

Our decision determines that construction of Sunrise is worth the cost because it will immediately provide necessary – but perhaps but not sufficient – incentives for renewable development in the Imperial Valley and it will help SDG&E meet its renewable generation goals as laid out by this Commission. More importantly, it will contribute to the reliability and flexibility by which SDG&E can provide electricity to its service area, even in the face of some doubts as to the ultimate level of renewable energy which will flow across the line. Finally, in this atmosphere of considerable financial uncertainty, it is important that we provide as much certainty as possible to the market within which SDG&E must finance this development. There are, however, several concerns which this Commission will need to address going forward.

D.08-12-058

A.06-08-010

First, we are in a time of significant financial uncertainty, and to the extent the Commission can help the process obtain more certainty, then I think that is part of our obligation. Where I differ from Commissioner Grueneich's very well-reasoned and well-articulated position is that I believe the imposition of even nominal conditions at this time runs the risk of interfering with the financing and other operational needs of SDG&E. At the end of the day, such uncertainty can make financing perhaps more difficult and indeed, more expensive for the ratepayers.

Second, one of the concerns that anyone reading the record in this case will have will be the continually moveable positions of SDG&E on various issues, including costs, during the course of this proceeding. It is clear that SDG&E had the burden and the responsibility of providing the Commission with a good faith estimate of the cost of Sunrise against which we are to balance the benefits. I take SDG&E at its word that it did in fact provide good faith estimates of the costs of Sunrise. While unforeseen circumstances may occur which could lead to an increase in the costs of this transmission line, costs reasonably foreseeable at the time the cost estimates were presented should have been, and presumably, therefore, were included in SDG&E's presentation. Accordingly, this Commission will look with skeptical eyes at any deviations from those costs, should they occur. The integrity of our deliberative processes depends on our being able to rely on the accuracy and diligence of good faith estimates of parties before us.

Third, parties have raised concerns that the total cost estimate of Sunrise is too high to justify Commission approval, and that indeed, SDG&E will be able to go to FERC to get higher costs approved. These are serious concerns. However, this Commission does not have jurisdiction to impose a cost cap in this case, and SDG&E can go to FERC

D.08-12-058

A.06-08-010

for an increase in return on this project. I want to emphasize that the good faith estimates provided to SDG&E formed the basis of our analysis and should be taken as a benchmark, departure from which should be supported by substantial evidence. Unless we can rely on cost estimates given by the applicants, the entire deliberative process is a mockery. Moreover, it will not go unnoticed by this Commission if a utility makes a habit of going to FERC to get higher costs approved after receiving State approval based on the submission of "reasonable" cost estimates. President Peevey's decision requires that SDG&E file quarterly project status updates, which will include any changes to cost estimates and the reasons therefore. By requiring these reports, the Commission will be better able to monitor the total costs of Sunrise and evaluate SDG&E's performance.

The Legislature, the Governor and this Commission require the utilities to increase their procurement of renewable resources, and the utilities have little time to meet the mandated renewable targets. Sunrise will allow SDG&E to tap into the large renewable resources of the Imperial Valley. In addition, the existence of Sunrise also encourages others to develop these resources. However, it is also important that the Imperial Valley authorities, on their own, undertake this development. I am encouraged by the comments of the representatives from entities in the Imperial Valley who spoke at the December 18, 2009 Commission meeting that they fully intend to proceed with the development themselves. This Commission may empower, but we cannot create. Moreover, though Sunrise cannot be justified as a jobs program, it has the added bonus of helping foster economic development in the Imperial Valley.

Fourth, this Commission takes corporate representations to this body, such as the ones made by SDG&E at the November 7, 2008 Oral

D.08-12-058

A.06-08-010

Argument, very seriously. While I can appreciate Commissioner Grueneich's wish that this Commission adopt specific and enforceable conditions prior to the approval of Sunrise, I prefer to believe that corporate self-interest will dictate that SDG&E's promises are representations of accountability, and that SDG&E will take actions consistent with those representations.

In conclusion, I want to particularly take a moment to acknowledge Commissioner Grueneich for her work in this proceeding. In addition to her tireless devotion to the public process, her leadership guided the Commission through the difficult and time consuming steps needed to assess the various issues in the Sunrise proceeding in depth and in detail.

/s/ JOHN A. BOHN
John A. Bohn
Commissioner

San Francisco, CA
December 18, 2008

Idaho Power/1304
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

*In re Application of San Diego Gas & Electric Company (U 902 E) for a
Certificate of Public Convenience and Necessity for the Sunrise Powerlink
Transmission Project, A.06-08-010, D.08-12-058, Appendix C
(California PUC, Dec. 24, 2008)*

February 21, 2023

A.06-08-010 COM/MP1/tcg

Appendix C Page 1

RISK OF FIRE IGNITION

Though some causes of fire ignition are unavoidable, nonetheless, fire risk can be mitigated. Mitigation measures include power line maintenance that reduces the risk of sparking and vegetation control around towers and lines to reduce the possibility that a spark ignites a fire, and that trees and other vegetation fall on power line equipment, causing line failure.

Construction projects may also increase the risk of human-induced fires. Traditional mitigations include prohibiting construction during high fire risk times and at other times ensuring appropriate equipment is available to quickly extinguish any fire that may start. Where power lines cut paths through previously undisturbed areas, or include maintenance access roads, the resulting increase in human access raises the risk of fire due to arson or inadvertent human activity.¹

The predominant causes of power line wildfires are distribution-level power lines (12 kV and under) and low-voltage or “sub-transmission” lines (69-138 kV). Below, we review the physical characteristics that make distribution-level power lines and sub-transmission lines more conducive to sparking and ignition than high voltage lines (230-500 kV).

As an initial matter, the energized conductors on distribution-level power lines and sub-transmission lines are much closer together than on high voltage transmission lines. The distance on the former may be as little as 2 feet, whereas conductors are at least 18 feet apart on 230 kV towers, and 35 feet apart on

¹ See Draft EIR/EIS, Sec. D.15.1.1 for more information on this issue.

A.06-08-010 COM/MP1/tcg

Appendix C

Page 2

500 kV towers. Fallen or wind-blown tree limbs, wildlife, and debris, such as kites and Mylar balloons, can more easily come into contact with and bridge two distribution-level or sub-transmission line conductor phases,² causing electrical arcs³ that can set fire to woody debris. Because high voltage transmission line conductors are spaced much further apart, this phenomenon is extremely rare on 230 and 500 kV transmission lines.

Because the conductor spacing is closer, distribution-level and sub-transmission lines can spark when they experience conductor-to-conductor contact, also known as “mid-line slap” hazard. This occurs when extremely high winds force two conductors on a single pole to oscillate so much that they contact one another. This phenomenon does not occur on high voltage transmission lines. Further, pursuant to Rule 35 of the Commission’s General Order 95, transmission-level conductors must have higher ground clearance (25 feet) than distribution-level conductors (17 feet). This additional height above the ground can mitigate the risk of ignition, depending upon the terrain.

Differences in power line support structures also affect their fire risk. Distribution-level power lines and sub-transmission lines often are supported by wood poles, which do not withstand the same level of wind loading as the steel monopoles and lattice steel towers used to support extra-high voltage transmission lines. Therefore, wood poles have a higher potential for structural

² Multiple conducting wires (conductors) on a single transmission or distribution line are clustered in groups of three wires that carry currents alternating at different phases.

³ Electrical arcing is an electric discharge that occurs when electrons are able to jump a gap in a circuit, which often results in a display of sparks.

A.06-08-010 COM/MP1/tcg

Appendix C

Page 3

failure during extreme winds, like the Santa Anas. Multiple wood pole failures on a single distribution-level or sub-transmission line can result in conductors contacting the ground and igniting nearby vegetation or the wood poles themselves.

Another source of sparking on distribution-level lines is equipment failure associated with the transformers and capacitors mounted on the lines, which may arc and ignite nearby vegetation. Transmission lines of any voltage do not carry this particular risk, because they do not serve customer load directly and are not mounted with transformers and capacitors.

Transmission line protection and control systems are designed to detect faults (such as arcing when debris contacts the line) and to shut off power rapidly (in 1/60 to 3/60 of a second), thus reducing the risk of sparking and ignition. Distribution system faults are harder to detect. The fault current and the normal load current are very close in value, in some cases. Consequently, distribution line protection and control systems are set to allow faults to last longer. Almost all distribution circuits have reclosing equipment that automatically re-energizes a faulted line after a very brief delay of a second or so. If a fault has not cleared, debris tangled in the conductors can cause repeated sparks and ignite nearby vegetation.

While gunshots also have been a cause of power line ignitions, they are more likely to affect distribution-level and sub-transmission lines than higher voltage transmission lines. Support structures for distribution-level and sub-transmission lines are shorter (typically 50-80 feet) than high voltage transmission lines (typically 120 feet for 230 kV and 150 feet for 500 kV). Thus,

A.06-08-010 COM/MP1/tcg

Appendix C

Page 4

the insulators on the lower poles make easier targets than those on high-voltage lines. In addition, steel conductors on high voltage lines have much greater structural integrity than sub-transmission conductors, making them less susceptible to harm in the event of a gunshot. Typical 230 kV and 500 kV conductors have circumferences at least three times greater than a typical 69 kV conductor (300 kcmil⁴ for 69 kV vs. 900 kcmil for 230 kV and 1033.5 kcmil for 500 kV), with a correspondingly greater strength.⁵

Finally, vegetation management practices differ for transmission and distribution-level power lines. Typically, utilities completely remove trees and tall shrubs in transmission line corridors. However, they typically trim trees and shrubs near distribution-level conductors, rather than removing them, because the bulk of distribution-level lines are located in more urban areas that seek to preserve vegetation. Because of the comparative closeness of vegetation that can ignite – generally a tree is trimmed to within 4 feet of a distribution-level conductor, whereas vegetation is kept 10 feet away from a 230 kV transmission line and 15 feet away from a 500 kV transmission line – the risk of distribution line ignitions is higher.

Fire risks that appear to apply equally to all power lines include accidents related to airplanes and helicopters contacting conductors, poles, and towers. While theoretically it is possible for equipment failures to occur on lines of any voltage and to cause ignitions, the record provides no example of an equipment

⁴ Kcmil (1000 cmils) is a measure of the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of circular mils. A circular mil (cmil) is the area of a circle with a diameter of one thousandth (0.001) of an inch.

⁵ Draft EIR/EIS, Sec. D.15.1.1.

A.06-08-010 COM/MP1/tcg

Appendix C

Page 5

failure on a 500 kV line resulting in an ignition. The only 500 kV-related ignition we have found reported in the United States was caused not by an equipment failure, but by a large tree falling on the transmission line – an event that could be mitigated through proper vegetation management.⁶

The physical impact of fires attributable to power lines between 2004 and 2007 varies greatly. Though more prevalent, distribution system ignitions burned fewer acres (9,818) than sub-transmission system ignitions (198,025.8).⁷ The 2007 Rice Fire burned 9,472 acres -- almost all of the acres attributable to distribution system ignitions during that period. The California Department of Forestry and Fire Protection (Cal Fire) and the Commission's Consumer Protection and Safety Division (CPSD) have determined that the Rice Fire was started when a 12 kV distribution-level line ignited improperly maintained vegetation around the line.⁸ However, the 2007 Witch Fire burned 197,990 acres -- almost all of the acres attributable to sub-transmission system ignitions between 2004 and 2007. Cal Fire and CPSD have determined that a 69 kV sub-transmission line ignited the Witch Fire.⁹ The Witch Fire and the Guejito Fire merged into a single fire, and although Cal Fire reports that the Witch Fire, ignited by a 69 kV sub-transmission line, was the dominant of the two and is named as responsible for all of the acres burned by the two fires in 2007, the Guejito Fire was ignited by cable television lashing wire and a 12 kV distribution

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

A.06-08-010 COM/MP1/tcg

Appendix C Page 6

line. The 230 kV transmission system ignitions burned 8.1 acres during the same period.

Of the 12 sub-transmission system (69-138 kV) fires that occurred in SDG&E's service area between 2004 and 2007, Cal Fires reports that:

- Four were caused by Mylar balloons contacting conductors;
- Two were caused by conductor-to-conductor contact;
- One was caused by dust on insulators;
- One was caused by static line failure due to heavy wind and corrosion;
- One was caused by a wire down due to a gun shot;
- One was caused by a wire down due to heavy wind;
- One was caused by a plane crashing into a tower; and
- One was caused by a bird contacting conductors.¹⁰

Of the three 230 kV transmission system fires that occurred in SDG&E's service area between 2004 and 2007, Cal Fires reports that:

- Two were caused by static line failure due to heavy wind and corrosion on the equipment; and
- One was caused by a kite tail becoming entangled in the insulators and arcing across conductor phases.

New SDG&E data on these 230 kV transmission system fires became available after publication of the Draft EIR/EIS and has been included in the Final EIR/EIS.¹¹ These data present a more complete picture of the role inadequate transmission system inspections appear to have played in the cause

¹⁰ *Id.*

¹¹ Final EIR/EIS, Sec. D.15.1.1 and General Response GR-9; Mussey Grade Exhibit MG-20.

A.06-08-010 COM/MP1/tcg

Appendix C
Page 7

of fires. With regard to the fires caused by equipment failure (static line failure due to heavy wind and corrosion), SDG&E had inspected both lines from helicopters using infrared technology 4 and 10 months prior to the line failures. The resulting fires, due in large part to corrosion of the transmission equipment, suggest that these inspection methods may be an inadequate means of detecting fire threats posed by such corrosion and should be reviewed.

(END OF APPENDIX C)

Idaho Power/1305
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

Snow Fire Incident Information Fact Sheet
(June 5, 2015)

February 21, 2023

8/24/2021

Riverside County Fire Internet

Incident Information Fact Sheet

Riverside County Fire Department in cooperation with CAL FIRE

Incident Name: Snow	Type of Incident: Wildland Fire
Incident Address: Snow Creek Road South of Highway 111	Incident Number: CA-RRU-63560
Community: Unincorporated area of Palm Springs (Snow Creek)	Date Reported: 6/5/2015
Fatalities: 0 Major: 0 Moderate: 0 Minor: 0 Non Injury: 0	Time Reported: 1:32 PM
Transported Ground Ambulances: 0	Est. Containment Time: 6/5/2015 5:49 AM
Air Ambulance: 0	Est. Control Time:
Loss: \$0.00	Evacuations: No
Saved: \$0.00	Evacuation Comments:
Cause: Electrical	

Current Situation

(Recent updates are posted at the top of the Current Situation)

FINAL UPDATE 6/5/15 @ 6:45 p.m. - The fire is 100% contained at 25 acres. The cause of the fire was determined to be a skyline from a 500 KV transmission line that broke and fell to the ground.

Update 3:40 p.m. Fire is holding at approximately 25 acres and is 70% contained.

Update 2:40 p.m.: Fire is now approximately 25 acres. Firefighters on scene with aerial and ground resources.

CAL FIRE/Riverside County, USFS San Bernardino and Palm Springs Firefighters are on scene of a wildland fire in Snow Creek, west of Palm Springs. The first arriving company officer reported approximately ten acres burning in medium fuels. Updates will be posted as information becomes available. Information Officer is responding.

Resources Assigned

Firefighters: 100	Helicopters: 2	Utilities: No
Law Enforcement: No	Engine Companies: 13	Air Tankers: 2
Air Attack: Yes	Truck Companies: 0	Fire Crews: 3
EMD: No	Overhead Personnel: 4	Water Tenders: 0
American Red Cross: No	Fire Investigator: Yes	Bulldozers: 2
Public Information Officer: No	Displaced Persons: No	RVC Medics: 0
Ambulance Air: 0 Ground: 0		
Specialized Equipment: None,		

Cooperating Agencies

CAL FIRE/Riverside, Palm Springs FD, Riverside County Fire Department, USFS – San Bernardino,

Prepared By: Jody Hagemann Information Center: (951) 940-6985

Date/Time Posted: 6/5/2015 2:05 PM Follow us on Twitter: CALFIRERRU

Follow us on Facebook: CALFIRE/RiversideCountyFireDepartment

Idaho Power/1306
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

U.S. Attorney's Office, Dist. of Or., PacifiCorp to Pay \$3.4 Million in Civil
Settlement for Ramsey Canyon Fire
(June 9, 2020)

February 21, 2023

8/24/2021

Pacificorp to Pay \$3.4 Million in Civil Settlement for Ramsey Canyon Fire | USAO-OR | Department of Justice



THE UNITED STATES ATTORNEY'S OFFICE
DISTRICT *of* OREGON

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Department of Justice

U.S. Attorney's Office

District of Oregon

FOR IMMEDIATE RELEASE

Tuesday, June 9, 2020

Pacificorp to Pay \$3.4 Million in Civil Settlement for Ramsey Canyon Fire

Fire burned approximately 1,888 acres in Jackson County in August 2018

PORTLAND, Ore.—U.S. Attorney Billy J. Williams announced today that PacifiCorp, a Portland-based utility that provides electricity to several states, including Oregon, has agreed to pay \$3.4 million to settle allegations by the United States relating to the August 2018 Ramsey Canyon Fire in Jackson County, Oregon.

The Ramsey Canyon Fire ignited on August 22, 2018 near the base of a PacifiCorp transmission line 12 miles northwest of Eagle Point, Oregon. The fire burned approximately 1,888 acres of federal, state, and private land, including 930 acres of land managed by the Bureau of Land Management (BLM). The United States sought more than \$4.8 million in suppression costs and resource damages.

PacifiCorp is an Oregon corporation headquartered in Portland. The company has a utility right-of-way on BLM land in Jackson and Douglas Counties on which it owns and operates the Dixonville-to-Meridian 500kV transmission line. The United States contends that the fire was caused by the failure of a connector on a transmission structure that PacifiCorp failed to properly install, inspect and maintain. The settlement is not an admission of liability of by PacifiCorp. PacifiCorp denies the United States' contentions.

"Each year, countless Oregonians live with the recurring threat of wildfires jeopardizing their safety and personal property. Sadly, thousands of acres of public and private land are burned by preventable fires" said U.S. Attorney Williams. "Our office is committed to protecting these lands."

"Oregon's forest resources are important to the well-being and economy of dozens of small communities, and the BLM manages these resources for the benefit of all Americans. The loss of these lands and the cost of fighting this fire represent a significant loss to taxpayers, and we're pleased this settlement will help recoup those costs," said William Perry Pendley, BLM Deputy Director, Policy and Programs. "Congratulations to the career BLM employees who provided the expertise to assess the damage done to the public's lands and to recover these costs for the benefit of the American taxpayer."

The Oregon Department of Forestry assisted the BLM and the U.S. Forest Service in investigating this case. The United States was represented in this matter by Carla McClurg, Assistant U.S. Attorney for the District of Oregon.

8/24/2021

Pacificorp to Pay \$3.4 Million in Civil Settlement for Ramsey Canyon Fire | USAO-OR | Department of Justice

Topic(s):

Consumer Protection
Environment

Component(s):

USAO - Oregon

Updated June 9, 2020

Idaho Power/1307
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

PG&E Fire Incident Data Compiled from 2014-2021

February 21, 2023

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2014

1	A	B	C	D			E	F	G	H	I	J	K				L			M			N			O			P			Q			R			S			T			U			V			W			X
				Utility Name	Date	Time							Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):																				
3	PG&E	6/10/14	15:14	40.2059900	-122.2533300	Vegetation	Rural	< 0.25 Acres	Fire Agency	Red Bluff FD	101545144		12,000	Conductor	Overhead	Yes	6/10/14	15:14	Contact From Object	N.A.	Other	Electric Facility	Human Error	Conveyor belt contact																													
4	PG&E	6/12/14	6:30	38.0437500	-122.7462400	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire et al	102230371	AT&T	12,000	Conductor	Overhead	Yes	6/12/14	6:30	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown																														
5	PG&E	6/13/14	9:19	36.9334800	-121.3885490	Vegetation	Rural	< 0.25 Acres	Fire Agency	Hollister FD	101703071	AT&T	21,000	Conductor	Overhead	Yes	6/13/14	9:19	Contact From Object	N.A.	Vehicle	Pole	Human Error																														
6	PG&E	6/14/14	8:47	37.4190050	-122.1807700	Vegetation	Rural	< 3 meters	Unknown		100275552	AT&T	12,000	Conductor	Overhead	Yes	6/14/14	8:47	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
7	PG&E	6/14/14	11:01	37.1309150	-121.0919180	Vegetation	Rural	10 - 99 Acres	Fire Agency	CAL Fire	Pole 000/013	None	70,000	Conductor	Overhead	Yes	6/14/14	11:01	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown																														
8	PG&E	6/15/14	9:47	37.1307740	-121.9714100	Vegetation	Rural	< 0.25 Acres	Fire Agency		23633 Schulties Rd, Los Gatos		12,000	Conductor	Overhead	Yes	6/15/14	9:47	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
9	PG&E	6/15/14	17:28	37.9707710	-121.9849810	Vegetation	Urban	< 3 meters	Self Extinguished		4239 Teakwood Ct, Concord		0 - 750	Conductor	Overhead	Yes	6/15/14	17:28	Wire-Wire Contact	N.A.	N.A.	N.A.	Weather																														
10	PG&E	6/15/14	20:55	39.8878600	-122.1973690	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101500605		12,000	Conductor	Overhead	Yes	6/15/14	20:55	Contact From Object	N.A.	Vehicle	Pole	Human Error																														
11	PG&E	6/16/14	15:37	38.1681700	-120.6074690	Vegetation	Rural	< 0.25 Acres	Fire Agency		101280871	AT&T	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
12	PG&E	6/17/14	13:49	38.6667940	-122.5963970	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire	102247824		12,000	Conductor	Overhead	Yes	6/17/14	13:49	Contact From Object	N.A.	Vehicle	Pole	Human Error																														
13	PG&E	6/17/14	14:50	40.9605800	-124.0439590	Vegetation	Rural	< 0.25 Acres	Unknown		100979528	AT&T	0 - 750	Conductor	Overhead	Yes	6/17/14	14:50	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown																														
14	PG&E	6/17/14	16:47	34.8860900	-120.4327320	Vegetation	Rural	< 3 meters	Self Extinguished		101894765		12,000	Conductor	Overhead	Yes	6/17/14	16:47	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																														
15	PG&E	6/17/14	21:24	38.4180400	-121.1404610	Vegetation	Rural	10 - 99 Acres	Unknown		Twr. 052/320	None	115,000	Conductor	Overhead	Yes	6/17/14	21:24	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
16	PG&E	6/18/14	10:01	37.8010980	-121.2021560	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	Manteca FD	102085311	Verizon	17,000	Conductor	Overhead	Yes	6/18/14	10:01	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																														
17	PG&E	6/18/14	18:29	37.3175090	-120.5049050	Vegetation	Urban	< 0.25 Acres	Fire Agency	Cal Fire	101162090	AT&T	0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																														
18	PG&E	6/19/14	16:32	37.9314600	-121.2999000	Vegetation	Urban	< 0.25 Acres	Unknown		102133758	AT&T	0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																														
19	PG&E	6/19/14	18:54	38.7801990	-121.5007240	Vegetation	Rural	26 - 9.99 Acres	Fire Agency		101297449	AT&T	12,000	Conductor	Overhead	Yes	6/19/14	18:54	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																														
20	PG&E	6/20/14	9:47	34.8650990	-120.3206720	Vegetation	Rural	< 0.25 Acres	Unknown		101862409		12,000	Conductor	Overhead	Yes	6/20/14	9:47	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																														
21	PG&E	6/20/14	12:00	39.6663370	-122.1968810	Vegetation	Rural	< 0.25 Acres	Unknown		100422609		0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																														
22	PG&E	6/20/14	14:15	40.7802300	-121.5028700	Vegetation	Rural	< 0.25 Acres	Fire Agency		101520035	Frontier	12,000	Conductor	Overhead	Yes	6/20/14	14:15	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
23	PG&E	6/21/14	6:49	38.3753000	-122.5494000	Vegetation	Rural	< 0.25 Acres	Fire Agency		3111 WARM SPRINGS RD, GLEN ELLEN		12,000	Conductor	Overhead	Yes	6/21/14	6:49	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
24	PG&E	6/21/14	14:36	38.3644400	-122.2626490	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire	102286053	AT&T	12,000	Conductor	Overhead	Yes	6/21/14	14:36	Contact From Object	N.A.	Vehicle	Pole	Human Error																														
25	PG&E	6/22/14	8:19	34.8943890	-120.4244590	Vegetation	Urban	< 3 meters	Unknown		101864052	Verizon	12,000	Conductor	Overhead	Yes	6/22/14	8:19	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
26	PG&E	6/23/14	6:04	37.5046000	-120.0074200	Vegetation	Rural	< 0.25 Acres	Unknown		Pole 007/019	None	70,000	Conductor	Overhead	Yes	6/23/14	6:04	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
27	PG&E	6/23/14	17:45	39.0640240	-121.0224860	Vegetation	Rural	26 - 9.99 Acres	Fire Agency		BET: MTR# 1007517420 & FUCO 7495		12,000	Conductor	Overhead	Yes	6/23/14	17:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
28	PG&E	6/24/14	7:11	36.7495400	-121.6570600	Vegetation	Rural	< 0.25 Acres	Fire Agency	Salinas FD	101712215	AT&T	12,000	Conductor	Overhead	Yes	6/24/14	7:11	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
29	PG&E	6/24/14	7:48	37.9037000	-121.6791620	Other	Urban	< 3 meters	Fire Agency	Contra Costa FD	100485898	AT&T	0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
30	PG&E	6/24/14	14:31	39.7856800	-121.9065900	Vegetation	Rural	10 - 99 Acres	Fire Agency		Mtr 36P580	None	12,000	Conductor	Overhead	Yes	6/24/14	14:31	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
31	PG&E	6/24/14	16:56	37.9740140	-121.3464620	Vegetation	Urban	< 0.25 Acres	Unknown		103190493		12,000	Conductor	Overhead	Yes	6/24/14	16:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
32	PG&E	6/24/14	17:12	38.1109730	-122.5645120	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	Novato Fire Department	102223482		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
33	PG&E	6/25/14	1:36	36.8908500	-121.7174600	Vegetation	Rural	< 0.25 Acres	Unknown		101697469	AT&T	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Balloons	Electric Facility	Human Error																														
34	PG&E	6/25/14	8:51	34.8830400	-120.2776190	Vegetation	Rural	26 - 9.99 Acres	Fire Agency		LD SIDE MTR 1008835806		12,000	Conductor	Overhead	Yes	6/25/14	8:51	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
35	PG&E	6/25/14	8:53	39.0110100	-120.8960600	Vegetation	Rural	26 - 9.99 Acres	Unknown		Main Line N/O buck to 20340 Spring Garden # 1004520726		12,000	Conductor	Overhead	Yes	6/25/14	8:53	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error																														
36	PG&E	6/25/14	21:47	37.9976630	-121.7691860	Vegetation	Rural	< 0.25 Acres	Unknown		100455766		21,000	Conductor	Overhead	Yes	6/25/14	21:47	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
37	PG&E	6/26/14	0:15	36.8002500	-119.7937790	Vegetation	Urban	< 0.25 Acres	Fire Agency	Fresno Fire Dept	100854012	AT&T	12,000	Conductor	Overhead	Yes	6/26/14	0:15	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
38	PG&E	6/28/14	23:04	37.8992070	-121.8608780	Vegetation	Rural	< 0.25 Acres	Unknown		100483886		21,000	Transformer	Overhead	Yes	6/28/14	23:04	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
39	PG&E	6/29/14	7:59	38.7794000	-121.5055490	Vegetation	Rural	< 0.25 Acres	Fire Agency		101297918	AT&T	0 - 750	Transformer	Overhead	Yes	6/29/14	7:59	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																														
40	PG&E	6/29/14	8:23	39.0919800	-121.5430700	Vegetation	Urban	< 0.25 Acres	Unknown		SB 15745 ARBOGA RD 500' S/O FURNEAUX RD 2 SP EAST		12,000	Conductor	Overhead	Yes	6/29/14	8:23	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
41	PG&E	6/29/14	19:53	38.5208000	-123.0606700	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	3600 E. AUTSTIN CREEK RD		12,000	Conductor	Overhead	Yes	6/29/14	19:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
42	PG&E	6/30/14	14:08	38.4491800	-122.8727700	Vegetation	Rural	< 0.25 Acres	Unknown		102022582	AT&T	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
43	PG&E	6/30/14	18:25	39.1449270	-122.1318820	Vegetation	Rural	< 0.25 Acres	Unknown		101629033		12,000	Conductor	Overhead	Yes	6/30/14	18:25	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
44	PG&E	6/30/14	20:02	36.8080200	-119.9101390	Vegetation	Urban	< 0.25 Acres	Unknown		100625545	AT&T	21,000	Conductor	Overhead	Yes	6/30/14	20:02	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
45	PG&E	7/1/14	3:46	37.9004730	-121.2602580	Vegetation	Rural	< 0.25 Acres	Unknown		2 POLES EAST OF C3412		12,000	Conductor	Overhead	Yes	7/1/14	3:46	Contact From Object	N.A.	Vehicle	Pole	Human Error																														
46	PG&E	7/1/14	6:43	38.0062300	-122.6430300	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	West Marin Fire	102258915	AT&T	12,000	Conductor	Overhead	Yes	7/1/14	6:43	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																														
47	PG&E	7/1/14	9:45	37.4266900	-119.8809500	Vegetation	Rural	26 - 9.99 Acres	Unknown		101065832		21,000	Conductor	Overhead	Yes	7/1/14	9:45	Contact From Object	N.A.	Animal	Electric Facility	Unknown																														
48	PG&E	7/1/14	14:36	38.8648700	-121.7025500	Vegetation	Rural	< 0.25 Acres	Fire Agency	Yolo FD	101593404	Verizon	12,000	Conductor	Overhead	Yes	7/1/14	14:36	Contact From Object	N.A.	Vehicle	Communication Facility	Human Error																														
49	PG&E	7/1/14	18:43	37.0854220	-121.7607380	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	6770 Croy Rd, Morgan Hill		0 - 750	Conductor	Overhead	Yes	7/1/14	18:43	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																														
50	PG&E	7/2/14	13:27	38.2545710	-122.0509280	Vegetation	Urban	< 0.25 Acres	Fire Agency		101556512	AT&T	12,000	Conductor	Overhead	Yes	7/2/14	13:17	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																														
51	PG&E	7/2/14	14:29																																																		

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2014

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
93	PG&E	7/23/14	12:16	35.2909980	-120.6593170	Other	Urban	Structure Only	Fire Agency	San Luis Obispo FD		103351214	12,000	Conductor	Overhead	Yes	7/23/14	12:16	Contact From Object	N.A.	Vehicle	Pole	Human Error	vehicle burned
94	PG&E	7/24/14	1:04	37.0812740	-122.1425840	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire		101537326	12,000	Conductor	Overhead	Yes	7/24/14	1:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
95	PG&E	7/24/14	10:59	40.0240030	-122.0955900	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	AT&T	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
96	PG&E	7/24/14	11:56	38.3914700	-122.9305300	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	7/24/14	11:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
97	PG&E	7/24/14	15:26	37.4465390	-122.2719340	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire	AT&T	Pole 000/019	60,000	Conductor	Overhead	Yes	7/24/14	15:26	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
98	PG&E	7/24/14	15:51	39.8368310	-121.7038940	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	7/24/14	15:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
99	PG&E	7/24/14	19:28	39.0450030	-121.1727940	Vegetation	Rural	26 - 9.99 Acres	Unknown			16243 Tierra Rd, Grass Valley	12,000	Conductor	Overhead	Yes	7/24/14	19:28	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
100	PG&E	7/25/14	12:16	39.6491530	-121.8713570	Vegetation	Rural	< 3 meters	Unknown			100356542	0 - 750	Conductor	Overhead	No		Unknown	N.A.	N.A.	N.A.	Unknown		
101	PG&E	7/26/14	5:02	39.2614500	-121.5745900	Vegetation	Rural	< 0.25 Acres	Self Extinguished			Twr. 001/110	115,000	Other	Overhead	Yes	7/26/14	5:02	Unknown	N.A.	N.A.	N.A.	Unknown	
102	PG&E	7/26/14	15:26	37.6655100	-119.8416500	Vegetation	Rural	1000 - 4999 Acres	Fire Agency	NPS		101084253	12,000	Conductor	Overhead	Yes	7/26/14	15:26	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
103	PG&E	7/27/14	4:17	37.7925760	-120.7750140	Other	Rural	Structure Only	Fire Agency	Oakdale FD		102334307	17,000	Conductor	Overhead	Yes	7/27/14	4:17	Contact From Object	N.A.	Vehicle	Pole	Human Error	car / garage burned
104	PG&E	7/27/14	6:54	35.6004700	-121.1154800	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		MAIN LINE LOAD SIDE FUSE TAP 5027	12,000	Conductor	Overhead	Yes	7/27/14	6:54	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
105	PG&E	7/27/14	16:30	35.5720140	-121.0578980	Vegetation	Rural	< 0.25 Acres	Fire Agency			Pole 014/099	70,000	Conductor	Overhead	Yes	7/27/14	16:30	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
106	PG&E	7/27/14	17:40	37.4481800	-119.9049800	Vegetation	Rural	26 - 9.99 Acres	Fire Agency			101087619	21,000	Conductor	Overhead	Yes	7/27/14	17:40	Other	N.A.	N.A.	N.A.	Unknown	
107	PG&E	7/28/14	0:46	37.3144520	-121.0158390	Other	Urban	Structure Only	Fire Agency		AT&T	101229360	12,000	Conductor	Overhead	Yes	7/28/14	0:46	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	woodpecker damage
108	PG&E	7/28/14	16:00	37.8855300	-121.7313290	Vegetation	Urban	< 3 meters	Unknown			967 Lynn St, Livermore	12,000	Conductor	Overhead	Yes	7/28/14	16:00	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	shack burned
109	PG&E	7/28/14	19:05	39.6681900	-123.6441700	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		MM 11 25	12,000	Conductor	Overhead	Yes	7/28/14	19:05	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
110	PG&E	7/30/14	4:36	36.8765040	-121.6645970	Vegetation	Rural	< 0.25 Acres	Unknown		AT&T	101699196	21,000	Conductor	Overhead	Yes	7/30/14	4:36	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
111	PG&E	7/30/14	10:42	39.3286240	-121.3836450	Vegetation	Rural	< 0.25 Acres	Unknown			101292419	12,000	Conductor	Overhead	Yes	7/30/14	10:42	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
112	PG&E	7/30/14	17:35	38.6482930	-120.6930860	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	AT&T	101403817	21,000	Unknown	Overhead	Yes	7/30/14	17:35	Equipment/ Facility Failure	Voltage Regulator	N.A.	N.A.	Unknown	
113	PG&E	7/31/14	12:41	37.8782200	-122.4633940	Vegetation	Urban	< 0.25 Acres	Fire Agency	Tiburon		102295755	12,000	Conductor	Overhead	Yes	7/31/14	12:41	Contact From Object	N.A.	Vehicle	Pole	Human Error	
114	PG&E	7/31/14	15:00	39.0424200	-122.9205900	Vegetation	Urban	< 0.25 Acres	Fire Agency	Lakeport Fire Dept.	AT&T	102164900	0 - 750	Conductor	Overhead	Yes	7/31/14	15:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
115	PG&E	7/31/14	22:08	38.5342800	-120.0570800	Vegetation	Rural	26 - 9.99 Acres	Unknown			4 SPANS SOUTH OF LR-2404	12,000	Conductor	Overhead	Yes	7/31/14	22:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
116	PG&E	8/1/14	16:17	39.6253200	-121.4523800	Vegetation	Rural	< 0.25 Acres	Unknown			709 Encina Grande Road	0 - 750	Other	Overhead	No		Unknown	N.A.	N.A.	N.A.	Unknown		
117	PG&E	8/2/14	0:04	37.6063140	-122.3896310	Vegetation	Urban	< 0.25 Acres	Unknown			Twr. 000/002	115,000	Conductor	Overhead	Yes	8/2/14	0:04	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
118	PG&E	8/2/14	10:38	36.6118400	-119.3056800	Vegetation	Rural	< 0.25 Acres	Unknown			100710225	12,000	Fuse	Overhead	Yes	8/2/14	10:38	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
119	PG&E	8/3/14	16:11	39.6443750	-121.7880330	Vegetation	Rural	< 0.25 Acres	Unknown			MTR 1007460127	12,000	Conductor	Overhead	Yes	8/3/14	16:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
120	PG&E	8/4/14	4:18	37.1062600	-121.6366690	Vegetation	Urban	< 0.25 Acres	Fire Agency	Cal Fire	Verizon	100606026	21,000	Conductor	Overhead	No		Contact From Object	N.A.	Vehicle	Communication Facility	Human Error		
121	PG&E	8/5/14	0:08	38.7804600	-121.4893690	Vegetation	Rural	< 0.25 Acres	Fire Agency			101297005	12,000	Conductor	Overhead	Yes	8/5/14	0:08	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
122	PG&E	8/5/14	2:57	38.5704300	-121.1022700	Vegetation	Rural	< 0.25 Acres	Unknown			7150 MEARS RD #A AUBURN	12,000	Conductor	Overhead	Yes	8/5/14	2:57	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
123	PG&E	8/5/14	12:03	39.2154990	-121.3029290	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		Str. 010/122	60,000	Conductor	Overhead	Yes	8/5/14	12:03	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
124	PG&E	8/5/14	14:50	37.3419700	-121.6319900	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		MTR 1009312709	0 - 750	Transformer	Overhead	Yes	8/5/14	14:50	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
125	PG&E	8/5/14	16:13	37.5634100	-119.9395000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		MTR 1006385335	0 - 750	Conductor	Overhead	No		Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
126	PG&E	8/5/14	17:12	36.9187600	-119.6766700	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		100725159	0 - 750	Conductor	Overhead	No		Unknown	N.A.	N.A.	N.A.	Unknown		
127	PG&E	8/5/14	21:41	38.0031100	-122.3270500	Vegetation	Urban	< 0.25 Acres	Fire Agency	Contra Costa FD		101426924	0 - 750	Conductor	Overhead	No		Unknown	N.A.	N.A.	N.A.	Unknown		
128	PG&E	8/8/14	18:17	40.0011200	-122.2260790	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		101530848	12,000	Conductor	Overhead	Yes	8/8/14	18:17	Contact From Object	N.A.	Vehicle	Pole	Human Error	
129	PG&E	8/9/14	2:53	38.3011000	-122.8963300	Vegetation	Rural	< 0.25 Acres	Unknown			2 SPANS SOURCE SIDE OF 30501 SHORLINE HWY, FALLON	12,000	Conductor	Overhead	Yes	8/9/14	2:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
130	PG&E	8/9/14	15:36	36.8851770	-119.0449600	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		MTR#1005057583	12,000	Conductor	Overhead	Yes	8/9/14	15:36	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
131	PG&E	8/11/14	9:23	37.9118400	-120.3488900	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		2 SPAN LOADSIDE FCO 20835	17,000	Conductor	Overhead	Yes	8/11/14	9:23	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
132	PG&E	8/11/14	14:35	39.6725200	-121.4983170	Vegetation	Rural	< 0.25 Acres	Unknown			Twr 022/146	230,000	Other	Overhead	Yes	8/11/14	14:35	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike
133	PG&E	8/12/14	8:58	36.7405700	-121.7676400	Vegetation	Rural	< 3 meters	Unknown			S/S MONTE RD 4 SPANS S/O NASHUA RD, CASTROVILLE	21,000	Other	Overhead	Yes	8/12/14	8:58	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
134	PG&E	8/12/14	9:42	39.2632400	-121.5974890	Other	Rural	Structure Only	Unknown			101287419	12,000	Conductor	Overhead	Yes	8/12/14	9:42	Contact From Object	N.A.	Vehicle	Pole	Human Error	vehicle burned
135	PG&E	8/12/14	15:38	38.7771100	-120.2657500	Vegetation	Rural	26 - 9.99 Acres	Fire Agency			WEST SIDE OF SW 6161	21,000	Conductor	Overhead	Yes	8/12/14	15:38	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
136	PG&E	8/14/14	10:46	38.0123950	-120.5860520	Vegetation	Rural	< 3 meters	Unknown		AT&T	101272971	17,000	Conductor	Overhead	Yes	8/14/14	10:46	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
137	PG&E	8/14/14	14:57	38.5099100	-122.8371300	Vegetation	Rural	< 0.25 Acres	Fire Agency		AT&T	102028597	0 - 750	Conductor	Overhead	Yes	8/14/14	14:57	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
138	PG&E	8/15/14	11:01	40.5840531	-122.4446948	Vegetation	Rural	< 0.25 Acres	Fire Agency	Redding Fire Dept	AT&T	101473764	12,000	Conductor	Overhead	Yes	8/15/14	11:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
139	PG&E	8/16/14	7:30	39.2938500	-121.6378000	Vegetation	Rural	< 0.25 Acres	Unknown			mtr # 1007536106	12,000	Conductor	Overhead	Yes	8/16/14	7:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
140	PG&E	8/17/14	7:27	37.3220200	-119.6344690	Vegetation	Rural	< 0.25 Acres	Unknown			RISER 10393	12,000	Conductor	Overhead	Yes	8/17/14	7:27	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
141	PG&E	8/17/14	17:33	35.0578500	-118.9174880	Other	Rural	Structure Only	Unknown			100175838	12,000	Conductor	Overhead	Yes	8/17/14	17:33	Contact From Object	N.A.	Vehicle	Pole	Human Error	vehicle burned
142	PG&E</																							

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2014

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
187	PG&E	9/29/14	14:26	36.7995300	-121.7692790	Vegetation	Rural	< 0.25 Acres	Fire Agency	Monterey County FD		12,000	Conductor	Overhead	Yes	9/29/14	14:26	Contact From Object	N.A.	Vehicle	Pole	Human Error	
188	PG&E	9/30/14	11:41	37.0764483	-120.1965500	Vegetation	Rural	< 0.25 Acres	Customer			0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
189	PG&E	9/30/14	14:08	37.5302700	-122.3227800	Vegetation	Urban	< 3 meters	Unknown		AT&T	12,000	Conductor	Overhead	Yes	9/30/14	14:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
190	PG&E	10/1/14	12:02	37.9248100	-121.2084300	Vegetation	Rural	< 3 meters	Fire Agency	Stockton FD		0 - 750	Other	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown	
191	PG&E	10/1/14	12:18	39.7260580	-121.8604800	Vegetation	Urban	< 0.25 Acres	Fire Agency	Cal Fire		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
192	PG&E	10/1/14	13:24	37.5505040	-122.3050830	Vegetation	Urban	< 0.25 Acres	Fire Agency			12,000	Conductor	Overhead	Yes	10/1/14	13:24	Contact From Object	N.A.	Vehicle	Communication Facility	Human Error	
193	PG&E	10/1/14	15:04	35.6316000	-119.2568050	Vegetation	Rural	< 0.25 Acres	Unknown			0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
194	PG&E	10/4/14	16:09	37.9450940	-121.9676150	Vegetation	Urban	< 3 meters	Fire Agency	Contra Costa FD		0 - 750	Conductor	Overhead	No			Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
195	PG&E	10/4/14	17:00	39.9606967	-122.1483850	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		0 - 750	Conductor	Overhead	Yes	10/4/14	17:00	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
196	PG&E	10/5/14	10:12	37.6802390	-122.4706640	Vegetation	Urban	< 0.25 Acres	Fire Agency	Daly City FD		0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
197	PG&E	10/5/14	22:32	37.1224850	-121.9994360	Vegetation	Rural	26 - 9.99 Acres	Unknown		Verizon	100519255	Conductor	Overhead	Yes	10/5/14	22:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
198	PG&E	10/6/14	8:53	38.8925800	-122.7376600	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	10/6/14	8:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
199	PG&E	10/7/14	11:35	35.0720230	-120.5905160	Vegetation	Rural	< 0.25 Acres	Fire Agency	SLO FD		12,000	Conductor	Subsurface	Yes	10/7/14	11:35	Contact From Object	N.A.	Other	Electric Facility	Human Error	Third-party dig-in
200	PG&E	10/8/14	14:21	34.6455160	-120.4118330	Vegetation	Rural	< 3 meters	Fire Agency	Santa Barbara FD		12,000	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
201	PG&E	10/9/14	8:25	37.9589417	-121.4342867	Other	Urban	Structure Only	Fire Agency	Stockton FD		12,000	Conductor	Overhead	Yes	10/9/14	8:25	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	roof burned
202	PG&E	10/9/14	19:10	38.4619500	-123.0418300	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		101955217	Conductor	Overhead	Yes	10/9/14	19:10	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
203	PG&E	10/10/14	14:41	38.1721017	-122.6282000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	10/10/14	14:41	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
204	PG&E	10/11/14	10:19	39.5765200	-121.3053800	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Bulte FD		12,000	Conductor	Overhead	Yes	10/11/14	10:19	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
205	PG&E	10/12/14	10:59	38.5917250	-121.5387000	Vegetation	Rural	Structure Only	Fire Agency			0 - 750	Conductor	Overhead	Yes	10/12/14	10:59	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	roof burned
206	PG&E	10/12/14	12:02	38.5902667	-121.5349117	Vegetation	Rural	< 0.25 Acres	Fire Agency	West Sacramento FD		101608435	Conductor	Overhead	Yes	10/12/14	12:02	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
207	PG&E	10/12/14	16:53	38.2865483	-122.4804667	Vegetation	Rural	< 0.25 Acres	Fire Agency	Sonoma FD		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
208	PG&E	10/13/14	9:19	38.1838050	-121.8546050	Vegetation	Rural	< 0.25 Acres	Fire Agency			21,000	Conductor	Overhead	Yes	10/13/14	9:19	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
209	PG&E	10/14/14	7:33	36.2506133	-119.8615800	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Kings County FD		12,000	Conductor	Overhead	Yes	10/14/14	7:33	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot
210	PG&E	10/14/14	11:05	37.9013410	-121.7646600	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Contra Costa FD		21,000	Transformer	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
211	PG&E	10/14/14	14:32	39.5898250	-122.1938540	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		21,000	Conductor	Overhead	Yes	10/14/14	14:32	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused
212	PG&E	10/16/14	16:25	39.0541620	-121.4235530	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	WHEATLAND FIRE		101303519	Conductor	Overhead	Yes	10/16/14	16:25	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
213	PG&E	10/17/14	13:41	40.0163440	-122.2252140	Vegetation	Rural	< 0.25 Acres	Unknown		AT&T	60,000	Conductor	Overhead	Yes	10/17/14	13:41	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
214	PG&E	10/20/14	1:23	38.0271917	-121.9419650	Vegetation	Urban	< 3 meters	Fire Agency	CONTRA COSTA		100450134	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
215	PG&E	10/20/14	13:30	38.7825333	-122.6926283	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	10/20/14	13:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
216	PG&E	10/21/14	2:54	37.3964280	-121.8395970	Vegetation	Rural	< 3 meters	Fire Agency	SJFIR		12,000	Conductor	Overhead	Yes	10/21/14	2:54	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
217	PG&E	10/22/14	16:45	38.3791580	-120.5007300	Vegetation	Rural	< 0.25 Acres	Fire Agency	West Point Fire		101251221	Conductor	Overhead	No			Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
218	PG&E	10/22/14	20:51	39.0067740	-120.7437200	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		60,000	Switch	Overhead	Yes	10/22/14	20:51	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown	
219	PG&E	10/23/14	12:45	35.4218200	-119.0278900	Vegetation	Urban	< 3 meters	Fire Agency	KERN COUNTY FD		100143992	Conductor	Overhead	Yes	10/23/14	12:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
220	PG&E	10/25/14	3:04	40.2956700	-123.8269867	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire		2374 ELK CRK MTR#1008024164	Conductor	Overhead	Yes	10/25/14	3:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
221	PG&E	10/25/14	10:52	38.3781200	-121.5118000	Vegetation	Rural	< 3 meters	Fire Agency	West Point Fire		101249034	Unknown	Overhead	No			Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
222	PG&E	10/25/14	14:35	37.0557667	-121.0560933	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	10/25/14	14:35	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
223	PG&E	10/25/14	14:45	36.5575100	-121.9279490	Vegetation	Urban	< 3 meters	Fire Agency	city fire dept		101739963	Conductor	Overhead	Yes	10/25/14	14:45	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
224	PG&E	10/26/14	22:24	34.5351600	-120.2966170	Vegetation	Rural	< 3 meters	Fire Agency	Santa Barbara CO		@ MTR #1008719129	Conductor	Overhead	Yes	10/26/14	22:24	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
225	PG&E	10/27/14	6:34	34.8659867	-120.3783817	Vegetation	Rural	< 3 meters	Fire Agency	Santa Barbara CO		101872138	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
226	PG&E	10/28/14	12:01	38.8168500	-122.5660700	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire		102208452	Conductor	Overhead	Yes	10/28/14	12:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
227	PG&E	10/28/14	16:34	38.2142500	-122.2577167	Vegetation	Rural	< 0.25 Acres	Fire Agency	American Cym Fire / CAL Fire		102290370	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown	
228	PG&E	10/29/14	13:22	39.4802950	-122.2492700	Vegetation	Rural	< 3 meters	Fire Agency	WILLOWS FIRE DEPT		21,000	Lightning Arrestor	Overhead	Yes	10/29/14	13:22	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown	
229	PG&E	11/1/14	9:10	37.1859320	-122.0012030	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire/ Santa Clara County Fire		100551454	Conductor	Overhead	Yes	11/1/14	9:10	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
230	PG&E	11/1/14	20:52	41.1343830	-124.1521100	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE		100980319	Conductor	Overhead	Yes	11/1/14	20:52	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
231	PG&E	11/5/14	8:34	38.4444710	-122.2492990	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire		102291451	Conductor	Overhead	Yes	11/5/14	8:34	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
232	PG&E	11/6/14	10:42	36.9811100	-120.0264980	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		15882 WATSON RD MADERA	Conductor	Overhead	Yes	11/6/14	10:42	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
233	PG&E	11/6/14	14:56	37.0567450	-120.8149750	Vegetation	Rural	< 3 meters	Self Extinguished		AT&T	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
234	PG&E	11/7/14	6:12	35.3169500	-120.6796090	Vegetation	Urban	< 3 meters	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	11/7/14	6:12	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
235	PG&E	11/8/14	15:02	38.1820870	-122.6692940	Vegetation	Rural	< 3 meters	Customer			0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
236	PG&E	11/9/14	6:34	37.9419180	-122.3755040	Vegetation	Rural	< 3 meters	Fire Agency	RICHMOND PD		101443361	Conductor	Overhead	Yes	11/9/14	6:34	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
237	PG&E	11/14/14	12:37	37.6510500	-122.4540800	Vegetation	Urban	< 3 meters	Fire Agency	PACIFICA FD		ON #4 LINE SIDE OF 11949 & 6053	Conductor	Overhead	Yes	11/14/14	12:37	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	
238	PG&E	11/16/14	5:29	37.5305067	-122.5165317	Vegetation	Rural	< 3 meters	Fire Agency	Cal Fire		2166 Vallemar Moss beach</											

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2015

1	A	B	C	D		E	F	G	H	I	J	K				L			M			N			O			P			Q			R			S			T			U			V			W			X
				Utility Name	Fire Start Date							Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):																			
3	PG&E	01/08/15	15:18	37.36631	-121.88317	Other	Rural	< 0.25 Acres	Fire Agency	SJFD	100566657	None	12,000	Conductor	Subsurface	Yes	1/8/15	15:18	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error																													
4	PG&E	01/10/15	13:07	38.08903	-122.20869	Vegetation	Urban	< 0.25 Acres	Utility: PG&E		102217759		12,000	Conductor	Overhead	Yes	1/10/15	13:07	Contact From Object	N.A.	Animal	Electric Facility	Unknown																													
5	PG&E	01/16/15	7:07	38.77533	-122.70044	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	102167494	Pacific Bell	0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																													
6	PG&E	01/26/15	3:51	37.05394	-122.15867	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE			12,000	Conductor	Overhead	Yes	1/26/15	3:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
7	PG&E	02/06/15	6:01	38.60589	-121.02213	Vegetation	Rural	< 3 meters	Fire Agency		6661 Ryan Ranch Road, El Dorado Hills		21,000	Conductor	Overhead	Yes	2/6/15	6:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
8	PG&E	02/06/15	14:08	36.40321	-121.91088	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	loadsides of 40283		12,000	Conductor	Overhead	Yes	2/6/15	14:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
9	PG&E	02/07/15	15:13	38.08712	-122.54963	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	NOVATO FIRE DEPARTMENT	103598139		12,000	Conductor	Overhead	Yes	2/7/15	15:13	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown																													
10	PG&E	02/07/15	18:38	40.46741	-123.65446	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	mile marker 36.61, hwy 36, bridgeville		12,000	Conductor	Overhead	Yes	2/7/15	18:38	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
11	PG&E	02/13/15	16:01	35.36284	-118.96615	Vegetation	Urban	< 0.25 Acres	Fire Agency	Bakersfield FD	512 Wilma Street, Bakersfield		0 - 750	Conductor	Overhead	Yes	2/13/15	16:01	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused																												
12	PG&E	02/16/15	11:08	37.35996	-120.85233	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101206051		12,000	Conductor	Overhead	Yes	2/16/15	11:08	Contact From Object	N.A.	Vehicle	Pole	Human Error																													
13	PG&E	02/17/15	16:46	39.76284	-121.58268	Vegetation	Urban	< 3 meters	Fire Agency	butte county	100324934	Pacific Bell	12,000	Conductor	Overhead	Yes	2/17/15	16:46	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused																												
14	PG&E	02/22/15	14:20	38.81600	-122.18318	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Capay	101592201		21,000	Conductor	Overhead	Yes	2/22/15	14:20	Contact From Object	N.A.	Vehicle	Pole	Human Error																													
15	PG&E	02/23/15	2:05	39.30273	-121.01749	Vegetation	Rural	< 3 meters	Fire Agency	NEVADA CITY FIRE	100086316		12,000	Conductor	Overhead	Yes	2/23/15	2:05	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
16	PG&E	02/23/15	13:25	38.50455	-122.74081	Vegetation	Rural	< 0.25 Acres	Fire Agency	RINCON VALLEY	BEHIND 4870 CARRIAGE LN SANTA ROSA		12,000	Conductor	Overhead	Yes	2/23/15	13:25	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
17	PG&E	02/25/15	2:34	36.75618	-119.78001	Vegetation	Urban	< 3 meters	Fire Agency	CITY OF FRESNO	100869017	Pacific Bell	12,000	Fuse	Overhead	Yes	2/25/15	2:34	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown																													
18	PG&E	02/25/15	16:42	34.89210	-120.50397	Vegetation	Rural	< 3 meters	Customer				0 - 750	Conductor	Overhead	Yes	2/25/15	16:42	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
19	PG&E	03/04/15	18:44	38.99945	-122.75451	Vegetation	Rural	< 0.25 Acres	Fire Agency	Kelseyville FD	102156367	Pacific Bell	12,000	Conductor	Overhead	Yes	3/4/15	18:44	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																													
20	PG&E	03/07/15	13:35	38.70909	-122.64837	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	14417 western mine rd, Middletown		12,000	Conductor	Overhead	Yes	3/7/15	13:35	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
21	PG&E	03/09/15	9:36	38.73283	-120.75239	Building	Urban	Structure Only	Unknown		101399208	Pacific Bell	12,000	Conductor	Overhead	Yes	3/9/15	9:36	Contact From Object	N.A.	Animal	Electric Facility	Unknown																													
22	PG&E	03/14/15	2:30	38.90381	-122.75790	Vegetation	Rural	< 0.25 Acres	Unknown		9210 Wildcat Road, Kelseyville		12,000	Conductor	Overhead	Yes	3/14/15	2:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
23	PG&E	03/14/15	14:17	38.82525	-121.13632	Vegetation	Rural	< 3 meters	Fire Agency	LOOMIS FIRE	100051369	Pacific Bell	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Balloons	Electric Facility	Human Error																													
24	PG&E	03/14/15	22:09	36.89154	-121.71191	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	103525395		21,000	Conductor	Overhead	Yes	3/14/15	22:09	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
25	PG&E	03/15/15	3:26	35.36933	-118.92804	Vegetation	Urban	< 0.25 Acres	Fire Agency	KERN COUNTY FIRE DEPT	100216241	Pacific Bell	0 - 750	Unknown	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																													
26	PG&E	03/15/15	2:38	36.93396	-119.78022	Vegetation	Rural	< 3 meters	Unknown		101121519	None	21,000	Conductor	Overhead	Yes	3/15/15	3:38	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown																													
27	PG&E	03/15/15	22:47	38.33457	-120.53253	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	103106530		12,000	Conductor	Overhead	Yes	3/15/15	22:47	Contact From Object	N.A.	Vehicle	Pole	Human Error																													
28	PG&E	03/19/15	20:11	37.84163	-122.12176	Vegetation	Urban	< 3 meters	Fire Agency	moraga fire	100498544	Pacific Bell	12,000	Conductor	Overhead	Yes	3/19/15	20:11	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																													
29	PG&E	03/21/15	10:46	40.16448	-122.28939	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	101546309	Pacific Bell	12,000	Conductor	Overhead	Yes	3/21/15	10:46	Contact From Object	N.A.	Vehicle	Pole	Human Error																													
30	PG&E	03/21/15	11:03	36.56658	-121.51428	Vegetation	Rural	< 0.25 Acres	Fire Agency	Monterey Regional	101758338	Pacific Bell	12,000	Conductor	Overhead	Yes	3/21/15	11:03	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
31	PG&E	03/31/15	13:33	37.11247	-120.94326	Vegetation	Rural	< 3 meters	Fire Agency	COUNTY FIRE	101199839		0 - 750	Conductor	Overhead	Yes	3/31/15	13:33	Contact From Object	N.A.	Animal	Electric Facility	Unknown																													
32	PG&E	04/02/15	9:44	39.67722	-121.49198	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100338726		12,000	Conductor	Overhead	Yes	4/2/15	9:44	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
33	PG&E	04/04/15	16:49	38.88245	-122.59135	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	20748 Jerusalem Grade Road, Middletown		12,000	Other	Overhead	Yes	4/4/15	16:49	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	Booster																												
34	PG&E	04/11/15	17:16	40.54619	-122.23427	Vegetation	Rural	< 0.25 Acres	Unknown		101491414		12,000	Conductor	Overhead	Yes	4/11/15	17:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
35	PG&E	04/12/15	12:35	40.18609	-122.21385	Vegetation	Rural	< 0.25 Acres	Fire Agency	NOT SURE 2ND ON SITE (1S)	101544984		12,000	Conductor	Overhead	Yes	4/12/15	12:35	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																													
36	PG&E	04/14/15	11:09	38.02151	-121.60999	Vegetation	Rural	< 3 meters	Fire Agency	EAST CONTRA COSTA	100050773	Pacific Bell	0 - 750	Conductor	Overhead	Yes	4/14/15	11:09	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
37	PG&E	04/14/15	12:35	38.17891	-121.69384	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	AIRPORT RD BTW 2CD & 3RD P/S/O CHURCH RD		21,000	Conductor	Overhead	Yes	4/14/15	12:35	Contact From Object	N.A.	Animal	Electric Facility	Unknown																													
38	PG&E	04/15/15	12:35	39.11523	-121.57110	Vegetation	Urban	< 3 meters	Unknown		101319105	Pacific Bell	0 - 750	Conductor	Overhead	Yes	4/15/15	12:35	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown																													
39	PG&E	04/16/15	17:35	38.20541	-122.14755	Vegetation	Rural	< 3 meters	Fire Agency	FAIRFIELD FD	SB 17513		12,000	Conductor	Overhead	Yes	4/16/15	17:35	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																													
40	PG&E	04/17/15	14:34	37.00413	-119.72927	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	MADERA COUNTY	101118401		21,000	Conductor	Overhead	Yes	4/17/15	14:34	Contact From Object	N.A.	Other	N.A.	N.A.	Unknown	bird nest caught fire																											
41	PG&E	04/18/15	3:07	38.68576	-121.00839	Vegetation	Urban	< 3 meters	Fire Agency	cameron park F.D.	around t-7464		21,000	Conductor	Overhead	Yes	4/18/15	3:07	Contact From Object	N.A.	Vehicle	Pole	Human Error																													
42	PG&E	04/19/15	9:18	36.57637	-119.66898	Vegetation	Rural	< 0.25 Acres	Self Extinguished		100826688	Pacific Bell	12,000	Conductor	Overhead	Yes	4/19/15	9:18	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
43	PG&E	04/19/15	13:01	37.15710	-120.41450	Vegetation	Rural	< 0.25 Acres	Unknown		101013878		12,000	Conductor	Overhead	Yes	4/19/15	13:01	Contact From Object	N.A.	Animal	Electric Facility	Unknown																													
44	PG&E	04/20/15	18:18	36.97431	-120.01758	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	MFD	101211344	Pacific Bell	12,000	Conductor	Overhead	Yes	4/20/15	18:18	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
45	PG&E	04/21/15	17:01	34.93126	-120.44048	Vegetation	Urban	< 3 meters	Self Extinguished		101919414	Verizon	12,000	Conductor	Overhead	Yes	4/21/15	17:01	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																													
46	PG&E	04/24/15	6:06	38.05007	-121.49664	Vegetation	Rural	< 3 meters	Fire Agency	unknown	levee rd s/o herman and helans resort		21,000	Conductor	Overhead	Yes	4/24/15	6:06	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																													
47	PG&E	04/24/15	17:47	37.55864	-121.91962	Vegetation	Rural	< 0.25 Acres	Fire Agency	Alameda County	Base of C/O pole 9435		12,000	Unknown	Overhead	Yes	4/24/15	17:47	Unknown	N.A.	N.A.	N.A.	Unknown																													
48	PG&E	04/26/15	16:50	34.85467	-120.52399	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Santa Barbara County Fire Dep	2 poles load side 7455		12,000	Conductor	Overhead	Yes	4/26/15	16:50	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown																													
49	PG&E	04/27/15	12:54	35.48709	-120.67561	Vegetation	Rural	< 3 meters	Unknown		103310601		21,000	Conductor	Overhead	Yes	4/27/15	12:54	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																													
50	PG&E	04/28/15	13:57	36.75043	-119.74831	Vegetation	Urban	< 3 meters	Fire Agency	FRESNO CITY FIRE	100842188		12,000																																							

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2015

1	A	B	C	D		E		F		G		H		I		J		K			L			M			N			O			P			Q			R			S			T			U			V			W			X		
				Utility Name	Fire Start Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment/Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):																																
95	PG&E	06/04/15	20:00	38.69160	-120.86058	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101412760	Pacific Bell	12,000	Conductor	Overhead	Yes	6/4/15	20:00	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused																																			
96	PG&E	06/05/15	1:25	38.34607	-122.39979	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	4870 REDWOOD		21,000	Conductor	Overhead	Yes	6/5/15	1:25	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
97	PG&E	06/05/15	9:58	40.10703	-123.71422	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	100986799		12,000	Conductor	Overhead	Yes	6/5/15	9:58	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	tie wire																																			
98	PG&E	06/05/15	14:40	37.95777	-120.45191	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101012484		17,000	Conductor	Overhead	Yes	6/5/15	14:40	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
99	PG&E	06/05/15	15:15	36.77591	-119.77027	Vegetation	Urban	< 0.25 Acres	Fire Agency	CITY OF FRESNO	100857009	Pacific Bell	0 - 750	Transformer	Overhead	Yes	6/5/15	15:15	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
100	PG&E	06/05/15	22:13	38.77290	-121.46992	Vegetation	Rural	< 3 meters	Fire Agency	WATER	100064053		12,000	Capacitor Bank	Overhead	Yes	6/5/15	22:13	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																																				
101	PG&E	06/06/15	11:24	39.80295	-121.90643	Vegetation	Rural	< 3 meters	Unknown		100433862	Pacific Bell	12,000	Conductor	Overhead	Yes	6/6/15	11:24	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
102	PG&E	06/06/15	12:00	36.98282	-120.03324	Vegetation	Rural	< 0.25 Acres	Unknown		101015092		12,000	Lightning Arrestor	Overhead	Yes	6/6/15	12:00	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown																																				
103	PG&E	06/06/15	15:38	39.04089	-123.40189	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	11480 ANDERSON VALLEY WAY @ BRIDGE		12,000	Conductor	Overhead	Yes	6/6/15	15:38	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
104	PG&E	06/06/15	21:17	38.00575	-121.23822	Vegetation	Rural	< 0.25 Acres	Fire Agency	COUNTY FIRE	102135759	Pacific Bell	12,000	Conductor	Overhead	Yes	6/6/15	21:17	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																																				
105	PG&E	06/07/15	5:05	36.69060	-119.74880	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	FRESNO FIRE	103339346		12,000	Conductor	Overhead	Yes	6/7/15	5:05	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																																				
106	PG&E	06/07/15	14:53	36.32160	-121.28363	Vegetation	Rural	< 0.25 Acres	Fire Agency	monterey county	peach and thorne greenfield	Pacific Bell	12,000	Unknown	Overhead	Yes	6/7/15	14:53	Unknown	N.A.	N.A.	N.A.	Unknown																																				
107	PG&E	06/07/15	17:48	38.21794	-121.97524	Vegetation	Rural	100 - 299 Acres	Fire Agency	Suisun fire protection district.	c/o's 278361		21,000	Conductor	Overhead	Yes	6/7/15	17:48	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor																																			
108	PG&E	06/08/15	14:18	38.17956	-120.95899	Vegetation	Rural	10 - 99 Acres	Fire Agency	CAL FIRE	102048579	Pacific Bell	12,000	Conductor	Overhead	Yes	6/8/15	14:18	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
109	PG&E	06/08/15	16:12	38.11554	-122.55622	Vegetation	Rural	< 3 meters	Fire Agency	novato fire	front yard 9 equestrian ct		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
110	PG&E	06/08/15	16:15	39.82356	-123.60931	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	2 spans loadside 1741		12,000	Conductor	Overhead	Yes	6/8/15	16:15	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
111	PG&E	06/08/15	17:38	37.95820	-121.94406	Vegetation	Urban	< 3 meters	Unknown		T7325		0 - 750	Conductor	Overhead	Yes	6/8/15	17:38	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
112	PG&E	06/08/15	18:32	37.94040	-122.07949	Vegetation	Urban	< 3 meters	Fire Agency	CONTRA COSTA FIRE	100462348	Pacific Bell	0 - 750	Fuse	Overhead	Yes	6/8/15	18:32	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown																																				
113	PG&E	06/09/15	1:19	40.54242	-122.23906	Vegetation	Rural	< 3 meters	Customer		101490096	Frontier	12,000	Transformer	Overhead	Yes	6/9/15	1:19	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
114	PG&E	06/09/15	11:51	36.48868	-119.58237	Building	Rural	Structure Only	Fire Agency	tulare county fire	4390 ave 352		12,000	Conductor	Overhead	Yes	6/9/15	11:51	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown																																				
115	PG&E	06/09/15	13:10	38.11758	-121.15094	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	WATERLOO MORADA FIRE D	102076487		21,000	Conductor	Overhead	Yes	6/9/15	13:10	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
116	PG&E	06/09/15	15:24	38.36510	-122.25410	Vegetation	Rural	10 - 99 Acres	Fire Agency	CAL FIRE	load side 2987	Yes	21,000	Conductor	Overhead	Yes	6/9/15	15:24	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
117	PG&E	06/09/15	16:20	38.38222	-122.43156	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	102269716	Pacific Bell	21,000	Unknown	Overhead	Yes	6/9/15	16:20	Unknown	N.A.	N.A.	N.A.	Unknown																																				
118	PG&E	06/09/15	21:21	38.93940	-121.24670	Vegetation	Urban	< 3 meters	Unknown		100035304	Pacific Bell	12,000	Conductor	Overhead	Yes	6/9/15	21:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
119	PG&E	06/10/15	12:00	39.13763	-121.63145	Vegetation	Urban	< 0.25 Acres	Fire Agency	YUBA CITY	101320887		12,000	Conductor	Overhead	Yes	6/10/15	12:00	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
120	PG&E	06/10/15	17:02	36.96710	-120.03052	Vegetation	Rural	< 3 meters	Unknown		101216691	Pacific Bell	0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																																				
121	PG&E	06/10/15	21:43	37.63812	-121.89433	Vegetation	Rural	< 3 meters	Fire Agency	PLEASANTON FIRE DEPT	100927124	Pacific Bell	12,000	Conductor	Overhead	Yes	6/10/15	21:43	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
122	PG&E	06/11/15	18:32	38.82212	-121.30605	Vegetation	Urban	< 0.25 Acres	Fire Agency	CITY OF ROCKLIN/ CAL FIRE	103861493		21,000	Switch	Overhead	Yes	6/11/15	18:32	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown																																				
123	PG&E	06/12/15	9:04	39.39398	-122.22991	Vegetation	Rural	< 0.25 Acres	Fire Agency	WILLOWS FIRE DEPT.	100326792		21,000	Conductor	Overhead	Yes	6/12/15	9:04	Contact From Object	N.A.	Other	Electric Facility	Human Error	crop duster hit line																																			
124	PG&E	06/12/15	9:24	37.07609	-120.20027	Vegetation	Rural	< 3 meters	Self Extinguished		103204949		0 - 750	Conductor	Overhead	Yes	6/12/15	9:24	Unknown	N.A.	N.A.	N.A.	Unknown																																				
125	PG&E	06/12/15	10:48	38.42732	-122.85903	Vegetation	Rural	< 0.25 Acres	Fire Agency	GRATON FIRE DEP.	102023459	Pacific Bell	12,000	Conductor	Overhead	Yes	6/12/15	10:48	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
126	PG&E	06/12/15	13:07	40.40775	-122.41037	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	ACROSS STREET FROM 4139 OLD HAPPY VALLEY RD		12,000	Lightning Arrestor	Overhead	No			Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown																																				
127	PG&E	06/12/15	16:01	37.92517	-122.07817	Vegetation	Urban	< 3 meters	Fire Agency	WALNUT CREEK FIRE	100478251	Pacific Bell	0 - 750	Transformer	Overhead	Yes	6/12/15	16:01	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
128	PG&E	06/12/15	23:32	39.23077	-121.15594	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	10903 PROSPECTOR RD ROUGH AND READY	Pacific Bell	21,000	Conductor	Overhead	Yes	6/12/15	23:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
129	PG&E	06/13/15	12:50	35.27221	-118.91221	Vegetation	Urban	< 3 meters	Fire Agency	Kern Co Fire Dept	103779942		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
130	PG&E	06/14/15	12:19	39.74316	-121.84249	Vegetation	Urban	< 3 meters	Fire Agency	CHICO FIRE DEPT	100426666	Pacific Bell	0 - 750	Conductor	Overhead	No			Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown																																				
131	PG&E	06/14/15	13:50	36.96363	-119.87030	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	12915 mesa, maderia		21,000	Conductor	Overhead	Yes	6/14/15	13:50	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
132	PG&E	06/15/15	15:35	37.18518	-121.75950	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	San Jose city	100618215	Pacific Bell	21,000	Conductor	Overhead	Yes	6/15/15	15:35	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																																				
133	PG&E	06/16/15	10:40	38.00621	-122.10918	Vegetation	Urban	26 - 9.99 Acres	Unknown		Tw 008/058		115,000	Conductor	Overhead	Yes	6/16/15	10:40	Contact From Object	N.A.	Other	Electric Facility	Unknown	bird-dropped material																																			
134	PG&E	06/16/15	11:27	39.03816	-122.92637	Vegetation	Rural	< 0.25 Acres	Fire Agency	LAKEPORT FIRE	102165174	Pacific Bell	0 - 750	Conductor	Overhead	Yes	6/16/15	11:27	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
135	PG&E	06/17/15	10:32	37.68881	-120.90776	Vegetation	Rural	< 3 meters	Fire Agency	Escalon fire dept.			17,000	Conductor	Overhead	Yes	6/17/15	10:32	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
136	PG&E	06/17/15	15:49	37.35161	-120.64202	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	8503 LONGVIEW ATWATER		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
137	PG&E	06/17/15	18:35	35.33024	-119.01164	Vegetation	Urban	< 3 meters	Fire Agency	BCFD	100155778	Pacific Bell	21,000	Conductor	Overhead	Yes	6/17/15	18:35	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
138	PG&E	06/19/15	12:14	34.83564	-120.38433	Vegetation	Rural	10 - 99 Acres	Fire Agency	SANTA BARBARA COUNTY FIRE	103015189		12,000	Conductor	Overhead	Yes	6/19/15	12:14	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
139	PG&E	06/19/15	20:09	39.15973	-121.48652	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101308410	Pacific Bell	0 - 750	Conductor	Overhead	Yes	6/19/15	20:09	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
140	PG&E	06/20/15	1:28	36.25480	-119.64349	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE			12,000	Conductor	Overhead	Yes	6/20/15	1:28	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
141	PG&E	06/21/15	1:32	39.00797	-121.34400	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	100021218		12,000	Conductor	Overhead	Yes	6/21/15	1:32	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																																				
142	PG&E	06/21/15	3:17	39.09559	-121.54211	Vegetation	Rural	10 - 99 Acres	Fire Agency	Wheatland fire dept	Transmission Sw 159 on the																																																

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2015

1	A	B	C	D		E		F		G		H		I		J		K		L		M		N		O		P		Q		R		S		T		U		V		W		X	
				Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):																		
187	PG&E	07/03/15	12:12	35.38600	-120.85705	Vegetation	Urban	< 0.25 Acres	Fire Agency	Morro Bay city	101848318		12,000	Conductor	Overhead	Yes	7/3/15	12:12	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																						
188	PG&E	07/03/15	19:21	36.53499	-119.50036	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	County, CDF	40952 Road 32 Kingsburg		12,000	Conductor	Overhead	Yes	7/3/15	19:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
189	PG&E	07/04/15	1:14	38.95660	-121.04336	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100037226		12,000	Other	Overhead	Yes	7/4/15	1:14	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	Booster																					
190	PG&E	07/04/15	7:37	36.83140	-119.89259	Vegetation	Urban	< 0.25 Acres	Unknown		103291813		115,000	Conductor	Overhead	Yes	7/4/15	7:37	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown																						
191	PG&E	07/04/15	14:14	37.88920	-121.61349	Vegetation	Rural	< 3 meters	Fire Agency	FIRE DEPARTMENT	15001 HWY 4 2W/O DISCOVERY BAY	None	21,000	Conductor	Overhead	Yes	7/4/15	14:14	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
192	PG&E	07/05/15	9:42	35.53230	-120.73706	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE			0 - 750	Conductor	Overhead	No			Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown																						
193	PG&E	07/05/15	21:21	38.65237	-120.62782	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	one span east of c/o 1055		21,000	Conductor	Overhead	Yes	7/5/15	21:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
194	PG&E	07/07/15	3:02	36.02176	-120.19985	Vegetation	Rural	< 0.25 Acres	Fire Agency	FRESNO CAL FIRE	1 POLE E/O 9716F OFF SUTTER AVE		21,000	Conductor	Overhead	Yes	7/7/15	3:02	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
195	PG&E	07/07/15	5:52	36.75931	-121.29536	Vegetation	Rural	< 0.25 Acres	Fire Agency	Hollister City	.25 Mile south of Bolado Park on Airline Hwy		21,000	Conductor	Overhead	Yes	7/7/15	5:52	Contact From Object	N.A.	Vehicle	Pole	Human Error																						
196	PG&E	07/07/15	10:42	39.11377	-121.06550	Vegetation	Rural	< 0.25 Acres	Unknown				12,000	Conductor	Overhead	Yes	7/7/15	10:42	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
197	PG&E	07/07/15	15:27	35.15496	-120.54420	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	303corraltos cyn rd	Pacific Bell	12,000	Conductor	Overhead	Yes	7/7/15	15:27	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
198	PG&E	07/07/15	22:02	37.00333	-121.56442	Vegetation	Urban	< 0.25 Acres	Self Extinguished		100614011		21,000	Conductor	Overhead	Yes	7/7/15	22:02	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																						
199	PG&E	07/08/15	11:23	39.22397	-121.06350	Vegetation	Urban	< 0.25 Acres	Fire Agency	CAL FIRE	100094468	Verizon	12,000	Conductor	Overhead	Yes	7/8/15	11:23	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
200	PG&E	07/11/15	8:57	38.21878	-122.23333	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	mid span from 5267		12,000	Conductor	Overhead	Yes	7/11/15	8:57	Equipment/ Facility Failure	Guy/Span Wire	N.A.	N.A.	Unknown																						
201	PG&E	07/11/15	15:38	38.18389	-121.88356	Vegetation	Rural	< 0.25 Acres	Fire Agency	unknown	FUSE C/O 10313 LITTLE HONKER BAY RD & 20 SPANS E/O 10313		21,000	Conductor	Overhead	Yes	7/11/15	15:38	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																						
202	PG&E	07/12/15	1:32	39.95203	-122.23034	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101528676	None	0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																						
203	PG&E	07/12/15	15:27	35.25623	-120.68390	Vegetation	Urban	< 3 meters	Customer		101936544	Pacific Bell	0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																						
204	PG&E	07/12/15	17:04	37.47130	-122.42559	Vegetation	Rural	< 0.25 Acres	Fire Agency	COUNTY FIRE	1 s w c509		12,000	Conductor	Overhead	Yes	7/12/15	17:04	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	Jumper																					
205	PG&E	07/12/15	19:47	39.51180	-122.19838	Vegetation	Rural	< 3 meters	Fire Agency	WILLOWS FIRE DEPT.	100403587		0 - 750	Conductor	Overhead	Yes	7/12/15	19:47	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																						
206	PG&E	07/13/15	17:16	37.26548	-121.98035	Vegetation	Urban	< 3 meters	Fire Agency	campbell	100523574	Pacific Bell	12,000	Capacitor Bank	Overhead	Yes	7/13/15	14:16	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																						
207	PG&E	07/13/15	14:04	37.96803	-122.35911	Vegetation	Rural	< 0.25 Acres	Fire Agency	RICHMOND FIRE DEPT & CO	101435021	Pacific Bell	12,000	Conductor	Overhead	Yes	7/13/15	17:04	Contact From Object	N.A.	Balloons	Electric Facility	Human Error																						
208	PG&E	07/14/15	12:37	39.02696	-122.13531	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	ar buckle fire demp	Pole 010/189 - SAND CREEK RD CORTINA SCHOOL RD		60,000	Conductor	Overhead	Yes	7/14/15	12:37	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
209	PG&E	07/14/15	17:25	37.36308	-122.02102	Vegetation	Urban	< 3 meters	Fire Agency	id	100530398	Pacific Bell	12,000	Conductor	Overhead	Yes	7/14/15	17:25	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
210	PG&E	07/14/15	20:38	38.24395	-122.54054	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101997187	Pacific Bell	12,000	Conductor	Overhead	Yes	7/14/15	20:38	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																						
211	PG&E	07/15/15	9:00	36.99698	-121.73812	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	101795728		21,000	Conductor	Overhead	Yes	7/15/15	9:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
212	PG&E	07/15/15	19:14	36.89846	-121.69053	Vegetation	Rural	< 0.25 Acres	Fire Agency	city	101710538		21,000	Conductor	Overhead	Yes	7/15/15	19:14	Contact From Object	N.A.	Vehicle	Pole	Human Error																						
213	PG&E	07/16/15	19:11	37.19894	-119.77123	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	20334 ROAD 400		12,000	Conductor	Overhead	Yes	7/16/15	19:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
214	PG&E	07/16/15	19:27	37.76190	-120.82127	Vegetation	Urban	< 3 meters	Self Extinguished		102333491	Pacific Bell	0 - 750	Conductor	Overhead	Yes	7/16/15	19:27	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																						
215	PG&E	07/17/15	0:20	36.96718	-119.64365	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100651276		0 - 750	Conductor	Overhead	Yes	7/17/15	0:20	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown																						
216	PG&E	07/17/15	0:53	34.88820	-120.32300	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	SANTA BARBRA COUNTY FIRE	EAST OF SISQUOC SUB		12,000	Conductor	Overhead	Yes	7/17/15	0:53	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																						
217	PG&E	07/17/15	17:18	38.55961	-121.64346	Vegetation	Rural	< 3 meters	Unknown		In mid span between 2 poles. @ 46735 co. rd. 32B davis		12,000	Conductor	Overhead	Yes	7/17/15	17:18	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																						
218	PG&E	07/18/15	17:00	38.83826	-123.62968	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	off HWY 1 PA		12,000	Conductor	Overhead	Yes	7/18/15	17:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
219	PG&E	07/18/15	18:59	39.71199	-123.32836	Vegetation	Rural	26 - 9.99 Acres	Unknown				12,000	Conductor	Overhead	Yes	7/18/15	18:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
220	PG&E	07/19/15	9:44	35.21499	-120.61437	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	101930875		12,000	Conductor	Overhead	Yes	7/19/15	9:44	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike																					
221	PG&E	07/19/15	19:36	38.66629	-121.79353	Vegetation	Urban	< 3 meters	Fire Agency	WOODLAND FIRE DEPT.	BASE OF TRANSMISSION / DISTRIBUTION POLE = 1/P/S/O FUSES # 8973		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
222	PG&E	07/20/15	15:15	37.76203	-120.86537	Vegetation	Urban	< 0.25 Acres	Fire Agency	OAKDALE CITY FIRE			0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																						
223	PG&E	07/21/15	8:44	39.11813	-123.20113	Vegetation	Rural	< 0.25 Acres	Fire Agency	UKIAH FIRE	102178810	Pacific Bell	0 - 750	Unknown	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																						
224	PG&E	07/21/15	10:46	37.18055	-121.06247	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	e/o dmc s/o cottenwood		12,000	Conductor	Overhead	Yes	7/21/15	10:46	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
225	PG&E	07/22/15	11:03	38.12063	-122.24813	Vegetation	Urban	< 3 meters	Fire Agency	VALLEJO FD	102308149		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
226	PG&E	07/22/15	14:21	38.79354	-120.71402	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	sl 3204 stope dr		12,000	Conductor	Overhead	Yes	7/22/15	14:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
227	PG&E	07/23/15	13:14	36.23983	-119.77674	Vegetation	Rural	< 0.25 Acres	Fire Agency	KINGS COUNTY	103242492	YES	12,000	Conductor	Overhead	Yes	7/23/15	13:14	Contact From Object	N.A.	Vehicle	Pole	Human Error																						
228	PG&E	07/23/15	20:04	38.00746	-121.84819	Vegetation	Rural	< 0.25 Acres	Unknown		Tower 006/081		60,000	Unknown	Overhead	Yes	7/23/15	20:04	Unknown	N.A.	N.A.	N.A.	Unknown																						
229	PG&E	07/24/15	4:10	38.45227	-119.71819	Vegetation	Rural	< 0.25 Acres	Fire Agency	Dixon fire dept	101575623	Pacific Bell	12,000	Conductor	Overhead	Yes	7/24/15	4:10	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
230	PG&E	07/24/15	14:30	36.69127	-119.03117	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	46970 DUNLAP RD	YES	0 - 750	Transformer	Overhead	Yes	7/24/15	14:30	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																						
231	PG&E	07/25/15	14:52	38.92645	-121.29455	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	wise rd west of gladding lincoln	None	12,000	Conductor	Overhead	Yes	7/25/15	14:52	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																						
232	PG&E	07/25/15	19:34	39.78477	-121.86082	Vegetation	Urban	< 0.25 Acres	Fire Agency	CAL FIRE	3668 hicks lane, chico		12,000	Conductor	Overhead	Yes	7/25/15	19:34	Contact From Object	N.A.	Animal	Electric Facility	Unknown																						
233	PG&E	07/26/15	12:25	39.15861	-121.06344	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	15499 ALLISON RANCH RD		12,000	Conductor	Overhead	Yes	7/26/15	12:25	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																						
234	PG&E	07/27/15	9:41	37.65653	-121.75705	Vegetation	Rural	< 0.25 Acres	Fire Agency	LPFD	100926006	Pacific Bell																																	

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2015

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment/Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
279	PG&E	08/14/15	17:44	37.88943	-120.49334	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	ENTRANCE TO 14650 HWY 108, JAMESTOWN		17,000	Conductor	Overhead	Yes	8/14/15	17:44	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
280	PG&E	08/15/15	12:26	36.83442	-121.66135	Vegetation	Rural	< 3 meters	Customer		101713223	Pacific Bell	12,000	Conductor	Overhead	Yes	8/15/15	12:26	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
281	PG&E	08/15/15	13:41	37.96072	-122.57094	Vegetation	Urban	< 0.25 Acres	Fire Agency	COUNTY FIRE			12,000	Conductor	Overhead	Yes	8/15/15	13:41	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
282	PG&E	08/16/15	7:35	35.45724	-120.65674	Vegetation	Rural	< 3 meters	Utility: PG&E		8932 SAN GABRIEL RD. SW C/O OF LOT, Atascadero	None	0 - 750	Conductor	Overhead	Yes	8/16/15	7:35	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
283	PG&E	08/16/15	12:04	37.59395	-122.00663	Vegetation	Urban	< 0.25 Acres	Fire Agency	ALCO FIRE/UNION CITY			12,000	Conductor	Overhead	Yes	8/16/15	12:04	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
284	PG&E	08/16/15	20:59	38.59631	-121.52662	Vegetation	Urban	< 3 meters	Fire Agency	west sacramento FD	101606084	Pacific Bell	12,000	Conductor	Overhead	Yes	8/16/15	20:59	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
285	PG&E	08/17/15	8:37	37.07567	-122.02303	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101800237	Pacific Bell	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
286	PG&E	08/17/15	14:29	36.72160	-119.83147	Vegetation	Rural	< 3 meters	Fire Agency	FRESNO FD			12,000	Conductor	Overhead	Yes	8/17/15	14:29	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
287	PG&E	08/17/15	17:33	38.83366	-123.55335	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	14 spans load side 2345		12,000	Conductor	Overhead	Yes	8/17/15	17:33	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
288	PG&E	08/17/15	20:57	36.68672	-119.06123	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	46371 ORCHARD DRIVE		12,000	Conductor	Overhead	Yes	8/17/15	20:57	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
289	PG&E	08/18/15	8:03	39.08673	-122.92360	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	at base of pole across from 3838 Hill rd Lakeport		0 - 750	Unknown	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown	
290	PG&E	08/18/15	20:36	39.20201	-121.07844	Vegetation	Rural	< 0.25 Acres	Fire Agency	CO. & CDF	3 LOC HIDDEN VALLEY ; OLD AUBURN RD 1		12,000	Conductor	Overhead	Yes	8/18/15	20:36	Contact From Object	N.A.	Vehicle	Pole	Human Error	
291	PG&E	08/19/15	0:07	38.88616	-121.07449	Vegetation	Urban	< 0.25 Acres	Unknown				12,000	Capacitor Bank	Overhead	Yes	8/19/15	0:07	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
292	PG&E	08/19/15	2:10	39.38484	-122.55136	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	STONYFORD FIRE DEPT	@ MTR # 1008056130		12,000	Conductor	Overhead	Yes	8/19/15	2:10	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
293	PG&E	08/19/15	6:20	39.28313	-123.29312	Vegetation	Rural	10 - 99 Acres	Fire Agency	CAL FIRE	MTR#50001225	None	12,000	Conductor	Overhead	Yes	8/19/15	6:20	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
294	PG&E	08/19/15	13:42	37.79257	-120.77483	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Stanislaus Consolidated fire	102334306	Pacific Bell	17,000	Conductor	Overhead	Yes	8/19/15	13:42	Contact From Object	N.A.	Vehicle	Pole	Human Error	
295	PG&E	08/20/15	14:08	36.89894	-119.52129	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100725569	None	12,000	Conductor	Overhead	Yes	8/20/15	14:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
296	PG&E	08/21/15	13:54	37.42948	-121.91416	Vegetation	Urban	< 3 meters	Customer		BACK YARD OF 296 ABBOTT		21,000	Conductor	Overhead	Yes	8/21/15	13:54	Equipment/ Facility Failure		Crossarm	N.A.	Unknown	
297	PG&E	08/22/15	20:38	38.77476	-120.85635	Vegetation	Rural	< 3 meters	Self Extinguished		at base of co pole 21721 - 720 Woodridge Rd.	Pacific Bell	12,000	Conductor	Overhead	Yes	8/22/15	20:38	Contact From Object	N.A.	Vegetation	Communication Facility	Unknown	tree hit phone lines
298	PG&E	08/23/15	14:04	38.93344	-122.61999	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CL fire dept	7200 so. center dr	Pacific Bell	12,000	Conductor	Overhead	Yes	8/23/15	14:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
299	PG&E	08/23/15	14:15	37.33940	-120.43778	Vegetation	Rural	< 0.25 Acres	Utility: PG&E		AT INTERSECTION OF HARBOR & DUNN		12,000	Lightning Arrestor	Overhead	Yes	8/23/15	14:15	Equipment/ Facility Failure		Lightning Arrestor	N.A.	Unknown	
300	PG&E	08/24/15	22:48	37.89605	-122.60110	Vegetation	Rural	< 3 meters	Fire Agency	marin county fire	200' east of pan toll rd 50' north of panoramic hwy		12,000	Unknown	Overhead	Yes	8/24/15	22:48	Unknown	N.A.	N.A.	Unknown		
301	PG&E	08/25/15	9:12	38.33511	-123.04487	Vegetation	Rural	< 0.25 Acres	Fire Agency	Bodega bay fire dept	101974695	Pacific Bell	12,000	Conductor	Overhead	Yes	8/25/15	9:12	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
302	PG&E	08/25/15	14:01	39.14910	-121.59715	Vegetation	Urban	< 0.25 Acres	Customer		101338374	Pacific Bell	0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	Unknown		
303	PG&E	08/26/15	12:04	37.96382	-122.52432	Vegetation	Urban	< 0.25 Acres	Fire Agency	srfd	102242504	Pacific Bell	12,000	Conductor	Overhead	Yes	8/26/15	12:04	Unknown	N.A.	N.A.	Unknown		
304	PG&E	08/26/15	15:36	36.62450	-121.52891	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	MONTEREY COUNTY FIRE DEPT	101770699	Pacific Bell	12,000	Conductor	Overhead	Yes	8/26/15	15:36	Contact From Object	N.A.	Vehicle	Pole	Human Error	
305	PG&E	08/26/15	23:49	36.38972	-121.36528	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101756678	None	21,000	Conductor	Overhead	Yes	8/26/15	23:49	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
306	PG&E	08/27/15	3:30	37.84480	-122.19922	Vegetation	Urban	< 0.25 Acres	Unknown		100487196	Pacific Bell	12,000	Conductor	Overhead	Yes	8/27/15	3:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
307	PG&E	08/27/15	18:00	37.40304	-121.90557	Vegetation	Urban	< 3 meters	Fire Agency	Milpitas F.D	switches 1238 and 1114		21,000	Switch	Overhead	Yes	8/27/15	18:00	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown	
308	PG&E	08/28/15	3:14	36.60670	-119.88070	Vegetation	Rural	< 3 meters	Fire Agency	COUNTY FIRE	100710466		12,000	Conductor	Overhead	Yes	8/28/15	3:14	Contact From Object	N.A.	Vehicle	Pole	Human Error	
309	PG&E	08/28/15	7:08	38.88394	-121.30302	Vegetation	Urban	< 0.25 Acres	Fire Agency	lincoln fire	100068928	Pacific Bell	12,000	Conductor	Overhead	Yes	8/28/15	7:08	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
310	PG&E	08/28/15	11:48	38.85130	-121.14687	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100055373	Pacific Bell	0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	Unknown		
311	PG&E	08/28/15	12:02	37.90471	-122.20584	Vegetation	Rural	< 0.25 Acres	Fire Agency	EB MUD	103623279		0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	Unknown		
312	PG&E	08/28/15	21:45	38.01982	-122.06136	Vegetation	Rural	< 0.25 Acres	Fire Agency	CONTRA COSTA FIRE	HWY 4 PORT CHICAGO WILLOW PASS		21,000	Conductor	Overhead	Yes	8/28/15	21:45	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	pole cut with chainsaw
313	PG&E	08/28/15	22:05	37.80391	-121.20762	Vegetation	Urban	< 0.25 Acres	Fire Agency	Manteca Fire	102084916	Verizon	17,000	Conductor	Overhead	Yes	8/28/15	22:05	Contact From Object	N.A.	Vehicle	Pole	Human Error	
314	PG&E	08/29/15	3:30	38.63019	-122.83270	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	Dir road across from 3204 Rio Lindo Rd, Healdsburg		12,000	Conductor	Overhead	Yes	8/29/15	3:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
315	PG&E	08/30/15	17:05	38.40390	-120.55590	Vegetation	Rural	< 0.25 Acres	Fire Agency		centennial mine rd		12,000	Conductor	Overhead	Yes	8/30/15	17:05	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
316	PG&E	08/31/15	14:28	36.53251	-121.14620	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	29401 Hwy 25		21,000	Conductor	Overhead	Yes	8/31/15	14:28	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
317	PG&E	08/31/15	16:06	40.49147	-122.28348	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101467437	Pacific Bell	12,000	Conductor	Overhead	Yes	8/31/15	16:06	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
318	PG&E	08/31/15	20:19	37.98851	-122.57776	Vegetation	Urban	< 0.25 Acres	Fire Agency	marin county fire	102222106	Pacific Bell	12,000	Conductor	Overhead	Yes	8/31/15	20:19	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
319	PG&E	09/01/15	1:29	38.15941	-121.61279	Other	Rural	Structure Only	Fire Agency	ISELTON FIRE DEPT	16393 JACKSON BL ISLETON		21,000	Conductor	Overhead	Yes	9/1/15	1:29	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
320	PG&E	09/01/15	10:34	39.40544	-122.00113	Vegetation	Rural	< 0.25 Acres	Fire Agency	BUTTE CITY	101638374		0 - 750	Conductor	Overhead	Yes	9/1/15	10:34	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
321	PG&E	09/01/15	18:48	35.38207	-118.93012	Other	Urban	Structure Only	Fire Agency	KCFD	100120045		0 - 750	Conductor	Overhead	Yes	9/1/15	18:48	Contact From Object	N.A.	Vehicle	Pole	Human Error	
322	PG&E	09/01/15	22:15	35.64434	-120.70667	Vegetation	Rural	< 3 meters	Utility: PG&E		101939126	Pacific Bell	12,000	Conductor	Overhead	Yes	9/1/15	22:15	Contact From Object	N.A.	Vehicle	Pole	Human Error	
323	PG&E	09/02/15	19:07	39.72505	-122.08708	Vegetation	Rural	< 3 meters	Fire Agency	ORLAND FIRE DEPT			0 - 750	Conductor	Overhead	No			Vandalism/Theft	N.A.	N.A.	Human Error	gun-shot conductor	
324	PG&E	09/03/15	19:51	37.60220	-122.03947	Vegetation	Urban	< 3 meters	Unknown				12,000	Conductor	Overhead	Yes	9/3/15	19:51	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
325	PG&E	09/04/15	7:49	40.23182	-122.36428	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	E/O FRONTIER RD & N/O WAGON WAY		12,000	Conductor	Overhead	Yes	9/4/15	7:49	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
326	PG&E	09/04/15	8:47	36.79246	-121.66288	Vegetation	Rural	< 0.25 Acres	Fire Agency	FIRE DEPT	101722853	Pacific Bell	12,000	Conductor	Overhead	Yes	9/4/15	8:47	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
327																								

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2015

1	A	B	C	D		E		F		G		H		I		J		K			L			M			N			O			P			Q			R			S			T			U			V			W			X		
				Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):																																
371	PG&E	09/29/15	19:46	37.97786	-121.71949	Vegetation	Urban	< 0.25 Acres	Fire Agency	OAKLEY FIRE DEPARTMENT	100470700	Pacific Bell	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
372	PG&E	09/30/15	16:41	37.35421	-122.15916	Vegetation	Rural	< 3 meters	Utility: PG&E		100520776	Pacific Bell	12,000	Conductor	Overhead	Yes	9/30/15	16:41	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused																																			
373	PG&E	09/30/15	17:25	38.57469	-120.68203	Vegetation	Rural	< 0.25 Acres	Fire Agency	el dorado county	7901 shenandoah ln		21,000	Conductor	Overhead	Yes	9/30/15	17:25	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
374	PG&E	09/30/15	19:38	39.21883	-122.24643	Vegetation	Rural	< 0.25 Acres	Fire Agency	williams fire demp	101641855		12,000	Conductor	Overhead	Yes	9/30/15	19:38	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
375	PG&E	10/01/15	2:43	39.66657	-121.77421	Vegetation	Rural	< 3 meters	Fire Agency	NOT KNOWN-GONE ON ARR	100345398	Pacific Bell	0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																																				
376	PG&E	10/01/15	11:28	37.50880	-120.34464	Vegetation	Rural	< 0.25 Acres	Unknown		Pole 019007		70,000	Conductor	Overhead	Yes	10/1/15	11:28	Contamination	N.A.	N.A.	N.A.	Weather																																				
377	PG&E	10/01/15	13:13	37.62911	-122.11534	Vegetation	Rural	< 0.25 Acres	Fire Agency	HAYWARD	X ST FROM 25920 EDEN LANDING RD		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
378	PG&E	10/02/15	19:16	36.94544	-119.83020	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	101121403		21,000	Conductor	Overhead	Yes	10/2/15	19:16	Contact From Object	N.A.	Other	Electric Facility	Human Error	Kite on line																																			
379	PG&E	10/03/15	7:27	39.06326	-122.62369	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	2323 new long valley rd		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																																				
380	PG&E	10/03/15	21:11	39.73584	-121.68554	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	honey run rd at cutouts 16015		12,000	Conductor	Overhead	Yes	10/3/15	21:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
381	PG&E	10/03/15	22:51	39.11578	-122.88785	Vegetation	Rural	< 0.25 Acres	Fire Agency	north shore fire department	102164828	Pacific Bell	12,000	Conductor	Overhead	Yes	10/3/15	22:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
382	PG&E	10/04/15	1:03	39.79228	-121.58029	Vegetation	Urban	< 3 meters	Fire Agency	CAL FIRE			12,000	Conductor	Overhead	Yes	10/4/15	1:03	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
383	PG&E	10/04/15	1:32	39.22788	-121.37735	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	in field at 6275 sandstone ln		12,000	Conductor	Overhead	Yes	10/4/15	1:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
384	PG&E	10/04/15	8:26	38.81272	-121.20460	Vegetation	Urban	< 3 meters	Fire Agency	LOOMIS FIRE	C-126 TAYLOR RD AND SIERRA COLLEGE		0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown																																				
385	PG&E	10/04/15	14:35	39.47043	-121.68873	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	NORTH SIDE OF HWY 162, 1500' EAST OF RICETON HWY		12,000	Lightning Arrestor	Overhead	Yes	10/4/15	14:35	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown																																				
386	PG&E	10/04/15	17:42	39.11654	-122.89514	Vegetation	Rural	10 - 99 Acres	Fire Agency	CAL FIRE	robin hill		12,000	Conductor	Overhead	Yes	10/4/15	17:42	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
387	PG&E	10/06/15	18:48	40.51057	-122.22413	Vegetation	Rural	26 - 9.99 Acres	Unknown		101468974	Frontier	12,000	Conductor	Overhead	Yes	10/6/15	18:48	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
388	PG&E	10/07/15	15:03	35.30789	-120.83281	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101924901	Pacific Bell	12,000	Conductor	Overhead	Yes	10/7/15	15:03	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
389	PG&E	10/08/15	13:47	35.54730	-120.77010	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	DEERFIELD RD S/O HIDDEN VALEY RD.		21,000	Conductor	Overhead	Yes	10/8/15	13:47	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
390	PG&E	10/09/15	6:32	38.36399	-122.91729	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	320 Freestone St. Frestone		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
391	PG&E	10/09/15	19:03	38.38555	-122.53028	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101988271	Pacific Bell	12,000	Conductor	Overhead	Yes	10/9/15	19:03	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
392	PG&E	10/09/15	22:16	37.59083	-122.35023	Vegetation	Urban	< 3 meters	Fire Agency	central county fire, engine 34	at base of pole c0708		0 - 750	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
393	PG&E	10/10/15	0:20	40.88620	-124.08834	Building	Urban	Structure Only	Fire Agency	CAL FIRE	100968524	Pacific Bell	0 - 750	Conductor	Overhead	Yes	10/10/15	0:20	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
394	PG&E	10/12/15	9:13	38.29190	-122.27061	Vegetation	Urban	< 3 meters	Customer		1111 Terrace Drive, Napa		0 - 750	Conductor	Overhead	Yes	10/12/15	9:13	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
395	PG&E	10/12/15	15:16	38.90206	-121.30109	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	CAL FIRE	1800 HWY 65 LINCOLN		21,000	Conductor	Overhead	Yes	10/12/15	15:16	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
396	PG&E	10/12/15	17:25	36.70740	-121.32824	Vegetation	Rural	300 - 999 Acres	Fire Agency	CAL FIRE	Cienega Road X Limekiln Road, San Benito Co.		21,000	Conductor	Overhead	Yes	10/12/15	17:25	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown																																				
397	PG&E	10/13/15	14:38	37.79350	-120.92841	Vegetation	Rural	< 0.25 Acres	Fire Agency	Escalon Fire	102335307		17,000	Conductor	Overhead	Yes	10/13/15	14:38	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown																																				
398	PG&E	10/13/15	18:32	37.74209	-121.94394	Building	Urban	Structure Only	Fire Agency	SAN RAMON FD	100902289		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
399	PG&E	10/14/15	14:17	37.33299	-120.50565	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	CAL FIRE	3537 N HWY 59 MERCED		0 - 750	Conductor	Overhead	Yes	10/14/15	14:17	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
400	PG&E	10/15/15	18:51	36.50818	-119.79081	Building	Rural	Structure Only	Fire Agency	FRESNO COUNTY	100803812		12,000	Conductor	Overhead	Yes	10/15/15	18:51	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike																																			
401	PG&E	10/16/15	9:43	39.18704	-123.20151	Vegetation	Rural	< 3 meters	Unknown		102198855		12,000	Conductor	Overhead	Yes	10/16/15	9:43	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
402	PG&E	10/17/15	7:04	37.65736	-121.61965	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	13900 TESLA RD LIVERMORE		12,000	Conductor	Overhead	Yes	10/17/15	7:04	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
403	PG&E	10/18/15	20:06	37.55143	-122.29279	Vegetation	Urban	< 3 meters	Fire Agency	SAN MATEO			12,000	Conductor	Overhead	Yes	10/18/15	20:06	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																																				
404	PG&E	10/20/15	5:59	38.75713	-121.20793	Vegetation	Rural	< 0.25 Acres	Fire Agency	South Placer fire dist	5062 Whisper Way		12,000	Conductor	Overhead	Yes	10/20/15	5:59	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																																				
405	PG&E	10/25/15	5:50	37.78434	-121.76833	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	cutouts 9504		21,000	Conductor	Overhead	Yes	10/25/15	5:50	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
406	PG&E	10/27/15	16:15	38.61545	-121.05860	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire	101375211	Pacific Bell	0 - 750	Transformer	Overhead	Yes	10/27/15	16:15	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
407	PG&E	10/27/15	19:27	39.07294	-121.68991	Vegetation	Rural	< 3 meters	Fire Agency	sutter county	101329222		0 - 750	Conductor	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown																																				
408	PG&E	10/28/15	1:05	37.63980	-122.11553	Vegetation	Urban	< 3 meters	Fire Agency	Hayward Fire Dept	100928934	Pacific Bell	0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown																																				
409	PG&E	10/30/15	4:29	39.50594	-123.76719	Vegetation	Rural	< 3 meters	Fire Agency	local fire	in field next to hwy / 1 span SS of Fuse 4617		12,000	Conductor	Overhead	Yes	10/30/15	4:29	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
410	PG&E	10/30/15	17:13	38.31661	-120.72265	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	7600 HWY 49, Jackson		0 - 750	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
411	PG&E	10/31/15	7:45	38.11567	-120.89308	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	103763040		12,000	Conductor	Overhead	Yes	10/31/15	7:45	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
412	PG&E	10/31/15	19:11	37.36976	-120.72342	Vegetation	Urban	< 3 meters	Fire Agency	CAL FIRE	5686 LINCOLN BLVD LIVINGSTON		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown																																				
413	PG&E	11/01/15	4:22	40.43909	-122.39769	Vegetation	Rural	< 0.25 Acres	Fire Agency	HAPPY VALLEY FIRE FIRST R	101490990	TDS HAPPY VALL	12,000	Conductor	Overhead	Yes	11/1/15	4:22	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
414	PG&E	11/02/15	9:53	36.77784	-119.93119	Building	Rural	Structure Only	Fire Agency	FRESNO COUNTY FIRE	7777 W SHIELDS		12,000	Conductor	Overhead	Yes	11/2/15	9:53	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown																																				
415	PG&E	11/04/15	17:30	36.82152	-120.50807	Vegetation	Rural	< 0.25 Acres	Fire Agency	FRESNO COUNTY FD	SMART METER RELAY # 16704		0 - 750	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown																																				
416	PG&E	11/04/15	19:21	37.55244	-122.33039	Vegetation	Urban	< 3 meters	Fire Agency	smfd	103376789		4,000	Conductor	Overhead	Yes	11/4/15	19:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown																																				
417	PG&E	11/05/15	10:39	36.40920	-119.79702	Vegetation	Rural	< 0.25 Acres	Fire Agency	FRESNO COUNTY	100871818		12,000	Conductor	Overhead	Yes	11/5/15	10:39	Contact From Object	N.A.	Vehicle	Pole	Human Error																																				
418	PG&E	11/05/15	12:11	35.37549	-118.94629	Vegetation	Urban	< 3 meters	Fire Agency	CITY	100254768	Pacific Bell	0 - 750	Conductor	Overhead	Yes	11/5/15	12:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown																																				
419</																																																											

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2016

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
3	PG&E	1/21/16	21:32	40.55300	-124.11158	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100994021	PACIFIC BELL	12,000	Conductor	Overhead	Yes	1/21/16	21:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
4	PG&E	1/23/16	15:41	39.94860	-122.37281	Vegetation	RURAL	< 0.25 Acres	Self Extinguished	N.A.	101524077		12,000	Conductor	Overhead	Yes	1/23/16	15:41	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
5	PG&E	2/2/16	6:01	37.77553	-122.44109	Building	URBAN	Structure Only	Fire Agency	SFFD	101817610	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	2/2/16	6:01	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
6	PG&E	2/5/16	20:50	40.01564	-122.43330	Vegetation	RURAL	< 0.25 Acres	Fire Agency	TEHAMA COUNTY & LOCAL	101529688	None	12,000	Conductor	Overhead	Yes	2/5/16	20:50	Contact From Object	N.A.	Vehicle	Pole	Human Error	
7	PG&E	2/8/16	3:55	39.78520	-121.50560	Vegetation	RURAL	< 0.25 Acres	Fire Agency	CAL FIRE/BUTTE COUNTY FIRE	100337507		12,000	Conductor	Overhead	Yes	2/8/16	3:55	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
8	PG&E	2/17/16	21:16	40.66770	-124.22734	Building	RURAL	Structure Only	Fire Agency	Cal Fire	101002728		0 - 750	Conductor	Overhead	Yes	2/17/16	21:16	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike
9	PG&E	2/26/16	15:40	36.83961	-119.79748	Building	URBAN	Structure Only	Self Extinguished	N.A.	100640781	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	2/26/16	15:40	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
10	PG&E	3/28/16	12:16	39.74275	-121.82024	Vegetation	URBAN	< 3 meters	Fire Agency	Chico FD	100338028	PACIFIC BELL	12,000	Conductor	Overhead	Yes	3/28/16	12:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
11	PG&E	4/1/16	4:25	35.01641	-118.89213	Vegetation	RURAL	< 3 meters	Fire Agency	Kern County FD	100194594	None	12,000	Other	Overhead	Yes	4/1/16	4:25	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
12	PG&E	4/2/16	3:48	35.37034	-118.97521	Vegetation	URBAN	< 0.25 Acres	Fire Agency	KCFD	100244829		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
13	PG&E	4/2/16	7:06	35.03071	-120.52785	Vegetation	RURAL	< 3 meters	Fire Agency	SAN LUIS CO FIRE	101892796	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	4/2/16	7:06	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
14	PG&E	4/3/16	6:54	40.41751	-122.21092	Other	RURAL	Structure Only	Fire Agency	COTTONWOOD FIRE DEPT	101488627	PACIFIC BELL	12,000	Conductor	Overhead	Yes	4/3/16	6:54	Contact From Object	N.A.	Vehicle	Pole	Human Error	
15	PG&E	4/3/16	12:01	38.68044	-123.12496	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101968191		12,000	Conductor	Overhead	Yes	4/3/16	12:01	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
16	PG&E	4/4/16	0:08	37.75674	-121.41933	Vegetation	URBAN	< 3 meters	Fire Agency	Tracy FD	102119421	PACIFIC BELL	12,000	Conductor	Overhead	Yes	4/4/16	0:08	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
17	PG&E	4/7/16	17:07	35.34199	-119.01752	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Bakersfield FD	100245953		0 - 750	Conductor	Overhead	Yes	4/7/16	17:07	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
18	PG&E	4/8/16	13:14	39.04293	-121.10020	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100086751	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	4/8/16	13:14	Contact From Object	N.A.	Vehicle	Pole	Human Error	
19	PG&E	4/13/16	19:28	40.49535	-124.12191	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	103659313		12,000	Conductor	Overhead	Yes	4/13/16	19:28	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
20	PG&E	4/14/16	14:16	36.15837	-119.56502	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Kings County FD	100766367		12,000	Other	Overhead	Yes	4/14/16	14:16	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
21	PG&E	4/18/16	18:14	37.79381	-120.98419	Vegetation	URBAN	< 3 meters	Fire Agency	Escalon Fire	102332958	None	0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
22	PG&E	4/20/16	16:39	39.40237	-122.01414	Vegetation	RURAL	< 3 meters	Unknown	Unknown	101641171		12,000	Conductor	Overhead	Yes	4/20/16	16:39	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
23	PG&E	4/21/16	3:20	38.19073	-122.24723	Vegetation	URBAN	< 0.25 Acres	Fire Agency	American Canyon FD	102295263	PACIFIC BELL	12,000	Conductor	Overhead	Yes	4/21/16	3:20	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
24	PG&E	4/21/16	9:25	39.29298	-123.76901	Vegetation	RURAL	< 3 meters	Customer	N.A.	103312287		0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
25	PG&E	4/22/16	17:10	37.88750	-121.69648	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Brentwood FD	100506567	None	0 - 750	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
26	PG&E	4/22/16	22:02	35.34916	-119.05375	Vegetation	URBAN	< 3 meters	Customer	N.A.	100156969	Yes	0 - 750	Conductor	Overhead	Yes	4/22/16	22:02	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
27	PG&E	4/23/16	18:32	36.49064	-119.62925	Vegetation	RURAL	< 0.25 Acres	Fire Agency	city of selma	100818205		12,000	Conductor	Overhead	Yes	4/23/16	18:32	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
28	PG&E	4/24/16	11:10	34.70896	-120.46117	Vegetation	URBAN	.26 - 9.99 Acres	Fire Agency	Santa Barbara County FD	101898989		12,000	Conductor	Overhead	Yes	4/24/16	11:10	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
29	PG&E	4/25/16	12:34	36.47607	-119.79041	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100875278		12,000	Conductor	Overhead	Yes	4/25/16	12:34	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
30	PG&E	4/25/16	14:50	35.54445	-119.08687	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Kern County FD	100207184	None	12,000	Conductor	Overhead	Yes	4/25/16	14:50	Other	N.A.	N.A.	N.A.	Human Error	
31	PG&E	4/27/16	14:02	36.51612	-119.25966	Vegetation	RURAL	< 3 meters	Unknown	Unknown	100755216	Pacific Bell	12,000	Conductor	Overhead	Yes	4/27/16	14:02	Contact From Object	N.A.	Other	Electric Facility	Unknown	bird nest
32	PG&E	4/30/16	17:59	38.31420	-120.90148	Vegetation	RURAL	< 3 meters	Fire Agency	Kern County FD	100000000		12,000	Conductor	Overhead	Yes	4/30/16	17:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
33	PG&E	4/30/16	16:40	37.00665	-120.63785	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Merced County FD	103083239		12,000	Conductor	Overhead	Yes	4/30/16	16:40	Unknown	N.A.	N.A.	N.A.	Unknown	
34	PG&E	4/30/16	13:41	38.25879	-122.02549	Vegetation	URBAN	< 3 meters	Fire Agency	Fairfield FD	101560133	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	4/30/16	13:41	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
35	PG&E	5/2/16	10:05	37.91481	-120.61782	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101283625	CALAVERAS TEL	17,000	Conductor	Overhead	Yes	5/2/16	10:05	Contact From Object	N.A.	Other	Electric Facility	Unknown	bird dropped snake
36	PG&E	5/9/16	17:05	35.98605	-119.42935	Vegetation	RURAL	< 3 meters	Unknown	Unknown	100663426		0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
37	PG&E	5/11/16	12:15	37.67808	-122.47884	Vegetation	URBAN	< 3 meters	Fire Agency	DALY CITY	103565907		0 - 750	Conductor	Overhead	Yes	5/11/16	12:15	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
38	PG&E	5/12/16	10:47	35.30243	-120.71591	Vegetation	RURAL	< 3 meters	Self Extinguished	N.A.	101937429		12,000	Conductor	Overhead	Yes	5/12/16	10:47	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
39	PG&E	5/12/16	13:35	40.45382	-124.04774	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101006413		12,000	Conductor	Overhead	Yes	5/12/16	13:35	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
40	PG&E	5/12/16	20:15	35.19217	-120.45631	Vegetation	RURAL	< 3 meters	Self Extinguished	N.A.	101857280		12,000	Conductor	Overhead	Yes	5/12/16	20:15	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
41	PG&E	5/14/16	15:06	37.96876	-121.67042	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	100472239	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	5/14/16	15:06	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
42	PG&E	5/14/16	22:06	39.16360	-121.56126	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Marysville FD	101312807		12,000	Switch	Overhead	Yes	5/14/16	22:06	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown	
43	PG&E	5/15/16	15:54	36.79479	-119.39659	Vegetation	RURAL	100 - 299 Acres	Fire Agency	Cal Fire	100729685	None	12,000	Conductor	Overhead	Yes	5/15/16	15:54	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
44	PG&E	5/16/16	8:59	37.92826	-121.21642	Vegetation	RURAL	< 3 meters	Fire Agency	Unknown	102130215	PACIFIC BELL	12,000	Conductor	Overhead	Yes	5/16/16	8:59	Contact From Object	N.A.	Vehicle	Pole	Human Error	
45	PG&E	5/16/16	11:34	38.77343	-121.46921	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	103323287		12,000	Conductor	Overhead	Yes	5/16/16	11:34	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	
46	PG&E	5/17/16	10:01	35.23788	-118.96390	Vegetation	RURAL	< 3 meters	Fire Agency	KCFD	100135809		0 - 750	Transformer	Overhead	Yes	5/17/16	10:01	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
47	PG&E	5/17/16	16:03	35.38565	-119.00746	Vegetation	URBAN	< 3 meters	Fire Agency	Bakersfield FD	100246655	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	5/17/16	16:03	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
48	PG&E	5/18/16	18:24	39.73815	-123.15874	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100000000		12,000	Conductor	Overhead	Yes	5/18/16	18:24	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
49	PG&E	5/18/16	15:45	35.55502	-120.68032	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Atascadero FD	101901773		21,000	Conductor	Overhead	Yes	5/18/16	15:45	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
50	PG&E	5/18/16	20:04	40.47788	-122.40312	Vegetation	RURAL	< 3 meters	Fire Agency	County	102307139	PACIFIC BELL	12,000	Conductor	Overhead	Yes	5/18/16	20:04	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
51	PG&E	5/19/16	1:42	34.66450	-120.39999																			

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2016

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
89	PG&E	6/7/16	13:55	36.93151	-119.86578	Vegetation	RURAL	< 3 meters	Utility: PG&E	N.A.	101215609	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/7/16	13:55	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
90	PG&E	6/7/16	18:19	36.98869	-120.63768	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Cal Fire	103214859		0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
91	PG&E	6/7/16	19:40	35.58520	-120.58295	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	101943517		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
92	PG&E	6/7/16	0:45	37.28555	-120.45169	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Cal Fire	103333060	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/7/16	0:45	Contact From Object	N.A.	Vehicle	Pole	Human Error	
93	PG&E	6/7/16	9:12	39.36294	-121.77233	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100378551	None	12,000	Conductor	Overhead	Yes	6/7/16	9:12	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
94	PG&E	6/8/16	11:20	39.30325	-121.52073	Vegetation	RURAL	< 3 meters	Customer	N.A.	101331693	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/8/16	11:20	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
95	PG&E	6/8/16	0:21	36.75666	-119.79698	Vegetation	URBAN	Structure Only	Fire Agency	Fresno FD	100864822		12,000	Conductor	Overhead	Yes	6/8/16	0:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
96	PG&E	6/8/16	16:50	35.67162	-120.59802	Building	RURAL	Structure Only	Fire Agency	Cal Fire	101867293	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/8/16	16:50	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	
97	PG&E	6/9/16	14:26	38.70031	-120.84704	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101390214	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/9/16	14:26	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
98	PG&E	6/9/16	10:52	36.80579	-119.71026	Vegetation	URBAN	< 3 meters	Unknown	Unknown	100794383		21,000	Conductor	Overhead	Yes	6/9/16	10:52	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
99	PG&E	6/9/16	23:39	39.01479	-122.85698	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	102143661		12,000	Conductor	Overhead	Yes	6/9/16	23:39	Contact From Object	N.A.	Vehicle	Pole	Human Error	
100	PG&E	6/10/16	8:25	36.72962	-119.69974	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Fresno FD	102309139		12,000	Conductor	Overhead	Yes	6/10/16	8:25	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
101	PG&E	6/10/16	15:51	39.99335	-123.78829	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100992291		12,000	Conductor	Overhead	Yes	6/10/16	15:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
102	PG&E	6/10/16	15:57	38.17922	-120.66569	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	103809655		12,000	Conductor	Overhead	Yes	6/10/16	15:57	Contact From Object	N.A.	Vehicle	Pole	Human Error	
103	PG&E	6/11/16	19:45	39.32654	-121.39213	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101292512		0 - 750	Transformer	Overhead	Yes	6/11/16	19:45	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
104	PG&E	6/12/16	8:01	36.59356	-119.98875	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100668862		12,000	Conductor	Overhead	Yes	6/12/16	8:01	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
105	PG&E	6/12/16	10:22	38.04911	-120.39761	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101042514		0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown	
106	PG&E	6/12/16	11:52	39.67992	-122.32165	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire/ORLAND	100405660		21,000	Conductor	Overhead	Yes	6/12/16	11:52	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
107	PG&E	6/12/16	13:10	38.25347	-122.06276	Vegetation	URBAN	< 3 meters	Fire Agency	Fairfield FD	101557178	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/12/16	13:10	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
108	PG&E	6/12/16	13:14	37.50960	-120.04623	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101083986		0 - 750	Conductor	Overhead	Yes	6/12/16	13:14	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
109	PG&E	6/12/16	1:45	37.46430	-122.34590	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Unknown	100265854	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/12/16	1:45	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
110	PG&E	6/12/16	19:19	39.15914	-121.58861	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Marysville FD	101312163	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/12/16	19:19	Contact From Object	N.A.	Vehicle	Pole	Human Error	
111	PG&E	6/12/16	20:00	37.26941	-121.78935	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	San Jose FD	103434547	None	115,000	Conductor	Overhead	Yes	6/12/16	20:00	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
112	PG&E	6/13/16	5:51	39.46406	-121.88581	Vegetation	RURAL	< 3 meters	Fire Agency	COLUMA GLENN FIRE	101617882		12,000	Transformer	Overhead	Yes	6/13/16	5:51	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
113	PG&E	6/15/16	14:40	38.30793	-122.65530	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire			0 - 750	Conductor	Overhead	Yes	6/15/16	14:40	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
114	PG&E	6/15/16	13:09	38.44330	-120.75676	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	103169620		12,000	Conductor	Overhead	Yes	6/15/16	13:09	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
115	PG&E	6/15/16	13:44	38.43752	-122.67706	Vegetation	URBAN	< 3 meters	Customer	N.A.	102024321	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/15/16	13:44	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
116	PG&E	6/16/16	17:41	37.34057	-121.78229	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	San Jose FD	100576793	PACIFIC BELL	21,000	Conductor	Overhead	Yes	6/16/16	17:41	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
117	PG&E	6/16/16	7:22	37.86781	-121.63822	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Contra Costa County FD	100497743	PACIFIC BELL	21,000	Conductor	Overhead	Yes	6/16/16	7:22	Contact From Object	N.A.	Vehicle	Pole	Human Error	
118	PG&E	6/16/16	13:07	39.06810	-121.66052	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Yuba City FD	101329181		12,000	Lightning Arrestor	Overhead	Yes	6/16/16	13:07	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown	
119	PG&E	6/17/16	11:17	36.73252	-120.40494	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	102312507		0 - 750	Capacitor Bank	Overhead	Yes	6/17/16	11:17	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
120	PG&E	6/19/16	12:07	39.38113	-123.77370	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	102187888	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/19/16	12:07	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
121	PG&E	6/19/16	17:19	38.45078	-122.35458	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	cal fire-napa fire	102256859	PACIFIC BELL	21,000	Conductor	Overhead	Yes	6/19/16	17:19	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
122	PG&E	6/19/16	15:50	38.24252	-121.85355	Vegetation	RURAL	< 0.25 Acres	Fire Agency	RIO VISTA MONTEZHUMA FIF	101582754		21,000	Conductor	Overhead	Yes	6/19/16	15:50	Contact From Object	N.A.	Vehicle	Pole	Human Error	
123	PG&E	6/20/16	13:57	36.53655	-119.37897	Vegetation	URBAN	< 3 meters	Customer	N.A.	103238848		0 - 750	Conductor	Overhead	Yes	6/20/16	13:57	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
124	PG&E	6/20/16	16:45	41.06971	-123.67893	Vegetation	RURAL	< 3 meters	Fire Agency	Hoopa FD	101011420	VERIZON CALIF	12,000	Conductor	Overhead	Yes	6/20/16	16:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
125	PG&E	6/21/16	20:49	35.53525	-120.84574	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101900832		12,000	Conductor	Overhead	Yes	6/21/16	20:49	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
126	PG&E	6/21/16	10:09	39.02942	-121.29275	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100024816	PACIFIC BELL	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
127	PG&E	6/21/16	16:53	38.42328	-122.54477	Vegetation	RURAL	< 0.25 Acres	Fire Agency	KENWOOD FIRE XST	102036904	Yes	0 - 750	Conductor	Overhead	Yes	6/21/16	16:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
128	PG&E	6/21/16	18:01	39.28517	-123.20530	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire/Redwood Valley FD	102176908	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/21/16	18:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
129	PG&E	6/22/16	19:13	36.38751	-119.83496	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Kings County FD	100848643		0 - 750	Conductor	Overhead	Yes	6/22/16	19:13	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
130	PG&E	6/23/16	10:10	36.72434	-120.05834	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Fresno FD	100637712	KERMAN TELEPH	0 - 750	Conductor	Overhead	Yes	6/23/16	10:10	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
131	PG&E	6/23/16	19:19	35.62119	-120.35616	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	101937184	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/23/16	19:19	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
132	PG&E	6/23/16	21:33	38.12063	-121.95450	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Suisun Fire Protection District.	101558702		0 - 750	Conductor	Overhead	Yes	6/23/16	21:33	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
133	PG&E	6/24/16	3:07	38.71917	-121.05460	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire/EDH FIRE DEPT	101376553		21,000	Conductor	Overhead	Yes	6/24/16	3:07	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
134	PG&E	6/24/16	14:38	40.22003	-122.28299	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101526647	PACIFIC BELL	0 - 750	Unknown	Overhead	Yes	6/24/16	14:38	Unknown	N.A.	N.A.	N.A.	Unknown	
135	PG&E	6/25/16	17:07	39.76026	-121.61876	Vegetation	URBAN	< 3 meters	Fire Agency	Cal FIRE/ PARADISE	100327279		12,000	Conductor	Overhead	Yes	6/25/16	17:07	Contact From Object	N.A.	Vehicle	Pole	Human Error	
136	PG&E	6/26/16	16:38	39.50417	-121.44753	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100375810	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/26/16	16:38	Wire-Wire Contact					

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2016

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
175	PG&E	7/19/16	1:53	38.07568	-122.53964	Vegetation	RURAL	< 3 meters	Fire Agency	NOVATO FIRE DEPT	102305231		12,000	Other	Overhead	Yes	7/19/16	1:53	Equipment/ Facility Failure	Recloser	N.A.	N.A.	Unknown	
176	PG&E	7/19/16	14:41	38.25346	-122.06278	Vegetation	URBAN	< 3 meters	Fire Agency	Fairfield FD	101557178	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/19/16	14:41	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
177	PG&E	7/20/16	6:25	34.89329	-120.35134	Vegetation	RURAL	< 3 meters	Fire Agency	Santa Barbara County FD	101861585	VERIZON CALIFO	12,000	Conductor	Overhead	Yes	7/20/16	6:25	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
178	PG&E	7/20/16	19:15	37.77121	-121.81041	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100898986	PACIFIC BELL	21,000	Conductor	Overhead	Yes	7/20/16	19:15	Contact From Object	N.A.	Vehicle	Pole	Human Error	
179	PG&E	7/21/16	13:10	39.49649	-121.68858	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100416773		12,000	Conductor	Overhead	Yes	7/21/16	13:10	Contact From Object	N.A.	Vehicle	Pole	Human Error	
180	PG&E	7/21/16	13:30	39.16788	-121.71653	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	101302589	PACIFIC BELL	12,000	Capacitor Bank	Overhead	Yes	7/21/16	13:30	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
181	PG&E	7/21/16	17:38	38.49410	-121.78740	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Dixon FD	101599745	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/21/16	17:38	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
182	PG&E	7/21/16	18:20	35.59224	-120.64739	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	103390807		21,000	Other	Overhead	Yes	7/21/16	18:20	Equipment/ Facility Failure	Recloser	N.A.	N.A.	Unknown	
183	PG&E	7/21/16	21:45	40.85656	-122.33873	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101455670	PACIFIC BELL	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
184	PG&E	7/22/16	4:46	37.34653	-120.93287	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Merced County FD	101207784		12,000	Conductor	Overhead	Yes	7/22/16	4:46	Unknown	N.A.	N.A.	Unknown		
185	PG&E	7/22/16	14:11	39.71213	-121.81363	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	100346440		12,000	Conductor	Overhead	Yes	7/22/16	14:11	Contact From Object	N.A.	Vehicle	Pole	Human Error	
186	PG&E	7/23/16	12:45	38.01926	-121.90209	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Contra Costa County FD	102345455		0 - 750	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
187	PG&E	7/23/16	16:12	35.34310	-119.04305	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Bakersfield FD	100256351	Yes	0 - 750	Conductor	Overhead	Yes	7/23/16	16:12	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
188	PG&E	7/23/16	19:12	36.74092	-119.72730	Vegetation	URBAN	< 3 meters	Customer	N.A.	100820603	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	7/23/16	19:12	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
189	PG&E	7/24/16	16:24	38.01047	-122.19414	Vegetation	RURAL	10 - 99 Acres	Fire Agency	CCD	103049639		115,000	Conductor	Overhead	Yes	7/24/16	16:24	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
190	PG&E	7/25/16	10:14	37.47600	-120.57400	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	CAL FIRE MERCED	101195552		21,000	Conductor	Overhead	Yes	7/25/16	10:14	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
191	PG&E	7/25/16	15:32	38.35220	-120.71065	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101263632	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/25/16	15:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
192	PG&E	7/27/16	15:29	38.83078	-122.18990	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown			21,000	Conductor	Overhead	Yes	7/27/16	15:29	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
193	PG&E	7/27/16	11:53	37.86492	-120.51339	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101041792		17,000	Conductor	Overhead	Yes	7/27/16	11:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
194	PG&E	7/27/16	15:04	40.82067	-124.18250	Vegetation	RURAL	< 3 meters	Fire Agency	SAMOA PENNSUL:A FIRE DE	100968543		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
195	PG&E	7/27/16	17:05	38.53916	-122.76559	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	102029945		60,000	Conductor	Overhead	Yes	7/27/16	17:05	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
196	PG&E	7/28/16	2:41	35.36740	-120.39770	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101849904		21,000	Conductor	Overhead	Yes	7/28/16	2:41	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
197	PG&E	7/28/16	8:12	37.82070	-120.13880	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101037043		0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
198	PG&E	7/28/16	12:58	37.23706	-119.81572	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	103323932		21,000	Conductor	Overhead	Yes	7/28/16	12:58	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
199	PG&E	7/28/16	13:19	39.71267	-123.49731	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	102195566		12,000	Conductor	Overhead	Yes	7/28/16	13:19	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
200	PG&E	7/28/16	14:07	39.68718	-121.71852	Vegetation	RURAL	10 - 99 Acres	Fire Agency	Cal Fire	103653216		60,000	Conductor	Overhead	Yes	7/28/16	14:07	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
201	PG&E	7/28/16	14:24	37.82318	-120.13562	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101037045		17,000	Other	Overhead	No			Equipment/ Facility Failure	Guy/Span Wire	N.A.	N.A.	Unknown	
202	PG&E	7/28/16	16:16	36.74999	-119.72965	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Fresno FD	100818516	PACIFIC BELL	0 - 750	Other	Overhead	Yes	7/28/16	16:16	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
203	PG&E	7/29/16	18:16	38.57695	-122.61868	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Selma Fire Department			12,000	Conductor	Overhead	Yes	7/29/16	18:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
204	PG&E	7/29/16	1:31	41.03964	-123.67403	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Hoopa FD	100962351		12,000	Conductor	Overhead	Yes	7/29/16	1:31	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
205	PG&E	7/29/16	15:47	39.04972	-121.51531	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101334767		0 - 750	Unknown	Overhead	Yes	7/29/16	15:47	Unknown	N.A.	N.A.	Unknown		
206	PG&E	7/29/16	18:50	38.02042	-122.06195	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Contra Costa County FD	10046986		21,000	Conductor	Overhead	Yes	7/29/16	18:50	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
207	PG&E	7/30/16	11:04	35.19413	-118.91307	Vegetation	RURAL	< 0.25 Acres	Utility: PG&E	N.A.	100150295		12,000	Conductor	Overhead	Yes	7/30/16	11:04	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
208	PG&E	7/31/16	12:11	38.78271	-120.91682	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101417359		21,000	Conductor	Overhead	Yes	7/31/16	12:11	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
209	PG&E	8/1/16	12:50	38.90443	-121.12742	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	100078299	PACIFIC BELL	12,000	Conductor	Overhead	Yes	8/1/16	12:50	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
210	PG&E	8/1/16	16:47	38.93192	-121.46936	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Unknown	101292397		0 - 750	Transformer	Overhead	Yes	8/1/16	16:47	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
211	PG&E	8/1/16	18:29	38.69663	-120.92832	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101412720	PACIFIC BELL	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
212	PG&E	8/2/16	6:52	38.19697	-122.27570	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Napa/American Canyon FD	103154739		12,000	Conductor	Overhead	Yes	8/2/16	6:52	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
213	PG&E	8/2/16	16:15	37.03124	-119.43955	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Fresno County FD	100675986		12,000	Conductor	Overhead	Yes	8/2/16	16:15	Contact From Object	N.A.	Vehicle	Pole	Human Error	
214	PG&E	8/3/16	4:38	38.84738	-120.81196	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	cal fire garden valley fire	103809676		21,000	Conductor	Overhead	Yes	8/3/16	4:38	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
215	PG&E	8/3/16	12:41	39.32695	-120.60328	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	100001032		12,000	Conductor	Overhead	Yes	8/3/16	12:41	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
216	PG&E	8/3/16	19:41	40.38679	-122.28216	Building	URBAN	Structure Only	Fire Agency	COTTONWOOD FIRE DEPT	101492556	Pacific Bell	12,000	Conductor	Overhead	Yes	8/3/16	19:41	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
217	PG&E	8/4/16	12:19	35.94249	-121.38442	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Tulare County Fire Dept.	103074837		12,000	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown	
218	PG&E	8/5/16	12:40	38.34067	-122.25777	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	102284869	PACIFIC BELL	12,000	Conductor	Overhead	Yes	8/5/16	12:40	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
219	PG&E	8/5/16	12:42	38.40478	-120.52924	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	101244628		12,000	Conductor	Overhead	Yes	8/5/16	12:42	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
220	PG&E	8/5/16	14:46	40.47975	-123.78030	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	103572261		12,000	Conductor	Overhead	Yes	8/5/16	14:46	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
221	PG&E	8/5/16	20:44	39.02486	-122.66724	Vegetation	RURAL	< 0.25 Acres	Customer	N.A.	102154138	PACIFIC BELL	12,000	Conductor	Overhead	Yes	8/5/16	20:44	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
222	PG&E	8/6/16	18:53	38.28187	-122.30194	Vegetation	RURAL	< 3 meters	Unknown	Unknown	102277853	PACIFIC BELL	0 - 750	Fuse	Overhead	No			Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
223	PG&E	8/7/16	14:20	37.23157																				

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2016

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X		
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):		
261	PG&E	8/27/16	19:33	36.96458	-122.05289	Vegetation	URBAN	< 0.25 Acres	Fire Agency	SC FIRE DEPT & CDF	101677596	PACIFIC BELL	21,000	Conductor	Overhead	Yes	8/27/16	19:33	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown			
262	PG&E	8/28/16	16:49	36.56186	-119.71860	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100683911		12,000	Conductor	Overhead	Yes	8/28/16	16:49	Contact From Object	N.A.			Vehicle	Pole	Human Error	
263	PG&E	8/29/16	16:25	38.26928	-121.60294	Vegetation	RURAL	< 0.25 Acres	Fire Agency	SAC FIRE	101583637	FRONTIER	21,000	Conductor	Overhead	Yes	8/29/16	16:25	Contact From Object	N.A.			Vehicle	Electric Facility	Human Error	
264	PG&E	8/30/16	16:01	36.59413	-121.92120	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Unknown	101734977		21,000	Conductor	Overhead	Yes	8/30/16	16:01	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
265	PG&E	8/30/16	16:14	38.05755	-122.16390	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Benicia FD	102264159	PACIFIC BELL	21,000	Conductor	Overhead	Yes	8/30/16	16:14	Contact From Object	N.A.			Vegetation	Electric Facility	Human Error	third-party caused
266	PG&E	8/30/16	19:27	39.92880	-122.12765	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	103165395	Yes	12,000	Conductor	Overhead	Yes	8/30/16	19:27	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown			
267	PG&E	8/31/16	11:17	37.37206	-120.45039	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Merced County FD	101147802	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	8/31/16	11:17	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
268	PG&E	8/31/16	14:52	35.19180	-120.46971	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101942860		12,000	Conductor	Overhead	Yes	8/31/16	14:52	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
269	PG&E	8/31/16	19:43	38.15100	-121.68037	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	ISLETON	101665829	FRONTIER	21,000	Conductor	Overhead	Yes	8/31/16	19:43	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
270	PG&E	9/1/16	9:30	37.28144	-121.86030	Vegetation	URBAN	< 3 meters	Customer	N.A.	100617565	None	21,000	Conductor	Overhead	Yes	9/1/16	9:30	Contact From Object	N.A.			Balloons	Electric Facility	Human Error	
271	PG&E	9/1/16	13:08	38.46327	-122.81616	Vegetation	RURAL	< 3 meters	Fire Agency	WINDSOR AND SANTA ROSA	101956270	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/1/16	13:08	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
272	PG&E	9/2/16	12:42	38.38680	-122.75553	Vegetation	RURAL	< 3 meters	Fire Agency	Santa Rosa FD	101969369	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/2/16	12:42	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
273	PG&E	9/2/16	13:50	37.66811	-121.76805	Vegetation	URBAN	< 0.25 Acres	Fire Agency	LPFD	100954399		21,000	Conductor	Overhead	Yes	9/2/16	13:50	Contact From Object	N.A.			Balloons	Electric Facility	Human Error	
274	PG&E	9/3/16	20:12	39.32230	-121.98490	Vegetation	RURAL	< 3 meters	Unknown	Unknown	101614478		12,000	Conductor	Overhead	Yes	9/3/16	20:12	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
275	PG&E	9/3/16	20:58	36.80805	-119.62789	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Unknown	103269240		12,000	Conductor	Overhead	Yes	9/3/16	20:58	Contact From Object	N.A.			Vehicle	Pole	Human Error	
276	PG&E	9/5/16	8:26	39.52329	-122.14619	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	100430821		21,000	Conductor	Overhead	Yes	9/5/16	8:26	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown			
277	PG&E	9/7/16	19:37	37.99206	-122.54447	Vegetation	URBAN	< 3 meters	Fire Agency	San Rafael FD	102249944	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/7/16	19:37	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
278	PG&E	9/7/16	9:56	39.55281	-121.64163	Vegetation	RURAL	.26 - 9.99 Acres	Unknown	Unknown	103653028		60,000	Conductor	Overhead	Yes	9/7/16	9:56	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
279	PG&E	9/8/16	14:39	38.00133	-122.32902	Vegetation	URBAN	< 0.25 Acres	Fire Agency	PINOLE FIRE DEPT	101426911		12,000	Conductor	Overhead	Yes	9/8/16	14:39	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown			
280	PG&E	9/8/16	22:04	37.29175	-121.87109	Vegetation	URBAN	< 0.25 Acres	Fire Agency	San Jose FD	100598024	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/8/16	22:04	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
281	PG&E	9/9/16	10:57	36.85174	-119.62254	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Fresno County FD	100746408	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/9/16	10:57	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
282	PG&E	9/9/16	13:22	37.28367	-120.47405	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Cal Fire	101018780	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/9/16	13:22	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown			
283	PG&E	9/9/16	15:25	38.92020	-121.08588	Vegetation	URBAN	< 0.25 Acres	Fire Agency	Cal Fire	100036304	PACIFIC BELL	12,000	Capacitor Bank	Overhead	Yes	9/9/16	15:25	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown			
284	PG&E	9/10/16	2:09	37.18617	-120.67754	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Merced County FD	101072400		12,000	Conductor	Overhead	Yes	9/10/16	2:09	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
285	PG&E	9/11/16	21:24	36.95261	-119.72629	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Unknown	100652942		21,000	Unknown	Overhead	Yes	9/11/16	21:24	Unknown	N.A.	N.A.	N.A.	Unknown			
286	PG&E	9/12/16	4:24	36.39990	-121.90201	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire Hwy 1 Carmel Hill	101669614		12,000	Conductor	Overhead	Yes	9/12/16	4:24	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
287	PG&E	9/12/16	12:38	38.78323	-120.60060	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101421708	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/12/16	12:38	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
288	PG&E	9/12/16	18:47	36.53030	-119.30560	Vegetation	RURAL	< 0.25 Acres	Fire Agency	CUTLER FIRE	100807630	None	12,000	Conductor	Overhead	Yes	9/12/16	18:47	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
289	PG&E	9/12/16	20:42	37.35500	-121.93550	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Santa Clara county fire	100608192		12,000	Conductor	Overhead	Yes	9/12/16	20:42	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown			
290	PG&E	9/12/16	15:08	39.52556	-123.76550	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	102185070		12,000	Conductor	Overhead	Yes	9/12/16	15:08	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
291	PG&E	9/13/16	10:26	39.19131	-121.18186	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100082849	PACIFIC BELL	21,000	Conductor	Overhead	Yes	9/13/16	10:26	Unknown	N.A.	N.A.	N.A.	Unknown			
292	PG&E	9/13/16	10:45	40.29579	-122.13182	Vegetation	RURAL	300 - 999 Acres	Fire Agency	Cal Fire	103702175		60,000	Conductor	Overhead	Yes	9/13/16	10:45	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
293	PG&E	9/14/16	21:16	37.34475	-121.07646	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	STANISLUAS COUNTY	101228545	None	12,000	Conductor	Overhead	Yes	9/14/16	21:16	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gunshot		
294	PG&E	9/14/16	23:25	39.47962	-121.85754	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	101618097		12,000	Conductor	Overhead	Yes	9/14/16	23:25	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
295	PG&E	9/15/16	15:56	37.11024	-121.95092	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100520198	VERIZON CALIFO	12,000	Conductor	Overhead	Yes	9/15/16	15:56	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
296	PG&E	9/16/16	20:56	39.83874	-121.70232	Vegetation	RURAL	10 - 99 Acres	Fire Agency	Cal Fire	100441760	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/16/16	20:56	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
297	PG&E	9/17/16	10:03	38.04945	-121.01430	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Unknown	102123492		12,000	Fuse	Overhead	Yes	9/17/16	10:03	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown			
298	PG&E	9/17/16	17:47	37.10117	-120.12887	Vegetation	RURAL	< 3 meters	Fire Agency	Unknown	101062487		12,000	Conductor	Overhead	Yes	9/17/16	17:47	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
299	PG&E	9/18/16	14:33	37.16185	-122.13470	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire & Boulder Creek Fire	103410909	Yes	12,000	Conductor	Overhead	Yes	9/18/16	14:33	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown			
300	PG&E	9/19/16	14:09	37.94585	-122.37201	Vegetation	RURAL	< 3 meters	Fire Agency	Unknown	101433385	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/19/16	14:09	Unknown	N.A.	N.A.	N.A.	Unknown			
301	PG&E	9/19/16	22:10	37.96530	-121.25794	Vegetation	URBAN	< 3 meters	Fire Agency	STOCKTON FIRE	102057961	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/19/16	22:10	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
302	PG&E	9/19/16	8:51	35.44586	-119.09188	Vegetation	RURAL	< 0.25 Acres	Self Extinguished	N.A.	103239256		115,000	Conductor	Overhead	Yes	9/19/16	8:51	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
303	PG&E	9/20/16	8:25	40.00442	-123.78712	Vegetation	RURAL	< 3 meters	Self Extinguished	N.A.	100992643	VERIZON CALIFO	12,000	Conductor	Overhead	Yes	9/20/16	8:25	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
304	PG&E	9/21/16	10:01	39.11732	-121.07105	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	100014315	PACIFIC BELL	115,000	Conductor	Overhead	Yes	9/21/16	10:01	Contact From Object	N.A.			Animal	Electric Facility	Unknown	
305	PG&E	9/21/16	19:11	38.78719	-123.55769	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire Point Arena & Gualala	103325552		12,000	Conductor	Overhead	Yes	9/21/16	19:11	Contact From Object	N.A.			Vegetation	Electric Facility	Unknown	
306	PG&E	9/21/16	21:00	38.82341	-122.20453	Vegetation	RURAL	< 3 meters	Customer	N.A.	101591523		0 - 750	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown			
307	PG&E	9/21/16	6:36	38.23127	-122.06355	Vegetation	RURAL	< 0.25 Acres	Unknown	Unknown	101563903	PACIFIC BELL	12,000	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown			
308	PG&E																									

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2016

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location			Fire			Utility Facility				Outage			Field Observations					Notes (Optional):		
3		Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	
347	PG&E	10/14/16	10:36	37.74380	-121.93400	Vegetation	URBAN	.26 - 9.99 Acres	Fire Agency	Cal Fire	100902265		0 - 750	Conductor	Overhead	Yes	10/14/16	10:36	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
348	PG&E	10/14/16	11:00	38.89625	-121.58915	Vegetation	RURAL	< 0.25 Acres	Fire Agency	placer	101334896	PACIFIC BELL	12,000	Other	Overhead	Yes	10/14/16	11:00	Contamination	N.A.	N.A.	N.A.	Unknown	
349	PG&E	10/14/16	19:44	39.62446	-121.53822	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	100435570		0 - 750	Conductor	Overhead	Yes	10/14/16	19:44	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
350	PG&E	10/15/16	15:34	37.32547	-120.31099	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101142010	PACIFIC BELL	12,000	Conductor	Overhead	Yes	10/15/16	15:34	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
351	PG&E	10/18/16	10:50	37.29993	-120.72945	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Unknown	101166039		12,000	Conductor	Overhead	Yes	10/18/16	10:50	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
352	PG&E	10/18/16	16:20	38.47124	-122.65687	Vegetation	URBAN	< 3 meters	Fire Agency	CITY OF SANTA ROSA	101966406		0 - 750	Conductor	Overhead	Yes	10/18/16	16:20	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	
353	PG&E	10/19/16	10:42	38.50979	-122.44996	Vegetation	RURAL	< 0.25 Acres	Fire Agency	st helena	102242552	PACIFIC BELL	21,000	Conductor	Overhead	Yes	10/19/16	10:42	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
354	PG&E	10/23/16	10:54	35.55451	-120.67080	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Cal Fire	101901785		21,000	Conductor	Overhead	Yes	10/23/16	10:54	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
355	PG&E	10/23/16	14:16	38.22710	-121.04948	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	102074335	VERIZON CALIFO	21,000	Conductor	Overhead	Yes	10/23/16	14:16	Contact From Object	N.A.	Vehicle	Pole	Human Error	
356	PG&E	10/23/16	18:10	38.02104	-120.59910	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	101272943		115,000	Conductor	Overhead	Yes	10/23/16	18:10	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
357	PG&E	10/26/16	10:16	37.11994	-120.31132	Vegetation	RURAL	< 3 meters	Fire Agency	Chowchilla FD	101129171		12,000	Conductor	Overhead	Yes	10/26/16	10:16	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
358	PG&E	10/31/16	17:04	36.66385	-119.74626	Vegetation	RURAL	.26 - 9.99 Acres	Fire Agency	Fresno County FD	100808306		12,000	Conductor	Overhead	Yes	10/31/16	17:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
359	PG&E	11/9/16	9:06	37.45316	-119.64132	Vegetation	RURAL	< 0.25 Acres	Fire Agency	US FOREST SERVICE	101017062		12,000	Conductor	Overhead	Yes	11/9/16	9:06	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
360	PG&E	11/14/16	3:25	35.43969	-120.89022	Vegetation	URBAN	< 3 meters	Fire Agency	Cayucos fire	101853338	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	11/14/16	3:25	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
361	PG&E	11/14/16	13:15	35.45772	-120.46186	Vegetation	RURAL	< 0.25 Acres	Fire Agency	Cal Fire	101895511		21,000	Conductor	Overhead	Yes	11/14/16	13:15	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
362	PG&E	11/15/16	17:27	39.72747	-121.65571	Vegetation	RURAL	< 0.25 Acres	Fire Agency	CAL FIRE/BUTTE COUNTY FIRE	100327525	PACIFIC BELL	12,000	Conductor	Overhead	Yes	11/15/16	17:27	Contact From Object	N.A.	Vehicle	Pole	Human Error	
363	PG&E	11/20/16	11:04	39.63262	-123.78228	Vegetation	RURAL	< 3 meters	Fire Agency	Cal Fire	102200173		12,000	Conductor	Overhead	Yes	11/20/16	11:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
364	PG&E	11/26/16	12:10	35.32208	-118.78080	Vegetation	RURAL	< 0.25 Acres	Utility: PG&E	N.A.	102300399		12,000	Conductor	Overhead	Yes	11/26/16	12:10	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location			Fire			Utility Facility				Outage			Field Observations					Notes (Optional):		
3	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor		
3	PG&E	01/01/17	15:57	38.66287	-121.74803	Vegetation	Urban	< 3 Meters	Fire Agency	Woodland fire dept 530-666-8920	Unknown	0 - 750	Conductor	Overhead	Yes	1/1/17	15:57	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
4	PG&E	01/10/17	15:55	38.75380	-121.15641	Building	Urban	Structure Only	Unknown	N.A.	Unknown	12,000	Conductor	Overhead	Yes	1/10/17	15:55	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
5	PG&E	01/18/17	15:34	37.38388	-121.80884	Building	Urban	Structure Only	Unknown	N.A.	100564835	0 - 750	Conductor	Overhead	Yes	1/18/17	15:34	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
6	PG&E	01/29/17	09:45	38.36159	-121.95091	Building	Urban	Structure Only	Fire Agency	Unknown	Unknown	12,000	Transformer	Subsurface	Yes	1/29/17	09:45	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
7	PG&E	02/03/17	10:00	37.56153	-122.02772	Vegetation	Urban	< 3 Meters	Fire Agency	jeff	100938466	12,000	Conductor	Overhead	Yes	2/3/17	10:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
8	PG&E	02/07/17	04:50	38.43314	-122.71902	Building	Urban	Structure Only	Fire Agency	Santa Rosa Fire Dept	102014637	12,000	Conductor	Overhead	Yes	2/7/17	04:50	Other	N.A.	N.A.	Unknown			
9	PG&E	03/16/17	12:43	38.27175	-122.01971	Other	Urban	< 0.25 Acres	Fire Agency	Unknown	101561532	12,000	Conductor	Overhead	Yes	3/16/17	12:43	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
10	PG&E	03/17/17	09:37	38.11532	-121.42216	Other	Rural	Structure Only	Fire Agency	911	102044732	21,000	Conductor	Overhead	Yes	3/17/17	09:37	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused	
11	PG&E	03/19/17	17:06	39.76209	-121.85247	Vegetation	Urban	< 3 Meters	Fire Agency	CHICO FIRE DEPT 911	100441377	0 - 750	Conductor	Overhead	Yes	3/19/17	17:06	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
12	PG&E	03/23/17	07:04	37.36975	-121.85218	Other	Urban	< 3 Meters	Fire Agency	SJFD disp 408-277-8950 Incident# F170829041	103485262	12,000	Transformer	Subsurface	Yes	3/23/17	07:04	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
13	PG&E	03/28/17	12:15	34.88092	-120.41992	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	103397961	12,000	Conductor	Overhead	Yes	3/28/17	12:15	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
14	PG&E	04/01/17	14:54	37.18823	-120.95764	Vegetation	Rural	< 0.25 Acres	Fire Agency	engine 74 mrced fire agency	102318665	12,000	Conductor	Overhead	Yes	4/1/17	14:54	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
15	PG&E	04/04/17	13:29	35.68851	-120.76533	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101945026	12,000	Conductor	Overhead	Yes	4/4/17	13:29	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
16	PG&E	04/04/17	14:54	37.29584	-121.93295	Vegetation	Urban	< 3 Meters	Customer	N.A.	100591136	12,000	Conductor	Overhead	Yes	4/4/17	14:54	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
17	PG&E	04/10/17	16:35	35.61751	-119.74296	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.	100128630	21,000	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown		
18	PG&E	04/13/17	14:21	37.79671	-121.25210	Other	Urban	Structure Only	Fire Agency	MANTECA CITY	102104500	17,000	Conductor	Overhead	Yes	4/13/17	14:21	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
19	PG&E	04/16/17	15:14	35.58053	-119.14227	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103833904	12,000	Conductor	Overhead	Yes	4/16/17	15:14	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown		
20	PG&E	04/20/17	20:14	37.37407	-120.71688	Vegetation	Urban	< 3 Meters	Fire Agency	209-966-3621	101205903	12,000	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
21	PG&E	04/23/17	7:10	36.07345	-120.93450	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101726333	12,000	Conductor	Overhead	Yes	4/23/17	7:10	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
22	PG&E	04/24/17	11:52	36.18990	-121.15129	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101718856	12,000	Conductor	Overhead	Yes	4/24/17	11:52	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	tie wire	
23	PG&E	04/25/17	12:38	38.65832	-120.97622	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101376746	12,000	Transformer	Overhead	Yes	4/25/17	12:38	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
24	PG&E	04/25/17	18:26	36.23725	-119.78071	Other	Rural	Structure Only	Self Extinguished	N.A.	100716676	0 - 750	Conductor	Overhead	Yes	4/25/17	18:26	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
25	PG&E	04/26/17	15:55	38.15608	-121.67886	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAPT KENNY WILLIAMS (707)374-2233	103826165	21,000	Conductor	Overhead	Yes	4/26/17	15:55	Contact From Object	N.A.	Other	Electric Facility	Other	bird's nest	
26	PG&E	04/28/17	5:55	34.58848	-120.10568	Vegetation	Rural	< 0.25 Acres	Fire Agency	805-683-2724	101900122	12,000	Conductor	Overhead	Yes	4/28/17	5:55	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
27	PG&E	04/28/17	14:35	37.12469	-121.62488	Vegetation	Urban	< 0.25 Acres	Fire Agency	Cal Fire	103098414	12,000	Conductor	Overhead	Yes	4/28/17	14:35	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown		
28	PG&E	04/28/17	15:49	38.76786	-120.96253	Vegetation	Rural	< 0.25 Acres	Fire Agency	chris paper fire investigator, 530/677-1868. Incident #caaeuo11821	101409833	21,000	Conductor	Overhead	Yes	4/28/17	15:49	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
29	PG&E	04/29/17	15:07	37.03486	-119.52423	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100678661	12,000	Conductor	Overhead	Yes	4/29/17	15:07	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
30	PG&E	04/30/17	9:32	35.63491	-118.95629	Vegetation	Rural	< 0.25 Acres	Fire Agency	661-324-6551	100216308	21,000	Conductor	Overhead	Yes	4/30/17	9:32	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown		
31	PG&E	05/01/17	14:20	36.02269	-119.95837	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CORCORAN STATION 559- 992-2156	Pole 076/015	70,000	Conductor	Overhead	Yes	5/1/17	14:20	Contact From Object	N.A.	Other	Electric Facility	Other	bird's nest	
32	PG&E	05/03/17	10:04	36.81613	-119.63202	Vegetation	Rural	< 0.25 Acres	Fire Agency	eng 44 Eric connors 559-324- 2294	100770906	12,000	Conductor	Overhead	Yes	5/3/17	10:04	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
33	PG&E	05/03/17	12:51	38.19080	-121.66150	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103834798	21,000	Conductor	Overhead	Yes	5/3/17	12:51	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
34	PG&E	05/04/17	16:19	35.55728	-120.75348	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101934476	21,000	Conductor	Overhead	Yes	5/4/17	16:19	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
35	PG&E	05/05/17	15:52	40.37758	-123.00187	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.	101501566	12,000	Conductor	Overhead	Yes	5/5/17	15:52	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
36	PG&E	05/06/17	1:56	37.32997	-120.83297	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103834182	12,000	Conductor	Overhead	Yes	5/6/17	1:56	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
37	PG&E	05/06/17	11:18	40.79512	-124.02902	Vegetation	Rural	< 3 Meters	Fire Agency	chief rick harden 7074423352	103661154	12,000	Conductor	Overhead	Yes	5/6/17	11:18	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
38	PG&E	05/06/17	12:43	40.76227	-124.16195	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100998152	12,000	Conductor	Overhead	Yes	5/6/17	12:43	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
39	PG&E	05/06/17	15:00	39.24580	-123.77854	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	102185559	12,000	Conductor	Overhead	Yes	5/6/17	15:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
40	PG&E	05/06/17	23:46	36.16537	-120.37372	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	100741510	12,000	Conductor	Overhead	Yes	5/6/17	23:46	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
41	PG&E	05/09/17	11:15	40.05970	-122.18895	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.	101531151	12,000	Conductor	Overhead	Yes	5/9/17	11:15	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
42	PG&E	05/09/17	15:57	39.54650	-121.85667	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100404826	12,000	Conductor	Overhead	No			Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown		
43	PG&E	05/09/17	18:26	40.86892	-123.51559	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	todd wright fire chief. 5307392493	103796045	12,000	Conductor	Overhead	Yes	5/9/17	18:26	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
44	PG&E	05/12/17	15:16	38.85066	-121.31683	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102347828	21,000	Conductor	Overhead	Yes	5/12/17	15:16	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused	
45	PG&E	05/13/17	21:49	39.67845	-121.77802	Vegetation	Rural	< 0.25 Acres	Fire Agency	911	100335502	12,000	Conductor	Overhead	Yes	5/13/17	21:49	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown		
46	PG&E	05/14/17	11:59	38.07980	-122.86650	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	102247059	12,000	Conductor	Overhead	Yes	5/14/17	11:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
47	PG&E	05/14/17	16:09	35.60167	-119.65665	Vegetation	Rural	10 - 99 Acres	Fire Agency	661-391-7000	100131572	21,000	Conductor	Overhead	Yes	5/14/17	16:09	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused	
48	PG&E	05/15/17	3:05	35.62610	-120.89616	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101873299	21,000	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
49	PG&E	05/15/17	13:05	38.19694	-121.40951	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102071491	12,000	Transformer	Overhead	No			Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
50	PG&E	05/15/17	16:00	37.17665	-119.81887	Vegetation	Rural	< 0.25 Acres	Fire Agency	SHAUN FAIRBANKS 559-683- 4823	101108423	21,000	Conductor	Overhead	Yes	5/15/17	16:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
51	PG&E	05/15/17	20:57	38.67253	-122.04559																			

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location			Fire			Utility Facility				Outage			Field Observations						Notes (Optional):	
7		Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	
76	PG&E	06/04/17	13:12	36.74591	-120.06018	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100645872	Unknown	12,000	Conductor	Overhead	Yes	6/4/17	13:12	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
77	PG&E	06/05/17	0:52	38.23420	-121.21311	Vegetation	Rural	< 3 Meters	Unknown	N.A.	102083982	PACIFIC BELL	12,000	Transformer	Overhead	Yes	6/5/17	0:52	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
78	PG&E	06/05/17	7:56	37.85680	-120.88150	Vegetation	Rural	< 0.25 Acres	Fire Agency	209 5523911	102333651	None	17,000	Conductor	Overhead	Yes	6/5/17	7:56	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
79	PG&E	06/05/17	17:12	36.94243	-121.46123	Vegetation	Rural	10 - 99 Acres	Fire Agency	Leo Alvarez 831-6364324	101717332	Unknown	21,000	Conductor	Overhead	Yes	6/5/17	17:12	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
80	PG&E	06/06/17	9:15	36.45426	-119.13382	Vegetation	Rural	< 0.25 Acres	Fire Agency	TIM ROGERS, 559-358-7120	102306658	Unknown	12,000	Conductor	Overhead	Yes	6/6/17	9:15	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
81	PG&E	06/06/17	09:48	36.99857	-120.93690	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	101199765	Unknown	12,000	Conductor	Overhead	Yes	6/6/17	09:48	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
82	PG&E	06/06/17	13:39	38.17110	-121.67825	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101666656	FRONTIER COMM	21,000	Fuse	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown	
83	PG&E	06/07/17	13:25	35.09398	-119.41607	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100192567	Unknown	12,000	Conductor	Overhead	No			Contact From Object	N.A.	Animal	Electric Facility	Unknown	
84	PG&E	06/07/17	10:13	39.56030	-122.10768	Vegetation	Rural	< 3 Meters	Utility: PG&E	N.A.	103838281	Unknown	12,000	Conductor	Overhead	Yes	6/7/17	10:13	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
85	PG&E	06/08/17	5:33	36.23884	-120.30164	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	100743822	Unknown	12,000	Conductor	Overhead	Yes	6/8/17	5:33	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
86	PG&E	06/08/17	0:26	37.12759	-120.01930	Vegetation	Rural	100 - 299 Acres	Fire Agency	Jeff Mc Carroll (559) 806 - 8815	103205823	Unknown	12,000	Conductor	Overhead	Yes	6/8/17	0:26	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
87	PG&E	06/08/17	15:08	34.60580	-120.02140	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	SHAWN STEINER	101947678	Unknown	12,000	Conductor	Overhead	Yes	6/8/17	15:08	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
88	PG&E	06/09/17	10:40	36.69563	-119.71863	Vegetation	Rural	< 0.25 Acres	Fire Agency	FRESNO COUNTY	100793555	Unknown	12,000	Conductor	Overhead	Yes	6/9/17	10:40	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
89	PG&E	06/09/17	13:27	36.73820	-119.82038	Vegetation	Rural	< 0.25 Acres	Fire Agency	FFD INC # 703 4018	100895732	Unknown	12,000	Conductor	Overhead	Yes	6/9/17	13:27	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
90	PG&E	06/09/17	17:20	35.79741	-120.53892	Vegetation	Rural	10 - 99 Acres	Fire Agency	Unknown	103406061	Unknown	12,000	Conductor	Overhead	Yes	6/9/17	17:20	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
91	PG&E	06/10/17	07:37	35.43590	-120.49570	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	101890429	Unknown	21,000	Conductor	Overhead	Yes	6/10/17	07:37	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
92	PG&E	06/12/17	15:28	36.96720	-120.09309	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101136946	Unknown	12,000	Conductor	Overhead	Yes	6/12/17	15:28	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
93	PG&E	06/12/17	18:04	35.36381	-118.62556	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.	103371824	Unknown	12,000	Transformer	Overhead	Yes	6/12/17	18:04	Contact From Object	N.A.	Other	Electric Facility	Other	bird's nest
94	PG&E	06/13/17	14:30	37.85265	-122.18529	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	Tower 005/035c	Unknown	115,000	Conductor	Overhead	Yes	6/13/17	14:30	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
95	PG&E	06/14/17	22:23	39.75591	-121.59343	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100324481	PACIFIC BELL	12,000	Fuse	Overhead	Yes	6/14/17	22:23	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
96	PG&E	06/15/17	2:58	40.29899	-122.43185	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	101511631	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/15/17	2:58	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	power theft
97	PG&E	06/15/17	5:02	36.82613	-121.67456	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101712958	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/15/17	5:02	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
98	PG&E	06/15/17	7:39	39.22756	-121.23476	Vegetation	Rural	< 0.25 Acres	Fire Agency	FIRE CHIEF	103676075	Unknown	21,000	Conductor	Overhead	Yes	6/15/17	7:39	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
99	PG&E	06/15/17	15:01	39.39127	-123.30541	Vegetation	Rural	< 0.25 Acres	Fire Agency	STEPHEN	103838176	YES	12,000	Conductor	Overhead	Yes	6/15/17	15:01	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
100	PG&E	06/15/17	16:21	38.70880	-122.90160	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101957366	Unknown	0 - 750	Conductor	Overhead	Yes	6/15/17	16:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
101	PG&E	06/15/17	17:18	38.79696	-121.20690	Vegetation	Urban	< 0.25 Acres	Fire Agency	Cal Fire	100058437	Unknown	21,000	Conductor	Overhead	Yes	6/15/17	17:18	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
102	PG&E	06/16/17	13:50	35.45050	-120.61690	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101898964	Unknown	21,000	Conductor	Overhead	Yes	6/16/17	13:50	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
103	PG&E	06/16/17	14:22	36.84496	-120.01918	Vegetation	Rural	< 3 Meters	Fire Agency	Cal Fire	101212782	Unknown	0 - 750	Conductor	Overhead	Yes	6/16/17	14:22	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
104	PG&E	06/16/17	16:17	39.22260	-121.00411	Vegetation	Rural	< 3 Meters	Fire Agency	GVFIRE	100036908	Unknown	12,000	Conductor	Overhead	Yes	6/16/17	16:17	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
105	PG&E	06/16/17	17:59	37.30938	-122.04719	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100555441	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/16/17	17:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
106	PG&E	06/16/17	19:14	38.34429	-122.78122	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101970801	Unknown	0 - 750	Conductor	Overhead	Yes	6/16/17	19:14	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
107	PG&E	06/16/17	22:30	38.03734	-122.18465	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101424286	Unknown	21,000	Conductor	Overhead	Yes	6/16/17	22:30	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
108	PG&E	06/17/17	02:53	37.33567	-120.58295	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101147424	Unknown	12,000	Conductor	Overhead	Yes	6/17/17	02:53	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
109	PG&E	06/17/17	15:49	36.93896	-119.68463	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	103406061	Unknown	21,000	Conductor	Overhead	Yes	6/17/17	15:49	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
110	PG&E	06/18/17	23:49	39.19494	-122.96321	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102160857	Unknown	12,000	Conductor	Overhead	Yes	6/18/17	23:49	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
111	PG&E	06/18/17	12:22	36.72578	-119.79068	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100894729	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/18/17	12:22	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
112	PG&E	06/18/17	13:10	38.23703	-122.67015	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	102007208	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/18/17	13:10	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
113	PG&E	06/18/17	18:09	37.55165	-122.29253	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100309893	Unknown	21,000	Conductor	Overhead	Yes	6/18/17	18:09	Equipment/ Facility Failure	Guy/Span Wire	N.A.	N.A.	Unknown	
114	PG&E	06/18/17	20:16	38.88844	-122.02044	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101650987	None	12,000	Lightning Arrestor	Overhead	Yes	6/18/17	20:16	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown	
115	PG&E	06/18/17	21:07	37.83974	-121.28643	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102085809	Unknown	12,000	Conductor	Overhead	Yes	6/18/17	21:07	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
116	PG&E	06/18/17	22:12	38.53900	-122.79203	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	102029435	Unknown	12,000	Other	Overhead	Yes	6/18/17	22:12	Equipment/ Facility Failure	Voltage Regulator	N.A.	N.A.	Unknown	
117	PG&E	06/18/17	23:12	36.75747	-119.66455	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100780126	PACIFIC BELL	12,000	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
118	PG&E	06/18/17	23:31	38.89731	-121.29467	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	103782395	Unknown	12,000	Conductor	Overhead	Yes	6/18/17	23:31	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
119	PG&E	06/19/17	01:23	35.36762	-118.95521	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100252360	PACIFIC BELL	21,000	Conductor	Overhead	Yes	6/19/17	01:23	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
120	PG&E	06/19/17	13:51	39.90633	-122.17660	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	103841797	YES	12,000	Conductor	Overhead	Yes	6/19/17	13:51	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
121	PG&E	06/19/17	16:18	37.79272	-121.23058	Other	Urban	Structure Only	Utility: PG&E	N.A.	103582825	Unknown	17,000	Transformer	Subsurface	Yes	6/19/17	16:18	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
122	PG&E	06/19/17	16:26	37.93783	-120.60897	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101282825	Unknown	17,000	Other	Overhead	No			Equipment/ Facility Failure	Recloser	N.A.	N.A.	Unknown	

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
158	PG&E	06/29/17	18:31	38.44450	-122.89990	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	102021185	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	6/29/17	18:31	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
159	PG&E	06/29/17	21:55	35.98040	-121.09557	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	103312369	Unknown	12,000	Transformer	Overhead	Yes	6/29/17	21:55	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
160	PG&E	06/30/17	10:24	39.02621	-121.54317	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101341770	Unknown	21,000	Conductor	Overhead	Yes	6/30/17	10:24	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
161	PG&E	06/30/17	01:20	39.82098	-121.58834	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103840463	YES	12,000	Conductor	Overhead	Yes	6/30/17	01:20	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
162	PG&E	06/30/17	23:54	38.57941	-122.88349	Vegetation	Rural	< 3 Meters	Customer	N.A.	101958804	PACIFIC BELL	12,000	Conductor	Overhead	Yes	6/30/17	23:54	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
163	PG&E	07/01/17	12:02	39.82093	-121.64183	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	Pole 003/039	Unknown	60,000	Conductor	Overhead	Yes	7/1/17	12:02	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
164	PG&E	07/01/17	3:54	36.99950	-119.97648	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	2099663621	Unknown	0 - 750	Conductor	Overhead	Yes	7/1/17	3:54	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
165	PG&E	07/01/17	3:12	38.19517	-122.91971	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103855493	Unknown	12,000	Conductor	Overhead	Yes	7/1/17	3:12	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
166	PG&E	07/01/17	10:41	39.27788	-121.68748	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101294919	Unknown	12,000	Other	Overhead	Yes	7/1/17	10:41	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
167	PG&E	07/02/17	13:28	39.96055	-121.62736	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	Pole 000/017c	Unknown	60,000	Conductor	Overhead	Yes	7/2/17	13:28	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
168	PG&E	07/02/17	3:49	36.95878	-120.89268	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101205043	Unknown	12,000	Conductor	Overhead	Yes	7/2/17	3:49	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	Third-party caused
169	PG&E	07/03/17	20:26	38.79229	-120.94384	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	101388730	PACIFIC BELL	21,000	Conductor	Overhead	Yes	7/3/17	20:26	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
170	PG&E	07/04/17	13:56	40.38303	-122.31503	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101506140	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/4/17	13:56	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
171	PG&E	07/04/17	16:16	38.87628	-121.13185	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100050181	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	7/4/17	16:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
172	PG&E	07/04/17	20:16	40.42283	-122.39748	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	SCOTT CORN 530-448-2414	101481860	Unknown	0 - 750	Conductor	Overhead	Yes	7/4/17	20:16	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
173	PG&E	07/05/17	3:25	38.68451	-121.01176	Vegetation	Urban	< 0.25 Acres	Fire Agency	JUSTIN RHAMES	101380157	PACIFIC BELL	21,000	Fuse	Overhead	Yes	7/5/17	3:25	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
174	PG&E	07/05/17	11:58	39.21046	-121.22662	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	STEVE ROBERTSON 530 906 4892	100010286	Unknown	21,000	Conductor	Overhead	Yes	7/5/17	11:58	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
175	PG&E	07/05/17	20:54	35.88475	-120.10996	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	661-324-6551 LOG325962	100171224	Unknown	21,000	Capacitor Bank	Overhead	No		Contact From Object	N.A.	Animal	Electric Facility	Unknown		
176	PG&E	07/06/17	15:18	36.74020	-119.76128	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	100864107	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	7/6/17	15:18	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused
177	PG&E	07/06/17	14:02	39.30091	-122.51726	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100414219	Unknown	12,000	Conductor	Overhead	Yes	7/6/17	14:02	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	Third-party caused
178	PG&E	07/06/17	20:07	39.59874	-121.90988	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	100436921	None	12,000	Conductor	Overhead	Yes	7/6/17	20:07	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
179	PG&E	07/06/17	23:30	35.55618	-120.75520	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101934472	Unknown	21,000	Conductor	Overhead	Yes	7/6/17	23:30	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
180	PG&E	07/07/17	15:09	40.90536	-122.38061	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	101455950	Unknown	12,000	Conductor	Overhead	Yes	7/7/17	15:09	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
181	PG&E	07/07/17	14:31	37.49900	-119.79900	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	STEVEN WARD OFFICE 209-966-3542 CELL559-706-8811	103855637	Unknown	21,000	Conductor	Overhead	Yes	7/7/17	14:31	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	PG&E contractor
182	PG&E	07/08/17	4:03	38.55354	-121.53680	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	101584938	Unknown	0 - 750	Conductor	Overhead	Yes	7/8/17	4:03	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
183	PG&E	07/08/17	15:59	37.28217	-122.01887	Other	Urban	< 0.25 Acres	Fire Agency	Unknown	100540958	Unknown	0 - 750	Conductor	Overhead	Yes	7/8/17	15:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
184	PG&E	07/08/17	18:16	35.46529	-120.67132	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	103392970	Unknown	0 - 750	Conductor	Overhead	Yes	7/8/17	18:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
185	PG&E	07/08/17	18:49	40.29354	-122.40890	Vegetation	Rural	10 - 99 Acres	Fire Agency	TOM STROING, RED BLUFF	101526269	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/8/17	18:49	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
186	PG&E	07/09/17	7:07	36.50920	-121.44651	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	103011964	Unknown	12,000	Conductor	Overhead	Yes	7/9/17	7:07	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
187	PG&E	07/09/17	11:00	39.42015	-121.54390	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100394209	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/9/17	11:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
188	PG&E	07/10/17	09:07	38.20742	-121.23350	Vegetation	Rural	< 3 Meters	Customer	N.A.	102083900	Unknown	0 - 750	Conductor	Overhead	Yes	7/10/17	09:07	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
189	PG&E	07/10/17	12:32	40.26028	-123.82528	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	103139646	Unknown	12,000	Conductor	Overhead	Yes	7/10/17	12:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
190	PG&E	07/10/17	16:39	36.96201	-120.85839	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	EFFRAIN CHAVARRIA	101203174	Unknown	12,000	Conductor	Overhead	Yes	7/10/17	16:39	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
191	PG&E	07/10/17	17:00	37.37677	-122.35967	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	David Hibdon 831-254-1763	100270370	Unknown	12,000	Conductor	Overhead	No		Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
192	PG&E	07/11/17	8:11	38.13370	-121.10542	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102072316	None	21,000	Other	Overhead	Yes	7/11/17	8:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
193	PG&E	07/11/17	11:53	38.03382	-121.32243	Vegetation	Urban	< 0.25 Acres	Utility; PG&E	N.A.	102118581	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	7/11/17	11:53	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
194	PG&E	07/11/17	13:56	39.45061	-121.71535	Vegetation	Rural	< 0.25 Acres	Fire Agency	chip fowler	100423597	Unknown	0 - 750	Conductor	Overhead	Yes	7/11/17	13:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
195	PG&E	07/11/17	22:12	37.01217	-121.94972	Vegetation	Rural	< 3 Meters	Fire Agency	CAPT PHIL CRAMBLETT 831-479-6842	101676689	PACIFIC BELL	21,000	Conductor	Overhead	Yes	7/11/17	22:12	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
196	PG&E	07/12/17	16:04	40.65308	-122.33429	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	Structure 000/001	Unknown	60,000	Conductor	Overhead	Yes	7/12/17	16:04	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
197	PG&E	07/12/17	05:51	38.39320	-121.80440	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101584920	Unknown	12,000	Conductor	Overhead	Yes	7/12/17	05:51	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
198	PG&E	07/12/17	10:48	36.96254	-120.04632	Other	Urban	< 0.25 Acres	Fire Agency	Barbara Riley 661-5499 ext. 2	103222654	None	0 - 750	Conductor	Overhead	Yes	7/12/17	10:48	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
199	PG&E	07/12/17	15:09	37.14908	-122.00371	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	103565794	Unknown	21,000	Conductor	Overhead	Yes	7/12/17	15:09	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
200	PG&E	07/12/17	20:21	40.08083	-123.83389	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	103841917	Unknown	12,000	Conductor	Overhead	Yes	7/12/17	20:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
201	PG&E	07/13/17	5:13	38.12011	-122.18577	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	Tower 025/173	Unknown	115,000	Conductor	Overhead	Yes	7/13/17	5:13	Contact From Object	N.A.	Other	Electric Facility	Other	bird material
202	PG&E	07/13/17	07:43	39.40638	-122.12630	Vegetation	Rural	< 3 Meters	Fire Agency	AXS-N/A FIRE NEAR POLE PER FD. NO STDBY. WANT CHECK OF POLE 530-458-0200	100406386	None	0 - 750	Conductor	Overhead	Yes	7/13/17	07:43	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
203	PG&E	07/13/17	19:29	36.85038	-119.54996	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	chis waters bat.chief 559-281-4308	100728986	Unknown	0 - 750	Conductor	Overhead	No		Contact From Object	N.A.	Animal	Electric Facility	Unknown		
204	PG&E	07/14/17	17:54	37.70950	-121.29210	Vegetation	Rural	< 0.25 Acres	Fire Agency	TRACY	102070196	Unknown	12,000	Conductor	Overhead	Yes	7/14/17	17:						

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location		Fire			Utility Facility				Outage			Field Observations						Notes (Optional):		
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor		
232	PG&E	07/22/17	16:01	40.83143	-124.05389	Vegetation	Rural	< 0.25 Acres	Fire Agency	BATTALION CHIEF CURT WATKINS, 707-825.2000	100983827	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/22/17	16:01	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused
233	PG&E	07/23/17	09:22	40.64201	-122.23025	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAPT?	101459708	FRONTIER COMM	12,000	Conductor	Overhead	Yes	7/23/17	09:22	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
234	PG&E	07/23/17	16:32	36.24055	-119.81283	Vegetation	Rural	< 0.25 Acres	Fire Agency	Brandon Jones (559) 852-2884	100783832	Unknown	12,000	Conductor	Overhead	Yes	7/23/17	16:32	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
235	PG&E	07/23/17	18:25	39.67233	-123.53360	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	103823226	Unknown	12,000	Conductor	Overhead	Yes	7/23/17	18:25	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
236	PG&E	07/23/17	19:41	36.21714	-119.90973	Vegetation	Rural	< 0.25 Acres	Fire Agency	Brandon Jones (559) 852-2884	103846605	Unknown	12,000	Conductor	Overhead	Yes	7/23/17	19:41	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
237	PG&E	07/24/17	14:01	37.26349	-122.33643	Vegetation	Rural	< 0.25 Acres	Fire Agency	mike klinck 650-879-0121	100322130	Unknown	0 - 750	Conductor	Overhead	Yes	7/24/17	14:01	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
238	PG&E	07/24/17	16:07	37.25369	-121.96760	Vegetation	Urban	< 0.25 Acres	Fire Agency	C1702050039	103447162	Unknown	0 - 750	Conductor	Overhead	Yes	7/24/17	16:07	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
239	PG&E	07/24/17	19:31	38.35192	-120.71029	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	101289362	Unknown	12,000	Conductor	Overhead	Yes	7/24/17	19:31	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
240	PG&E	07/24/17	21:45	35.60243	-120.92107	Vegetation	Rural	10 - 99 Acres	Fire Agency	Unknown	101860186	Unknown	12,000	Conductor	Overhead	Yes	7/24/17	21:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
241	PG&E	07/25/17	15:51	38.37795	-122.53878	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	102031447	Unknown	12,000	Conductor	Overhead	Yes	7/25/17	15:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
242	PG&E	07/25/17	19:12	39.59970	-121.44490	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100403612	Unknown	12,000	Conductor	Overhead	Yes	7/25/17	19:12	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
243	PG&E	07/26/17	06:55	36.78124	-119.75525	Vegetation	Urban	< 3 Meters	Fire Agency	FRESNO FIRE, BATALION 1, FULMER 559 993 2661	100866522	PACIFIC BELL	12,000	Conductor	Overhead	Yes	7/26/17	06:55	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
244	PG&E	07/28/17	14:02	40.99973	-121.95793	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101512624	Unknown	12,000	Conductor	Overhead	Yes	7/28/17	14:02	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
245	PG&E	07/28/17	16:57	35.47270	-120.99080	Vegetation	Rural	10 - 99 Acres	Fire Agency	TOM MCEWEN 805-903-3409	101933868	Unknown	12,000	Conductor	Overhead	Yes	7/28/17	16:57	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
246	PG&E	07/28/17	19:20	35.72756	-120.99030	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	San Luis Obispo CDF	101945496	None	21,000	Conductor	Overhead	Yes	7/28/17	19:20	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
247	PG&E	07/29/17	13:18	39.46313	-121.45951	Vegetation	Rural	< 0.25 Acres	Fire Agency	russ fowler 530 521 8056	103846763	Unknown	12,000	Conductor	Overhead	Yes	7/29/17	13:18	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
248	PG&E	07/29/17	13:28	35.45229	-120.38344	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101889516	Unknown	0 - 750	Conductor	Overhead	Yes	7/29/17	13:28	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
249	PG&E	07/29/17	14:52	37.05999	-122.00113	Vegetation	Urban	< 0.25 Acres	Fire Agency	Scotts Valley Fire Dept.	101679068	PACIFIC BELL	21,000	Conductor	Overhead	Yes	7/29/17	14:52	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
250	PG&E	07/29/17	17:56	37.02507	-121.53583	Vegetation	Rural	< 3 Meters	Fire Agency	GEORGE MARSHALL	100610842	Unknown	21,000	Conductor	Overhead	Yes	7/29/17	17:56	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
251	PG&E	07/29/17	18:08	37.94875	-121.34571	Vegetation	Rural	< 0.25 Acres	Fire Agency	911	102126507	Unknown	12,000	Conductor	Overhead	Yes	7/29/17	18:08	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
252	PG&E	07/29/17	20:45	35.45171	-120.61711	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	101941008	Unknown	0 - 750	Conductor	Overhead	Yes	7/29/17	20:45	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	Third-party caused
253	PG&E	07/30/17	09:46	38.91318	-122.61788	Vegetation	Rural	< 0.25 Acres	Fire Agency	mike wink	102151066	None	0 - 750	Conductor	Overhead	Yes	7/30/17	09:46	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
254	PG&E	07/31/17	12:58	37.09707	-122.27965	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	101679025	Unknown	0 - 750	Conductor	Overhead	No		Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
255	PG&E	07/31/17	14:10	35.97865	-120.11100	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	100695130	Unknown	21,000	Conductor	Overhead	Yes	7/31/17	14:10	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
256	PG&E	07/31/17	14:41	38.79675	-121.13288	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	103782414	Unknown	12,000	Conductor	Overhead	Yes	7/31/17	14:41	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
257	PG&E	08/01/17	12:23	36.04123	-119.50529	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100661556	Unknown	0 - 750	Other	Overhead	Yes	8/1/17	12:23	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
258	PG&E	08/02/17	9:42	39.22744	-123.10811	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	Pole 5/0	None	60,000	Conductor	Overhead	Yes	8/2/17	9:42	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
259	PG&E	08/02/17	5:54	40.79856	-123.39614	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	100974913	Unknown	12,000	Conductor	Overhead	Yes	8/2/17	5:54	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
260	PG&E	08/02/17	8:58	37.56179	-121.94860	Vegetation	Rural	< 0.25 Acres	Fire Agency	FREMONT FIRE DEPT. 911	100940374	PACIFIC BELL	12,000	Other	Overhead	Yes	8/2/17	8:58	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
261	PG&E	08/02/17	17:04	37.31632	-122.07225	Vegetation	Urban	< 0.25 Acres	Fire Agency	TONY RAINIERI 408-378-4010	100534186	Unknown	12,000	Conductor	Overhead	No		Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
262	PG&E	08/02/17	18:16	37.39296	-120.62127	Vegetation	Urban	< 3 Meters	Fire Agency	2099663621	101190510	PACIFIC BELL	12,000	Transformer	Overhead	Yes	8/2/17	18:16	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
263	PG&E	08/03/17	10:53	39.07320	-121.08679	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	100072742	PACIFIC BELL	12,000	Conductor	Overhead	Yes	8/3/17	10:53	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
264	PG&E	08/03/17	11:16	38.11924	-122.50154	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	SSR172150008	102227219	Unknown	12,000	Conductor	Overhead	Yes	8/3/17	11:16	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
265	PG&E	08/03/17	22:44	39.07110	-121.48700	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	ART PAQUETTE 530-633-0861	101335644	PACIFIC BELL	12,000	Unknown	Overhead	No		Unknown	N.A.	N.A.	N.A.	Unknown		
266	PG&E	08/04/17	09:54	38.60394	-121.05918	Vegetation	Rural	< 3 Meters	Fire Agency	D. Franks 530-622-3858, Incident #022602	101411052	PACIFIC BELL	21,000	Capacitor Bank	Overhead	Yes	8/4/17	09:54	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
267	PG&E	08/04/17	18:14	35.61928	-120.65890	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101912293	PACIFIC BELL	12,000	Fuse	Overhead	Yes	8/4/17	18:14	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
268	PG&E	08/05/17	08:33	38.45835	-120.86954	Vegetation	Rural	< 0.25 Acres	Fire Agency	JEFF MICHEL- 530 409 2223	101236223	Unknown	0 - 750	Conductor	Overhead	Yes	8/5/17	08:33	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
269	PG&E	08/05/17	18:08	39.09683	-123.21466	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	102196629	Unknown	12,000	Conductor	Overhead	Yes	8/5/17	18:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
270	PG&E	08/05/17	18:09	36.96750	-120.08993	Vegetation	Urban	.26 - 9.99 Acres	Fire Agency	911	101136476	Unknown	12,000	Conductor	Overhead	Yes	8/5/17	18:09	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
271	PG&E	08/05/17	19:21	36.76912	-119.61010	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100725102	Unknown	12,000	Other	Overhead	Yes	8/5/17	19:21	Equipment/ Facility Failure	Recloser	N.A.	N.A.	Unknown	
272	PG&E	08/06/17	11:38	36.58574	-121.71213	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101747125	Unknown	12,000	Conductor	Overhead	Yes	8/6/17	11:38	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
273	PG&E	08/06/17	18:21	40.60120	-122.23460	Vegetation	Rural	< 3 Meters	Fire Agency	17CASH4007992	101470083	Unknown	12,000	Other	Overhead	Yes	8/6/17	18:21	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike
274	PG&E	08/08/17	13:46	38.43664	-122.72596	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	Tower 005/090	None	115,000	Conductor	Overhead	Yes	8/8/17	13:46	Contact From Object	N.A.	Other	Electric Facility	Human Error	
275	PG&E	08/08/17	0:36	35.42687	-119.05719	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	100167715	PACIFIC BELL	12,000	Unknown	Subsurface	Yes	8/8/17	0:36	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
276	PG&E	08/08/17	4:10	38.49485	-122.66849	Vegetation	Rural	< 3 Meters	Fire Agency	911	102025742	PACIFIC BELL	12,000	Transformer	Overhead	Yes	8/8/17	4:10	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
277	PG&E	08/08/17	11:27	37.04448	-121.63431	Vegetation	Urban	< 3 Meters	Utility; PG&E	N.A.	100613200	VERIZON CALIFO	21,000	Capacitor Bank	Overhead	Yes	8/8/17	11:27	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
278	PG&E																							

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
308	PG&E	08/28/17	10:07	39.04720	-120.78589	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	FORESTHILL	100019525	Unknown	12,000	Conductor	Overhead	Yes	8/28/17	10:07	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused
309	PG&E	08/28/17	13:55	37.68570	-120.80670	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	102327313	None	0 - 750	Conductor	Overhead	Yes	8/28/17	13:55	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
310	PG&E	08/28/17	14:06	38.63402	-122.41945	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	102253236	Unknown	21,000	Conductor	Overhead	Yes	8/28/17	14:06	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
311	PG&E	08/28/17	14:23	38.50540	-120.75916	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	101260228	PACIFIC BELL	12,000	Fuse </td <td>Overhead</td> <td>Yes</td> <td>8/28/17</td> <td>14:23</td> <td>Equipment/ Facility Failure</td> <td>Fuse</td> <td>N.A.</td> <td>N.A.</td> <td>Unknown</td> <td></td>	Overhead	Yes	8/28/17	14:23	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
312	PG&E	08/28/17	14:59	40.28528	-123.87278	Vegetation	Rural	< 3 Meters	Fire Agency	Cal Fire	100990599	Unknown	12,000	Conductor	Overhead	Yes	8/28/17	14:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
313	PG&E	08/28/17	23:56	40.11971	-123.64400	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	103844288	Unknown	12,000	Conductor	Overhead	Yes	8/28/17	23:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
314	PG&E	08/29/17	6:08	38.23650	-122.46080	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101998998	Unknown	12,000	Conductor	Overhead	Yes	8/29/17	6:08	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
315	PG&E	08/29/17	10:27	38.36871	-122.00121	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	101661402	PACIFIC BELL	12,000	Lightning Arrestor	Overhead	Yes	8/29/17	10:27	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
316	PG&E	08/29/17	10:40	38.20657	-121.15763	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102082031	Unknown	12,000	Conductor	Overhead	Yes	8/29/17	10:40	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
317	PG&E	08/29/17	12:49	37.45070	-119.64538	Vegetation	Rural	> 5000 Acres	Fire Agency	USFS	101017368	Unknown	12,000	Conductor	Overhead	Yes	8/29/17	12:49	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	PG&E contractor
318	PG&E	08/29/17	15:54	38.30196	-122.54314	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	102026119	PACIFIC BELL	12,000	Fuse </td <td>Overhead</td> <td>Yes</td> <td>8/29/17</td> <td>15:54</td> <td>Contact From Object</td> <td>N.A.</td> <td>Animal</td> <td>Electric Facility</td> <td>Unknown</td> <td></td>	Overhead	Yes	8/29/17	15:54	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
319	PG&E	08/30/17	16:17	35.35283	-119.05377	Vegetation	Urban	< 0.25 Acres	Fire Agency	BCFD/KCFD 661-324-6551	100145928	Unknown	0 - 750	Conductor	Overhead	Yes	8/30/17	16:17	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
320	PG&E	08/30/17	18:21	40.62430	-122.30386	Vegetation	Rural	< 0.25 Acres	Fire Agency	CASHU008896	103151338	YES	12,000	Conductor	Overhead	Yes	8/30/17	18:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
321	PG&E	08/30/17	22:37	38.99933	-120.98871	Vegetation	Rural	< 3 Meters	Fire Agency	Andy 530-889-0111	100026238	PACIFIC BELL	12,000	Conductor	Overhead	Yes	8/30/17	22:37	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
322	PG&E	08/30/17	22:39	38.16621	-121.93815	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	suisun	103850994	Unknown	12,000	Conductor	Overhead	Yes	8/30/17	22:39	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
323	PG&E	08/31/17	6:42	35.61599	-120.85770	Vegetation	Rural	< 0.25 Acres	Fire Agency	Derrick	101860075	Unknown	21,000	Conductor	Overhead	Yes	8/31/17	6:42	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
324	PG&E	08/31/17	11:33	37.13786	-121.99658	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100519201	Unknown	21,000	Conductor	Overhead	Yes	8/31/17	11:33	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
325	PG&E	08/31/17	11:51	38.39169	-122.31951	Vegetation	Rural	< 3 Meters	Fire Agency	Cal Fire	102291943	PACIFIC BELL	21,000	Conductor	Overhead	Yes	8/31/17	11:51	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
326	PG&E	08/31/17	21:07	41.06048	-124.10377	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	100977438	Unknown	12,000	Conductor	Overhead	Yes	8/31/17	21:07	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
327	PG&E	08/31/17	22:50	36.81501	-119.77632	Vegetation	Urban	< 3 Meters	Customer	N.A.	100851402	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	8/31/17	22:50	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
328	PG&E	09/01/17	6:09	36.19489	-120.70786	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101705717	Unknown	12,000	Fuse </td <td>Overhead</td> <td>Yes</td> <td>9/1/17</td> <td>6:09</td> <td>Equipment/ Facility Failure</td> <td>Fuse</td> <td>N.A.</td> <td>N.A.</td> <td>Unknown</td> <td></td>	Overhead	Yes	9/1/17	6:09	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
329	PG&E	09/01/17	8:00	37.37567	-119.88862	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	101067028	Unknown	0 - 750	Conductor	Overhead	Yes	9/1/17	8:00	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
330	PG&E	09/01/17	12:07	40.59381	-124.13596	Vegetation	Rural	< 3 Meters	Fire Agency	DISPATCH FIRE 707-725-7550	100993250	PACIFIC BELL	12,000	Lightning Arrestor	Overhead	No			Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown	
331	PG&E	09/01/17	12:52	37.16670	-121.70690	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100601982	VERIZON CALIFO	21,000	Conductor	Overhead	Yes	9/1/17	12:52	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
332	PG&E	09/01/17	12:59	38.45270	-122.78450	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102015626	PACIFIC BELL	12,000	Fuse </td <td>Overhead</td> <td>Yes</td> <td>9/1/17</td> <td>12:59</td> <td>Contact From Object</td> <td>N.A.</td> <td>Vehicle</td> <td>Pole</td> <td>Human Error</td> <td>Third-party caused</td>	Overhead	Yes	9/1/17	12:59	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
333	PG&E	09/01/17	17:48	36.65180	-121.72490	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	MCFD	103155761	Unknown	12,000	Conductor	Overhead	Yes	9/1/17	17:48	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
334	PG&E	09/01/17	18:42	38.29390	-122.50390	Other	Rural	< 0.25 Acres	Fire Agency	BOB NORRBOM 707 996 2102	101982894	PACIFIC BELL	12,000	Fuse </td <td>Overhead</td> <td>Yes</td> <td>9/1/17</td> <td>18:42</td> <td>Equipment/ Facility Failure</td> <td>Fuse</td> <td>N.A.</td> <td>N.A.</td> <td>Unknown</td> <td></td>	Overhead	Yes	9/1/17	18:42	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
335	PG&E	09/02/17	12:01	37.66445	-121.92227	Vegetation	Rural	< 3 Meters	Customer	N.A.	100956020	PACIFIC BELL	21,000	Conductor	Overhead	Yes	9/2/17	12:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
336	PG&E	09/02/17	16:18	37.26897	-121.80564	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100584311	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/2/17	16:18	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
337	PG&E	09/02/17	18:00	37.93380	-122.40690	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102347407	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/2/17	18:00	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
338	PG&E	09/03/17	7:12	37.37432	-122.21838	Vegetation	Rural	< 0.25 Acres	Fire Agency	Local	100270106	Unknown	12,000	Conductor	Overhead	Yes	9/3/17	7:12	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
339	PG&E	09/03/17	12:52	37.21616	-119.48067	Vegetation	Rural	1000 - 4999 Acres	Fire Agency	Cal Fire	103345573	Unknown	0 - 750	Conductor	Overhead	Yes	9/3/17	12:52	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
340	PG&E	09/03/17	17:52	37.49559	-119.83667	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	209-966-3621	101086621	Unknown	21,000	Transformer	Overhead	Yes	9/3/17	17:52	Contact From Object	N.A.	Other	Electric Facility	Weather	lightning strike
341	PG&E	09/03/17	22:57	36.09533	-120.51699	Vegetation	Rural	100 - 299 Acres	Fire Agency	CHRIS CHRISTOPHERSON 559-281-4320	100739435	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/3/17	22:57	Contact Between Third Party Facility	N.A.	N.A.	N.A.	Weather	
342	PG&E	09/04/17	0:57	36.80240	-119.82540	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100856132	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	9/4/17	0:57	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
343	PG&E	09/04/17	3:29	39.83171	-121.84441	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	102300100	PACIFIC BELL	12,000	Conductor	Overhead	No			Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
344	PG&E	09/04/17	6:43	37.45463	-121.93311	Other	Rural	Structure Only	Customer	N.A.	100557780	PACIFIC BELL	21,000	Conductor	Overhead	Yes	09/04/17	6:43	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
345	PG&E	09/05/17	1:24	39.43168	-121.55285	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100420238	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/5/17	1:24	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
346	PG&E	09/05/17	6:58	39.67273	-123.51279	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	102194697	VERIZON CALIFO	12,000	Conductor	Overhead	Yes	9/5/17	6:58	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
347	PG&E	09/05/17	7:20	39.71095	-121.79724	Vegetation	Rural	< 3 Meters	Fire Agency	(530) 538-6841	100355255	Unknown	12,000	Conductor	Overhead	Yes	9/5/17	7:20	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
348	PG&E	09/05/17	13:51	38.18972	-121.31746	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103218208	Unknown	12,000	Conductor	Overhead	Yes	9/5/17	13:51	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
349	PG&E	09/05/17	17:51	38.34067	-122.25777	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	102284869	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/5/17	17:51	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
350	PG&E	09/06/17	19:26	40.83920	-122.36350	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103643183	Unknown	12,000	Conductor	Overhead	Yes	9/6/17	19:26	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
351	PG&E	09/06/17	20:08	37.29255	-122.29403	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	100256917	Unknown	12,000	Conductor	Overhead	Yes	9/6/17	20:08	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
352	PG&E	09/08/17	4:47	38.74778	-120.85905	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	101391575	PACIFIC BELL	12,000	Conductor	Overhead	Yes	9/8/17	4:47	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
353	PG&E	09/08/17	17:21	38.60388	-120.92748	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	101379094	PACIFIC BELL	21,000	Conductor	Overhead	Yes	9/8/17	17:21	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
354	PG&E	09/08/17	21:14	37.96038	-120.37636	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	John Lite 209-984-5623	101042521	Unknown	17,000	Conductor	Overhead	Yes	9/8/17	21:14	Contact From Object					

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
386	PG&E	09/27/17	9:11	39.01626	-122.86854	Vegetation	Rural	< 3 Meters	Customer	N.A.	102143577	PACIFIC BELL	12,000	Transformer	Overhead	Yes	9/27/17	9:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
387	PG&E	09/27/17	12:12	39.48450	-121.35450	Vegetation	Rural	< 0.25 Acres	Fire Agency	bill lopez cell 530 521-8052	100429924	PACIFIC BELL	12,000	Fuse	Overhead	Yes	9/27/17	12:12	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
388	PG&E	09/27/17	19:06	40.75920	-123.99500	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	103660812	Unknown	12,000	Conductor	Overhead	Yes	9/27/17	19:06	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
389	PG&E	09/28/17	18:28	37.98840	-122.09700	Vegetation	Urban	< 3 Meters	Fire Agency	(510)374-7070	103627505	Unknown	21,000	Conductor	Overhead	Yes	9/28/17	18:28	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	Third-party caused
390	PG&E	09/29/17	2:01	39.53174	-122.18567	Vegetation	Urban	< 3 Meters	Unknown	N.A.	100419384	Unknown	21,000	Transformer	Padmounted	Yes	9/29/17	2:01	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
391	PG&E	09/30/17	15:08	37.41091	-121.17474	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	Tower 030/132	None	230,000	Conductor	Overhead	Yes	9/30/17	15:08	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	Third-party caused
392	PG&E	10/01/17	7:24	37.91400	-122.37710	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101437028	Unknown	12,000	Transformer	Overhead	Yes	10/1/17	7:24	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
393	PG&E	10/01/17	16:11	39.79696	-122.11853	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103850270	Unknown	0 - 750	Conductor	Overhead	Yes	10/1/17	16:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
394	PG&E	10/01/17	23:51	40.01920	-122.14520	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	MARK FRITZ	101534592	Unknown	12,000	Conductor	Overhead	Yes	10/1/17	23:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
395	PG&E	10/02/17	2:55	37.33137	-120.52428	Vegetation	Urban	.26 - 9.99 Acres	Fire Agency	209-966-3621	101160137	Unknown	12,000	Conductor	Overhead	Yes	10/2/17	2:55	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
396	PG&E	10/02/17	7:07	38.29490	-122.10660	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101658181	Unknown	0 - 750	Transformer	Overhead	Yes	10/2/17	7:07	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
397	PG&E	10/02/17	12:22	39.63135	-122.00685	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	103224422	Unknown	12,000	Conductor	Overhead	Yes	10/2/17	12:22	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
398	PG&E	10/02/17	14:56	38.91023	-120.91853	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	100110400	None	21,000	Other	Overhead	Yes	10/2/17	14:56	Contact From Object	N.A.	Vehicle	Pole	Human Error	Third-party caused
399	PG&E	10/02/17	16:05	38.71820	-120.97560	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101375963	Unknown	21,000	Conductor	Overhead	Yes	10/2/17	16:05	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
400	PG&E	10/02/17	17:30	38.36340	-122.28458	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire	102282538	PACIFIC BELL	12,000	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
401	PG&E	10/03/17	17:48	35.10842	-119.37855	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	span 001/019 - 001/020	Unknown	70,000	Conductor	Overhead	Yes	10/3/17	17:48	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
402	PG&E	10/04/17	12:20	37.81692	-121.27147	Vegetation	Rural	< 0.25 Acres	Fire Agency	LATHROP	102091094	Unknown	0 - 750	Other	Overhead	No			Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
403	PG&E	10/04/17	23:42	38.65539	-120.99340	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101375442	PACIFIC BELL	12,000	Other	Overhead	Yes	10/4/17	23:42	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
404	PG&E	10/05/17	0:20	38.00524	-121.75446	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100456226	Unknown	21,000	Switch	Subsurface	Yes	10/5/17	0:20	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown	
405	PG&E	10/05/17	10:57	39.46636	-122.16704	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100343435	PACIFIC BELL	21,000	Other	Overhead	Yes	10/5/17	10:57	Contact From Object	N.A.	Other	Electric Facility	Other	bird's Nest
406	PG&E	10/06/17	7:24	38.56070	-121.76425	Vegetation	Urban	< 3 Meters	Fire Agency	5307583600	101639481	PACIFIC BELL	12,000	Lightning Arrestor	Overhead	Yes	10/6/17	7:24	Equipment/ Facility Failure	Lightning Arrestor	N.A.	N.A.	Unknown	
407	PG&E	10/06/17	12:03	39.46450	-122.11238	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100344016	Unknown	21,000	Conductor	Overhead	Yes	10/6/17	12:03	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
408	PG&E	10/06/17	16:04	40.97124	-124.03716	Vegetation	Rural	< 0.25 Acres	Fire Agency	JO BOB	100978977	Unknown	12,000	Conductor	Overhead	Yes	10/6/17	16:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
409	PG&E	10/07/17	10:11	37.19880	-121.83250	Vegetation	Urban	< 0.25 Acres	Fire Agency	JOHN PAVLOFF	100600703	PACIFIC BELL	21,000	Other	Overhead	Yes	10/7/17	10:11	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
410	PG&E	10/08/17	5:11	40.32520	-124.28810	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	100987374	FRONTIER COMM	12,000	Conductor	Overhead	Yes	10/8/17	5:11	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
411	PG&E	10/08/17	16:41	39.58900	-122.20150	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	100341037	Unknown	0 - 750	Conductor	Overhead	Yes	10/8/17	16:41	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
412	PG&E	10/08/17	16:43	40.88760	-123.99175	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	100972408	Unknown	12,000	Conductor	Overhead	Yes	10/8/17	16:43	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
413	PG&E	10/08/17	17:39	38.53311	-121.54236	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	101585529	Unknown	12,000	Conductor	Overhead	Yes	10/8/17	17:39	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
414	PG&E	10/08/17	19:11	37.20714	-121.86200	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100622560	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	10/8/17	19:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
415	PG&E	10/08/17	19:44	39.74459	-121.59704	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	100304566	Unknown	12,000	Conductor	Overhead	Yes	10/8/17	19:44	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
416	PG&E	10/08/17	20:35	39.63150	-121.42250	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100347747	Unknown	12,000	Conductor	Overhead	Yes	10/8/17	20:35	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
417	PG&E	10/08/17	21:10	39.45540	-121.04981	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	100099226	Unknown	12,000	Conductor	Overhead	Yes	10/8/17	21:10	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
418	PG&E	10/08/17	21:46	39.25949	-120.99650	Vegetation	Urban	< 0.25 Acres	Fire Agency	PHILLIP NUNNICK 530 273-3158 INCENDENT # 26264	100072730	PACIFIC BELL	12,000	Other	Overhead	Yes	10/8/17	21:46	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
419	PG&E	10/08/17	22:19	39.73711	-121.64642	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown	103319605	Unknown	0 - 750	Conductor	Overhead	Yes	10/8/17	22:19	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
420	PG&E	10/08/17	22:30	38.32262	-121.94307	Vegetation	Rural	< 0.25 Acres	Fire Agency	vaca	101561309	PACIFIC BELL	21,000	Conductor	Overhead	Yes	10/8/17	22:30	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
421	PG&E	10/08/17	22:54	35.55276	-118.96809	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	span 7/87-7/88, Vedder T	Unknown	115,000	Conductor	Overhead	Yes	10/8/17	22:54	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
422	PG&E	10/08/17	22:58	39.36423	-121.11307	Vegetation	Rural	< 3 Meters	Fire Agency	INCIDENT NUMBER 26268	100068104	PACIFIC BELL	12,000	Conductor	Overhead	Yes	10/8/17	22:58	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
423	PG&E	10/08/17	23:51	38.27585	-121.96167	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	707-428-7305	101660727	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	10/8/17	23:51	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
424	PG&E	10/09/17	1:02	38.70368	-120.67250	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire	101408485	Unknown	21,000	Other	Overhead	Yes	10/9/17	1:02	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
425	PG&E	10/09/17	1:13	38.10103	-122.21965	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	102218775	PACIFIC BELL	0 - 750	Conductor	Overhead	No			Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
426	PG&E	10/09/17	1:25	38.19062	-121.94974	Vegetation	Rural	10 - 99 Acres	Unknown	N.A.	101559973	Unknown	21,000	Conductor	Overhead	Yes	10/9/17	1:25	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
427	PG&E	10/09/17	1:29	37.84157	-121.95827	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown	100501933	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	10/9/17	1:29	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
428	PG&E	10/09/17	1:45	38.85755	-122.72207	Vegetation	Rural	< 0.25 Acres	Fire Agency	wink	103570679	Unknown	12,000	Conductor	Overhead	Yes	10/9/17	1:45	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
429	PG&E	10/09/17	2:27	37.72931	-122.13783	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100903727	PACIFIC BELL	12,000	Conductor	Overhead	Yes	10/9/17	2:27	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
430	PG&E	10/09/17	4:36	38.26428	-122.04877	Vegetation	Urban	< 3 Meters	Fire Agency	Fairfield	101660707	Unknown	0 - 750	Conductor	Overhead	Yes	10/9/17	4:36	Contact From Object	N.A.	Vegetation	Electric Facility	Weather	Oct 8/9 wind storm
431	PG&E	10/09/17	12:05	35.40672	-118.96231	Vegetation	Urban	< 3 Meters	Customer	N.A.	100252698	PACIFIC BELL	0 - 750	Conductor	Overhead	Yes	10/9/17	12:05	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
432	PG&E	10/10/17	13:36	38.93098	-123.30235	Vegetation	Rural	< 3 Meters	Customer	N.A.	102214553	Unknown	0 - 750	Conductor	Overhead	Yes	10/10/17	13:36	Contact From Object</					

Pacific Gas and Electric Company - Fire Incident Data Collection Plan
Annual Report for 2017

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location			Fire			Utility Facility				Outage			Field Observations					Notes (Optional):		
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor		
465	PG&E	11/06/17	9:59	37.14600	-121.66753	Vegetation	Rural	< 0.25 Acres	Fire Agency	INCIDENT # 1717CASCU008183		21,000	Conductor	Overhead	Yes	11/6/17	9:59	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
466	PG&E	11/06/17	15:06	38.29980	-122.50300	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	11/6/17	15:06	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
467	PG&E	11/08/17	07:11	37.73669	-120.34587	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	11/8/17	07:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
468	PG&E	11/08/17	14:53	37.79198	-122.22211	Building	Urban	Structure Only	Fire Agency	Unknown		4,000	Conductor	Overhead	Yes	11/8/17	14:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
469	PG&E	11/11/17	11:57	35.11908	-120.39364	Vegetation	Rural	< 0.25 Acres	Fire Agency	Jordan Dayley ph#929-3911.engine#3467		12,000	Conductor	Overhead	Yes	11/11/17	11:57	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
470	PG&E	11/12/17	19:44	36.73779	-119.77691	Building	Urban	< 0.25 Acres	Fire Agency	capt will johnson		12,000	Capacitor Bank	Overhead	Yes	11/12/17	19:44	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown		
471	PG&E	11/14/17	07:43	37.32400	-120.81456	Vegetation	Rural	< 3 Meters	Fire Agency	cammu #023223		12,000	Transformer	Overhead	Yes	11/14/17	07:43	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown		
472	PG&E	11/17/17	09:53	37.08016	-120.01945	Other	Rural	< 3 Meters	Utility: PG&E	N.A.		12,000	Fuse	Overhead	Yes	11/17/17	09:53	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown		
473	PG&E	11/20/17	08:32	38.75835	-120.84385	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	11/20/17	08:32	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
474	PG&E	11/20/17	20:05	35.49951	-118.90994	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	661-324-6551		None	0 - 750	Conductor	Overhead	Yes	11/20/17	20:05	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
475	PG&E	11/21/17	11:55	37.61013	-121.33324	Vegetation	Rural	< 0.25 Acres	Fire Agency	tracy fire dept		12,000	Conductor	Overhead	Yes	11/21/17	11:55	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
476	PG&E	11/22/17	13:44	36.75202	-121.66363	Vegetation	Rural	< 0.25 Acres	Fire Agency	Cal Fire		12,000	Conductor	Overhead	Yes	11/22/17	13:44	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown		
477	PG&E	11/23/17	16:29	35.77554	-120.69413	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	11/23/17	16:29	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
478	PG&E	11/24/17	10:33	36.62133	-120.06165	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	KERMAN FIRE DEP.		12,000	Conductor	Overhead	Yes	11/24/17	10:33	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
479	PG&E	11/25/17	6:29	36.01436	-119.95559	Vegetation	Rural	< 3 Meters	Utility: PG&E	N.A.		12,000	Conductor	Overhead	Yes	11/25/17	6:29	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
480	PG&E	11/26/17	10:10	36.70981	-119.56321	Vegetation	Urban	< 3 Meters	Fire Agency	Unknown		0 - 750	Conductor	Overhead	Yes	11/26/17	10:10	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	Third-party caused	
481	PG&E	11/27/17	06:23	36.69419	-121.65832	Vegetation	Urban	< 3 Meters	Fire Agency	831-758-7261		12,000	Conductor	Overhead	Yes	11/27/17	06:23	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
482	PG&E	11/27/17	11:11	37.12962	-122.31244	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	11/27/17	11:11	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
483	PG&E	11/28/17	15:49	36.49743	-119.79086	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.		12,000	Other	Overhead	Yes	11/28/17	15:49	Equipment/ Facility Failure	Voltage Regulator	N.A.	N.A.	Unknown		
484	PG&E	11/29/17	17:34	38.68410	-120.65461	Vegetation	Rural	< 3 Meters	Fire Agency	Cal Fire		21,000	Conductor	Overhead	Yes	11/29/17	17:34	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
485	PG&E	12/07/17	12:25	34.71151	-120.17715	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire		115,000	Unknown	Overhead	No			Unknown	N.A.	N.A.	N.A.	Unknown		
486	PG&E	12/12/17	4:40	39.77107	-121.59727	Building	Urban	Structure Only	Fire Agency	paradise fire city department		12,000	Fuse	Overhead	Yes	12/12/17	4:40	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown		
487	PG&E	12/13/17	12:13	35.59220	-120.64741	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		21,000	Other	Overhead	Yes	12/13/17	12:13	Equipment/ Facility Failure	Recloser	N.A.	N.A.	Unknown		
488	PG&E	12/14/17	1:33	37.19789	-121.83746	Building	Rural	Structure Only	Fire Agency	Unknown		0 - 750	Conductor	Overhead	Yes	12/14/17	1:33	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
489	PG&E	12/14/17	17:16	34.58783	-120.35663	Vegetation	Rural	10 - 99 Acres	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	12/14/17	17:16	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
490	PG&E	12/16/17	7:01	39.74474	-122.19612	Building	Urban	Structure Only	Fire Agency	ORLAND CITY FIRE DEPT		0 - 750	Conductor	Overhead	Yes	12/16/17	7:01	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
491	PG&E	12/16/17	11:51	38.81706	-122.70412	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Shawn Ohare		12,000	Conductor	Overhead	Yes	12/16/17	11:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
492	PG&E	12/16/17	13:39	37.97022	-121.64092	Vegetation	Rural	< 0.25 Acres	Fire Agency	FIRE CAPTAIN ON DUTY		0 - 750	Conductor	Overhead	Yes	12/16/17	13:39	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
493	PG&E	12/16/17	16:03	35.65929	-120.49459	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		21,000	Conductor	Overhead	Yes	12/16/17	16:03	Other	N.A.	N.A.	N.A.	Unknown		
494	PG&E	12/19/17	7:05	36.27152	-120.39270	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		12,000	Fuse	Overhead	Yes	12/19/17	7:05	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
495	PG&E	12/19/17	16:55	35.23093	-119.59840	Vegetation	Rural	< 0.25 Acres	Fire Agency	KC FIRE DEPT		21,000	Conductor	Overhead	Yes	12/19/17	16:55	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
496	PG&E	12/19/17	19:45	40.72710	-122.32629	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown		0 - 750	Conductor	Overhead	Yes	12/19/17	19:45	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
497	PG&E	12/20/17	07:54	37.40115	-122.36062	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown		12,000	Conductor	Overhead	Yes	12/20/17	07:54	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown		
498	PG&E	12/20/17	14:03	35.66460	-121.24400	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Cal Fire		12,000	Fuse	Overhead	No			Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown		
499	PG&E	12/20/17	16:04	34.61055	-120.32180	Vegetation	Rural	< 3 Meters	Fire Agency	Unknown		12,000	Fuse	Overhead	Yes	12/20/17	16:04	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown		
500	PG&E	12/22/17	14:38	35.33754	-119.06370	Building	Urban	Structure Only	Fire Agency	Unknown		21,000	Switch	Subsurface	Yes	12/22/17	14:38	Equipment/ Facility Failure	Switch	N.A.	N.A.	Unknown		
501	PG&E	12/24/17	6:41	37.44444	-122.18976	Building	Urban	Structure Only	Fire Agency	Menlo Park FD		4,000	Conductor	Overhead	Yes	12/24/17	6:41	Contact From Object	N.A.	Animal	Electric Facility	Unknown		
502	PG&E	12/24/17	03:53	40.46185	-122.32768	Vegetation	Rural	< 3 Meters	Self Extinguished	N.A.		12,000	Conductor	Overhead	Yes	12/24/17	03:53	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	Third-party caused	
503	PG&E	12/29/17	16:31	37.85168	-122.15863	Vegetation	Rural	< 3 Meters	Fire Agency	925-933-1313		12,000	Capacitor Bank	Overhead	No			Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown		
504																								

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):	
3	PG&E	01/01/18	01:35	37.12463	-120.30416	Vegetation	Rural	< 0.25 Acres	Fire Agency	Prison system fire Dept.	101128983	Unknown	12,000	Conductor	Overhead	No	N.A.	N.A.	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor	
4	PG&E	01/01/18	16:00	35.45779	-120.95778	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101882074	Unknown	12,000	Conductor	Overhead	No	N.A.	N.A.	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown		
5	PG&E	01/13/18	18:34	35.36426	-120.82182	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	Str. 002/010	None	230,000	Conductor	Overhead	No	N.A.	N.A.	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	Marker ball	
6	PG&E	01/16/18	14:25	34.57035	-119.96451	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	101921689	Verizon	12,000	Conductor	Overhead	Yes	01/16/18	14:25	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
7	PG&E	02/01/18	17:41	37.97196	-121.32292	Building	Urban	Structure Only	Self Extinguished	N.A.	102057437	AT&T	0 - 750	Conductor	Overhead	Yes	02/01/18	17:41	Contact From Object	N.A.	N.A.	Vegetation	Human Error	third-party caused	
8	PG&E	02/07/18	05:44	40.65432	-122.51980	Vegetation	Rural	< 3 meters	Utility: PG&E	N.A.	103922730	Unknown	12,000	Conductor	Overhead	Yes	02/07/18	05:44	Contact From Object	N.A.	N.A.	Vegetation	Unknown		
9	PG&E	02/07/18	09:16	38.03686	-120.20956	Vegetation	Rural	< 3 meters	Fire Agency	Jason Podesta 209-586-3362	101038120	AT&T	17,000	Conductor	Overhead	Yes	02/07/18	09:16	Contact From Object	N.A.	N.A.	Other	Human Error	third-party caused	
10	PG&E	02/09/18	18:56	39.15294	-122.22962	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101626240	Unknown	12,000	Conductor	Overhead	Yes	02/09/18	18:56	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
11	PG&E	02/12/18	20:20	39.93953	-121.64937	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	100430947	Unknown	12,000	Conductor	Overhead	Yes	02/12/18	20:20	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
12	PG&E	02/25/18	13:19	36.25297	-120.31534	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	559-294-6818	100744054	Unknown	12,000	Conductor	Overhead	Yes	02/25/18	13:19	Contact From Object	N.A.	N.A.	Balloons	Human Error	third-party caused	
13	PG&E	02/26/18	16:33	35.53021	-118.96955	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100208194	Unknown	21,000	Conductor	Overhead	Yes	02/26/18	16:33	Contact From Object	N.A.	N.A.	Balloons	Human Error	third-party caused	
14	PG&E	03/03/18	12:15	39.12128	-121.05504	Building	Urban	Structure Only	Unknown	N.A.	100095928	AT&T	0 - 750	Conductor	Overhead	Yes	03/03/18	12:15	Contact From Object	N.A.	N.A.	Vegetation	Unknown		
15	PG&E	03/05/18	16:24	34.99299	-118.90108	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Kern County FD	103235837	Unknown	12,000	Unknown	Overhead	Yes	03/05/18	16:24	Unknown	N.A.	N.A.	Unknown	Unknown		
16	PG&E	03/06/18	17:57	38.28110	-120.89650	Vegetation	Rural	< 0.25 Acres	Fire Agency	530-647-5220	101238429	AT&T	12,000	Conductor	Overhead	Yes	03/06/18	17:57	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
17	PG&E	03/10/18	15:22	39.27307	-122.18177	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101635717	Unknown	12,000	Lightning Arrestor	Overhead	Yes	03/10/18	15:22	Contact From Object	N.A.	N.A.	Other	Electric Facility	Other	bird's nest
18	PG&E	03/12/18	03:26	38.95128	-122.06473	Vegetation	Rural	< 3 meters	Utility: PG&E	N.A.	103781246	Unknown	12,000	Other	Overhead	Yes	03/12/18	03:26	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown		
19	PG&E	03/26/18	17:06	38.73038	-122.62155	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	102166450	AT&T	12,000	Conductor	Overhead	Yes	03/26/18	17:06	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
20	PG&E	04/02/18	11:36	38.47995	-121.99456	Vegetation	Rural	< 0.25 Acres	Fire Agency	WINTERS FIRE DEPT	101577668	Unknown	12,000	Conductor	Overhead	Yes	04/02/18	11:36	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
21	PG&E	04/03/18	14:46	37.01185	-121.61516	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	100611410	Verizon	21,000	Conductor	Overhead	Yes	04/03/18	14:46	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
22	PG&E	04/12/18	14:17	34.96600	-120.42829	Other	Urban	< 3 meters	Fire Agency	santa maria FD	101871639	Verizon	0 - 750	Conductor	Overhead	Yes	04/12/18	14:17	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
23	PG&E	04/16/18	20:02	35.43650	-118.89490	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	103228190	Unknown	12,000	Conductor	Overhead	Yes	04/16/18	20:02	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
24	PG&E	04/23/18	20:20	37.61375	-121.36119	Vegetation	Rural	< 3 meters	Fire Agency	209-464-4650	Pole 1/9	None	115,000	Conductor	Overhead	Yes	04/23/18	20:20	Contact From Object	N.A.	N.A.	Other	Electric Facility	Other	bird's nest
25	PG&E	04/24/18	12:00	36.38596	-119.77637	Vegetation	Rural	< 0.25 Acres	Fire Agency	559-924-2150 Jason Allen	102305550	Unknown	0 - 750	Conductor	Overhead	Yes	04/24/18	12:00	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
26	PG&E	04/24/18	19:15	36.81117	-119.82598	Building	Urban	Structure Only	Fire Agency	FRESNO FIRE DEPT, 559 621	100830359	Unknown	0 - 750	Conductor	Overhead	Yes	04/24/18	19:15	Contact From Object	N.A.	N.A.	Animal	Electric Facility	Unknown	
27	PG&E	04/27/18	12:48	39.17166	-120.86517	Vegetation	Rural	< 0.25 Acres	Fire Agency	incident # 9960 ph # 530-	100075314	Unknown	12,000	Conductor	Overhead	Yes	04/27/18	12:48	Unknown	N.A.	N.A.	Unknown	Unknown		
28	PG&E	04/29/18	11:54	36.13464	-119.54890	Vegetation	Rural	< 3 meters	Self Extinguished	N.A.	103247569	Unknown	12,000	Fuse	Overhead	Yes	04/29/18	11:54	Contact From Object	N.A.	N.A.	Other	Electric Facility	Other	bird's nest
29	PG&E	04/30/18	14:33	35.04366	-120.49422	Vegetation	Rural	< 0.25 Acres	Fire Agency	Chris Compmas 805-929-3911	101893032	Unknown	12,000	Conductor	Overhead	Yes	04/30/18	14:33	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
30	PG&E	05/04/18	16:34	38.01479	-121.99885	Vegetation	Rural	< 0.25 Acres	Fire Agency	Contra Costa FD	103148775	None	0 - 750	Conductor	Overhead	No	N.A.	N.A.	Unknown	N.A.	N.A.	Unknown	Unknown		
31	PG&E	05/06/18	15:02	39.13840	-122.07875	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101623905	Unknown	12,000	Conductor	Overhead	Yes	05/06/18	15:02	Contact From Object	N.A.	N.A.	Balloons	Electric Facility	Human Error	third-party caused
32	PG&E	05/08/18	17:49	38.25460	-122.45281	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	101992211	AT&T	0 - 750	Conductor	Overhead	Yes	05/08/18	17:49	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
33	PG&E	05/09/18	13:47	35.40011	-118.89697	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103924151	Unknown	12,000	Capacitor Bank	Overhead	No	N.A.	N.A.	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown		
34	PG&E	05/09/18	14:00	38.59081	-123.34232	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	KEM County FD	101998286	Unknown	12,000	Conductor	Overhead	Yes	05/09/18	14:00	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
35	PG&E	05/11/18	10:13	38.38700	-122.98560	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101973909	Unknown	12,000	Conductor	Overhead	Yes	05/11/18	10:13	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
36	PG&E	05/11/18	12:45	38.92565	-121.24684	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100035269	AT&T	12,000	Conductor	Overhead	Yes	05/11/18	12:45	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
37	PG&E	05/11/18	15:51	40.33848	-123.91367	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100989912	Unknown	12,000	Conductor	Overhead	Yes	05/11/18	15:51	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
38	PG&E	05/11/18	17:43	38.82183	-120.92953	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Douglas Ferro. cell-530-708-	101388939	AT&T	21,000	Conductor	Overhead	Yes	05/11/18	17:43	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
39	PG&E	05/12/18	15:50	38.65410	-121.76422	Vegetation	Rural	< 3 meters	Fire Agency	Woodland FD	101606060	None	12,000	Conductor	Overhead	Yes	05/12/18	15:50	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
40	PG&E	05/13/18	00:26	38.91191	-122.06063	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	101604030	Unknown	12,000	Conductor	Overhead	Yes	05/13/18	00:26	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown		
41	PG&E	05/13/18	11:04	37.52348	-120.32990	Building	Rural	Structure Only	Fire Agency	Unknown	Tw 13/10	None	70,000	Switch	Overhead	Yes	05/13/18	11:04	Contact From Object	N.A.	N.A.	Other	Electric Facility	Other	bird's nest
42	PG&E	05/14/18	14:02	35.40356	-119.04133	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100240571	AT&T	12,000	Conductor	Overhead	Yes	05/14/18	14:02	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown		
43	PG&E	05/14/18	21:10	35.23850	-119.08330	Vegetation	Rural	< 3 meters	Fire Agency	kern county FD	100164480	AT&T	21,000	Conductor	Overhead	Yes	05/14/18	21:10	Unknown	N.A.	N.A.	Unknown	Unknown		
44	PG&E	05/15/18	04:22	37.44010	-121.92473	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	103776080	Unknown	21,000	Conductor	Overhead	Yes	05/15/18	04:22	Contact From Object	N.A.	N.A.	Animal	Electric Facility	Unknown	
45	PG&E	05/16/18	09:12	35.31063	-118.91638	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100143713	None	12,000	Conductor	Overhead	Yes	05/16/18	09:12	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown		
46	PG&E	05/17/18	17:41	35.22350	-119.15490	Vegetation	Rural	< 0.25 Acres	Customer	N.A.	103854888	Unknown	12,000	Conductor	Overhead	Yes	05/17/18	17:41	Contact From Object	N.A.	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
47	PG&E	05/19/18	09:39	38.93260	-121.49369	Vegetation	Rural	< 3 meters	Fire Agency	EAST NICHOLOUS ? SUTTER	Str. 41/319	None	115,000	Conductor	Overhead	Yes	05/19/18	09:39	Contact From Object	N.A.	N.A.	Other	Electric Facility	Human Error	aircraft
48	PG&E	05/19/18	13:58	36.47065	-121.46686	Vegetation	Rural	< 0.25 Acres	Fire Agency	Gonz FD-911	101744837	Unknown	12,000	Conductor	Overhead	Yes	05/19/18	13:58	Contact From Object	N.A.	N.A.	Vegetation	Electric Facility	Unknown	
49	PG&E	05/19/18	19:44	40.26653	-122.27274	Vegetation	Rural	26 - 9.99 Acres	Fire Agency																

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
85	PG&E	06/05/18	19:10	35.87673	-119.54339	Vegetation	Rural	< 0.25 Acres	Fire Agency	LT. Stewart. (559) 949-8343	100649683	Unknown	12,000	Conductor	Overhead	Yes	06/05/18	19:10	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
86	PG&E	06/06/18	10:32	36.28370	-119.77342	Vegetation	Rural	28 - 9.99 Acres	Fire Agency	Kings County FD	100711710	AT&T	0 - 750	Conductor	Overhead	Yes	06/06/18	10:32	Contact From Object	N.A.	N.A.	N.A.	Unknown	
87	PG&E	06/06/18	11:07	38.27343	-122.43845	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102005548	AT&T	12,000	Conductor	Overhead	Yes	06/06/18	11:07	Wire-Wire Contact	N.A.	N.A.	N.A.	Human Error	Work error
88	PG&E	06/06/18	15:00	38.79495	-121.48476	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Adrian Rogers (530) 682-7908	103815399	AT&T	12,000	Conductor	Overhead	Yes	06/06/18	15:00	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
89	PG&E	06/06/18	16:28	38.08008	-121.22891	Vegetation	Rural	< 0.25 Acres	Fire Agency	Fire Chief Steve Henry 6925 E	102105447	AT&T	12,000	Conductor	Overhead	Yes	06/06/18	16:28	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
90	PG&E	06/06/18	19:13	37.14599	-121.66763	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103790604	None	0 - 750	Conductor	Overhead	Yes	06/06/18	19:13	Contact From Object	N.A.	N.A.	N.A.	Unknown	
91	PG&E	06/06/18	19:21	38.00119	-121.09517	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	103351400	Unknown	12,000	Conductor	Overhead	Yes	06/06/18	19:21	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
92	PG&E	06/06/18	21:06	38.15100	-121.68037	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101665829	Frontier	21,000	Conductor	Overhead	Yes	06/06/18	21:06	Unknown	N.A.	N.A.	N.A.	Unknown	
93	PG&E	06/08/18	17:10	35.47698	-120.65407	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	101936165	Unknown	12,000	Conductor	Overhead	Yes	06/08/18	17:10	Contact From Object	N.A.	N.A.	N.A.	Unknown	
94	PG&E	06/08/18	19:03	35.15397	-120.59403	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101852092	AT&T	12,000	Conductor	Overhead	Yes	06/08/18	19:03	Contact From Object	N.A.	N.A.	N.A.	Unknown	
95	PG&E	06/09/18	00:46	35.07448	-120.51670	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101927520	Unknown	12,000	Conductor	Overhead	Yes	06/09/18	00:46	Contact From Object	N.A.	N.A.	N.A.	Unknown	
96	PG&E	06/09/18	16:02	37.87853	-121.64742	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	east county fire	100497205	Unknown	21,000	Conductor	Overhead	Yes	06/09/18	16:02	Contact From Object	N.A.	N.A.	N.A.	Unknown	
97	PG&E	06/10/18	17:19	38.41570	-122.91838	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	101978419	AT&T	12,000	Conductor	Overhead	Yes	06/10/18	17:19	Contact From Object	N.A.	N.A.	N.A.	Unknown	
98	PG&E	06/11/18	14:20	38.89752862	-121.31194	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	CAL FIRE	100042575	N.A.	12,000	Conductor	Subsurface	Yes	06/11/18	14:20	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party dig in
99	PG&E	06/11/18	17:49	34.73294	-120.08608	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103015183	Unknown	0 - 750	Conductor	Overhead	Yes	06/11/18	17:49	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
100	PG&E	06/11/18	19:59	38.23105	-120.79440	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	Twr 2/25	None	60,000	Conductor	Overhead	Yes	06/11/18	19:59	Contamination	N.A.	N.A.	N.A.	Unknown	
101	PG&E	06/12/18	08:55	35.85075	-119.89146	Vegetation	Rural	10 - 99 Acres	Fire Agency	Jason Brown 559-935-0756	100649777	None	21,000	Conductor	Overhead	Yes	06/12/18	08:55	Contact From Object	N.A.	N.A.	N.A.	Unknown	
102	PG&E	06/12/18	12:12	38.58904	-121.51999	Vegetation	Urban	< 3 meters	Fire Agency	West Sac FD	101657851	Unknown	12,000	Conductor	Overhead	Yes	06/12/18	12:12	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
103	PG&E	06/13/18	02:53	36.89639	-121.83738	Vegetation	Rural	< 3 meters	Fire Agency	Sean Murray -Phone # 831-728-	101699116	AT&T	21,000	Conductor	Overhead	Yes	06/13/18	02:53	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
104	PG&E	06/13/18	11:18	35.29270	-120.42897	Vegetation	Rural	< 3 meters	Customer	N.A.	101884565	Unknown	12,000	Conductor	Overhead	Yes	06/13/18	11:18	Contact From Object	N.A.	N.A.	N.A.	Unknown	
105	PG&E	06/13/18	16:27	36.63305	-119.98967	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100667215	Unknown	12,000	Conductor	Overhead	Yes	06/13/18	16:27	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
106	PG&E	06/13/18	22:40	38.49014	-122.66614	Vegetation	Rural	< 0.25 Acres	Fire Agency	SRS181640125	101968547	Unknown	12,000	Conductor	Overhead	Yes	06/13/18	22:40	Equipment/ Facility Failure	Voltage Regulator	N.A.	N.A.	Unknown	
107	PG&E	06/14/18	14:25	39.5246362	-121.4625652	Vegetation	Urban	< 0.25 Acres	Fire Agency	Mike Waters (investigator 530 538-	100426966	None	12,000	Conductor	Overhead	Yes	06/14/18	14:25	Contact From Object	N.A.	N.A.	N.A.	Human Error	bucket truck
108	PG&E	06/14/18	16:12	40.44189	-124.01973	Vegetation	Rural	< 3 meters	Utility: PG&E	N.A.	101005522	AT&T	12,000	Conductor	Overhead	Yes	06/14/18	16:12	Contact From Object	N.A.	N.A.	N.A.	Unknown	
109	PG&E	06/15/18	02:56	37.48695	-122.42231	Vegetation	Rural	< 0.25 Acres	Utility: PG&E	N.A.	10105105	None	60,000	Conductor	Overhead	Yes	06/15/18	02:56	Contamination	N.A.	N.A.	N.A.	Unknown	
110	PG&E	06/15/18	09:51	37.19859	-119.47094	Vegetation	Rural	< 0.25 Acres	Fire Agency	RANCHARIA ENGINE 4255 USFS	101058060	Unknown	12,000	Conductor	Overhead	Yes	06/15/18	09:51	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
111	PG&E	06/15/18	10:05	38.62384	-121.02214	Vegetation	Rural	< 3 meters	Customer	N.A.	101376538	AT&T	0 - 750	Conductor	Overhead	Yes	06/15/18	10:05	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
112	PG&E	06/16/18	09:56	38.65588	-121.79368	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	101606330	Unknown	12,000	Conductor	Overhead	Yes	06/16/18	09:56	Contact From Object	N.A.	N.A.	N.A.	Unknown	bird's nest
113	PG&E	06/16/18	13:17	38.61973	-121.84551	Vegetation	Rural	28 - 9.99 Acres	Fire Agency	Woodland FD	103905392	Unknown	12,000	Conductor	Overhead	Yes	06/16/18	13:17	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
114	PG&E	06/16/18	16:28	37.07375	-120.19243	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101133603	AT&T	0 - 750	Conductor	Overhead	Yes	06/16/18	16:28	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
115	PG&E	06/16/18	18:06	38.09497	-122.21014	Vegetation	Urban	< 0.25 Acres	Fire Agency	707 648-4488	102218342	AT&T	12,000	Conductor	Overhead	Yes	06/16/18	18:06	Contact From Object	N.A.	N.A.	N.A.	Unknown	
116	PG&E	06/16/18	18:15	39.13347	-121.54364	Building	Urban	Structure Only	Fire Agency	530-743-1553	101319352	Unknown	0 - 750	Conductor	Overhead	Yes	06/16/18	18:15	Contact From Object	N.A.	N.A.	N.A.	Unknown	
117	PG&E	06/16/18	18:46	39.32307	-121.53703	Vegetation	Rural	< 3 meters	Fire Agency	palermo	100381711	Unknown	0 - 750	Conductor	Overhead	Yes	06/16/18	18:46	Contact From Object	N.A.	N.A.	N.A.	Unknown	
118	PG&E	06/16/18	19:37	38.75258	-121.44393	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100102668	AT&T	0 - 750	Conductor	Overhead	Yes	06/16/18	19:37	Contact From Object	N.A.	N.A.	N.A.	Unknown	
119	PG&E	06/16/18	19:37	38.69901	-122.02089	Vegetation	Rural	< 3 meters	Fire Agency	ESPARTO FIRE DEPT	101644179	AT&T	12,000	Conductor	Overhead	Yes	06/16/18	19:37	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
120	PG&E	06/16/18	19:58	37.90696	-121.80632	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	100483910	Unknown	21,000	Conductor	Overhead	Yes	06/16/18	19:58	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
121	PG&E	06/16/18	20:33	38.04936	-122.20600	Vegetation	Rural	< 0.25 Acres	Fire Agency	Contra Costa FD	101423963	Unknown	21,000	Conductor	Overhead	Yes	06/16/18	20:33	Wire-Wire Contact	N.A.	N.A.	N.A.	Unknown	
122	PG&E	06/17/18	16:01	38.09321	-120.94500	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CATCU006927 incident #	102042425	Unknown	12,000	Conductor	Overhead	Yes	06/17/18	16:01	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
123	PG&E	06/18/18	08:31	35.52701	-120.64747	Vegetation	Rural	< 3 meters	Customer	N.A.	101887037	Unknown	21,000	Conductor	Overhead	Yes	06/18/18	08:31	Contact From Object	N.A.	N.A.	N.A.	Unknown	
124	PG&E	06/18/18	16:06	37.80534	-121.37950	Vegetation	Rural	< 0.25 Acres	Fire Agency	Stockton FD	103569107	Unknown	0 - 750	Conductor	Overhead	Yes	06/18/18	16:06	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
125	PG&E	06/19/18	00:27	38.76042	-120.82237	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101388356	Unknown	12,000	Conductor	Overhead	Yes	06/19/18	00:27	Contact From Object	N.A.	N.A.	N.A.	Unknown	
126	PG&E	06/19/18	09:43	38.53096	-121.55051	Vegetation	Rural	< 3 meters	Fire Agency	Yolo County FD	101585318	Unknown	0 - 750	Conductor	Overhead	Yes	06/19/18	09:43	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
127	PG&E	06/19/18	10:17	38.59183	-120.70965	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	101395943	AT&T	21,000	Conductor	Overhead	Yes	06/19/18	10:17	Contact From Object	N.A.	N.A.	N.A.	Human Error	third-party caused
128	PG&E	06/19/18	11:45	35.98510	-120.14174	Vegetation	Rural	< 3 meters	Self Extinguished	N.A.	100698130	Unknown	21,000	Conductor	Overhead	Yes	06/19/18	11:45	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
129	PG&E	06/19/18	14:41	37.21581	-119.68107	Vegetation	Rural	< 0.25 Acres	Fire Agency	JOE QUINSTORFF 559-683-8008	103372829	Unknown	21,000	Conductor	Overhead	Yes	06/19/18	14:41	Contact From Object	N.A.	N.A.	N.A.	Unknown	
130	PG&E	06/20/18	08:30	34.75611	-120.22811	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101858890	None	0 - 750	Conductor	Overhead	Yes	06/20/18	08:30	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
131	PG&E	06/21/18	17:36	38.10462	-121.81453	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	Twr 21/142	None												

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
167	PG&E	06/30/18	22:36	39.11413	-121.07704	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Matt Wallen (530) 277-3312	100105380	AT&T	12,000	Conductor	Overhead	Yes	06/30/18	22:36	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
168	PG&E	07/01/18	00:23	40.26967	-124.23862	Vegetation	Rural	< 3 meters	Fire Agency	fire chief	100986962	Unknown	12,000	Conductor	Overhead	Yes	07/01/18	00:23	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
169	PG&E	07/01/18	00:45	38.88422	-120.84697	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Brian Mackwood (530)708-2711	100109003	None	21,000	Conductor	Overhead	Yes	07/01/18	00:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
170	PG&E	07/01/18	08:13	39.41539	-121.51222	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	100430344	AT&T	12,000	Conductor	Overhead	Yes	07/01/18	08:13	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
171	PG&E	07/02/18	02:26	37.70867	-121.27728	Vegetation	Rural	< 3 meters	Fire Agency	209236-8105	103921895	Unknown	17,000	Conductor	Overhead	Yes	07/02/18	02:26	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
172	PG&E	07/02/18	05:12	38.60918	-122.45947	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	707-967-1467	102252558	AT&T	21,000	Conductor	Overhead	Yes	07/02/18	05:12	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
173	PG&E	07/02/18	11:35	39.09951	-122.90008	Vegetation	Rural	< 3 meters	Unknown	N.A.	102146848	AT&T	12,000	Conductor	Overhead	Yes	07/02/18	11:35	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
174	PG&E	07/02/18	17:15	36.60519	-119.82395	Vegetation	Rural	< 3 meters	Customer	N.A.	100753607	Unknown	12,000	Conductor	Overhead	Yes	07/02/18	17:15	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
175	PG&E	07/03/18	18:02	39.71125	-121.82822	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103387781	Unknown	12,000	Conductor	Overhead	Yes	07/03/18	18:02	Unknown	N.A.	N.A.	N.A.	Unknown	
176	PG&E	07/04/18	15:26	39.55378	-123.42549	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	102196183	Verizon	12,000	Conductor	Overhead	Yes	07/04/18	15:26	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
177	PG&E	07/05/18	12:45	39.77857	-121.86991	Vegetation	Urban	< 3 meters	Customer	N.A.	103350704	Unknown	0 - 750	Conductor	Overhead	Yes	07/05/18	12:45	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
178	PG&E	07/06/18	17:13	35.02903	-120.52785	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103401924	Unknown	12,000	Conductor	Overhead	Yes	07/06/18	17:13	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
179	PG&E	07/06/18	20:39	37.38323	-120.61507	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	103217389	Unknown	12,000	Conductor	Overhead	No	N.A.	N.A.	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
180	PG&E	07/07/18	06:11	38.08360	-121.85496	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101582721	Frontier	21,000	Conductor	Overhead	Yes	07/07/18	06:11	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
181	PG&E	07/07/18	09:05	39.27449	-121.66469	Vegetation	Urban	< 3 meters	Unknown	N.A.	101327124	Unknown	12,000	Conductor	Overhead	Yes	07/07/18	09:05	Contact From Object	N.A.	Other	Electric Facility	Human Error	third-party caused
182	PG&E	07/07/18	20:24	35.02115	-120.50036	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	101893417	AT&T	12,000	Conductor	Overhead	Yes	07/07/18	20:24	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
183	PG&E	07/08/18	19:32	38.77362	-122.06208	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101661938	None	21,000	Conductor	Overhead	Yes	07/08/18	19:32	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
184	PG&E	07/08/18	20:04	39.79149	-123.19813	Vegetation	Rural	< 3 meters	Unknown	N.A.	102182026	Verizon	12,000	Conductor	Overhead	Yes	07/08/18	20:04	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
185	PG&E	07/09/18	07:27	35.07852	-120.39481	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101861366	Unknown	12,000	Conductor	Overhead	Yes	07/09/18	07:27	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
186	PG&E	07/10/18	05:05	38.85410	-121.18056	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100052871	AT&T	12,000	Conductor	Overhead	Yes	07/10/18	05:05	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
187	PG&E	07/10/18	06:45	37.08496	-122.07441	Vegetation	Urban	< 0.25 Acres	Fire Agency	CAL FIRE	101675262	AT&T	0 - 750	Conductor	Overhead	Yes	07/10/18	06:45	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
188	PG&E	07/10/18	18:58	40.13842	-122.20849	Vegetation	Rural	< 3 meters	Unknown	N.A.	101538131	Unknown	12,000	Conductor	Overhead	Yes	07/10/18	18:58	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
189	PG&E	07/11/18	02:11	37.71042	-121.47328	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	Pole 7/8	None	115,000	Conductor	Overhead	Yes	07/11/18	02:11	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
190	PG&E	07/11/18	10:10	37.07247	-120.94945	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103920696	None	12,000	Conductor	Overhead	Yes	07/11/18	10:10	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
191	PG&E	07/13/18	08:10	37.09974	-120.83611	Vegetation	Rural	< 3 meters	Fire Agency	Merced FD	101178812	Unknown	12,000	Capacitor Bank	Overhead	No	N.A.	N.A.	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
192	PG&E	07/13/18	10:59	39.48359	-123.79238	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	102184869	AT&T	12,000	Conductor	Overhead	Yes	07/13/18	10:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
193	PG&E	07/13/18	15:45	40.48310	-122.32250	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103160260	Unknown	12,000	Conductor	Overhead	Yes	07/13/18	15:45	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
194	PG&E	07/13/18	18:51	39.77898	-122.14092	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100421715	Unknown	12,000	Conductor	Overhead	Yes	07/13/18	18:51	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
195	PG&E	07/14/18	11:34	38.40265	-122.54891	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	103141862	Verizon	12,000	Conductor	Overhead	Yes	07/14/18	11:34	Equipment/ Facility Failure	Other	N.A.	N.A.	Unknown	
196	PG&E	07/14/18	12:40	38.57926	-122.87798	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103122744	AT&T	12,000	Conductor	Overhead	Yes	07/14/18	12:40	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
197	PG&E	07/14/18	12:56	39.20931	-121.19695	Vegetation	Rural	< 0.25 Acres	Fire Agency	FIRE DEPT LEFT BEFORE	100086833	None	21,000	Conductor	Overhead	Yes	07/14/18	12:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
198	PG&E	07/14/18	14:44	38.95242	-121.24673	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100035452	AT&T	12,000	Conductor	Overhead	Yes	07/14/18	14:44	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
199	PG&E	07/14/18	15:01	37.83874	-121.01651	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	102330872	None	17,000	Conductor	Overhead	Yes	07/14/18	15:01	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
200	PG&E	07/14/18	15:58	35.42813	-119.05902	Vegetation	Urban	< 3 meters	Unknown	N.A.	100238826	None	12,000	Conductor	Overhead	Yes	07/14/18	15:58	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
201	PG&E	07/14/18	21:38	36.33141	-121.88287	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	ASSISTED JAMIE	101672234	Unknown	12,000	Conductor	Overhead	Yes	07/14/18	21:38	Contact From Object	N.A.	Animal	Pole	Other	bull rubbing pole
202	PG&E	07/15/18	10:06	35.53008	-119.07180	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	100206898	Unknown	12,000	Conductor	Overhead	Yes	07/15/18	10:06	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
203	PG&E	07/16/18	12:57	35.59011	-120.64335	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101904896	Unknown	21,000	Capacitor Bank	Overhead	Yes	07/16/18	12:57	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
204	PG&E	07/17/18	05:59	37.93801	-122.51415	Vegetation	Rural	< 3 meters	Unknown	N.A.	102231901	Unknown	12,000	Conductor	Overhead	Yes	07/17/18	05:59	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
205	PG&E	07/17/18	11:11	35.69857	-120.97769	Vegetation	Rural	10 - 9.99 Acres	Fire Agency	dennis byrnes 8055434244 inc # =	103886652	Unknown	21,000	Conductor	Overhead	Yes	07/17/18	11:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
206	PG&E	07/17/18	11:58	37.22171	-121.67779	Vegetation	Rural	< 0.25 Acres	Fire Agency	Luis Morado state arson fire	100601345	Unknown	12,000	Conductor	Overhead	Yes	07/17/18	11:58	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
207	PG&E	07/17/18	15:16	39.00625	-122.87632	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102158497	Unknown	0 - 750	Conductor	Overhead	Yes	07/17/18	15:16	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
208	PG&E	07/17/18	15:53	35.34975	-119.03619	Vegetation	Urban	< 3 meters	Unknown	N.A.	100244890	Yes	0 - 750	Conductor	Overhead	Yes	07/17/18	15:53	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
209	PG&E	07/17/18	16:53	38.39550	-122.92120	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	101978449	AT&T	12,000	Conductor	Overhead	Yes	07/17/18	16:53	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
210	PG&E	07/17/18	19:40	40.59275	-122.48856	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101477082	AT&T	12,000	Conductor	Overhead	Yes	07/17/18	19:40	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
211	PG&E	07/18/18	01:14	38.36714	-120.55778	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101247987	Unknown	12,000	Conductor	Overhead	Yes	07/18/18	01:14	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
212	PG&E	07/18/18	03:46	37.12669	-121.65967	Vegetation	Urban	< 3 meters	Unknown	N.A.	103426203	Yes	21,000	Conductor	Overhead	Yes	07/18/18	03:46	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
213	PG&E	07/18/18	07:16	35.61704	-119.19527	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103909160	None	12,000	Conductor	Overhead	Yes	07/18/18	07:16	Equipment/ Facility Failure					

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
249	PG&E	07/30/18	08:50	40.10641	-123.71382	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	100986799	Unknown	12,000	Conductor	Overhead	Yes	07/30/18	08:50	Equipment/ Facility Failure	crossarm	N.A.	N.A.	Unknown	
250	PG&E	07/30/18	14:36	38.19875	-120.36382	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	NICK WEBB (209) 532-7424	103336176	Unknown	17,000	Conductor	Overhead	Yes	07/30/18	14:36	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	PG&E contractor
251	PG&E	07/30/18	22:01	36.39416	-120.93401	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101733550	Unknown	21,000	Conductor	Overhead	Yes	07/30/18	22:01	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
252	PG&E	07/31/18	07:07	37.82118	-121.44998	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102065265	Unknown	12,000	Conductor	Overhead	Yes	07/31/18	07:07	Equipment/ Facility Failure	Pole	N.A.	N.A.	Unknown	
253	PG&E	07/31/18	07:57	38.95586	-122.72744	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102162351	AT&T	12,000	Conductor	Overhead	Yes	07/31/18	07:57	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
254	PG&E	07/31/18	11:01	40.13320	-122.22440	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103133510	Unknown	0 - 750	Conductor	Overhead	Yes	07/31/18	11:01	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
255	PG&E	08/01/18	17:58	38.91551	-122.79896	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	102156435	Unknown	12,000	Conductor	Overhead	Yes	08/01/18	17:58	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
256	PG&E	08/01/18	19:06	40.82022	-124.18345	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	100968544	AT&T	12,000	Conductor	Overhead	Yes	08/01/18	19:06	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
257	PG&E	08/02/18	09:48	39.47680	-121.53945	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	100370637	Unknown	12,000	Conductor	Overhead	Yes	08/02/18	09:48	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
258	PG&E	08/02/18	15:54	38.93240	-122.74920	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	kelsey cobb station 707-2794924	102162100	Unknown	12,000	Conductor	Overhead	Yes	08/02/18	15:54	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
259	PG&E	08/02/18	17:34	37.05025	-120.54118	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101114879	None	12,000	Conductor	Overhead	Yes	08/02/18	17:34	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
260	PG&E	08/02/18	20:27	38.15130	-121.07777	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	102072797	AT&T	21,000	Conductor	Overhead	Yes	08/02/18	20:27	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
261	PG&E	08/03/18	00:09	36.98687	-120.05966	Vegetation	Urban	< 0.25 Acres	Fire Agency	Madera County	101225773	AT&T	0 - 750	Conductor	Overhead	Yes	08/03/18	00:09	Equipment/ Facility Failure	Insulator	N.A.	N.A.	Unknown	
262	PG&E	08/03/18	09:45	40.49884	-121.83815	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	ZEIGLER	101492431	Frontier	12,000	Conductor	Overhead	Yes	08/03/18	09:45	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
263	PG&E	08/03/18	16:13	37.87650	-122.08878	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	VIC MASSENKOFF 925-941-3541	100491885	None	12,000	Conductor	Overhead	Yes	08/03/18	16:13	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
264	PG&E	08/03/18	19:19	35.43857	-118.79685	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	100203794	AT&T	12,000	Conductor	Overhead	Yes	08/03/18	19:19	Contact From Object	N.A.	Other	Electric Facility	Human Error	helicopter
265	PG&E	08/03/18	19:51	38.66547	-121.78432	Vegetation	Urban	< 3 meters	Fire Agency	Woodland FD	101607437	Unknown	12,000	Conductor	Overhead	Yes	08/03/18	19:51	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
266	PG&E	08/04/18	06:21	37.27405	-120.63362	Vegetation	Rural	< 3 meters	Unknown	N.A.	101145547	Unknown	12,000	Conductor	Overhead	Yes	08/04/18	06:21	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
267	PG&E	08/04/18	07:22	37.97561	-122.55374	Building	Urban	Structure Only	Fire Agency	ROSS VALLEY	102241252	AT&T	12,000	Conductor	Overhead	Yes	08/04/18	07:22	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
268	PG&E	08/04/18	14:33	38.92620	-121.42090	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	100034761	AT&T	12,000	Conductor	Overhead	Yes	08/04/18	14:33	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
269	PG&E	08/04/18	17:18	37.04721	-122.03294	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	101798912	AT&T	21,000	Conductor	Overhead	Yes	08/04/18	17:18	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
270	PG&E	08/05/18	13:40	37.31777	-121.85754	Vegetation	Urban	< 0.25 Acres	Fire Agency	San Jose FD	103542217	Unknown	0 - 750	Conductor	Overhead	Yes	08/05/18	13:40	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
271	PG&E	08/05/18	13:56	37.40055	-119.75320	Vegetation	Rural	10 - 99 Acres	Fire Agency	JIM FORGA 209-966-3621	101017235	Unknown	12,000	Conductor	Overhead	Yes	08/05/18	13:56	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
272	PG&E	08/06/18	17:27	39.33610	-121.59815	Vegetation	Rural	< 3 meters	Unknown	N.A.	100393693	Yes	12,000	Conductor	Overhead	Yes	08/06/18	17:27	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
273	PG&E	08/07/18	09:47	38.65561	-121.02259	Vegetation	Urban	< 3 meters	Fire Agency	CAL FIRE	103902317	AT&T	21,000	Conductor	Overhead	Yes	08/07/18	09:47	Unknown	N.A.	N.A.	N.A.	Unknown	
274	PG&E	08/07/18	10:19	38.10522	-120.49777	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101282323	Unknown	17,000	Lightning Arrestor	Overhead	Yes	08/07/18	10:19	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
275	PG&E	08/07/18	15:22	36.79895	-119.76457	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	103278630	Unknown	0 - 750	Conductor	Overhead	Yes	08/07/18	15:22	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	PG&E contractor
276	PG&E	08/07/18	15:46	40.44652	-122.44598	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101464611	Unknown	0 - 750	Conductor	Overhead	Yes	08/07/18	15:46	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
277	PG&E	08/07/18	17:15	37.11812	-122.10927	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101670606	AT&T	12,000	Conductor	Overhead	Yes	08/07/18	17:15	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
278	PG&E	08/07/18	21:03	38.21293	-120.91836	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102042811	Unknown	12,000	Conductor	Overhead	Yes	08/07/18	21:03	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
279	PG&E	08/08/18	10:03	40.79333	-124.02417	Vegetation	Rural	< 0.25 Acres	Fire Agency	CHIEF	100983089	Unknown	12,000	Conductor	Overhead	Yes	08/08/18	10:03	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
280	PG&E	08/08/18	16:02	36.47034	-121.71429	Vegetation	Rural	< 3 meters	Customer	N.A.	103910535	None	12,000	Conductor	Overhead	Yes	08/08/18	16:02	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
281	PG&E	08/08/18	16:03	37.29739	-122.26507	Vegetation	Rural	< 3 meters	Utility: PG&E	N.A.	100307515	Unknown	12,000	Conductor	Overhead	Yes	08/08/18	16:03	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
282	PG&E	08/10/18	12:54	38.79902	-120.72997	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101386272	AT&T	12,000	Conductor	Overhead	Yes	08/10/18	12:54	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
283	PG&E	08/10/18	15:39	38.20251	-122.15789	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103697205	Unknown	12,000	Conductor	Overhead	Yes	08/10/18	15:39	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
284	PG&E	08/10/18	19:18	35.76524	-120.31365	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	18ca-slu-008722 dennis 805 543	101876421	Unknown	21,000	Conductor	Overhead	Yes	08/10/18	19:18	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
285	PG&E	08/10/18	20:18	39.20932	-121.06149	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	100075517	AT&T	12,000	Conductor	Overhead	Yes	08/10/18	20:18	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
286	PG&E	08/11/18	16:58	38.19525	-120.67578	Vegetation	Rural	< 0.25 Acres	Fire Agency	DON YOUNG	101250814	Unknown	12,000	Conductor	Overhead	Yes	08/11/18	16:58	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
287	PG&E	08/12/18	11:42	35.63265	-119.25446	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100140952	None	12,000	Conductor	Overhead	Yes	08/12/18	11:42	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
288	PG&E	08/12/18	14:46	38.64428	-120.92115	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	101410516	Unknown	21,000	Conductor	Overhead	Yes	08/12/18	14:46	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
289	PG&E	08/13/18	15:11	37.88318	-121.24832	Vegetation	Rural	< 3 meters	Unknown	N.A.	102137301	Unknown	12,000	Conductor	Overhead	Yes	08/13/18	15:11	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
290	PG&E	08/13/18	15:33	38.70800	-120.96247	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101377799	Unknown	21,000	Conductor	Overhead	Yes	08/13/18	15:33	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
291	PG&E	08/13/18	18:43	36.22648	-121.11113	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	101729151	Unknown	12,000	Conductor	Overhead	Yes	08/13/18	18:43	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
292	PG&E	08/14/18	06:43	40.68604	-122.14102	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	J.T. zulliger 530-225-2420	103379843	Unknown	12,000	Conductor	Overhead	Yes	08/14/18	06:43	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
293	PG&E	08/14/18	15:18	36.96557	-121.86813	Vegetation	Urban	< 0.25 Acres	Fire Agency	Unknown	103128221	AT&T	21,000	Conductor	Overhead	Yes	08/14/18	15:18	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
294	PG&E	08/14/18	15:46	38.08782	-122.60016	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	103916882	Verizon	0 - 750	Conductor	Overhead	Yes	08/14/18	15:46	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
295	PG&E	08/17/18	09:38	40.29968	-122.33216	Vegetation	Rural	< 0.25 Acres	Fire Agency	chief	10150974													

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes (Optional):
331	PG&E	09/05/18	11:39	38.99704	-121.5426852	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	101331539	Unknown	21,000	Conductor	Overhead	Yes	09/05/18	11:39	Contact From Object	N.A.	Other	Electric Facility	Human Error	third-party caused
332	PG&E	09/05/18	16:55	37.46554	-119.90052	Vegetation	Rural	< 0.25 Acres	Fire Agency	JON BERRY 209-966-4700	101087053	Unknown	21,000	Conductor	Overhead	Yes	09/05/18	16:55	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
333	PG&E	09/05/18	17:34	39.25862	-123.20168	Vegetation	Rural	< 3 meters	Fire Agency	redwood valley fire	102202457	AT&T	12,000	Conductor	Overhead	Yes	09/05/18	17:34	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
334	PG&E	09/05/18	20:02	39.75452	-123.22021	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	102183324	Verizon	12,000	Conductor	Overhead	Yes	09/05/18	20:02	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
335	PG&E	09/06/18	01:19	37.05981	-121.01695	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	Pole 088/386	None	70,000	Conductor	Overhead	Yes	09/06/18	01:19	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
336	PG&E	09/06/18	16:19	39.09040	-120.94637	Vegetation	Rural	< 3 meters	Unknown	N.A.	100020676	Unknown	12,000	Conductor	Overhead	Yes	09/06/18	16:19	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
337	PG&E	09/09/18	04:25	38.65336	-122.85384	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	Pole 13/1	None	60,000	Conductor	Overhead	Yes	09/09/18	04:25	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
338	PG&E	09/10/18	07:05	35.04227	-120.56735	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101924034	Unknown	12,000	Conductor	Overhead	Yes	09/10/18	07:05	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
339	PG&E	09/10/18	20:37	38.01883	-122.72246	Vegetation	Rural	100 - 299 Acres	Fire Agency	Unknown	102252760	Unknown	12,000	Conductor	Overhead	Yes	09/10/18	20:37	Unknown	N.A.	N.A.	N.A.	Unknown	
340	PG&E	09/10/18	21:25	37.09844	-120.25827	Building	Rural	Structure Only	Unknown	N.A.	101129394	Unknown	12,000	Conductor	Overhead	Yes	09/10/18	21:25	Equipment/ Facility Failure	Crossarm	N.A.	N.A.	Unknown	
341	PG&E	09/11/18	05:23	37.37604	-119.63036	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	TROY CHEEK 209-966-3621	101023184	Unknown	12,000	Conductor	Overhead	Yes	09/11/18	05:23	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
342	PG&E	09/11/18	11:19	35.42132	-120.86274	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	101928875	Unknown	12,000	Conductor	Overhead	Yes	09/11/18	11:19	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
343	PG&E	09/11/18	18:51	38.39580	-121.63819	Vegetation	Rural	10 - 99 Acres	Unknown	N.A.	101586871	AT&T	12,000	Conductor	Overhead	Yes	09/11/18	18:51	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
344	PG&E	09/11/18	21:44	34.85530	-119.48640	Vegetation	Rural	< 0.25 Acres	Fire Agency	Santa Barbara Co. FD	100165137	Unknown	21,000	Conductor	Overhead	Yes	09/11/18	21:44	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
345	PG&E	09/12/18	19:38	38.12284	-121.81251	Building	Rural	Structure Only	Fire Agency	Solano FD	101568543	Unknown	21,000	Conductor	Overhead	Yes	09/12/18	19:38	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
346	PG&E	09/13/18	09:02	40.17464	-122.24122	Vegetation	Urban	< 0.25 Acres	Fire Agency	Red Bluff FD	101541885	Unknown	0 - 750	Conductor	Overhead	Yes	09/13/18	09:02	Unknown	N.A.	N.A.	N.A.	Unknown	
347	PG&E	09/14/18	09:06	40.13357	-122.20490	Vegetation	Rural	< 3 meters	Unknown	N.A.	101537662	Unknown	12,000	Capacitor Bank	Overhead	Yes	09/14/18	09:06	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
348	PG&E	09/14/18	15:08	35.32800	-120.69820	Vegetation	Rural	< 0.25 Acres	Fire Agency	Sean Hernandez Cell # 805 903	103400199	Unknown	12,000	Conductor	Overhead	Yes	09/14/18	15:08	Equipment/ Facility Failure	Fuse	N.A.	N.A.	Unknown	
349	PG&E	09/15/18	03:47	35.44166	-119.16139	Vegetation	Rural	< 3 meters	Unknown	N.A.	103920769	Unknown	21,000	Conductor	Overhead	Yes	09/15/18	03:47	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
350	PG&E	09/15/18	09:57	38.69380	-122.83201	Vegetation	Rural	< 3 meters	Customer	N.A.	102034048	AT&T	0 - 750	Conductor	Overhead	Yes	09/15/18	09:57	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	
351	PG&E	09/15/18	13:34	37.24642	-120.43757	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101154147	None	0 - 750	Conductor	Overhead	Yes	09/15/18	13:34	Unknown	N.A.	N.A.	N.A.	Unknown	
352	PG&E	09/16/18	08:10	37.99530	-122.28336	Vegetation	Urban	< 3 meters	Unknown	N.A.	101425698	Unknown	12,000	Conductor	Overhead	Yes	09/16/18	08:10	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
353	PG&E	09/16/18	08:26	35.30460	-120.63891	Vegetation	Rural	10 - 99 Acres	Fire Agency	Unknown	Pole 4/23A	None	70,000	Conductor	Overhead	Yes	09/16/18	08:26	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
354	PG&E	09/16/18	10:22	39.46272	-123.78374	Vegetation	Rural	< 3 meters	Fire Agency	Unknown	102184303	AT&T	12,000	Conductor	Overhead	Yes	09/16/18	10:22	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
355	PG&E	09/17/18	16:05	36.81454	-119.97953	Vegetation	Rural	< 0.25 Acres	Fire Agency	Fresno FD	100664916	None	12,000	Conductor	Overhead	Yes	09/17/18	16:05	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
356	PG&E	09/19/18	06:04	37.53154	-120.32842	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	Pole 1/34	None	70,000	Conductor	Overhead	Yes	09/19/18	06:04	Contact From Object	N.A.	Other	Electric Facility	Unknown	guano
357	PG&E	09/21/18	11:26	37.74484	-121.51356	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102064462	AT&T	12,000	Conductor	Overhead	Yes	09/21/18	11:26	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
358	PG&E	09/21/18	21:10	39.02733	-122.66269	Vegetation	Rural	< 3 meters	Customer	N.A.	102147414	Unknown	12,000	Conductor	Overhead	Yes	09/21/18	21:10	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
359	PG&E	09/21/18	23:02	38.64276	-122.74533	Vegetation	Rural	< 0.25 Acres	Fire Agency	CAL FIRE	102218862	Unknown	12,000	Conductor	Overhead	Yes	09/21/18	23:02	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
360	PG&E	09/22/18	17:56	37.01270	-120.84586	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101198814	None	12,000	Fuse	Overhead	Yes	09/22/18	17:56	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
361	PG&E	09/23/18	03:18	38.41600	-121.73033	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	101587125	AT&T	12,000	Conductor	Overhead	Yes	09/23/18	03:18	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
362	PG&E	09/23/18	15:57	37.33503	-121.76787	Vegetation	Urban	10 - 99 Acres	Fire Agency	San Jose FD	100576722	AT&T	21,000	Conductor	Overhead	Yes	09/23/18	15:57	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
363	PG&E	09/24/18	00:35	39.81524	-121.64376	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	Pole 3/42B	None	60,000	Conductor	Overhead	Yes	09/24/18	00:35	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
364	PG&E	09/24/18	12:07	37.59527	-122.01753	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	103505364	Unknown	12,000	Conductor	Overhead	Yes	09/24/18	12:07	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
365	PG&E	09/24/18	17:06	37.29154	-121.93570	Vegetation	Urban	< 3 meters	Unknown	N.A.	100521762	Unknown	12,000	Conductor	Overhead	Yes	09/24/18	17:06	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
366	PG&E	09/27/18	03:40	37.54733	-120.32552	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	Tw 1/22	None	70,000	Conductor	Overhead	Yes	09/27/18	03:40	Contact From Object	N.A.	Other	Electric Facility	Unknown	guano
367	PG&E	09/27/18	12:43	38.51481	-122.44626	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	Tw 000/010	None	60,000	Conductor	Overhead	Yes	09/27/18	12:43	Contact From Object	N.A.	Other	Electric Facility	Human Error	helicopter
368	PG&E	09/27/18	15:25	36.50078	-119.29129	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100779012	Unknown	0 - 750	Conductor	Overhead	Yes	09/27/18	15:25	Contact From Object	N.A.	Other	Pole	Human Error	third-party caused
369	PG&E	09/27/18	17:19	36.54978	-120.38933	Vegetation	Rural	26 - 9.99 Acres	Unknown	N.A.	103921482	Verizon	12,000	Conductor	Overhead	Yes	09/27/18	17:19	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
370	PG&E	09/28/18	04:31	35.23070	-119.09219	Vegetation	Rural	< 3 meters	Unknown	N.A.	100162524	Unknown	12,000	Conductor	Overhead	Yes	09/28/18	04:31	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
371	PG&E	09/28/18	09:55	37.05639	-120.80083	Vegetation	Rural	< 3 meters	Unknown	N.A.	Pole 23/8	None	70,000	Conductor	Overhead	Yes	09/28/18	09:55	Contact From Object	N.A.	Vehicle	Electric Facility	Human Error	third-party caused
372	PG&E	09/29/18	13:11	40.90611	-124.06250	Vegetation	Rural	< 3 meters	Fire Agency	CAL FIRE	100973832	Unknown	12,000	Conductor	Overhead	Yes	09/29/18	13:11	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
373	PG&E	09/29/18	16:16	41.02195	-123.65500	Vegetation	Rural	< 0.25 Acres	Fire Agency	Hoopa Fire Dept	100962165	Unknown	12,000	Conductor	Overhead	Yes	09/29/18	16:16	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
374	PG&E	09/30/18	14:40	39.93010	-122.24910	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Unknown	101499723	AT&T	12,000	Conductor	Overhead	Yes	09/30/18	14:40	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
375	PG&E	10/01/18	15:10	36.82004	-121.68686	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103839895	AT&T	12,000	Conductor	Overhead	Yes	10/01/18	15:10	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
376	PG&E	10/03/18	16:16	38.93056	-121.18250	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100069555	None	12,000	Conductor	Overhead	Yes	10/03/18	16:16	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
377	PG&E	10/06/18	14:56	39.92846	-122.22553	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Red Bluff FD	101499494	Unknown	12,000	Conductor	Overhead	Yes	10/06/18	14:56	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
378	PG&E																							

Pacific Gas and Electric Company
Fire Incident Data Collection Plan Annual Report for 2018

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location				Fire			Utility Facility				Outage			Field Observations					Notes (Optional):	
3		Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted		Contributing Factor
413	PG&E	11/09/18	04:49	39.82344	-121.83816	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	100402367	AT&T	12,000	Conductor	Overhead	Yes	11/09/18	04:49	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
414	PG&E	11/09/18	08:59	37.28095	-122.12144	Vegetation	Rural	.26 - 9.99 Acres	Unknown	N.A.	100546562	AT&T	12,000	Conductor	Overhead	Yes	11/09/18	08:59	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
415	PG&E	11/09/18	15:34	35.05121	-118.81118	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Unknown	103930710	None	12,000	Conductor	Overhead	Yes	11/09/18	15:34	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
416	PG&E	11/10/18	13:31	37.04673	-121.98533	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CAL FIRE	101671641	Unknown	21,000	Conductor	Overhead	Yes	11/10/18	13:31	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
417	PG&E	11/11/18	04:18	38.43408	-122.55220	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102032588	Unknown	0 - 750	Conductor	Overhead	Yes	11/11/18	04:18	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
418	PG&E	11/11/18	10:40	37.09842	-120.74163	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	103934503	Unknown	12,000	Conductor	Overhead	Yes	11/11/18	10:40	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
419	PG&E	11/11/18	13:06	37.32020	-122.00234	Vegetation	Urban	< 0.25 Acres	Unknown	N.A.	103927631	AT&T	12,000	Capacitor Bank	Overhead	Yes	11/11/18	13:06	Equipment/ Facility Failure	Capacitor Bank	N.A.	N.A.	Unknown	
420	PG&E	11/12/18	05:17	38.48517	-122.80465	Vegetation	Rural	< 3 meters	Unknown	N.A.	102027067	Unknown	12,000	Conductor	Overhead	Yes	11/12/18	05:17	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
421	PG&E	11/12/18	14:39	36.99296	-120.03718	Vegetation	Rural	< 3 meters	Unknown	N.A.	101015260	AT&T	12,000	Conductor	Overhead	Yes	11/12/18	14:39	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
422	PG&E	11/13/18	11:34	34.99420	-118.99239	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	100195031	None	0 - 750	Conductor	Overhead	Yes	11/13/18	11:34	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
423	PG&E	11/13/18	15:41	37.06438	-121.95780	Vegetation	Rural	< 0.25 Acres	Fire Agency	Unknown	101680441	AT&T	0 - 750	Conductor	Overhead	Yes	11/13/18	15:41	Other	N.A.	N.A.	N.A.	Human Error	Grow house
424	PG&E	11/15/18	06:09	38.35991	-122.36818	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	102241814	AT&T	0 - 750	Conductor	Overhead	Yes	11/15/18	06:09	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
425	PG&E	11/15/18	06:34	38.60816	-120.95323	Vegetation	Rural	< 0.25 Acres	Self Extinguished	N.A.	101414740	Unknown	12,000	Conductor	Overhead	Yes	11/15/18	06:34	Contact From Object	N.A.	Animal	Electric Facility	Unknown	
426	PG&E	11/16/18	17:02	38.75743	-120.90115	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101409894	AT&T	21,000	Conductor	Overhead	Yes	11/16/18	17:02	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
427	PG&E	11/17/18	17:20	38.70824	-120.69266	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101421319	Unknown	12,000	Conductor	Overhead	Yes	11/17/18	17:20	Contact From Object	N.A.	Vehicle	Pole	Human Error	third-party caused
428	PG&E	11/18/18	01:37	34.95261	-120.43642	Other	Urban	< 3 meters	Unknown	N.A.	103420365	N.A.	12,000	Transformer	Padmounted	Yes	11/18/18	01:37	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
429	PG&E	11/18/18	14:31	40.79679	-124.13375	Building	Rural	Structure Only	Fire Agency	Unknown	100974896	Unknown	0 - 750	Conductor	Overhead	Yes	11/18/18	14:31	Contact From Object	N.A.	Vegetation	Electric Facility	Human Error	third-party caused
430	PG&E	11/19/18	09:46	38.50528	-121.69559	Vegetation	Rural	< 3 meters	Unknown	N.A.	101577202	Unknown	12,000	Conductor	Overhead	Yes	11/19/18	09:46	Contact From Object	N.A.	Balloons	Electric Facility	Human Error	third-party caused
431	PG&E	11/20/18	13:07	35.30425	-120.80477	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101928023	Unknown	12,000	Conductor	Overhead	Yes	11/20/18	13:07	Equipment/ Facility Failure	Transformer	N.A.	N.A.	Unknown	
432	PG&E	11/21/18	02:16	40.43827	-124.38470	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101005309	Frontier	12,000	Conductor	Overhead	Yes	11/21/18	02:16	Vandalism/Theft	N.A.	N.A.	N.A.	Human Error	gun-shot conductor
433	PG&E	11/23/18	22:14	38.26658	-122.02117	Building	Urban	Structure Only	Unknown	N.A.	101668121	AT&T	12,000	Conductor	Overhead	Yes	11/23/18	22:14	Equipment/ Facility Failure	Conductor	N.A.	N.A.	Unknown	
434	PG&E	12/12/18	12:09	38.72702	-120.79470	Vegetation	Rural	< 3 meters	Unknown	N.A.	101404403	AT&T	0 - 750	Conductor	Overhead	Yes	12/12/18	12:09	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
435	PG&E	12/14/18	10:32	40.43788	-123.78337	Vegetation	Rural	< 0.25 Acres	Unknown	N.A.	101009136	Unknown	12,000	Conductor	Overhead	Yes	12/14/18	10:32	Contact From Object	N.A.	Vegetation	Electric Facility	Unknown	
436	PG&E	12/31/18	21:43	39.73802	-122.01630	Vegetation	Rural	< 3 meters	Unknown	N.A.	103801376	None	12,000	Conductor	Overhead	Yes	12/31/18	21:43	Equipment/ Facility Failure	Splice/Clamp/Connector	N.A.	N.A.	Unknown	

Utility Name	Fire Start		Location			Fire				Utility Facility				Outage			Field Observations				Notes (Optional)					
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility	Contact From Object		Facility Contacted	Contributing Factor			
PG&E	1/14/2019	8:32	35.22659	-118.843189		Agriculture	3 meters - 0.25 Acres	Fire Dept	Bakersfield FD	253911104-210007/706(4113)		12,000	Line Recloser	Overhead	Yes	1/14/2019	8:32	Equipment - PG&E	Line Recloser							
PG&E	1/16/2019	10:17	38.62121	-120.1863297	Vegetation	Conifer Forest	Structure Only	Cal Fire				17,000	Conductor	Overhead	Yes	1/16/2019	10:17	Vegetation								
PG&E	1/23/2019	0:26	38.68016	-121.7773098		Urban	1 meter - < 3 meters	Fire Dept	Woodland FD	220638936908		12,000	Conductor	Overhead	Yes	1/23/2019	0:26	Equipment - PG&E	Conductor	Veg. contact	Electric Facility					
PG&E	2/1/2019	20:40	34.86879	-120.414139		Urban	3 meters - 0.25 Acres	Fire Dept	Unknown			12,000	Conductor	Overhead	Yes	2/1/2019	21:40	Vegetation								
PG&E	2/11/2019	10:55	37.24138	-121.981997	Animal Found	Urban	Structure Only	Fire Dept	Los Gatos FD	315688127328		12,000	Conductor	Overhead	Yes	2/11/2019	10:55	Contact - Animal - Other								
PG&E	2/13/2019	11:11	35.02633	-119.205335		Urban	1 meter - < 3 meters	Fire Dept	Bakersfield FD	1010958025		12,000	Conductor	Overhead	Yes	2/13/2019	11:11	Vegetation								
PG&E	2/26/2019	12:49	36.13788	-119.8877483		Urban	3 meters - 0.25 Acres	Fire Dept	Kings County FD	10069349		12,000	Transformer	Overhead	Yes	2/26/2019	12:49	Equipment - PG&E	Transformer							
PG&E	3/13/2019	16:08	39.88308	-122.5497584	Bird Found	Herbaceous	3 meters - 0.25 Acres	Cal Fire		6fr03191607		12,000	Conductor	Overhead	Yes	3/13/2019	16:08	Contact - Animal - Bird								
PG&E	3/14/2019	14:42	36.03674	-120.1116069		Herbaceous	0.25 - 10 Acres	Fire Dept	Kings County FD	100170237		21,000	Pole	Overhead	Yes	3/14/2019	14:42	Equipment - PG&E	Pole							
PG&E	3/19/2019	12:52	37.99600	-120.3244095	Tree - cutting, 3rd party	Hardwood Forest	1 meter - < 3 meters	Self Extinguished		101045032		17,000	Conductor	Overhead	Yes	3/19/2019	12:52	Contact - 3rd Party								
PG&E	4/9/2019	14:07	34.63110	-115.981319	Vegetation	Hardwood Woodland	0.25 - 10 Acres	Fire Dept	Santa Barbara County FD	101863014		12,000	Conductor	Overhead	Yes	4/9/2019	14:07	Vegetation								
PG&E	4/9/2019	17:00	36.82245	-119.6293876		Agriculture	3 meters - 0.25 Acres	Cal Fire	Fresno FD	100770778		12,000	Pole	Overhead	Yes	4/9/2019	17:00	Weather - High Wind								
PG&E	4/9/2019	15:27	37.73405	-120.07761	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Cal Fire		101076921		21,000	Pole	Overhead	Yes	4/9/2019	15:27	Vegetation								
PG&E	4/9/2019	17:59	36.97107	-120.0669976	Vegetation	Urban	1 meter - < 3 meters	Fire Dept	Madera FD	254611106		12,000	Conductor	Overhead	Yes	4/9/2019	17:59	Vegetation								
PG&E	4/10/2019	22:19	36.61307	-119.6688383		Urban	3 meters - 0.25 Acres	Self Extinguished		105421208		12,000	Conductor	Overhead	Yes	4/10/2019	22:19	Weather - High Wind								
PG&E	4/10/2019	12:43	35.58036	-120.3344461	Bird Found	Herbaceous	3 meters - 0.25 Acres	Cal Fire	Shandon FD	31305357640		21,000	Transformer	Overhead	Yes	4/10/2019	12:43	Contact - Animal - Other								
PG&E	4/12/2019	10:45	36.61443	-120.4245241		Agriculture	3 meters - 0.25 Acres	Cal Fire		253671101		12,000	Conductor	Overhead	Yes	4/12/2019	10:45	Contact - 3rd Party								
PG&E	4/20/2019	6:57	37.86856	-121.684274		Hardwood Woodland	3 meters - 0.25 Acres	Fire Dept	East County FD			17,000	Conductor	Overhead	No	4/20/2019		Equipment - PG&E	Conductor							
PG&E	4/23/2019	11:08	38.05945	-122.1626972	Bird Found	Urban	1 meter - < 3 meters	Fire Dept	Benicia FD	7hy0423191108		12,000	Conductor	Overhead	Yes	4/23/2019	11:08	Contact - 3rd Party								
PG&E	4/24/2019	18:01	35.77587	-119.915307	Bird Found	Herbaceous	10 - 100 Acres	Unknown				70,000	Conductor	Overhead	Yes	4/24/2019	18:01	Contact - Animal - Other								
PG&E	4/24/2019	11:59	38.07757	-122.547991		Herbaceous	1 meter - < 3 meters	Fire Dept	Novato FD	junper @ 5003		12,000	Conductor	Overhead	Yes	4/24/2019	11:59	Equipment - PG&E	Conductor	Vehicle contact	Electric Facility					
PG&E	4/25/2019	12:18	37.27456	-121.9448886		Urban	1 meter - < 3 meters	Fire Dept	Santa Clara County FD	K1048		12,000	Capacitor Bank	Overhead	No	4/25/2019		Equipment - PG&E	Capacitor Bank							
PG&E	4/25/2019	12:40	35.43978	-119.0794372	Vehicle	Urban	3 meters - 0.25 Acres	Fire Dept	Kern County FD	103320987		12,000	Conductor	Overhead	Yes	4/25/2019	12:40	Contact - 3rd Party								
PG&E	4/26/2019	3:26	37.15315	-120.2776763	Bird Found	Agriculture	1 meter - < 3 meters	Cal Fire	Lafon FD	424000103026		12,000	Conductor	Overhead	Yes	4/26/2019	3:26	Contact - Animal - Bird								
PG&E	4/26/2019	16:33	36.81445	-119.8119439	Vegetation	Urban	Structure Only	Cal Fire	Fresno FD	100209139		21,000	Other	Overhead	Yes	4/26/2019	16:33	Vegetation								
PG&E	4/28/2019	12:36	39.67564	-121.567688		Hardwood Woodland	1 meter - < 3 meters	Cal Fire		100044366		12,000	Conductor	Overhead	Yes	4/28/2019	12:36	Equipment - PG&E	Conductor							
PG&E	4/29/2019	8:53	36.78412	-119.585622	Animal Found	Agriculture	Structure Only	Cal Fire		10089552848		12,000	Conductor	Overhead	Yes	4/29/2019	8:53	Contact - Animal - Other								
PG&E	4/29/2019	18:07	38.65865	-121.726485		Agriculture	3 meters - 0.25 Acres	Cal Fire	Woodland FD	103691007		12,000	Conductor	Overhead	Yes	4/29/2019	18:07	Equipment - PG&E	Conductor							
PG&E	5/1/2019	17:21	37.39271	-121.8242033		Urban	1 meter - < 3 meters	Cal Fire	San Jose FD	103909203		12,000	Conductor	Overhead	Yes	5/1/2019	17:21	Contact - 3rd Party								
PG&E	5/3/2019	13:47	37.05528	-120.3361825	Vehicle	Agriculture	3 meters - 0.25 Acres	Cal Fire		103794549		12,000	Guy/Span Wire	Overhead	Yes	5/3/2019	13:47	Contact - 3rd Party								
PG&E	5/3/2019	15:45	39.49433	-121.6886944	Vehicle	Urban	3 meters - 0.25 Acres	Fire Dept	Richvale FD	100303032		12,000	Pole	Overhead	Yes	5/3/2019	15:45	Contact - 3rd Party								
PG&E	5/3/2019	19:11	36.50012	-119.5392949		Agriculture	3 meters - 0.25 Acres	Fire Dept	Tulare County FD	100894245		12,000	Other	Overhead	No	5/3/2019		Equipment - PG&E								
PG&E	5/3/2019	21:28	36.75053	-119.89992	Vehicle	Urban	3 meters - 0.25 Acres	Fire Dept	Fresno FD	103270078		12,000	Pole	Overhead	Yes	5/3/2019	21:28	Contact - 3rd Party								
PG&E	5/4/2019	17:48	36.04725	-120.9187567	Bird Found	Herbaceous	0.25 - 10 Acres	Cal Fire		100674255		15,000	Cal Fire	Overhead	Yes	5/4/2019	17:48	Contact - Animal - Other								
PG&E	5/4/2019	23:19	39.95915	-121.936611	Gun Shot	Herbaceous	0.25 - 10 Acres	Cal Fire		3302		12,000	Recloser	Overhead	Yes	5/4/2019	23:19	Contact - 3rd Party								
PG&E	5/5/2019	6:40	35.67366	-120.08724	Vehicle	Urban	10 - 100 Acres	Cal Fire	Kern County FD	252021101		12,000	Conductor	Overhead	Yes	5/5/2019	6:40	Contact - 3rd Party								
PG&E	5/7/2019	21:33	36.45796	-119.34931		Agriculture	3 meters - 0.25 Acres	Fire Dept	Tulare County FD	79277		12,000	Fuse	Overhead	Yes	5/7/2019	21:33	Equipment - PG&E	Fuse							
PG&E	5/8/2019	10:23	39.38050	-122.527015		Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire	Colusa FD	100686074		12,000	Conductor	Overhead	No	5/8/2019		Equipment - PG&E	Conductor							
PG&E	5/10/2019	13:00	39.27548	-121.68759	Gun Shot	Urban	0.25 - 10 Acres	Fire Dept	Sutter County FD	153771104		12,000	Conductor	Overhead	Yes	5/10/2019	13:00	Contact - 3rd Party								
PG&E	5/10/2019	14:52	40.70400	-122.831432	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Fire Dept	Lewiston FD	Keswick-Trinity 60KV Line		60,000	Conductor	Overhead	Yes	5/10/2019	14:52	Vegetation								
PG&E	5/14/2019	8:56	38.79891	-121.378209		Herbaceous	3 meters - 0.25 Acres	Cal Fire	California Department of	152422101		21,000	Conductor	Overhead	Yes	5/14/2019	8:56	Equipment - PG&E	Conductor							
PG&E	5/14/2019	11:55	38.23709	-122.044297	Vegetation	Urban	3 meters - 0.25 Acres	Fire Dept	Suisun FD	Unknown		12,000	Conductor	Overhead	No	5/14/2019		Vegetation								
PG&E	5/14/2019	16:17	36.44769	-119.8468	Vehicle	Agriculture	3 meters - 0.25 Acres	Fire Dept	Fresno County FD	437961147966		12,000	Conductor	Overhead	Yes	5/14/2019	16:17	Contact - 3rd Party								
PG&E	5/14/2019	7:17	35.50372	-121.559342		Urban	3 meters - 0.25 Acres	Unknown		22/450		60,000	Pole	Overhead	Yes	5/14/2019	7:17	Contact - 3rd Party								
PG&E	5/14/2019	18:11	38.43503	-121.9517002		Urban	3 meters - 0.25 Acres	Fire Dept	Vacaville FD	103951126		12,000	Pole	Overhead	Yes	5/14/2019	18:11	Contact - 3rd Party								
PG&E	5/14/2019	21:03	39.05535	-121.324403	Vehicle	Herbaceous	3 meters - 0.25 Acres	Fire Dept	Wheatland FD	103944282		12,000	Pole	Overhead	Yes	5/14/2019	21:03	Contact - 3rd Party								
PG&E	5/15/2019	16:20	37.15315	-120.2776763	Vehicle	Agriculture	1 meter - < 3 meters	Cal Fire		103740103		12,000	Conductor	Overhead	Yes	5/15/2019	16:20	Contact - 3rd Party								
PG&E	5/15/2019	21:31	38.57309	-122.9603166	Vegetation	Hardwood Forest	1 meter - < 3 meters	Unknown		103931117		12,000	Conductor	Overhead	Yes	5/15/2019	21:31	Vegetation								
PG&E	5/17/2019	15:12	38.47967	-123.148577		Conifer Forest	1 meter - < 3 meters	Cal Fire		42811111		12,000	Conductor	Overhead	Yes	5/17/2019	15:12	Vegetation								
PG&E	5/17/2019	18:54	38.																							

Utility Name	Fire Start		Location					Fire				Utility Facility			Outage			Field Observations				Notes (Optional):
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility	Contact From Object	Facility Contacted	
PG&E	6/11/2019	8:49	36.97083	-121.9918667	Vegetation	Urban	1 meter < 3 meters	Fire Dept	Santa Cruz FD	85252107		21,000	Conductor	Overhead	Yes	6/11/2019	8:49	Vegetation		Vegetation	Electric Facility	
PG&E	6/11/2019	12:21	37.12207	-121.81586	Vegetation	Urban	0.25 - 10 Acres	Fire Dept	San Jose FD	69331107		12,000	Conductor	Overhead	Yes	6/11/2019	12:21	Vegetation		Vegetation	Electric Facility	
PG&E	6/11/2019	15:41	37.66894	-122.4493383		Urban	3 meters - 0.25 Acres	Fire Dept	Colma FD	314364543100		12,000	Transformer	Overhead	Yes	6/11/2019	15:41	Equipment - PG&E	Transformer			
PG&E	6/11/2019	16:01	36.77601	-119.75017		Urban	3 meters - 0.25 Acres	Fire Dept	Fresno FD	09876		12,000	Fuse	Overhead	Yes	6/11/2019	16:01	Equipment - PG&E	Fuse			
PG&E	6/11/2019	17:16	36.79171	-119.51763		Agriculture	1 meter - 3 meters	Cal Fire	California Department of	184882353125		12,000	Transformer	Overhead	Yes	6/11/2019	17:16	Equipment - PG&E	Transformer			
PG&E	6/12/2019	7:55	38.10528	-122.0096811		Agriculture	1 meter - 3 meters	Self Extinguished		2200030547		12,000	Transformer	Overhead	Yes	6/12/2019	7:55	Contact - Customer	Equip/Structure/Fuse	Contact from Object	Electric Facility	Human Error
PG&E	6/12/2019	6:12	38.14630	-122.18844	Metallic Balloon	Herbaceous	0.25 - 10 Acres	Cal Fire	Unknown	Unknown		11,500	Other	Overhead	Yes	6/12/2019	6:12	Contact - 3rd Party		Balloon Contact	Electric Facility	Human Error
PG&E	6/12/2019	13:16	37.99137	-121.311885		Urban	3 meters - 0.25 Acres	Fire Dept	San Francisco FD	317662554392		12,000	Transformer	Overhead	Yes	6/12/2019	13:16	Equipment - PG&E	Transformer			
PG&E	6/13/2019	0:30	36.57887	-121.72838	Vegetation	Urban	0.25 - 10 Acres	Cal Fire		182223100		20,000	Conductor	Overhead	Yes	6/13/2019	0:30	Vegetation		Vegetation	Electric Facility	
PG&E	6/14/2019	4:38	37.55246	-120.3254367		Herbaceous	3 meters - 0.25 Acres	Cal Fire		0911008		70,000	Insulator	Overhead	No	6/14/2019	4:38	Equipment - PG&E	Insulator			
PG&E	6/14/2019	14:34	37.98443	-122.514295	Vegetation	Urban	1 meter - 3 meters	Fire Dept	San Rafael FD	420311009		12,000	Conductor	Overhead	Yes	6/14/2019	14:34	Vegetation		Vegetation	Electric Facility	
PG&E	6/15/2019	14:08	38.88022	-122.61247	Tree - cutting, 3rd party	Agriculture	3 meters - 0.25 Acres	Cal Fire		43361103		12,000	Pole	Overhead	Yes	6/15/2019	14:08	Contact - 3rd Party		Contact from Object - Other	Human Error	
PG&E	6/16/2019	11:28	35.41713	-118.913483	Metallic Balloon	Herbaceous	0.25 - 10 Acres	Fire Dept	Bakersfield FD	13859		12,000	Other	Overhead	Yes	6/16/2019	11:28	Contact - 3rd Party		Balloon Contact	Electric Facility	Human Error
PG&E	6/17/2019	10:25	38.51100	-122.213445	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire		43051101		12,000	Conductor	Overhead	Yes	6/17/2019	10:25	Vegetation		Vegetation	Electric Facility	
PG&E	6/17/2019	16:37	38.60786	-121.80337		Agriculture	3 meters - 0.25 Acres	Fire Dept	Woodland FD	12789		12,000	Insulator	Overhead	Yes	6/17/2019	16:37	Equipment - PG&E	Insulator			
PG&E	6/17/2019	18:07	38.27780	-122.438441	Vegetation	Herbaceous	1 meter - 3 meters	Fire Dept	Unknown	42721105		12,000	Conductor	Overhead	Yes	6/17/2019	18:07	Vegetation		Vegetation	Electric Facility	
PG&E	6/17/2019	18:19	38.09840	-122.87861	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Fire Dept	Marin County FD	42291101		12,000	Conductor	Overhead	Yes	6/17/2019	18:19	Vegetation		Vegetation	Electric Facility	
PG&E	6/17/2019	23:31	36.70837	-119.76345		Urban	3 meters - 0.25 Acres	Fire Dept	Fresno County FD	1004291789		12,000	Secondary	Overhead	Yes	6/17/2019	23:31	Equipment - PG&E				
PG&E	6/17/2019	20:58	35.40397	-118.89504		Urban	1 meter - 3 meters	Other	Customer	Unknown		12,000	Other	Subsurface	No	6/18/2019	8:26	Equipment - PG&E	Other			
PG&E	6/18/2019	8:26	36.98117	-119.87987		Urban	3 meters - 0.25 Acres	Cal Fire	Madera County FD	121812417576		12,000	Transformer	Overhead	Yes	6/18/2019	8:26	Equipment - PG&E	Transformer			
PG&E	6/18/2019	19:38	39.68159	-122.271583		Agriculture	1 meter - 3 meters	Fire Dept	Atois FD	100367422		21,000	Crossarm	Overhead	Yes	6/18/2019	19:38	Equipment - PG&E	Crossarm			
PG&E	6/18/2019	19:49	35.88763	-120.91673	Bird Found	Herbaceous	0.25 - 10 Acres	Cal Fire		Unknown		12,000	Pole	Overhead	Yes	6/18/2019	19:49	Contact - Animal - Bird		Animal Contact		Animal Contact
PG&E	6/18/2019	13:05	35.02322	-119.095783		Herbaceous	1 meter - 3 meters	Self Extinguished		253411106		12,000	Other	Overhead	No	6/18/2019	13:05	Equipment - PG&E	Other			
PG&E	6/19/2019	9:02	37.79273	-121.287083		Urban	3 meters - 0.25 Acres	Fire Dept	Lathrop FD	17000		17,000	Conductor	Overhead	Yes	6/19/2019	9:02	Equipment - PG&E	Conductor			
PG&E	6/19/2019	11:44	39.86124	-121.69072	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Cal Fire		100400933		12,000	Conductor	Overhead	Yes	6/19/2019	11:44	Vegetation		Vegetation	Electric Facility	
PG&E	6/19/2019	12:15	39.40702	-122.229405	Bird Found	Urban	1 meter - 3 meters	Fire Dept	Willows FD	6900619191201		21,000	Conductor	Overhead	Yes	6/19/2019	12:15	Contact - Animal - Bird		Animal Contact	Electric Facility	Animal Contact
PG&E	6/19/2019	8:31	35.38335	-119.696478		Herbaceous	3 meters - 0.25 Acres	Other	Third Party Field Worker	Unknown		115,000	Jump	Overhead	Yes	6/19/2019	8:31	Contact - Animal - Bird		Animal Contact		Animal Contact
PG&E	6/20/2019	5:38	38.31575	-121.893097	Vegetation	Herbaceous	3 meters - 0.25 Acres	Fire Dept	Unknown	Unknown		21,000	Other	Overhead	No	6/20/2019	5:38	Vegetation		Vegetation	Electric Facility	
PG&E	6/20/2019	16:32	38.25455	-121.074867	Bird Found	Agriculture	1 meter - 3 meters	Self Extinguished		670620191624		12,000	Transformer	Overhead	Yes	6/20/2019	16:32	Contact - Animal - Bird		Animal Contact	Electric Facility	Animal Contact
PG&E	6/21/2019	2:37	38.90526	-121.06819	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire		103957753		21,000	Pole	Overhead	Yes	6/21/2019	2:37	Vegetation		Vegetation	Electric Facility	
PG&E	6/21/2019	10:56	39.52511	-121.6886367	Bird Found	Agriculture	3 meters - 0.25 Acres	Fire Dept	Butte County FD	6f0621191046		12,000	Conductor	Underbuid	Yes	6/21/2019	10:56	Contact - Animal - Bird		Animal Contact	Electric Facility	Animal Contact
PG&E	6/21/2019	11:33	39.12880	-121.4772733		Agriculture	3 meters - 0.25 Acres	Fire Dept	Linda FD	603954219		12,000	Pole	Overhead	Yes	6/21/2019	11:33	Weather - High Wind				High Winds
PG&E	6/22/2019	29:30	38.01331	-121.5560417		Urban	3 meters - 0.25 Acres	Fire Dept	Stockton FD	10446		21,000	Line Recloser	Overhead	Yes	6/22/2019	29:30	Equipment - PG&E				
PG&E	6/23/2019	12:41	37.18809	-121.7831083		Herbaceous	3 meters - 0.25 Acres	Fire Dept	Unknown	69324111		21,000	Conductor	Overhead	Yes	6/23/2019	12:41	Equipment - Overloaded				
PG&E	6/23/2019	14:43	37.82104	-121.98876		Urban	1 meter - 3 meters	Fire Dept	Contra Costa FD	14662107		21,000	Splice/Clamp/Conn	Overhead	Yes	6/23/2019	14:43	Equipment - PG&E	Splice/Clamp/Connector			
PG&E	6/24/2019	9:53	37.32701	-122.073086		Herbaceous	3 meters - 0.25 Acres	Self Extinguished		Unknown		60,000	Other	Overhead	Yes	6/24/2019	9:53	Contact - Animal - Bird		Animal Contact	Electric Facility	Animal Contact
PG&E	6/25/2019	7:49	39.00423	-122.86738	Vehicle	Agriculture	1 meter - 3 meters	Cal Fire		102144284		12,000	Pole	Overhead	Yes	6/25/2019	7:49	Contact - 3rd Party		Vehicle Contact	Pole	Human Error
PG&E	6/25/2019	16:32	38.16232	-121.074867	Bird Found	Herbaceous	100+ Acres	Cal Fire	Unknown	Unknown		12,000	Conductor	Overhead	Yes	6/25/2019	16:32	Contact - Animal - Other		Animal Contact	Electric Facility	Animal Contact
PG&E	6/26/2019	6:48	36.55851	-119.828507	Vegetation	Agriculture	1 meter - 3 meters	Fire Dept	Unknown	252310103		12,000	Conductor	Overhead	Yes	6/26/2019	6:48	Vegetation		Vegetation	Electric Facility	
PG&E	6/26/2019	9:29	38.18887	-121.662153		Urban	3 meters - 0.25 Acres	Fire Dept	Rio Vista FD	103951387		21,000	Pole	Overhead	Yes	6/26/2019	9:29	Equipment - PG&E				
PG&E	6/26/2019	13:14	40.01851	-122.410691	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire		69062110331101		12,000	Splice/Clamp/Conn	Overhead	Yes	6/26/2019	13:14	Vegetation		Vegetation	Electric Facility	
PG&E	6/26/2019	15:22	38.51105	-122.005867	Vehicle	Agriculture	3 meters - 0.25 Acres	Fire Dept	Winters FD	103963484		12,000	Pole	Overhead	Yes	6/26/2019	15:22	Contact - 3rd Party		Vehicle Contact	Pole	Human Error
PG&E	6/27/2019	2:23	36.81983	-119.33336	Bird Found	Hardwood Woodland	0.25 - 10 Acres	Cal Fire		Unknown		115,000	Insulator	Overhead	Yes	6/27/2019	2:23	Equipment - PG&E	Insulator			
PG&E	6/28/2019	13:45	36.72066	-119.862517		Agriculture	0.25 - 10 Acres	Fire Dept	Fresno FD	119.862517		12,000	Splice/Clamp/Conn	Overhead	Yes	6/28/2019	13:45	Equipment - PG&E	Splice/Clamp/Connector			
PG&E	6/29/2019	11:41	37.73967	-121.422513	Metallic Balloon	Urban	3 meters - 0.25 Acres	Fire Dept	Tracy FD	162881014		12,000	Conductor	Overhead	Yes	6/29/2019	11:41	Contact - 3rd Party		Balloon Contact	Electric Facility	Human Error
PG&E	6/30/2019	5:22	38.98503	-121.307114	Bird Found	Herbaceous	3 meters - 0.25 Acres	Cal Fire		6f06303190426		12,000	Conductor	Overhead	Yes	6/30/2019	5:22	Contact - Animal - Bird		Animal Contact	Electric Facility	Animal Contact
PG&E	6/30/2019	17:30	40.23268	-122.3337533	Vehicle	Agriculture	3 meters - 0.25 Acres	Cal Fire		374		12,000	Capacitor Bank	Overhead	Yes	6/30/2019	17:30	Equipment - PG&E	Capacitor Bank			
PG&E	6/30/2019	18:02	37.72171	-121.5222917		Urban	3 meters - 0.25 Acres	Employee		162771101		12,000	Splice/Clamp/Conn	Subsurface	Yes	6/30/2019	18:02	Equipment - PG&E	Splice/Clamp/Connector			
PG&E	7/1/2019	2:15	38.29550	-120.833485		Shrub	0.25 - 10 Acres	Cal Fire		Unknown		12,000	Conductor	Overhead	No	7/1/2019	2:15	Vegetation		Vegetation	Electric Facility	
PG&E	7/1/2019	13:51	40.97889	-124.036783	Vehicle	Conifer Forest	0.25 - 10 Acres	Cal Fire		60000.06		60,000	Pole	Overhead	Yes	7/1/2019	13:51	Contact - 3rd Party		Vehicle Contact	Pole	Human Error
PG&E	7/2/2019	10:59	38.26662	-121.260285		Herbaceous	3 meters - 0.25 Acres	Self Extinguished		105710104		12,000	Conductor	Overhead	Yes	7/2/2019	10:59	Equipment - PG&E				
PG&E	7/2/2019	11:48	36.21459	-121.122549	Bird Found	Herbaceous/Other	0.25 - 10 Acres	Cal Fire		Unknown		12,0										

Utility Name	Fire Start		Location				Fire				Utility Facility			Outage			Field Observations				Notes (Optional):	
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With Incident	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure	Contact From Object		Facility Contacted
PG&E	9/13/2019	6:30	37.34481	-121.7715733		Herbaceous	3 meters - 0.25 Acres	Fire Dept	Unknown	83397110		21,000	Splice/Clamp/Con	Overhead	Yes	9/13/2019	6:30	Equipment - PG&E	Splice/Clamp/Connector			
PG&E	9/13/2019	16:38	37.42588	-121.924633	Aircraft	Urban	0.25 - 10 Acres	Fire Dept	Milpitas FD	21032		21,000	Conductor	Overhead	Yes	9/13/2019	16:38	Contact - 3rd Party		Vehicle contact		Human Error
PG&E	9/13/2019	15:47	37.64462	-122.118675		Urban	1 meter - < 3 meters	Fire Dept	Alameda County FD	50325		12,000	Transformer	Overhead	Yes	9/13/2019	15:47	Equipment - PG&E	Transformer			
PG&E	9/13/2019	20:26	40.79733	-124.196811	Vegetation	Urban	0.25 - 10 Acres	Fire Dept	Samosa FD	1924811004		12,000	Conductor	Overhead	Yes	9/13/2019	20:26	Vegetation		Veg. contact	Electric Facility	
PG&E	9/13/2019	8:53	39.07537	-121.171685	Bird Found	Herbaceous	0.25 - 10 Acres	Fire Dept	Consolidated FD	6170913190810		12,000	Other	Overhead	Yes	9/13/2019	8:53	Contact - Animal - Bird		Animal contact	Electric Facility	Animal Contact
PG&E	9/13/2019	12:30	36.50410	-121.402467	Bird Found	Herbaceous	3 meters - 0.25 Acres	Fire Dept	Hollister FD	9025		21,000	Conductor	Overhead	Yes	9/13/2019	12:30	Contact - Animal - Bird		Animal contact		Animal Contact
PG&E	9/15/2019	12:38	38.11940	-120.801343	Vehicle	Hardwood Woodlan	0.25 - 10 Acres	Cal Fire	Unknown	103959405		12,000	Pole	Overhead	Yes	9/15/2019	12:38	Contact - 3rd Party		Vehicle contact	Pole	Human Error
PG&E	9/15/2019	12:58	38.10568	-122.64555	Vegetation	Urban	0.25 - 10 Acres	Fire Dept	Novato FD	103958177		12,000	Pole	Overhead	Yes	9/15/2019	12:58	Vegetation		Veg. contact	Pole	
PG&E	9/16/2019	14:39	37.37624	-119.87289	Vegetation	Hardwood Woodlan	10 - 100 Acres	Cal Fire	Unknown	254452102		21,000	Conductor	Overhead	Yes	9/16/2019	14:39	Vegetation		Veg. contact	Electric Facility	
PG&E	9/17/2019	13:21	38.60177	-121.69283	Vehicle	Agriculture	3 meters - 0.25 Acres	Fire Dept	Davis FD	62041106		12,000	Conductor	Overhead	Yes	9/17/2019	13:21	Contact - 3rd Party		Vehicle contact	Electric Facility	Human Error
PG&E	9/17/2019	14:11	38.80655	-121.30846	Bird Found	Herbaceous	3 meters - 0.25 Acres	Unknown	Unknown	Unknown		115,000	Conductor	Overhead	Yes	9/17/2019	14:11	Contact - Animal - Other		Animal contact		Animal Contact
PG&E	9/20/2019	10:58	39.98039	-122.140683	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	Unknown		12,000	Service Conductor	Overhead	Yes	9/20/2019	10:58	Vegetation		Veg. contact	Electric Facility	
PG&E	9/22/2019	11:45	38.60395	-121.05914		Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	Unknown		21,000	Other	Pad mount	Yes	9/22/2019	11:45	Equipment - PG&E	Other			
PG&E	9/22/2019	11:34	36.02644	-121.250775	Vegetation	Herbaceous	0.25 - 10 Acres	Fire Dept	Unknown	103958188		12,000	Pole	Overhead	Yes	9/22/2019	11:34	Vegetation		Veg. contact	Pole	
PG&E	9/22/2019	11:56	37.51663	-119.91594		Hardwood Woodlan	3 meters - 0.25 Acres	Cal Fire	Unknown	103967994		21,000	Pole	Overhead	Yes	9/22/2019	11:56	Equipment - PG&E	Pole			
PG&E	9/23/2019	16:04	37.87986	-122.078867	Animal Found	Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	110512		12,000	Posthead	Overhead	Yes	9/23/2019	16:04	Contact - Animal - Other		Animal contact		Animal Contact
PG&E	9/23/2019	16:39	38.62899	-121.71094		Agriculture	0.25 - 10 Acres	Fire Dept	Woodland FD	62041106		12,000	Conductor	Overhead	No			Contact - 3rd Party		Vehicle contact	Electric Facility	Human Error
PG&E	9/23/2019	19:13	38.43157	-121.915463	Bird Found	Urban	3 meters - 0.25 Acres	Fire Dept	Dixon FD	6194923191913		12,000	Conductor	Overhead	Yes	9/23/2019	19:13	Contact - Animal - Bird		Animal contact		Animal Contact
PG&E	9/24/2019	13:13	38.49116	-122.479681	Bird Found	Urban	3 meters - 0.25 Acres	Fire Dept	Saint Helena FD	Silverado 2103		21,000	Crossarm	Overhead	Yes	9/24/2019	13:13	Contact - Animal - Bird		Animal contact	Electric Facility	Animal Contact
PG&E	9/24/2019	13:59	35.1143	-119.461633		Urban	1 meter - < 3 meters	Fire Dept	kern County FD	252081108		12,000	Conductor	Overhead	Yes	9/24/2019	13:59	Equipment - PG&E	Conductor			
PG&E	9/25/2019	9:45	38.79513	-121.475595		Agriculture	3 meters - 0.25 Acres	Cal Fire	Unknown	Fuses At C943		12,000	Fuse	Overhead	No			Equipment - PG&E	Fuse			
PG&E	9/26/2019	11:12	38.58950	-121.698035		Agriculture	3 meters - 0.25 Acres	Fire Dept	Woodland FD	Cutsouts And Jumpers At 9127		12,000	Conductor	Overhead	Yes	9/26/2019	11:12	Equipment - PG&E				
PG&E	9/26/2019	13:47	38.11225	-122.221454	Vegetation	Urban	0.25 - 10 Acres	Fire Dept	Woodland FD	Unknown		12,000	Secondary	Overhead	Yes	9/26/2019	13:47	Vegetation		Veg. contact		
PG&E	9/26/2019	14:12	36.55171	-121.837791	Vegetation	Shrub	1 meter - < 3 meters	Cal Fire	Unknown	2287		21,000	Conductor	Overhead	Yes	9/26/2019	14:12	Vegetation		Veg. contact		
PG&E	9/26/2019	17:54	38.08763	-121.526623		Urban	0.25 - 10 Acres	Fire Dept	Unknown	103958238		21,000	Pole	Overhead	Yes	9/26/2019	17:54	Equipment - PG&E		Pole		
PG&E	9/27/2019	10:30	36.53362	-121.146397	Vegetation	Barren/Other	0.25 - 10 Acres	Cal Fire	Unknown	182492105		21,000	Conductor	Overhead	Yes	9/27/2019	10:30	Vegetation		Veg. contact	Electric Facility	
PG&E	9/27/2019	14:25	38.48451	-121.722873	Vehicle	Agriculture	3 meters - 0.25 Acres	Cal Fire	Unknown	103959408		12,000	Pole	Overhead	Yes	9/27/2019	14:25	Contact - 3rd Party		Vehicle contact	Pole	Human Error
PG&E	9/28/2019	13:16	37.25534	-119.50572		Hardwood Woodlan	3 meters - 0.25 Acres	Cal Fire	Unknown	252531103		12,000	Conductor	Overhead	Yes	9/28/2019	13:16	Equipment - PG&E	Conductor			
PG&E	9/28/2019	16:18	38.23023	-122.459289		Urban	0.25 - 10 Acres	Cal Fire	Unknown	103958771		12,000	Pole	Overhead	Yes	9/28/2019	16:18	Equipment - PG&E	Pole			
PG&E	9/28/2019	19:24	39.61346	-121.7083167		Herbaceous	100+ Acres	Cal Fire	Unknown	Unknown		12,000	Conductor	Overhead	Yes	9/28/2019	19:24	Equipment - PG&E	Conductor			
PG&E	9/29/2019	13:30	39.55135	-121.810397		Agriculture	0.25 - 10 Acres	Cal Fire	Unknown	102171101		12,000	Conductor	Overhead	Yes	9/29/2019	13:30	Equipment - PG&E	Conductor			
PG&E	9/29/2019	15:04	36.23811	-120.395815		Herbaceous	0.25 - 10 Acres	Cal Fire	Coalinga FD	9000		12,000	Conductor	Overhead	Yes	9/29/2019	15:04	Equipment - PG&E	Conductor			
PG&E	9/29/2019	20:06	37.54482	-121.896376	Metallic Balloon	Urban	0.25 - 10 Acres	Cal Fire	Unknown	8015		12,000	Insulator	Overhead	Yes	9/29/2019	20:06	Contact - 3rd Party		Balloon contact		Human Error
PG&E	9/29/2019	20:29	36.29940	-119.79240		Urban	3 meters - 0.25 Acres	Fire Dept	Lemoore FD	253601105		12,000	Conductor	Overhead	Yes	9/29/2019	20:29	Equipment - PG&E	Conductor			
PG&E	9/29/2019	22:06	37.06417	-119.976943		Agriculture	3 meters - 0.25 Acres	Cal Fire	Madera FD	32153320550		12,000	Transformer	Overhead	Yes	9/29/2019	22:06	Equipment - PG&E	Transformer			
PG&E	9/30/2019	14:29	34.61392	-120.179945	Contact with High Voltage, 3rd Party	Agriculture	0.25 - 10 Acres	Cal Fire	Unknown	18301102		12,000	Conductor	Overhead	Yes	9/30/2019	14:29	Contact - 3rd Party		Contact from Object	Electric Facility	Human Error
PG&E	10/2/2019	17:17	38.43059	-122.811004		Herbaceous	0.25 - 10 Acres	Fire Dept	Unknown	7Nr1002191710		12,000	Conductor	Overhead	Yes	10/2/2019	17:17	Contact - Animal - Bird		Animal contact		Animal Contact
PG&E	10/2/2019	19:15	36.95441	-119.99999	Vehicle	Urban	1 meter - < 3 meters	Cal Fire	Unknown	311463218071		12,000	Transformer	Overhead	Yes	10/2/2019	19:15	Contact - 3rd Party		Vehicle contact	Electric Facility	Human Error
PG&E	10/3/2019	16:28	37.15779	-120.014312		Herbaceous	10 - 100 Acres	Cal Fire	Unknown	101024245		12,000	Insulator	Overhead	No			Equipment - PG&E	Insulator			
PG&E	10/4/2019	19:07	40.49644	-122.044779		Hardwood Woodlan	0.25 - 10 Acres	Cal Fire	Unknown	Unknown		12,000	Other	Overhead	Yes	10/4/2019	19:07	Equipment - Overloaded	Other			
PG&E	10/5/2019	5:48	35.20845	-119.006825		Agriculture	3 meters - 0.25 Acres	Fire Dept	Kern County FD	3310		12,000	Other	Overhead	Yes	10/5/2019	5:48	Equipment - PG&E	Other			
PG&E	10/5/2019	16:46	34.86955	-120.247174	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	Unknown	162821103		12,000	Conductor	Overhead	Yes	10/5/2019	16:46	Vegetation		Veg. contact	Electric Facility	
PG&E	10/6/2019	20:30	37.70995	-122.178319		Urban	3 meters - 0.25 Acres	Fire Dept	Alameda FD	31515844491		12,000	Transformer	Overhead	Yes	10/6/2019	20:30	Equipment - PG&E	Transformer			
PG&E	10/7/2019	9:27	38.10476	-122.826583		Urban	1 meter - < 3 meters	Unknown	Unknown	Unknown		12,000	Splice/Clamp/Con	Overhead	Yes	10/7/2019	9:27	Equipment - PG&E	Splice/Clamp/Connector			
PG&E	10/7/2019	18:47	37.70998	-120.588115	Contact with High Voltage, 3rd Party	Herbaceous	10 - 100 Acres	Cal Fire	Unknown	163711708		17,000	Conductor	Overhead	Yes	10/7/2019	18:47	Contact - 3rd Party		Vehicle contact	Electric Facility	Human Error
PG&E	10/8/2019	17:59	35.29789	-120.48683		Hardwood Woodlan	3 meters - 0.25 Acres	Cal Fire	Davis FD	182541103		12,000	Conductor	Overhead	Yes	10/8/2019	17:59	Equipment - PG&E	Conductor			
PG&E	10/8/2019	19:02	38.54965	-121.701083		Agriculture	3 meters - 0.25 Acres	Fire Dept	Davis FD	44167967		12,000	Recloser	Overhead	No			Equipment - PG&E	Recloser			
PG&E	10/10/2019	3:36	38.35540	-121.869815		Agriculture	0.25 - 10 Acres	Fire Dept	Vacaville FD	636421105		21,000	Conductor	Overhead	Yes	10/10/2019	3:36	Equipment - PG&E	Conductor			
PG&E	10/10/2019	6:11	37.39324	-121.821525		Urban	1 meter - < 3 meters	Fire Dept	San Jose FD	83531105		12,000	Conductor	Overhead	Yes	10/10/2019	6:11	Equipment - PG&E	Conductor			
PG&E	10/10/2019	14:25	37.31152	-121.0017583		Agriculture	3 meters - 0.25 Acres	Fire Dept	Newman FD	162741106		12,000	Conductor	Overhead	Yes	10/10/2019	14:25	Equipment - PG&E	Conductor			
PG&E	10/10/2019	16:29	37.49790	-122.462655		Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	24101102		12,000	Conductor	Overhead	No			Equipment - PG&E	Conductor			
PG&E	10/10/2019	19:43	39.85804	-122.197467		Herbaceous	1 meter - < 3 meters	Cal Fire	Unknown	8520		12,000	Conductor	Overhead	Yes	10/10/2019						

Utility Name	Fire Start		Location				Fire				Utility Facility			Outage			Field Observations				Notes (Optional):		
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With Incident	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object		Facility Contacted	Contributing Factor
PG&E	10/27/2019	17:12	37.31150	-121.99589	Vegetation	Urban	1 meter - < 3 meters	Fire Dept	Santa Clara County FD	85371114		12,000	Transformer	Overhead	Yes	10/27/2019	17:12	Vegetation					
PG&E	10/27/2019	15:38	37.80020	-122.09406		Urban	3 meters - 0.25 Acres	Fire Dept	Contra Costa County FD	Unknown	Yes	12,000	Conductor	Overhead	No			Contact - 3rd Party	Conductor		Electric Facility	Human Error	
PG&E	10/27/2019	15:28	36.78502	-121.65085	Vegetation	Hardwood Woodlan	1 meters - 0.25 Acres	Cal Fire	Unknown	182961107		12,000	Conductor	Overhead	Yes	10/27/2019	15:28	Vegetation					
PG&E	10/27/2019	16:15	37.38066	-121.90163	Metallic Balloon	Urban	3 meters - 0.25 Acres	Fire Dept	Unknown	X2068	Yes	21,000	Conductor	Overhead	Yes	10/27/2019	16:15	Contact - 3rd Party			Balloon contact	Human Error	
PG&E	10/27/2019	15:01	37.93835	-121.2469	Vegetation	Urban	1 meter - < 3 meters	Fire Dept	Stockton FD	163481114		12,000	Conductor	Overhead	Yes	10/27/2019	15:01	Vegetation					
PG&E	10/27/2019	14:00	36.62025	-120.62025	Vegetation	Urban	3 meters - 0.25 Acres	Fire Dept	Merced County/FD	25421101		12,000	Conductor	Overhead	Yes	10/27/2019	14:41	Vegetation					
PG&E	10/27/2019	14:48	37.27666	-121.81646	Vegetation	Urban	0.25 - 10 Acres	Fire Dept	Unknown	831921109		21,000	Conductor	Overhead	Yes	10/27/2019	14:48	Vegetation					
PG&E	10/27/2019	13:32	37.96663	-121.34618	17	Urban	1 meter - < 3 meters	Fire Dept	Stockton FD	Unknown		12,000	Conductor	Overhead	Yes	10/27/2019	13:32	Equipment - PG&E	Conductor				
PG&E	10/27/2019	11:01	37.59733	-122.06163	Vegetation	Urban	3 meters - 0.25 Acres	Self Extinguished	Unknown	100936457		12,000	Other	Overhead	Yes	10/27/2019	11:01	Vegetation					
PG&E	10/27/2019	9:44	36.98802	-121.93952	17	Urban	3 meters - 0.25 Acres	Fire Dept	Unknown	839252109		21,000	Conductor	Overhead	Yes	10/27/2019	9:44	Other Fire: Non-PG&E related					
PG&E	10/27/2019	6:34	38.74670	-121.1449		Agriculture	3 meters - 0.25 Acres	Cal Fire	Esparto FD	103779734		21,000	Conductor	Overhead	Yes	10/27/2019	6:34	Equipment - PG&E	Conductor				
PG&E	10/27/2019	7:27	37.99324	-121.64126	2	Urban	10 - 100 Acres	Cal Fire	Contra Costa County FD	04592112-2101053518(K504R)		12,000	Line Recloser	Overhead	Yes	10/27/2019	7:27	Equipment - PG&E			Line Reducer		
PG&E	10/27/2019	14:56	38.15628	-121.97609	7	Urban	100+ Acres	Fire Dept	Suisun FD	Unknown		21,000	Conductor	Overhead	No			Equipment - PG&E					
PG&E	10/27/2019	5:38	39.19675	-121.93273	Vegetation	Hardwood Woodlan	3 meters - 0.25 Acres	Fire Dept	Unknown	101633101		12,000	Conductor	Overhead	No			Vegetation					
PG&E	10/27/2019	12:03	35.56031	-122.10677	Vegetation	Agriculture	0.25 - 10 Acres	Self Extinguished	Unknown	1038017810		12,000	Pole	Overhead	Yes	10/27/2019	3:16	Vegetation					
PG&E	10/27/2019	1:42	39.17368	-122.13345		Urban	10 - 100 Acres	Fire Dept	Williams FD	101629105		12,000	Pole	Overhead	Yes	10/27/2019	1:42	Equipment - PG&E	Pole				
PG&E	10/27/2019	2:39	38.16658	-121.96678		Urban	0.25 - 10 Acres	Fire Dept	Unknown	62462223		21,000	Other	Overhead	Yes	10/27/2019	2:39	Equipment - PG&E	Other				
PG&E	10/27/2019	2:14	35.52676	-122.3642	Vegetation	Herbaceous	10 - 100 Acres	Cal Fire	Unknown	10044823		21,000	Pole	Overhead	Yes	10/27/2019	2:14	Vegetation					
PG&E	10/27/2019	5:35	38.27622	-122.46142	3	Urban	0.25 - 10 Acres	Cal Fire	Unknown	Unknown		12,000	Conductor	Overhead	No			Equipment - PG&E	Conductor				
PG&E	10/28/2019	17:48	37.0095	-121.77819	Vegetation	Hardwood Woodlan	0.25 - 10 Acres	Cal Fire	Unknown	101682849		21,000	Conductor	Overhead	Yes	10/28/2019	17:48	Vegetation					
PG&E	10/28/2019	18:46	38.56463	-122.46419	Vegetation	Conifer Forest	1 meter - < 3 meters	Cal Fire	Unknown	43432104		21,000	Conductor	Overhead	Yes	10/28/2019	18:46	Vegetation					
PG&E	10/28/2019	7:09	37.78883	-121.62183		Herbaceous	0.25 - 10 Acres	Fire Dept	Livermore FD	163741102		12,000	Fuse	Underbuild	No	10/28/2019	7:09	Equipment - PG&E	Fuse				
PG&E	10/28/2019	16:51	38.85597	-121.71864	3	Agriculture	0.25 - 10 Acres	Fire Dept	Sutter County FD	101593864		12,000	Conductor	Overhead	No			Equipment - PG&E	Conductor				
PG&E	10/28/2019	13:00	37.20979	-121.17253	Vegetation	Conifer Forest	1 meter - < 3 meters	Cal Fire	Unknown	100099164		12,000	Transformer	Underbuild	Yes	10/28/2019	13:00	Vegetation					
PG&E	10/28/2019	11:34	38.21147	-121.35473	Vegetation	Hardwood Forest	10 - 100 Acres	Fire Dept	Woodbridge FD	162081102		12,000	Conductor	Overhead	Yes	10/28/2019	11:34	Vegetation					
PG&E	10/29/2019	20:40	37.26893	-122.01753	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	082841102-21005712064(8051)		12,000	Cable	Overhead	Yes	10/29/2019	20:40	Vegetation					
PG&E	10/29/2019	12:57	34.62034	-120.10973	Animal Found	Herbaceous	3 meters - 0.25 Acres	Fire Dept	Unknown	6933		12,000	Other	Overhead	Yes	10/29/2019	12:57	Contact - Animal - Other					
PG&E	10/29/2019	3:29	37.03745	-121.52047	Animal Found	Hardwood Woodlan	0.25 - 10 Acres	Cal Fire	Unknown	14971		21,000	Fuse	Overhead	Yes	10/29/2019	3:29	Contact - Animal - Other					
PG&E	10/30/2019	12:03	35.42390	-119.0193		Urban	3 meters - 0.25 Acres	Fire Dept	Unknown	25271114		12,000	Conductor	Overhead	Yes	10/30/2019	12:03	Contact - 3rd Party					
PG&E	10/30/2019	14:29	35.39391	-118.995	Vegetation	Urban	3 meters - 0.25 Acres	Fire Dept	Unknown	253371102		12,000	Secondary	Overhead	Yes	10/30/2019	14:29	Vegetation					
PG&E	10/30/2019	8:47	38.36119	-121.99945	Vegetation	Urban	3 meters - 0.25 Acres	Fire Dept	Vacaville FD	Unknown		12,000	Conductor	Overhead	Yes	10/30/2019	8:47	Vegetation					
PG&E	10/30/2019	13:32	38.47922	-122.03024	Vegetation	Herbaceous	0.25 - 10 Acres	Cal Fire	Unknown	063681102		12,000	Conductor	Overhead	No			Vegetation					
PG&E	10/30/2019	10:02	35.41848	-119.05195		Urban	3 meters - 0.25 Acres	Fire Dept	Kern County FD	Unknown		12,000	Conductor	Overhead	No			Equipment - PG&E	Conductor				
PG&E	10/31/2019	21:21	38.46100	-120.6264	Vegetation	Hardwood Forest	1 meter - < 3 meters	Fire Dept	Sierra County FD	152111101		12,000	Conductor	Overhead	Yes	10/31/2019	21:21	Vegetation					
PG&E	10/31/2019	17:23	38.04583	-122.19051	11	Herbaceous	1 meter - < 3 meters	Fire Dept	Crockett FD	13432207		21,000	Conductor	Overhead	Yes	10/31/2019	17:23	Equipment - PG&E	Conductor				
PG&E	10/31/2019	16:09	38.38449	-122.18928	Vegetation	Agriculture	0.25 - 10 Acres	Cal Fire	Unknown	Unknown		12,000	Conductor	Overhead	No			Vegetation					
PG&E	10/31/2019	14:57	37.36761	-122.13346	Vegetation	Hardwood Woodlan	1 meter - < 3 meters	Fire Dept	Santa Clara County FD	82161102		12,000	Conductor	Overhead	Yes	10/31/2019	14:57	Vegetation					
PG&E	11/1/2019	11:33	38.58012	-122.57785	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	Unknown	42711101		12,000	Conductor	Overhead	Yes	11/1/2019	11:33	Vegetation					
PG&E	11/1/2019	22:43	34.77291	-120.42897	17	Herbaceous	3 meters - 0.25 Acres	Fire Dept	Santa Barbara County FD	Unknown		12,000	Conductor	Overhead	No			Unknown					
PG&E	11/1/2019	11:57	37.65300	-121.6671	Animal Found	Herbaceous	1 meter - < 3 meters	Self Extinguished	Unknown	31662472194		12,000	Transformer	Overhead	Yes	11/1/2019	11:57	Contact - Animal - Other					
PG&E	11/3/2019	22:01	37.65836	-122.04365		Hardwood Woodlan	3 meters - 0.25 Acres	Fire Dept	Hayward FD	14091101		12,000	Conductor	Overhead	Yes	11/3/2019	22:01	Equipment - Overloaded	Conductor				
PG&E	11/3/2019	18:26	36.23229	-121.76283	Vegetation	Hardwood Forest	0.25 - 10 Acres	Cal Fire	Unknown	182941102		12,000	Conductor	Overhead	Yes	11/3/2019	18:26	Vegetation					
PG&E	11/4/2019	9:48	38.68005	-122.05993	Metallic Balloon	Agriculture	3 meters - 0.25 Acres	Cal Fire	Esparto FD	63172101		21,000	Conductor	Overhead	No			Contact - 3rd Party					
PG&E	11/4/2019	23:32	34.66190	-120.0852		Herbaceous	3 meters - 0.25 Acres	Fire Dept	Unknown	8145		12,000	Conductor	Overhead	Yes	11/4/2019	23:32	Equipment - PG&E	Conductor				
PG&E	11/5/2019	15:53	35.70669	-120.70585	Bird Found	Herbaceous	0.25 - 10 Acres	Cal Fire	Unknown	484105191543		12,000	Conductor	Overhead	Yes	11/5/2019	15:53	Contact - Animal - Bird					
PG&E	11/6/2019	18:13	36.01441	-120.12988	Bird Found	Urban	1 meter - < 3 meters	Self Extinguished	Unknown	41669024996		21,000	Conductor	Overhead	Yes	11/6/2019	18:13	Contact - Animal - Bird					
PG&E	11/7/2019	10:48	37.29477	-120.81023		Agriculture	1 meter - < 3 meters	Cal Fire	Unknown	7258		12,000	Lightning Arrestor	Overhead	Yes	11/7/2019	10:48	Equipment - PG&E					
PG&E	11/8/2019	7:22	37.97852	-122.30848		Urban	0.25 - 10 Acres	Fire Dept	Richmond FD	143711105		12,000	Conductor	Overhead	Yes	11/8/2019	7:22	Equipment - PG&E	Conductor				
PG&E	11/9/2019	22:02	37.28041	-121.90419	Vegetation	Urban	3 meters - 0.25 Acres	Fire Dept	San Jose FD	82311101		12,000	Conductor	Overhead	Yes	11/9/2019	22:02	Vegetation					
PG&E	11/10/2019	9:47	35.07871	-120.49746	7	Herbaceous	1 meter - < 3 meters	Cal Fire	Unknown	481110190931		12,000	Conductor	Overhead	Yes	11/10/2019	9:47	Contact - Animal - Bird					
PG&E	11/11/2019	6:52	36.88217	-119.18096		Herbaceous	3 meters - 0.25 Acres	Cal Fire	Unknown	471111191656		12,000	Other	Overhead	Yes	11/11/2019	6:52	Contact - Animal - Bird					
PG&E	11/11/2019	9:46	37.87824	-120.49583	Vehicle	Urban	3 meters - 0.25 Acres	Cal Fire	Unknown	101020184		17,000	Other	Overhead	Yes	11/11/2019	9:46	Contact - 3rd Party					
PG&E	11/13/2019	15:43	35.31798	-119.16616	11	Agriculture	1 meter - < 3 meters	Fire Dept	Kern County FD	471111191536		21,000	Pole	Overhead	Yes								

Utility Name	Line No	Fire Start Date	Location				Fire			Utility Facility				Outage			Field Observations				Notes	EIR Number		
			Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment Facility			Contact From Object	Facility Contacted
PG&E	10/2/2000	15:12	38.46604	-121.93605	Vegetation	Urban	1 meter - < 3 meters	Customer	N.A.	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	10/2/2000	15:02	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	10/3/2000	12:05	37.00427	-120.08510	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	N.A.	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	10/3/2000	12:05	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/29/2000	16:22	38.24509	-121.76179	Vegetation	Herbaceous	1 meter - < 3 meters	Cal Fire	N.A.	1006560422 Y	12,000	Pole	Overhead	Y	9/29/2000	16:36	Contact from object	N.A.	Vehicle	Pole	N.A.	EID00010A		
PG&E	9/26/2000	01:40	38.83978	-121.02068	Vegetation	Herbaceous	3 meters - 0.25 Acres	Utility - PG&E	N.A.	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/26/2000	1:22	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/28/2000	18:21	37.96576	-122.13883	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Customer	N.A.	1006560422 Y	12,000	Service Drop	Overhead	Y	9/28/2000	18:19	Unknown	Conductor fail N.A.	N.A.	Unknown	N.A.	Unknown as to what caused the initial failure, but initial investigation found the ignition to be attributable to PG&E facilities.		
PG&E	9/28/2000	15:51	39.65306	-121.44935	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Cal Fire	N.A.	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/28/2000	15:45	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/28/2000	13:35	37.95796	-122.17589	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Richmond FD	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	N	N.A.	N.A.	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.			
PG&E	9/28/2000	8:37	37.52923	-121.99026	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Fremont FD	1006560422 Y	12,000	Pole	Overhead	Y	9/28/2000	8:40	Contact from object	N.A.	Vehicle	Pole	N.A.			
PG&E	9/28/2000	10:42	38.16584	-120.93128	Vegetation	Shrub	0.25 - 10 Acres	Cal Fire	N.A.	1006560422 Y	17,000	Herbar	Underground	Y	9/28/2000	10:53	Under investigation	N.A.	N.A.	N.A.	N.A.	PG&E has included the Zogg fire in this ignition report because CAL FIRE has announced that the cause of the Zogg fire was a pine tree contacting PG&E overhead electric lines. PG&E is investigating on the cause of the Zogg fire's ignition.		
PG&E	9/27/2000	14:48	40.53922	-122.56662	Vegetation	Hardwood Forest	100 + Acres	Cal Fire	N.A.	1006560422 Y	12,000	N.A.	Overhead	Y	9/27/2000	14:48	Under investigation	N.A.	N.A.	N.A.	N.A.	EID00927A		
PG&E	9/27/2000	19:32	38.27863	-122.57607	Vegetation	Herbaceous	3 meters - 0.25 Acres	Fire Agency	Petaluma FD	1006560422 Y	12,000	Automatic Wire Sp	Overhead	Y	9/27/2000	19:24	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.	N.A.			
PG&E	9/27/2000	16:56	37.788487	-121.769933	Vegetation	Urban	0.25 - 10 Acres	Fire Agency	San Ramon FD	1006560422 Y	21,000	Fuse	Overhead	Y	9/27/2000	16:24	Equipment - PG&E	Fuse failure - N.A.	N.A.	N.A.	N.A.			
PG&E	9/27/2000	15:30	40.449150	-122.308930	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire	N.A.	1006560422 Y	12,000	Service Drop	Overhead	Y	9/27/2000	15:27	Contact from object	N.A.	Vegetation	Service Drop	N.A.			
PG&E	9/27/2000	08:16	37.997867	-123.015333	Vegetation	Shrub	0.25 - 10 Acres	Cal Fire	N.A.	1006560422 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/27/2000	9:13	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.			
PG&E	9/26/2000	20:11	39.12809	-121.639179	Vegetation	Urban	Unknown	Fire Agency	Yuba City Fire Dept	101300049 Y	12,000	Insulator	Overhead	N	N.A.	N.A.	Equipment - PG&E	Insulator fail N.A.	N.A.	N.A.	N.A.	Unknown whether meets reportability threshold, but confirmed to be attributable to PG&E.		
PG&E	9/24/2000	15:44	39.265267	-121.529383	Vegetation	Agriculture	3 meters - 0.25 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/24/2000	16:01	Contact from object	N.A.	Vehicle	Conductor - Pri N.A.	N.A.			
PG&E	9/23/2000	15:31	38.226283	-122.5311867	Vegetation	Herbaceous	10 - 100 Acres	Cal Fire	N.A.	101300049 Y	12,000	Pole	Overhead	Y	9/23/2000	15:23	Contact from object	N.A.	Vehicle	Pole	N.A.			
PG&E	9/23/2000	12:17	37.689067	-122.146900	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Alco FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/23/2000	12:02	Contact from object	N.A.	Balloon	Conductor - Pri N.A.	N.A.			
PG&E	9/23/2000	10:26	36.81848	-121.45608	Vegetation	Herbaceous	0.25 - 100 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/23/2000	23:31	Contact from object	N.A.	Animal	Conductor - Pri N.A.	N.A.			
PG&E	9/22/2000	10:32	38.09649	-121.521445	Vegetation	Agriculture	3 meters - 0.25 Acres	Customer	N.A.	101300049 Y	21,000	Conductor - Primal/Overhead	Overhead	Y	9/22/2000	7:44	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.			
PG&E	9/21/2000	18:51	38.60626	-121.02263	Vegetation	Herbaceous	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/21/2000	19:40	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.	Unknown whether meets reportability threshold, but confirmed to be attributable to PG&E.		
PG&E	9/21/2000	12:05	39.468473	-121.5774917	Building	Urban	Unknown	Self Extinguished	N.A.	100399938 Y	12,000	Pole	Overhead	Y	9/21/2000	11:56	Equipment - PG&E	Pole failure - N.A.	N.A.	N.A.	N.A.			
PG&E	9/20/2000	11:50	36.333883	-121.423827	Vegetation	Barn/Other	3 meters - 0.25 Acres	Fire Agency	Gonzales FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/20/2000	11:46	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.			
PG&E	9/20/2000	14:52	34.43113	-119.081245	Vegetation	Shrub	3 meters - 0.25 Acres	Fire Agency	Kern County FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/20/2000	14:50	Equipment - PG&E	Conductor fail N.A.	N.A.	Vegetation	Conductor - Pri N.A.	N.A.		
PG&E	9/18/2000	17:49	38.71824	-121.784135	Vegetation	Agriculture	1 meter - < 3 meters	Fire Agency	Willow Creek FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/18/2000	16:38	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/18/2000	15:20	38.426350	-122.684533	Vegetation	Hardwood Forest	1 meter - < 3 meters	Fire Agency	Santa Rosa FD	101300049 Y	750	Conductor - Sec'on/Overhead	Overhead	Y	9/18/2000	15:52	Contact from object	N.A.	Vegetation	Conductor - Sec'N A.	N.A.			
PG&E	9/17/2000	14:19	36.55195	-119.242165	Vegetation	Agriculture	3 meters - 0.25 Acres	Fire Agency	Redwood County FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/17/2000	14:19	Contact from object	N.A.	Animal	Conductor - Pri N.A.	N.A.			
PG&E	9/17/2000	08:54	38.833792	-121.189394	Other	Urban	Unknown	N.A.	N.A.	1423 N	12,000	Pole	Overhead	Y	9/17/2000	8:47	Contact from object	N.A.	Animal	Pole	N.A.			
PG&E	9/16/2000	16:47	37.691001	-122.412364	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	Cal Fire/Prisbane FD	Switch: 2849 Y	12,000	Splice/Clamp/Con'Overhead	Overhead	Y	9/16/2000	16:35	Equipment - PG&E	Fuse failure - N.A.	N.A.	N.A.	N.A.			
PG&E	9/16/2000	06:11	36.037365	-119.473765	Herbaceous	Urban	3 meters - 0.25 Acres	Cal Fire	N.A.	101300049 Y	15,000	Conductor - Primal/Overhead	Overhead	Y	9/16/2000	10:15	Contact from object	N.A.	Animal	Conductor - Tran N.A.	N.A.			
PG&E	9/16/2000	14:29	37.976667	-120.4571033	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	17,000	Conductor - Sec'on/Overhead	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Vehicle	Conductor - Sec'N A.	N.A.			
PG&E	9/15/2000	20:34	38.95693192	-121.1061578	Other	Hardwood Woodland	1 meter - < 3 meters	Fire Agency	Albion FD	Fuse: 9963 Y	12,000	Fuse	Overhead	Y	9/11/2000	10:24	Contact from object	N.A.	Animal	Fuse	N.A.			
PG&E	9/9/2000	12:42	38.16584	-120.93128	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	17,000	Herbar	Underground	Y	9/9/2000	10:53	Equipment - PG&E	Rectifier failure N.A.	N.A.	N.A.	N.A.			
PG&E	9/8/2000	11:18	38.478783	-121.888317	Vegetation	Agriculture	3 meters - 0.25 Acres	Fire Agency	Dixon FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/8/2000	18:12	Contact from object	N.A.	Animal	Conductor - Pri N.A.	N.A.			
PG&E	9/8/2000	14:41	37.653809	-121.679195	Other	Urban	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/8/2000	14:41	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/8/2000	11:21	40.437773	-122.299072	Other	Urban	1 meter - < 3 meters	Fire Agency	Anderson FD	101300049 Y	12,000	Conductor - Sec'on/Overhead	Overhead	Y	9/8/2000	11:20	Contact from object	N.A.	Vegetation	Conductor - Sec'N A.	N.A.			
PG&E	9/8/2000	03:06	40.1864933	-122.214208	Vegetation	Urban	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	12,000	Pole	Overhead	Y	9/8/2000	3:39	Equipment - PG&E	#N/A	N.A.	N.A.	N.A.			
PG&E	9/8/2000	02:14	40.468265	-122.311387	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/8/2000	15:35	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/7/2000	13:27	37.94829	-122.320377	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Central Marin FD	101300049 Y	9/7 Service Drop	12,000	Service Drop	Overhead	Y	9/7/2000	04:26	Equipment - PG&E	Service Drop	N.A.	Vegetation	Service Drop	N.A.	
PG&E	9/7/2000	18:04	37.000216	-121.880206	Vegetation	Conifer Forest	1 meter - < 3 meters	Fire Agency	Red Del Mar FD	101300049 Y	21,000	Conductor - Primal/Overhead	Overhead	Y	9/7/2000	18:30	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/7/2000	16:18	38.8101514	-121.047193	Vegetation	Hardwood Forest	3 meters - 0.25 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/7/2000	16:18	Contact from object	N.A.	Other	Conductor - Pri Weather	N.A.			
PG&E	9/7/2000	15:44	36.545978	-121.9314031	Other	Urban	0.25 - 10 Acres	Fire Agency	Gonzales FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/7/2000	15:40	Contact from object	N.A.	Animal	Conductor - Pri N.A.	N.A.			
PG&E	9/6/2000	20:58	37.01735	-122.12241	Vegetation	Conifer Forest	0.25 - 10 Acres	Cal Fire	Cal Fire & Scotts Valley	101300049 Y	21,000	Conductor - Primal/Overhead	Overhead	Y	9/6/2000	17:07	Contact from object	N.A.	Vehicle	Conductor - Pri N.A.	N.A.			
PG&E	9/6/2000	16:47	36.749099	-121.584286	Vegetation	Hardwood Forest	0.25 - 10 Acres	Cal Fire	N.A.	CGC: 413443870V	12,000	Transformer	Overhead	Y	9/6/2000	16:39	Equipment - PG&E	Transformer F.N.A.	N.A.	N.A.	N.A.			
PG&E	9/6/2000	10:29	41.249213	-122.766296	Vegetation	Conifer Forest	0.25 - 10 Acres	Cal Fire	N.A.	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	Y	9/6/2000	10:27	Contact from object	N.A.	Vegetation	Conductor - Pri N.A.	N.A.			
PG&E	9/6/2000	13:09	37.978823	-121.4547817	Other	Agriculture	3 meters - 0.25 Acres	Fire Agency	Tracy FD	101300049 Y	12,000	Conductor - Primal/Overhead	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Balloon	Conductor - Pri N.A.	N.A.			
PG&E	9/6/2000	13:04	38.95521	-123.591078	Other	Conifer Forest	1 meter - < 3 meters	Cal Fire	N.A.	101300049 Y	12,000	Service Drop	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Transformer F.N.A.	N.A.	N.A.			
PG&E	9/6/2000	19:24	34.602574	-120.346238	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Santa Barbara County FD	101300049 Y	12,000	Service Drop	Overhead	Y	9/6/2000	19:46	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.			
PG&E	9/6/2																							

Utility Name	Fire Start Date	Location				Fire	Suppressed Agency	Suppression Agency	Facility Identification		Other Companies		Utility Facility		Equipment Involved With		Type	Outage		Field Observations						Notes	EIR Number	
		Date	Time	Latitude	Longitude				Material at Origin	Land Use	Size	Facility ID	Other Companies	Voltage	Equipment	Involved With		Was There an Outage?	Date	Time	Suspected Initiating Event	Equipment - Facility	Contact From Object	Facility Contacted	Contributing Factor			
PG&E	8/13/2020	14:14	38.1645867	-122.0135667	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Sacramento FD	Circuit: 062462Z		21,000	Conductor - Open	Overhead	Y	8/13/2020	14:13	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.	N.A.						
PG&E	8/13/2020	10:50	38.1657883	-122.0431383	Vegetation	Agriculture	1 meter - 1.0 meters	Customer	N.A.	Circuit: 063127V		21,000	Jumper	Overhead	Y	8/13/2020	10:45	Contact from object	N.A.	Animal	Jumper	N.A.						
PG&E	8/13/2020	21:01	38.85131	-122.37713	Vegetation	Agriculture	3 meters - 0.25 Acres	Customer	N.A.	Circuit: 1527031V		12,000	Conductor - Primal	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/21/2020	09:52	34.6869786	-118.472363	Other	Herbaceous	100+ Acres	Fire Agency	N.A.	Circuit: 1003070V		21,000	Jumper	Overhead	Y	8/21/2020	9:49	Contact from object	N.A.	Animal	Jumper	N.A.						
PG&E	8/21/2020	23:45	36.183669	-119.717277	Other	Herbaceous	1 meter - 1.0 meters	Fire Agency	Kings County FD	Circuit: 063127V		12,000	Capacitor Bank	Overhead	Y	8/21/2020	23:46	Contact from object	N.A.	Animal	Capacitor Bank	N.A.						
PG&E	8/11/2020	0:38	36.72556	-121.26768	Vegetation	Barn/Other	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 182492Z		12,000	Conductor - Primal	Overhead	Y	8/11/2020	23:39	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/21/2020	06:34	39.5100453	-121.215978	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 0330210V		12,000	Conductor - Primal	Overhead	Y	8/21/2020	6:15	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/10/2020	10:20	40.399981	-121.939049	Other	Herbaceous	100 - 100 Acres	Self Extinguished	N.A.	Circuit: 4086345N		50,000	Other	Overhead	N	N.A.	N.A.	Equipment - PG&E	Other	N.A.	N.A.							
PG&E	8/9/2020	08:53	39.119088	-121.067784	Other	Herbaceous	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 019150_019154N		115,000	Conductor - Trans	Overhead	Y	8/9/2020	08:53	Contact from object	N.A.	Animal	Conductor - Tran	N.A.						
PG&E	8/9/2020	17:01	37.73351	-122.017068	Other	Urban	1 meter - 1.0 meters	Self Extinguished	N.A.	Circuit: 1000010V		12,000	Conductor - Primal	Overhead	Y	8/9/2020	17:29	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/9/2020	00:08	40.79832	-124.177676	Other	Urban	1 meter - 1.0 meters	Utility, PG&E	PG&E Employee	Pole ID: 1008888Y		12,000	Riser	Overhead	Y	8/9/2020	0:37	Equipment - PG&E	Riser Failure	N.A.	N.A.							
PG&E	8/9/2020	20:38	39.1082133	-121.6222817	Vegetation	Urban	1 meter - 1.0 meters	Self Extinguished	N.A.	Circuit: 1527031V		12,000	Splice/Clamp/Con	Overhead	Y	8/9/2020	20:21	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.							
PG&E	8/7/2020	15:45	36.700317	-120.448847	Building	Urban	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 2523120A		750	Service Drop	Overhead	Y	8/7/2020	15:40	Equipment - PG&E	Conductor fail N.A.	N.A.	N.A.							
PG&E	8/7/2020	15:45	34.74964077	-120.746441	Vegetation	Urban	100 - 100 Acres	Fire Agency	Santa Barbara County FD	Pole ID: 1018587V		12,000	Splice/Clamp/Con	Overhead	Y	8/7/2020	14:54	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.							
PG&E	8/7/2020	14:03	36.838545	-121.371861	Other	Herbaceous	1 meter - 1.0 meters	Fire Agency	Hollister Fire	Circuit: 182492Z		21,000	Conductor - Primal	Overhead	Y	8/7/2020	13:56	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/6/2020	13:01	36.563563	-119.761515	Vegetation	Urban	1 meter - 1.0 meters	Self Extinguished	N.A.	Circuit: 2523120A		12,000	Conductor - Primal	Overhead	Y	8/6/2020	12:52	Contact from object	N.A.	Vegetation	Conductor - Ra	N.A.						
PG&E	8/5/2020	12:39	39.44983	-121.19761	Vegetation	Conifer Forest	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 10202110Z		12,000	Conductor - Primal	Overhead	Y	8/5/2020	12:41	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/5/2020	19:49	39.82375	-122.0618183	Vegetation	Agriculture	0.25 - 10 Acres	Fire Agency	Capay FD	Circuit: 1021113V		750	Conductor - Sec	Overhead	Y	8/5/2020	19:34	Contact from object	N.A.	Vegetation	Conductor - Sec	N.A.						
PG&E	8/5/2020	19:05	38.23232108	-120.6712193	Other	Hardwood Woodland	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 15803		12,000	Switch	Overhead	Y	8/5/2020	18:49	Vandalism	N.A.	N.A.	N.A.							
PG&E	8/5/2020	11:31	40.893937	-123.571581	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	US Forest Service	Circuit: 1019171V		12,000	Conductor - Primal	Overhead	Y	8/5/2020	11:24	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/5/2020	7:25	38.265415	-122.79165	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Sonoma County	Pole ID: 1019873V		12,000	Pole	Overhead	Y	8/5/2020	7:19	Contact from object	N.A.	Vehicle	Pole	N.A.						
PG&E	8/5/2020	02:28	40.563428	-122.3687417	Vegetation	Hardwood Woodland	1 meter - 1.0 meters	Fire Agency	Hedding Fire	Circuit: 10194021V		12,000	Conductor - Primal	Overhead	Y	8/5/2020	2:11	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/4/2020	15:10	39.92083	-122.4535	Other	Herbaceous	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1033110Z		12,000	Conductor - Primal	Overhead	Y	8/4/2020	15:58	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	8/4/2020	16:28	37.39450362	-122.0064957	Other	Urban	1 meter - 1.0 meters	Self Extinguished	N.A.	Circuit: 83421109N		12,000	Riser	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Balloon	Riser	N.A.						
PG&E	8/4/2020	23:15	38.8972867	-121.3610055	Other	Agriculture	3 meters - 0.25 Acres	Fire Agency	Lincoln FD	Circuit: 1527031V		12,000	Conductor - Primal	Overhead	Y	8/3/2020	23:03	Contact from object	N.A.	Balloon	Conductor - Pri	N.A.						
PG&E	8/4/2020	23:17	38.874826	-121.652299	Other	Herbaceous	3 meters - 0.25 Acres	Fire Agency	West Sacramento FD	Voltage Regulator		12,000	Voltage Regulator	Overhead	Y	8/3/2020	23:03	Contact from object	N.A.	Vegetation	Voltage Regu	N.A.						
PG&E	8/2/2020	18:35	35.824094	-120.545139	Vegetation	Hardwood Woodland	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 1028611N		12,000	Conductor - Primal	Overhead	Y	8/2/2020	23:38	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/2/2020	23:19	36.85933	-120.34139	Vegetation	Agriculture	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1527031V		115,000	Utility/Span Wire	Overhead	Y	8/2/2020	23:19	Contact from object	N.A.	Vehicle	Utility/Span Wire	N.A.						
PG&E	8/2/2020	00:57	34.838668	-120.223247	Other	Hardwood Woodland	0.25 - 10 Acres	Fire Agency	Santa Barbara County FD	Circuit: 1028611N		12,000	Conductor - Primal	Overhead	Y	8/2/2020	0:57	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/2/2020	4:39	37.414152	-122.173711	Other	Herbaceous	0.25 - 10 Acres	Fire Agency	Palo Alto FD	Circuit: CGC_31142933V		12,000	Splice/Clamp/Con	Overhead	Y	8/2/2020	23:18	Equipment - PG&E	Transformer F.N.A.	N.A.	N.A.							
PG&E	8/2/2020	10:13	35.894266	-119.045068	Other	Urban	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1527031V		12,000	Transformer	Overhead	Y	8/2/2020	10:10	Equipment - PG&E	Transformer F.N.A.	N.A.	N.A.							
PG&E	8/2/2020	00:57	34.838668	-120.223247	Other	Herbaceous	3 meters - 0.25 Acres	Fire Agency	Santa Barbara County FD	Circuit: 1028611N		12,000	Automatic Wire	Overhead	Y	8/2/2020	0:57	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/1/2020	05:42	38.867864	-121.558888	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1527031V		12,000	Conductor - Primal	Overhead	Y	8/1/2020	5:35	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	8/1/2020	06:14	37.698554	-122.195239	Other	Urban	1 meter - 1.0 meters	Fire Agency	Alco FD	Circuit: 1013111N		12,000	Conductor - Primal	Overhead	Y	8/1/2020	6:04	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	7/31/2020	05:42	38.859368	-122.1413743	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1024511V		12,000	Splice/Clamp/Con	Overhead	Y	7/31/2020	5:43	Contact from object	N.A.	Animal	Splice/Clamp/F	N.A.						
PG&E	7/31/2020	03:04	39.206478	-121.265456	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1024811V		12,000	Conductor - Primal	Overhead	Y	8/1/2020	5:18	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	7/30/2020	11:20	36.01905	-120.87667	Other	Herbaceous	0.25 - 10 Acres	Self Extinguished	N.A.	Pole ID: 249734T		60,000	Insulator	Overhead	Y	7/30/2020	11:20	Equipment - PG&E	Insulator fail/N.A.	N.A.	N.A.							
PG&E	7/30/2020	19:41	37.818206	-120.440104	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	West Sacramento FD	Pole ID: 1000106V		21,000	Conductor - Primal	Overhead	Y	7/30/2020	19:10	Contact from object	N.A.	Animal	Insulator	N.A.						
PG&E	7/29/2020	19:17	39.217871	-121.230965	Other	Herbaceous	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 1000106V		21,000	Insulator	Overhead	Y	7/29/2020	17:45	Contact from object	N.A.	Animal	Jumper	N.A.						
PG&E	7/29/2020	17:55	38.8455137	-121.4558667	Other	Agriculture	0.25 - 10 Acres	Fire Agency	Thornton FD	Circuit: CGC_312590636N		12,000	Jumper	Overhead	Y	7/29/2020	17:45	Contact from object	N.A.	Animal	Jumper	N.A.						
PG&E	7/28/2020	12:37	35.53166	-120.95175	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 10202110Z		12,000	Conductor - Primal	Overhead	Y	7/28/2020	12:37	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	7/28/2020	17:14	40.687486	-122.282606	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1024811V		750	Conductor - Sec	Overhead	Y	7/28/2020	17:11	Contact from object	N.A.	Vegetation	Conductor - Sec	N.A.						
PG&E	7/28/2020	17:14	39.393716	-121.260107	Vegetation	Hardwood Forest	0.25 - 10 Acres	Self Extinguished	N.A.	Circuit: 10202110Z		12,000	Conductor - Primal	Overhead	Y	7/28/2020	13:03	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	7/28/2020	07:18	40.246487	-121.264487	Other	Herbaceous	3 meters - 0.25 Acres	Self Extinguished	N.A.	Circuit: 1024811V		12,000	Automatic Wire	Over														

Utility Name	Fire Start Date	Location				Fire		Suppression Agency		Utility Facility		Equipment		Outage		Field Observations				Notes	EIR Number			
		Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed	Suppression Agency	Facility Location	Other Companies	Voltage	Equipment Involved With	Type	Was There an Outage	Date	Time	Suspected Initiating Event			Equipment/Facility	Contact From Object	Facility Contacted
PG&E	6/17/2020	02:21	38.1755569	-122.0470953	Other	Agriculture	1 meter - < 3 meters	Unknown	N.A.	PG&E	101604303Y	21,000	Pole	Overhead	Y	6/17/2020	2:15	Contact from object	N.A.	Animal	Conductor - Ra	N.A.		
PG&E	6/26/2020	17:13	36.785481	-119.7751597	Other	Urban	1 meter - < 3 meters	Fire Agency	Fresno FD	PG&E	102539211Y	12,000	Conductor - Sec/Overhead	Overhead	Y	6/26/2020	17:45	Equipment - PG&E	Conductor fail	N.A.	N.A.	N.A.		
PG&E	6/26/2020	17:54	40.887	-122.369225	Other	Urban	0.25 - 10 Acres	Fire Agency	US Forest Service	PG&E	1003721Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/26/2020	17:23	Equipment - PG&E	N.A.	Other	Conductor - Pri	Human Error		Gun shot
PG&E	6/26/2020	05:37	40.009076	-122.447833	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	100299258Y	12,000	Transformer	Overhead	N	6/26/2020	23:49	Equipment - PG&E	Transformer F	N.A.	N.A.	N.A.		
PG&E	6/25/2020	15:05	37.94053	-122.05242	Other	Urban	3 meters - 0.25 Acres	Self Extinguished	N.A.	PG&E	1014302Y	21,000	Splice/Clamp/Con	Overhead	Y	6/25/2020	15:01	Equipment - PG&E	Splice/Clamp	N.A.	N.A.	N.A.		
PG&E	6/25/2020	00:40	36.787267	-119.771273	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Fresno FD	PG&E	1006970Y	12,000	Polehead	Overhead	Y	6/25/2020	0:32	Equipment - PG&E	Riser Failure	N.A.	N.A.	N.A.		
PG&E	6/24/2020	02:17	36.2092	-120.304469	Other	Other	1 meter - < 1 meters	Unknown	N.A.	PG&E	100298100Y	12,000	Conductor - All	Overhead	Y	6/24/2020	2:17	Equipment - PG&E	Conductor - All	N.A.	N.A.	N.A.		
PG&E	6/24/2020	23:48	38.0162829	-121.607901	Other	Agriculture	3 meters - 0.25 Acres	Utility - PG&E	PG&E Employee	PG&E	1014592Y	21,000	Conductor - Sec/Overhead	Overhead	Y	6/24/2020	23:48	Equipment - PG&E	Conductor fail	N.A.	N.A.	N.A.		
PG&E	6/24/2020	11:38	39.2016888	-121.5460465	Other	Agriculture	1 meter - < 1 meters	Self Extinguished	N.A.	PG&E	10109211Y	12,000	Voltage Regulator	Overhead	Y	6/24/2020	11:33	Contact from object	N.A.	Animal	Voltage Regula	N.A.		
PG&E	6/23/2020	20:48	39.21212	-121.206158	Vegetation	Hardwood Forest	1 meter - < 1 meters	Fire Agency	Fremont Valley	PG&E	1011321Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/23/2020	20:48	Contact from object	N.A.	Animal	Conductor - Pri	N.A.		
PG&E	6/23/2020	20:47	37.22708	-118.67333	Other	Rural	3 meters - 0.25 Acres	Customer	N.A.	PG&E	10254423Y	12,000	Splice/Clamp/Con	Overhead	Y	6/23/2020	20:33	Equipment - PG&E	Splice/Clamp	N.A.	N.A.	N.A.		
PG&E	6/23/2020	20:12	39.052373	-121.037117	Vegetation	Rural	1 meter - < 1 meters	Cal Fire	N.A.	PG&E	10256921Y	21,000	Conductor - Prima/Overhead	Overhead	Y	6/23/2020	19:50	Contact from object	N.A.	Animal	Conductor - Pri	N.A.		
PG&E	6/23/2020	16:24	40.488084	-122.538387	Vegetation	Herbaceous	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	10204931Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/23/2020	16:19	Contact from object	N.A.	Other	Conductor - Pri	Human Error		
PG&E	6/23/2020	13:00	36.6839777	-119.737088	Vegetation	Urban	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	10254251Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/23/2020	12:18	Contact from object	N.A.	Other	Conductor - Pri	Weather		
PG&E	6/23/2020	12:37	37.5709999	-122.796269	Other	Herbaceous	0.25 - 10 Acres	Fire Agency	Windsor FD	PG&E	10085899Y	750	Conductor - Ra	Overhead	Y	6/23/2020	12:33	Contact from object	N.A.	Animal	Conductor - Ra	N.A.		
PG&E	6/22/2020	22:39	37.99761	-121.30225	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Stockton FD	PG&E	1021870Y	12,000	Conductor - Sec/Overhead	Overhead	Y	6/22/2020	12:32	Contact from object	N.A.	Vegetation	Conductor - Sec	N.A.		
PG&E	6/22/2020	12:31	40.3491833	-124.0201733	Vegetation	Conifer Forest	0.25 - 10 Acres	Cal Fire	N.A.	PG&E	10202923Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/22/2020	12:24	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.		
PG&E	6/22/2020	21:10	35.21533	-119.391294	Other	Urban	1 meter - < 3 meters	Customer	N.A.	PG&E	102544421Y	12,000	Service Drop	Overhead	Y	6/22/2020	20:57	Equipment - PG&E	Conductor fail	N.A.	N.A.	N.A.		
PG&E	6/22/2020	15:14	36.7869556	-120.370641	Other	Agriculture	0.25 - 10 Acres	Fire Agency	Firebaugh FD	PG&E	101390907Y	12,000	Pole	Overhead	Y	6/22/2020	14:47	Equipment - PG&E	Pole failure	N.A.	N.A.	N.A.		
PG&E	6/22/2020	13:59	37.3683683	-120.49432	Vegetation	Agriculture	0.25 - 10 Acres	Cal Fire	N.A.	PG&E	101013327Y	12,000	Fuse	Overhead	Y	6/22/2020	13:57	Contact from object	N.A.	Animal	Fuse	N.A.		
PG&E	6/22/2020	07:09	38.6264833	-121.420373	Other	Herbaceous	0.25 - 10 Acres	Cal Fire	Cal Fire Grass Valley	PG&E	101008476Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/22/2020	7:07	Contact from object	N.A.	Animal	Conductor - Pri	N.A.		
PG&E	6/22/2020	6:21	35.33965	-119.151249	Other	Agriculture	Unknown	Fire Agency	Kern County FD	PG&E	10004207 Unknown	21,000	Pole	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Animal	Pole	N.A.		
PG&E	6/22/2020	21:30	37.683665	-122.486609	Building	Urban	Structure Only	Fire Agency	North County Fire Autho	PG&E	100604071Y	750	Conductor - Under/Underground	Underground	N	N.A.	N.A.	Equipment - PG&E	Conductor fail	N.A.	N.A.	N.A.		
PG&E	6/22/2020	18:04	34.616405	-119.6175517	Other	Rural	3 meters - 0.25 Acres	Self Extinguished	N.A.	PG&E	10204202Y	21,000	Conductor - Prima/Overhead	Overhead	Y	6/22/2020	23:04	Contact from object	N.A.	Animal	Conductor - Pri	N.A.		
PG&E	6/22/2020	18:04	37.126397	-121.840241	Other	Urban	3 meters - 0.25 Acres	Fire Agency	San Jose FD	PG&E	1020212Y	21,000	Conductor - Sec/Overhead	Overhead	Y	6/22/2020	18:03	Equipment - PG&E	Conductor fail	N.A.	N.A.	N.A.		
PG&E	6/21/2020	17:32	36.86319	-121.491312	Other	Rural	10 - 100 Acres	Cal Fire	N.A.	PG&E	10217421Y	21,000	Conductor - Prima/Overhead	Overhead	Y	6/21/2020	17:04	Contact from object	N.A.	Balloon	Conductor - Pri	N.A.		
PG&E	6/21/2020	16:38	38.8762497	-121.3752497	Other	Urban	1 meter - < 1 meters	Fire Agency	Hollister FD	PG&E	10132121Y	12,000	Fuse	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Animal	Fuse	N.A.		
PG&E	6/20/2020	17:24	39.364065	-121.551483	Other	Wetland	10 - 100 Acres	Cal Fire	N.A.	PG&E	10104174Y	21,000	Splice/Clamp/Con	Overhead	Y	6/20/2020	16:58	Equipment - PG&E	Splice/Clamp	N.A.	N.A.	N.A.		
PG&E	6/20/2020	17:00	36.520383	-121.4648383	Other	Rural	1 meter - < 1 meters	Fire Agency	Gonzales FD	PG&E	10130131Y	12,000	Jumper	Overhead	Y	6/20/2020	16:58	Equipment - PG&E	#N/A	N.A.	N.A.	N.A.		
PG&E	6/20/2020	13:09	37.71164	-122.10279	Other	Rural	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	10201921Y	12,000	Splice/Clamp/Con	Overhead	Y	6/20/2020	13:07	Equipment - PG&E	Riser Failure	N.A.	N.A.	N.A.		
PG&E	6/19/2020	11:49	38.788705	-121.721896	Vegetation	Herbaceous	3 meters - 0.25 Acres	Fire Agency	Woodland FD	PG&E	102207974086N	12,000	Splice/Clamp/Con	Overhead	Y	N.A.	N.A.	Equipment - PG&E	Transformer F	N.A.	N.A.	N.A.		
PG&E	6/19/2020	11:58	39.4899753	-121.5511244	Other	Urban	1 meter - < 1 meters	Fire Agency	Oroville FD	PG&E	10201420Y	12,000	Recloser	Overhead	N	N.A.	N.A.	Contact from object	N.A.	Animal	Recloser	N.A.		
PG&E	6/19/2020	05:31	38.492645	-122.412945	Other	Agriculture	Unknown	Fire Agency	Amador FD	PG&E	10200429Y	12,000	Splice/Clamp/Con	Overhead	Y	6/19/2020	5:29	Equipment - PG&E	Splice/Clamp	N.A.	N.A.	N.A.		
PG&E	6/19/2020	04:37	38.418073	-120.822241	Vegetation	Hardwood Woodland	0.25 - 10 Acres	Fire Agency	Amador FD	PG&E	10216341Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/19/2020	4:30	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.		
PG&E	6/18/2020	18:17	38.388748	-122.410509	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	10204292Y	21,000	Conductor - Prima/Overhead	Overhead	Y	6/18/2020	16:51	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.		
PG&E	6/18/2020	06:26	38.892639	-121.352601	Other	Urban	10 - 100 Acres	Fire Agency	Merced FD	PG&E	10217021Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/18/2020	6:25	Weather	Conductor - Pri	N.A.	N.A.	N.A.		
PG&E	6/18/2020	14:26	37.4633446	-121.8680333	Vegetation	Urban	1 meter - < 3 meters	Fire Agency	Milpitas FD	PG&E	10201820Y	12,000	Service Drop	Overhead	Y	6/18/2020	14:25	Contact from object	N.A.	Vehicle	Service Drop	N.A.		
PG&E	6/18/2020	06:01	38.34046	-120.717496	Vegetation	Hardwood Woodland	0.25 - 10 Acres	Cal Fire	N.A.	PG&E	10216211Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/18/2020	6:04	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.		
PG&E	6/17/2020	11:51	39.12086	-121.553268	Other	Urban	3 meters - 0.25 Acres	Customer	N.A.	PG&E	10210311Y	12,000	Service Drop	Overhead	Y	6/17/2020	11:51	Contact from object	N.A.	Vegetation	Service Drop	N.A.		
PG&E	6/17/2020	11:19	38.9663817	-122.62668	Other	Urban	1 meter - < 3 meters	Customer	N.A.	PG&E	10204361Y	12,000	Conductor - Sec/Underground	Underground	Y	6/17/2020	11:14	Equipment - PG&E	Riser Failure	N.A.	N.A.	N.A.		
PG&E	6/16/2020	11:58	38.556813	-122.45442	Vegetation	Conifer Forest	3 meters - 0.25 Acres	Cal Fire	N.A.	PG&E	10204432Y	750	Service Drop	Overhead	Y	6/16/2020	11:57	Contact from object	N.A.	Vegetation	Service Drop	N.A.		
PG&E	6/16/2020	15:40	39.254486	-122.9992017	Rural	3 meters - 0.25 Acres	Fire Agency	PG&E	PG&E	10204372Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/16/2020	15:37	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.			
PG&E	6/15/2020	11:58	38.8527	-121.174967	Vegetation	Urban	1 meter - < 3 meters	Fire Agency	Pennyn FD	PG&E	10223444325N	12,000	Transformer	Overhead	Y	6/15/2020	15:37	Contact from object	N.A.	Animal	Transformer	N.A.		
PG&E	6/15/2020	09:49	35.009211	-119.067499	Other	Herbaceous	10 - 100 Acres	Fire Agency	Kern County FD	PG&E	10254113Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/15/2020	8:01	Contact from object	N.A.	Other	Conductor - Pri	Outside Force		
PG&E	6/15/2020	10:56	35.00923742	-119.067493	Other	Herbaceous	Unknown	Utility - PG&E	PG&E Employee	PG&E	100221483 Unknown	12,000	Conductor - Prima/Overhead	Overhead	Y	6/15/2020	5:55	Contact from object	N.A.	Other	Conductor - Pri	N.A.		
PG&E	6/14/2020	12:41	34.613442	-120.28179	Vegetation	Rural	100 - Acres	Fire Agency	Santa Barbara County FD	PG&E	10218041Y	12,000	Conductor - Prima/Overhead	Overhead	Y	6/14/2020	12:39	Equipment - PG&E	Pole failure	N.A.	N.A.	N.A.		
PG&E	6/14/2020	17:56	38.794292	-122.022498	Vegetation	Rural	3 meters - 0.25 Acres	Customer	N.A.	PG&E	10202923Y	12,000	Conductor - Ra	Overhead	Y	6/13/2020	17:36	Equipment - PG&E	#N/A	N.A.	N.A.	N.A.		
PG&E	6/13/2020	08:28	37.4488387	-122.478808	Other																			

Utility Name	Fire Start Date	Fire Start Time	Location			Fire		Suppression Agency		Utility Facility				Outage			Field Observations					Notes	EIR Number					
			Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppression Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility	Contact From Object	Facility Contested			Contributing Factor				
PG&E	5/14/2020	06:51	36.13741	-120.20523	Other	Herbaceous	10 - 100 Acres	Cal Fire	N.A.	9500 N		12,000	Recloser	Overhead	Y	5/14/2020	6:40	Contact from object	N.A.	Animal	Recloser	N.A.						
PG&E	5/14/2020	04:31	38.11092	-122.218579	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Vallejo FD	043455101	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/14/2020	3:59	Contact from object	N.A.	Animal	Conductor - Pri	N.A.						
PG&E	5/14/2020	09:29	38.242764	-120.834607	Vegetation	Herbaceous	3 meters - 0.25 Acres	Cal Fire	N.A.	163221101	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/14/2020	9:13	Contact from object	N.A.	Ballon	Conductor - Pri	N.A.						
PG&E	5/12/2020	07:49	37.27962	-122.200616	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Cal Fire	N.A.	02491331	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/12/2020	8:37	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	5/12/2020	12:57	36.26931	-119.69102	Vegetation	Agriculture	3 meters - 0.25 Acres	Fire Agency	King County FD	25266104	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/12/2020	12:49	Contact from object	N.A.	Vehicle	Conductor - Pri	N.A.						
PG&E	5/11/2020	8:22	37.50591	-122.212008	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Redwood City FD	02426101	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/11/2020	8:11	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	5/12/2020	16:42	35.9813867	-120.67224	Vegetation	Herbaceous	3 meters - 0.25 Acres	Cal Fire	N.A.	02426101	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/12/2020	16:42	Contact from object	N.A.	Vehicle	Conductor - Pri	N.A.						
PG&E	5/10/2020	16:59	38.89695	-121.0673267	Other	Urban	1 meter - < 3 meters	Fire Agency	Albany FD	02101261	Y	12,000	Splice/Clamp/Con/Overhead	Overhead	Y	5/10/2020	16:59	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.							
PG&E	5/9/2020	18:49	39.007011	-122.781644	Vegetation	Hardwood Forest	3 meters - 0.25 Acres	Fire Agency	Kelseyville FD	Pole ID: 10126021	Y	12,000	Pole	Overhead	Y	5/9/2020	18:46	Contact from object	N.A.	Vehicle	Pole	N.A.						
PG&E	5/8/2020	15:55	37.8689923	-120.811798	Other	Rural	0.25 - 10 Acres	Cal Fire	N.A.	Pole ID: 10102921	Y	17,000	Pole	Overhead	Y	5/8/2020	15:46	Contact from object	N.A.	Vehicle	Pole	N.A.						
PG&E	5/8/2020	14:29	38.645394	-121.028456	Vegetation	Herbaceous	3 meters - 0.25 Acres	Fire Agency	El Dorado Hills FD	Pole ID: 10141292	Y	21,000	Pole	Overhead	Y	5/8/2020	14:24	Contact from object	N.A.	Vehicle	Pole	N.A.						
PG&E	5/8/2020	12:54	35.942388	-120.0914167	Other	Rural	3 meters - 0.25 Acres	Self Extinguished	N.A.	Capacitor: 156K CNY	Y	21,000	Capacitor Bank	Overhead	N	N.A.	Contact from object	N.A.	Animal	Capacitor Bank	N.A.							
PG&E	5/7/2020	17:52	37.32417	-122.08749	Other	Agriculture	3 meters - 0.25 Acres	Cal Fire	Merced County Cal Fire	02101261	Y	12,000	Pole	Overhead	Y	5/7/2020	17:48	Contact from object	N.A.	Vehicle	Pole	N.A.						
PG&E	5/7/2020	12:35	38.1072183	-121.9888	Other	Rural	3 meters - 0.25 Acres	Fire Agency	Suisun FD	02101261	Y	12,000	Splice/Clamp/Con/Overhead	Overhead	Y	5/7/2020	14:11	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.							
PG&E	5/6/2020	12:29	35.4114999	-122.975993	Vegetation	Hardwood Woodland	3 meters - 0.25 Acres	Unknown	N.A.	1018981N	Y	750	Service Connector	Overhead	N	N.A.	Equipment - PG&E	Service Neutral/N.A.	N.A.	N.A.								
PG&E	5/6/2020	22:51	38.5388449	-120.848549	Other	Rural	3 meters - 0.25 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/6/2020	22:24	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	5/6/2020	14:11	37.038346	-120.151729	Other	Urban	0.25 - 10 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Seccon/Overhead	Overhead	Y	5/6/2020	14:10	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	5/5/2020	15:39	38.590613	-122.938251	Vegetation	Hardwood Forest	0.25 - 10 Acres	Cal Fire	N.A.	04275113	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/5/2020	15:37	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	5/5/2020	09:55	34.5571999	-120.160669	Vegetation	Herbaceous	3 meters - 0.25 Acres	Fire Agency	Santa Barbara County FD	02101261	Y	12,000	Splice/Clamp/Con/Overhead	Overhead	Y	5/5/2020	9:55	Equipment - PG&E	Splice/Clamp/N.A.	N.A.	N.A.							
PG&E	5/4/2020	18:25	38.4857103	-122.760543	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Santa Rosa FD	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/4/2020	18:19	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	5/2/2020	14:04	36.6401388	-119.3861607	Other	Agriculture	0.25 - 10 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/2/2020	14:03	Contact from object	N.A.	Other	Conductor - Pri	N.A.						
PG&E	5/2/2020	11:42	34.8686792	-120.4110834	Other	Urban	3 meters - 0.25 Acres	Fire Agency	Santa Maria FD	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/2/2020	11:41	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	5/1/2020	00:56	39.647425	-121.634975	Vegetation	Herbaceous	3 meters - 0.25 Acres	Cal Fire	N.A.	Guy attached to 10V	Y	12,000	Guy/Span Wire	Overhead	Y	5/1/2020	0:42	Contact from object	N.A.	Vehicle	Guy/Span Wire	N.A.						
PG&E	4/30/2020	23:25	38.0995044	-122.882501	Vegetation	Rural	0.25 - 10 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	5/1/2020	1:40	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	4/29/2020	17:50	38.540013	-122.386461	Vegetation	Hardwood Forest	3 meters - 0.25 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	4/29/2020	16:42	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	4/29/2020	12:35	39.555765	-121.509973	Vegetation	Hardwood Woodland	0.25 - 10 Acres	Cal Fire	N.A.	02101261	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	4/29/2020	15:33	Contact from object	N.A.	Vegetation	Conductor - Pri	N.A.						
PG&E	4/28/2020	12:45	38.1072183	-121.9888	Other	Wetland	3 meters - 0.25 Acres	Utility - PG&E	N.A.	Pole ID: 10159904	Y	12,000	Conductor - Primal/Overhead	Overhead	N	N.A.	Contact from object	N.A.	Ballon	Conductor - Pri	N.A.							
PG&E	4/27/2020	14:27	36.571895	-120.33681	Vegetation	Agriculture	0.25 - 10 Acres	Fire Agency	North Central FD	Pole ID: 1006461	Y	12,000	Lighting Arrestor	Overhead	Y	4/27/2020	14:27	Equipment - PG&E	Lighting arre	N.A.	N.A.							
PG&E	4/25/2020	16:10	38.2740917	-122.0974133	Other	Agriculture	1 meter - < 3 meters	Fire Agency	Suisun FD	02101261	Y	12,000	Service Drop	Overhead	N	N.A.	Equipment - PG&E	Conductor fail	N.A.	N.A.								
PG&E	4/25/2020	04:20	38.12299367	-121.6849768	Other	Herbaceous	3 meters - 0.25 Acres	Fire Agency	Rio Vista FD	Fuse: 12887 N	Y	21,000	Fuse	Overhead	Y	4/25/2020	3:46	Contact from object	N.A.	Vegetation	Fuse	N.A.						
PG&E	4/23/2020	18:05	35.123196	-120.620124	Building	Urban	Structure Only	Cal Fire	San Luis Obispo	18260106	N.A.	12,000	N.A.	Overhead	N	N.A.	Under Investigation	N.A.	N.A.	N.A.	N.A.							
PG&E	4/23/2020	11:38	37.893316	-121.034339	Vegetation	Herbaceous	0.25 - 10 Acres	Fire Agency	Farmington FD	02101261	Y	17,000	Conductor - Primal/Overhead	Overhead	Y	4/23/2020	15:25	Contact from object	N.A.	Ballon	Conductor - Pri	N.A.						
PG&E	4/23/2020	15:03	39.893317	-121.682973	Other	Rural	3 meters - 0.25 Acres	Unknown	N.A.	Pole ID: 10379231	Y	12,000	Pole	Overhead	Y	4/23/2020	11:05	Equipment - PG&E	Pole failure	N.A.	N.A.							
PG&E	4/23/2020	14:40	37.023286	-120.120519	Vegetation	Herbaceous	0.25 - 10 Acres	Cal Fire	N.A.	25461104	N.A.	12,000	Conductor - Primal/Overhead	Overhead	Y	4/23/2020	14:30	Unknown	Conductor fail	N.A.	N.A.							
PG&E	4/17/2020	20:25	37.683033	-121.25295	Other	Agriculture	3 meters - 0.25 Acres	Fire Agency	Lathrop Manteca FD	1638031	Y	17,000	Conductor - Primal/Overhead	Overhead	Y	4/17/2020	20:00	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	4/15/2020	16:05	39.096842	-121.738054	Vegetation	Agriculture	3 meters - 0.25 Acres	Fire Agency	Sutter County FD	15211103	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	4/15/2020	16:03	Contact from object	N.A.	Vehicle	Conductor - Pri	N.A.						
PG&E	4/14/2020	17:56	38.159646	-121.807305	Vegetation	Agriculture	1 meter - < 3 meters	Fire Agency	Suisun FD	02101261	Y	21,000	Service Drop	Overhead	Y	4/14/2020	17:55	Contact from object	N.A.	Vehicle	Service Drop	N.A.						
PG&E	4/7/2020	15:42	36.300449	-121.048903	Other	Herbaceous	1 meter - < 3 meters	Cal Fire	N.A.	182031102	Y	12,000	Conductor - Primal/Overhead	Overhead	Y	4/7/2020	15:38	Equipment - PG&E	Conductor fail	N.A.	N.A.							
PG&E	4/3/2020	12:17	35.5060683	-119.62216	Other	Agriculture	0.25 - 10 Acres	Utility - PG&E	PG&E SPT	5.151761-11	Y	12,000	Transformer	Overhead	Y	4/3/2020	12:17	Contact from object	N.A.	Animal	Transformer	N.A.						
PG&E	4/2/2020	15:29	38.803147	-121.53107	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	South Coast FPD	Transmission: ELK-Y	Y	60,000	Conductor - Transr/Overhead	Overhead	Y	4/2/2020	15:23	Contact from object	N.A.	Vegetation	Conductor - Tra	N.A.						
PG&E	3/17/2020	21:47	40.8696833	-121.924365	Building	Strub	3 meters - 0.25 Acres	Cal Fire	N.A.	02101261	Y	12,000	Service Drop	Overhead	Y	3/18/2020	22:42	Equipment - PG&E	Lighting arre	N.A.	Vegetation	Service Drop	N.A.					
PG&E	3/13/2020	16:00	38.35977	-121.973767	Vegetation	Urban	3 meters - 0.25 Acres	Fire Agency	Vacaville FD	02101261	Y	750	Conductor - Seccon/Overhead	Overhead	N	N.A.	Contact from object	N.A.	Vegetation	Conductor - Sec	N.A.							
PG&E	3/12/2020	13:08	40.06794	-122.190682	Other	Agriculture	Unknown	Unknown	N.A.	103931102	N	12,000	Conductor - Primal/Overhead	Overhead	N	N.A.	Contact from object	N.A.	Vehicle	Conductor - Pri	N.A.							
PG&E	3/8/2020	15:33	35.87644	-119.648683	Vegetation	Barren/Other	Unknown	Unknown	N.A.	25151103	N	12,000	Conductor - All	Overhead	N	N.A.	Contact from object	N.A.	Vegetation	Conductor - All	N.A.							
PG&E	3/7/2020	7:08	35.84408	-120.048107	Vegetation	Agriculture	0.25 - 10 Acres	Fire Agency	King County FD	0210126																		

Utility Name	Fire Start		Location				Fire				Utility Facility		Outage		Field Observations		Notes						
	Date	Time	Latitude	Longitude	Material at Origin	Material at Origin - Comments	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Name	Other Companies	Voltage	Equipment Involved With Incident	Type	Was There an Outage		Date	Time	Suspected Initiating Event	Equipment Facility Failure	Contact From Object	Facility Contacted
PG&E	1/4/2021	18:06:00	35.124227	-112.065468	Vegetation	N/A	Conifer Forest	<0.25	Cal Fire	N/A	100014857	Y	12,000 Conductor - Primary	Overhead	Y	1/4/2021	18:14:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/10/2021	15:51:00	39.75587	-122.1128	Other	N/A	Urban	<0.25	Fire Agency	Orland FD	102601001	N	0-750 Conductor - Racked	Overhead	Y	1/10/2021	15:41:00	Contact from Object	N/A	Animal	Conductor - Racked	N/A	
PG&E	1/10/2021	15:34:00	39.7427095	-122.280234	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	N/A	100092964	Y	12,000 Conductor - Primary	Overhead	Y	1/10/2021	15:41:00	Contact from Object	N/A	Animal	Conductor - Primary	N/A	
PG&E	1/14/2021	05:54:00	35.563255	-120.908547	Vegetation	N/A	Hardwood Woodland	<3 meters of linear travel	Employee/Cal Fire	Employee/Cal Fire	101947907	Y	12,000 Conductor - Primary	Overhead	Y	1/14/2021	05:45:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/16/2021	12:50:00	38.582233	-121.730602	Vegetation	N/A	Urban	0.26x9.99	Fire Agency	Woodland FD	101588107	Y	12,000 Conductor - Primary	Overhead	Y	1/16/2021	12:45:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/16/2021	08:12:00	37.1244349	-121.948556	Vegetation	N/A	Agriculture	<0.25	Cal Fire	N/A	100055700, 10051	Y	12,000 Conductor - Primary	Overhead	Y	1/16/2021	09:48:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/16/2021	20:12:00	35.202626	-121.923174	Vegetation	N/A	Urban	<0.25	Fire Agency	Milpitas FD	100193874	Y	12,000 Conductor - Primary	Overhead	Y	1/16/2021	20:37:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/16/2021	23:20:00	37.533817	-122.044233	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	Alameda County FD	100926297	Y	0-750 Conductor - Racked	Overhead	Y	1/16/2021	00:59:00	Contact from Object	N/A	Vegetation	Conductor - Racked	N/A	
PG&E	1/19/2021	00:32:00	37.566129	-121.923174	Vegetation	N/A	Conifer Forest	<0.25	Fire Agency	Scotts Valley Fire	100179316, 10156	Y	21,000 Conductor - Primary	Overhead	Y	1/19/2021	00:20:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/19/2021	00:02:00	37.21017025	-122.067921	Vegetation	N/A	Conifer Forest	<0.25	Fire Agency	Fremont FD	100094100, 10053	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	01:28:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/19/2021	04:21:00	37.71814	-122.09112	Vegetation	N/A	Urban	Structure-only	Fire Agency	Alameda County	10090184, 10090	Y	0-750 Conductor - Open 1	Overhead	Y	1/19/2021	04:12:00	Contact from Object	N/A	Vegetation	Conductor - Open W/Weather	High Winds	
PG&E	1/19/2021	04:56:00	37.593761	-122.044488	Vegetation	N/A	Conifer Forest	<0.25	Fire Agency	Scotts Valley Fire	100128104	N	21,000 Conductor - Primary	Overhead	Y	1/19/2021	04:40:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/19/2021	07:17:00	37.530872	-121.975231	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	Fremont FD	100964281	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	09:49:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/18/2021	20:25:00	38.788123	-122.82093	Vegetation	N/A	Hardwood Forest	0.26x9.99	Cal Fire	N/A	44298401	N	115,000 Conductor - Transit	Overhead	Y	1/18/2021	21:35:00	Contact from Object	N/A	Vegetation	Conductor - Transit	High Winds	
PG&E	1/19/2021	09:18:00	37.019723	-122.0250281	Vegetation	N/A	Conifer Forest	0.26x9.99	Fire Agency	Scotts Valley Fire	100178431	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	09:29:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/19/2021	10:14:00	38.688791	-122.82093	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	San Mateo Fire	100307911	Y	0-750 Conductor - Open 1	Overhead	Y	1/19/2021	11:12:00	Contact from Object	N/A	Vegetation	Conductor - Open W/Weather	N/A	
PG&E	1/19/2021	10:46:00	38.8580233	-120.838567	Vegetation	N/A	Herbaceous	0.26x9.99	Cal Fire	Cal Fire, Garden Valley	100110622, 10011	Y	21,000 Conductor - Primary	Overhead	Y	1/19/2021	10:11:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/19/2021	12:18:00	36.979752	-121.811114	Vegetation	N/A	Herbaceous	10.99	Cal Fire	N/A	100178681, 10182	N	21,000 Conductor - Primary	Overhead	Y	1/19/2021	07:43:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/19/2021	07:42:00	37.02093	-121.932001	Vegetation	N/A	Conifer Forest	0.26x9.99	Cal Fire	N/A	100168271, 10179	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	05:37:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/20/2021	12:14:00	37.19582	-122.13051	Vegetation	N/A	Conifer Forest	10.99	Cal Fire	N/A	101672992, 10180	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	06:52:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/19/2021	10:10:00	38.412247	-120.1379	Vegetation	N/A	Conifer Forest	<0.25	Utility - PG&E	N/A	103135466, 10313	Y	17,000 Conductor - Primary	Overhead	Y	1/19/2021	01:05:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/22/2021	10:15:00	37.494448	-121.871653	Vegetation	N/A	Hardwood Woodland	<0.25	Fire Agency	Mariposa Fire	101078986	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	02:47:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/23/2021	10:47:00	37.30541	-122.00974	Vegetation	N/A	Urban	<3 meters of linear travel	Unknown	N/A	100523347	Y	0-750 Conductor - Open 1	Overhead	Y	1/23/2021	16:35:00	Contact from Object	N/A	Vegetation	Conductor - Open W/Weather	High Winds	
PG&E	1/26/2021	14:22:00	41.08315663	-124.1051807	Vegetation	N/A	Conifer Forest	<3 meters of linear travel	Cal Fire	N/A	100976039	Y	12,000 Conductor - Primary	Overhead	Y	1/26/2021	15:40:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	1/26/2021	18:32:00	37.4778237	-121.925474	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	Fremont FD	100084539	Y	12,000 Conductor - Open 1	Overhead	Y	1/26/2021	18:57:00	Contact from Object	N/A	Vegetation	Conductor - Open W/Weather	N/A	
PG&E	1/27/2021	04:43:00	40.45891518	-122.438949	Vegetation	N/A	Hardwood Woodland	<3 meters of linear travel	Cal Fire	Self Extinguished/Cal Fire	101472961	Y	12,000 Conductor - Primary	Overhead	Y	1/27/2021	03:29:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/30/2021	08:04:00	38.144919	-122.26433	Building	N/A	Urban	<3 meters of linear travel	Fire Agency	Vallejo FD	102727651	Y	0-750 Service Drop	Overhead	Y	1/30/2021	07:57:00	Contact from Object	N/A	Vegetation	Service Drop	N/A	
PG&E	2/1/2021	16:12:00	38.144919	-122.26433	Vegetation	N/A	Urban	<0.25	Fire Agency	Kern County	100013002	Y	12,000 Conductor - Primary	Overhead	Y	1/30/2021	16:12:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	2/7/2021	19:18:00	35.458404	-119.109157	Vegetation	N/A	Urban	<0.25	Unknown	N/A	104014982	Y	12,000 Conductor - Primary	Overhead	Y	2/7/2021	19:08:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	2/21/2021	12:03:00	38.25396411	-122.024697	Vegetation	N/A	Urban	<0.25	Self Extinguished	N/A	101667751	Y	12,000 Conductor - Primary	Overhead	Y	2/23/2021	11:52:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	2/21/2021	14:21:00	35.12578004	-118.807479	Other	Balloon	Agriculture	<0.25	Fire Agency	Kern County Fire Dept	100201392	N	12,000 Conductor - Primary	Overhead	Y	2/23/2021	13:44:00	Contact from Object	N/A	Balloon	Conductor - Primary	N/A	
PG&E	2/21/2021	15:40:00	38.688791	-122.82093	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	N/A	100094281	Y	12,000 Conductor - Primary	Overhead	Y	2/23/2021	13:11:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	2/24/2021	10:09:00	35.38409	-118.923173	Other	Debris	Urban	<0.25	Fire Agency	Kern County Fire	100201392	Y	12,000 Lightening Arrestor	Overhead	Y	2/24/2021	09:15:00	Contact from Object	N/A	Vegetation	Lightening Arrestor	N/A	
PG&E	2/24/2021	21:44:00	36.9914043	-120.787399	Vegetation	N/A	Conifer Forest	<3 meters of linear travel	Cal Fire	N/A	100169041	Y	21,000 Conductor - Primary	Overhead	Y	2/24/2021	21:06:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	2/26/2021	16:42:00	37.92659	-121.83624	Vegetation	N/A	Herbaceous	0.26x9.99	Cal Fire	N/A	100169041	Y	12,000 Conductor - Primary	Overhead	Y	2/26/2021	16:42:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	3/7/2021	13:19:00	35.545898	-118.96347	Vegetation	N/A	Herbaceous	0.26x9.99	Fire Agency	Kern County Fire	110527045	N	21,000 Conductor - Primary	Overhead	Y	3/1/2021	16:57:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/19/2021	11:06:00	38.631307	-120.528612	Vegetation	N/A	Herbaceous	0.26x9.99	Cal Fire	N/A	15366202	Y	21,000 Conductor - Primary	Overhead	Y	1/19/2021	10:35:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	1/19/2021	06:50:00	37.92659	-121.83624	Vegetation	N/A	Conifer Forest	<0.25	Fire Agency	Campa	100102993	Y	12,000 Conductor - Primary	Overhead	Y	1/19/2021	06:50:00	Contact from Object	N/A	Vegetation	Conductor - Primary	High Winds	
PG&E	3/1/2021	17:08:00	36.880026	-119.186561	Vegetation	N/A	Herbaceous	<3 meters of linear travel	Self Extinguished	N/A	100689498	N	12,000 Conductor - Primary	Overhead	Y	3/1/2021	17:06:00	Contact from Object	N/A	Other	Conductor - Primary	Human Error	Third party gunshot damaged PG&E facilities.
PG&E	1/19/2021	13:30:00	37.34561575	-118.649791	Vegetation	N/A	Hardwood Woodland	<3 meters of linear travel	Fire Agency	Albion Little River Fire	100363935, 10220	N	12,000 Conductor - Primary	Overhead	Y	3/2/2021	12:29:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	3/25/2021	13:00:00	39.228205	-123.742883	Vegetation	N/A	Conifer Forest	<3 meters of linear travel	Fire Agency	Albion Little River Fire	100363935, 10220	N	12,000 Conductor - Primary	Overhead	Y	3/25/2021	12:54:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	3/28/2021	13:58:00	36.9107483	-121.798737	Vegetation	N/A	Agriculture	<0.25	Cal Fire	N/A	101699656, 10169	Y	21,000 Conductor - Primary	Overhead	Y	3/28/2021	13:57:00	Contact from Object	N/A	Other	Conductor - Primary	Human Error	Third party aircraft damaged PG&E facilities.
PG&E	3/29/2021	10:49:00	37.741437	-121.421932	Vegetation	N/A	Urban	<0.25	Fire Agency	Tracy Fire	100122909	N	12,000 Conductor - Primary	Overhead	Y	3/29/2021	11:21:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	3/30/2021	15:38:00	39.15072102	-122.627019	Vegetation	N/A	Urban	<0.25	Fire Agency	Yuba City Fire	1001339037	Y	0-750 Conductor - Open 1	Overhead	Y	3/30/2021	15:36:00	Contact from Object	N/A	Vegetation	Conductor - Open W/Weather	N/A	
PG&E	3/30/2021	16:12:00	38.144919	-122.26433	Vegetation	N/A	Urban	<0.25	Self Extinguished	N/A	101582071	Y	12,000 Conductor - Primary	Overhead	Y	3/30/2021	16:44:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	4/7/2021	15:38:00	35.75485	-119.65118	Vegetation	N/A	Agriculture	<0.25	Customer	N/A	100167525	N	21,000 Transformer	Overhead	Y	4/7/2021	15:38:00	Contact from Object	N/A	Vegetation	Transformer	N/A	

Utility Name	Fire Start				Location				Fire				Utility Facility				Outage				Field Observations				Notes
	Date	Time	Latitude	Longitude	Material at Origin	Material at Origin - Comments	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Location	Other Companies	Voltage	Equipment Involved With Problem	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment Facility Failure	Contact From Object	Facility Contacted	Contributing Factor		
PG&E	6/7/2021	14:30	37.463486	-122.300549	N/A	Shrub	<0.25	Cal Fire	N/A	100279034	N	4,000 Conductor - Primary	Overhead	Y	6/7/2021	14:30	Contact From Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds				
PG&E	6/8/2021	18:20	36.9483097	-121.8180011	Vegetation	N/A	Agriculture	<0.25	Cal Fire	N/A	101693981	Y	21,000 Conductor - Primary	Overhead	Y	6/8/2021	18:20	Contact From Object	N/A	Vegetation	Fuse	N/A			
PG&E	6/9/2021	15:04	38.4644833	-121.5568897	Other	Balloon	0.26-9.99	Self Extinguished	N/A	101580976	N	21,000 Conductor - Primary	Overhead	Y	6/9/2021	16:25:00	Contact From Object	N/A	Balloon	Conductor - Primary	N/A				
PG&E	6/9/2021	15:40	38.4644833	-121.5568897	Vegetation	N/A	Herbaceous	<0.25	Fire Agency	Greenfield FD	101797446	Y	21,000 Conductor - Primary	Overhead	Y	6/9/2021	15:30:00	Contact From Object	N/A	Balloon	Conductor - Primary	N/A			
PG&E	6/9/2021	18:47	35.42229071	-118.0247455	Vegetation	N/A	Urban	<0.25	Fire Agency	Kern County FD	100144790	Y	0.750 Service Drop	Overhead	Y	6/9/2021	18:46:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/10/2021	09:58	38.71426	-120.33292	Vegetation	N/A	Hardwood Woodland	<3 meters of linear trave	Self Extinguished	N/A	101409291	Y	0.750 Service Drop	Overhead	Y	6/10/2021	09:55:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/10/2021	16:30	38.71426	-120.33292	Vegetation	N/A	Herbaceous	<0.25	Fire Agency	Merced Rio FD	101409291	Y	0.750 Service Drop	Overhead	Y	6/10/2021	16:30:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/11/2021	19:40	40.618352	-124.1818308	Vegetation	N/A	Herbaceous	<0.25	Cal Fire	N/A	100120056	Y	21,000 Conductor - Primary	Overhead	Y	6/11/2021	19:36:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/11/2021	17:21	37.0598917	-121.9592677	Other	Balloon	Urban	<0.25	Cal Fire	N/A	100613033	Y	12,000 Conductor - Primary	Overhead	Y	6/11/2021	17:20:00	Contact From Object	N/A	Balloon	Conductor - Primary	N/A			
PG&E	6/14/2021	12:40	37.0598917	-121.9592677	Other	Balloon	Herbaceous	10-99	Fire Agency	San Jose FD	100613033	Y	11,000 Conductor - Primary	Overhead	Y	6/14/2021	12:31:15	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/14/2021	12:40	37.056715	-122.44888	Other	Balloon	Urban	0.26-9.99	Fire Agency	Hayward FD	100918111, 10093	Y	12,000 Splice/Clamp/Conr	Overhead	Y	6/14/2021	12:44:00	Contact From Object	N/A	Balloon	Splice/Clamp/Conc/N/A				
PG&E	6/16/2021	16:35	39.04007048	-120.5466142	Vegetation	N/A	Agriculture	<0.25	Utility - PG&E	N/A	102821103	Y	21,000 Conductor - Primary	Overhead	Y	6/16/2021	16:32:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/16/2021	15:41	38.798485	-121.8762046	Vegetation	N/A	Urban	0.26-9.99	Fire Agency	Primo FD	104016291	Y	0.750 Conductor - Open 1	Overhead	Y	6/16/2021	15:22:00	Contact From Object	N/A	Vegetation	Conductor - Open W/N/A				
PG&E	6/15/2021	12:15	39.3055217	-121.951783	Vegetation	N/A	Agriculture	<0.25	Fire Agency	Marysville FD	101287967	Y	0.750 Conductor - Open 1	Overhead	Y	6/15/2021	12:14:00	Contact From Object	N/A	Vegetation	Conductor - Open W/N/A				
PG&E	6/16/2021	16:35	39.04007048	-120.5466142	Vegetation	N/A	Hardwood Woodland	0.26-9.99	Cal Fire	N/A	103571927	Y	12,000 Conductor - Primary	Overhead	Y	6/16/2021	16:32:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/16/2021	18:38	38.958131	-121.7370517	Vegetation	N/A	Hardwood Woodland	<0.25	Cal Fire	N/A	103941848	N	12,000 Transformer	Overhead	Y	6/16/2021	18:37:00	Contact From Object	N/A	Animal	Transformer	N/A			
PG&E	6/17/2021	01:17	38.9523883	-120.6523883	Vegetation	N/A	Hardwood Woodland	<0.25	Cal Fire	N/A	101382666	Y	12,000 Conductor - Primary	Overhead	Y	6/17/2021	01:07:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/16/2021	11:06	38.55172092	-122.6679311	Vegetation	N/A	Conifer Forest	0.26-9.99	Cal Fire	N/A	102026681	Y	12,000 Conductor - Primary	Overhead	Y	6/16/2021	11:15:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/17/2021	10:25	38.5405513	-121.780055	Vegetation	N/A	Agriculture	<0.25	Fire Agency	Watsonville FD	101791881	Y	21,000 Conductor - Primary	Overhead	Y	6/17/2021	10:22:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/18/2021	04:33	39.354025	-121.045372	Vegetation	N/A	Conifer Forest	0.26-9.99	Cal Fire	N/A	100359270	Y	12,000 Conductor - Primary	Overhead	Y	6/18/2021	04:08:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/18/2021	11:00	35.29313	-118.3144	Vegetation	N/A	Urban	<0.25	Fire Agency	Fire Department	100213372	Y	12,000 Recloser	Overhead	Y	6/18/2021	10:58:00	Contact From Object	N/A	Vehicle	Recloser	N/A			
PG&E	6/20/2021	06:28	38.45496	-120.57174	Vegetation	N/A	Hardwood Forest	0.26-9.99	Cal Fire	N/A	101260473, 10126	Y	12,000 Conductor - Primary	Overhead	Y	6/20/2021	06:19:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/20/2021	19:46	39.390799	-121.834668	Vegetation	Conductor	Barren/Other	<0.25	Fire Agency	Grillits FD	101790901	Y	12,000 Conductor - Primary	Overhead	Y	6/20/2021	19:33:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/19/2021	15:34	38.397938	-122.970472	Vegetation	Conductor	Conifer Forest	<0.25	Cal Fire	N/A	101973887	Y	12,000 Conductor - Primary	Overhead	Y	6/19/2021	15:33:00	Contact From Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds			
PG&E	6/21/2021	06:00	38.9790677	-121.5407761	Vegetation	Conductor	Agriculture	<3 meters of linear trave	Other party	103866115	Y	21,000 Conductor - Primary	Overhead	Y	6/21/2021	05:21:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A				
PG&E	6/21/2021	05:25	38.4121883	-121.516817	Vegetation	Conductor	Herbaceous	<0.25	Fire Agency	Mercedburg FD	101790901	Y	0.750 Service Drop	Overhead	Y	6/21/2021	05:21:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/22/2021	07:00	38.6481695	-121.074284	Vegetation	Conductor	Herbaceous	<0.25	Cal Fire	N/A	103035315	N	21,000 Recloser	Overhead	Y	6/22/2021	06:57:00	Contact From Object	N/A	Animal	Recloser	N/A			
PG&E	6/22/2021	13:11	38.6788	-121.044433	Vegetation	Conductor	Urban	0.26-9.99	Cal Fire	N/A	101380400, 10389	Y	21,000 Pole	Overhead	Y	6/22/2021	13:27:00	Contact From Object	N/A	Vegetation	Pole	N/A			
PG&E	6/22/2021	18:09	38.6788	-121.044433	Vegetation	Conductor	Urban	0.26-9.99	Fire Agency	San Jose FD, Customer	100413482	Y	0.750 Service Drop	Overhead	Y	6/22/2021	18:09:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/22/2021	21:54	38.6395	-121.425091	Vegetation	N/A	Herbaceous	0.26-9.99	Fire Agency	Hollister FD	101752964	Y	0.750 Service Drop	Overhead	Y	6/22/2021	21:53:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/24/2021	13:04	38.398153	-122.544836	Vegetation	N/A	Herbaceous	<0.25	Customer	N/A	101979991, 10303	Y	0.750 Conductor - Insulat	Overhead	Y	6/24/2021	12:57:00	Contact From Object	N/A	Vegetation	Conductor - Insulate	N/A			
PG&E	6/25/2021	03:30	38.398153	-122.544836	Vegetation	N/A	Urban	0.26-9.99	Customer	N/A	103904956	Y	2,260 Pole	Overhead	Y	6/25/2021	03:30:00	Contact From Object	N/A	Vegetation	Conductor - Insulate	N/A			
PG&E	6/26/2021	14:30	40.674003	-122.316921	Vegetation	Conductor	Hardwood Woodland	<0.25	Cal Fire	N/A	101780201, 101315	Y	0.750 Service Drop	Overhead	Y	6/26/2021	14:27:00	Contact From Object	N/A	Vegetation	Service Drop	N/A			
PG&E	6/26/2021	15:43	38.8926899	-121.6218963	Vegetation	Conductor	Herbaceous	<0.25	Cal Fire	N/A	102187523	Y	12,000 Conductor - Primary	Overhead	Y	6/26/2021	15:50:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/26/2021	16:45	38.15310898	-121.926699	Vegetation	Conductor	Agriculture	0.26-9.99	Fire Agency	N/A	100115097	Y	12,000 Pole	Overhead	Y	6/26/2021	16:45:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	6/29/2021	04:10	35.4791538	-118.0827879	Vegetation	Pole	Herbaceous	<0.25	Fire Agency	Kern County FD	100115097	Y	12,000 Pole	Overhead	Y	6/29/2021	04:02:00	Contact From Object	N/A	Vehicle	Pole	N/A			
PG&E	6/29/2021	11:33	38.2721621	-122.092478	Vegetation	Conductor	Urban	0.26-9.99	Fire Agency	Salano County FD	101562904	Y	12,000 Guy/Span Wire	Overhead	N/A	N/A	Contact From Object	N/A	Vehicle	Guy/Span Wire	N/A				
PG&E	6/29/2021	15:17	38.2721621	-122.092478	Vegetation	Conductor	Urban	0.26-9.99	Fire Agency	N/A	100115097	Y	12,000 Conductor - Primary	Overhead	Y	6/29/2021	15:17:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	7/1/2021	17:30	35.2670883	-118.1062573	Other	Pole	Agriculture	<3 meters of linear trave	Fire Agency	Kern County FD	100233836	Y	12,000 Conductor - Primary	Overhead	Y	7/1/2021	17:27:00	Contact From Object	N/A	Vehicle	Conductor - Wire	N/A			
PG&E	7/2/2021	12:30	38.8833042	-120.6597783	Vegetation	None	Conifer Forest	<0.25	Cal Fire	N/A	101412333	Y	21,000 Fuse	Overhead	Y	7/2/2021	12:28:00	Contact From Object	N/A	Vehicle	Fuse	N/A			
PG&E	7/2/2021	16:48	38.8833042	-120.6597783	Vegetation	Conductor	Agriculture	<0.25	Cal Fire	N/A	101412333	Y	21,000 Fuse	Overhead	Y	7/2/2021	16:48:00	Contact From Object	N/A	Vehicle	Fuse	N/A			
PG&E	7/3/2021	14:10	38.2351473	-121.5829677	Vegetation	Conductor	Conifer Forest	<0.25	Fire Agency	Sacramento Fire Department	101185773	Y	21,000 Transformer	Overhead	Y	7/3/2021	15:52:00	Contact From Object	N/A	Animal	Transformer	N/A			
PG&E	7/3/2021	18:51	38.454043	-122.684917	Vegetation	N/A	Hardwood Forest	<3 meters of linear trave	Unknown	N/A	103617529	Y	0.750 Service Drop	Overhead	Y	7/3/2021	18:51:00	Contact From Object	N/A	Animal	Service Drop	N/A			
PG&E	7/4/2021	08:20	38.1204948	-121.8820679	Vegetation	Conductor	Barren/Other	0.26-9.99	Cal Fire	N/A	101812334	Y	12,000 Conductor - Primary	Overhead	Y	7/4/2021	08:20:00	Contact From Object	N/A	Vegetation	Conductor - Primary	N/A			
PG&E	7/4/2021	19:06	35.0037050	-118.940146	Other	Bird	Agriculture	0.26-9.99	Fire Agency	Kern County FD	100134622	Y	12,000 Fuse	Overhead	Y	7/4/2021	19:05:00	Contact From Object	N/A	Animal	Fuse	N/A			
PG&E	7/7/2021	15:25	40.6738147	-122.2319167	Vegetation	N/A	Agriculture	<3 meters of linear trave	Cal Fire	Cal Fire, Palo Cedro FD	104033977	N	0.750 Service Drop	Overhead	N/A	N/A	Contact From Object	N/A	Vegetation	Splice/Clamp/Conc/N/A					
PG&E	7/8/2021	16:41	38.9108307	-121.146684	Vegetation	N/A	Urban	0.26-9.99	Cal Fire	N/A	100016986	Y	12,000 Conductor - Open 1	Overhead	Y	7/8/2021	16:39:00	Contact From Object	N/A	Vegetation	Conductor - Open W/N/A				
PG&E	7/9/2021	09:18	38.4121883	-121.516817	Vegetation	Conductor	Herbaceous																		

Utility Name	Fire Start		Location				Fire			Utility Facility				Outage			Field Observations				Notes		
	Date	Time	Latitude	Longitude	Material at Origin	Material at Origin - Comments	Land Use at Origin	Size	Suppressed By	Suppressing Agency	Facility Identification	Other Companies	Voltage	Equipment Involved With Issues	Type	Was There an Outage	Date	Time	Suspected Initiating Event	Equipment / Facility Failure		Contact From Object	Facility Contacted
PG&E	10/11/2021	13:48:00	35.554218	-121.116104	Vegetation	N/A	Hardwood Woodland	0.26-9.99	Cal Fire	N/A	182711102, 101085	Y	12,000 Conductor - Primary	Overhead	Y	10/11/2021	13:40:00	Contact from Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds	
PG&E	10/11/2021	15:19:00	40.06988	-122.10006	Vegetation	N/A	Urban	<0.25	Cal Fire	N/A	103481101, 101155	Y	12,000 Conductor - Primary	Overhead	Y	10/11/2021	15:13:00	Contact from Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds	
PG&E	10/11/2021	13:38:00	37.78364477	-120.7661139	Vegetation	N/A	Urban	<0.25	Cal Fire	Cal Fire, Modesto FD	163711701, 102134	Y	17,000 Conductor - Primary	Overhead	Y	10/11/2021	15:22:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	10/11/2021	14:53:00	36.842981	-121.530068	Vegetation	N/A	Hardwood Woodland	0.26-9.99	Fire Agency	Fire Dept	103839465	N	21,000 Conductor - Primary	Overhead	Y	10/11/2021	14:58:00	Contact from Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds	
PG&E	10/11/2021	20:37:00	37.2571383	-120.474085	Vegetation	N/A	Herbaceous	<0.25	Fire Agency	Merced FD	101153781	N	12,000 Conductor - Primary	Overhead	Y	10/11/2021	13:19:00	Contact from Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds	
PG&E	10/11/2021	04:36:00	37.897281	-122.535389	Vegetation	N/A	Urban	<0.25	Fire Agency	Mil Valley FD	042031125, 10223	Y	12,000 Conductor - Primary	Overhead	Y	10/11/2021	04:19:00	Contact from Object	N/A	Vegetation	Conductor - Primary	Weather - High Winds	
PG&E	10/14/2021	13:37:00	36.583683	-121.93141	Other	N/A	Conifer Forest	<0.25	Cal Fire	N/A	101730465	Y	21,000 Pole	Overhead	Y	10/14/2021	13:33:00	Contact from Object	N/A	Vehicle	N/A	N/A	
PG&E	10/11/2021	14:24:00	36.69876	-120.47584	Vegetation	N/A	Barren/Other	0.26-9.99	Cal Fire	Cal Fire / Mendota City Fire	252311104, 101110	Y	0-750 Service Drop	Overhead	Y	10/11/2021	14:20:00	Contact from Object	N/A	Vegetation	Service Drop	Weather - High Winds	
PG&E	10/17/2021	10:27:00	39.522217	-121.867856	Vegetation	N/A	Hardwood Woodland	0.26-9.99	Cal Fire	N/A	102111101, 103115	N	12,000 Conductor - Primary	Overhead	Y	10/17/2021	10:24:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	10/25/2021	04:39:00	36.832365	-119.894324	Vegetation	N/A	Urban	<0.25	Fire Agency	Fresno County FD	10081990	Y	21,000 Gas/Spine Wire	Overhead	Y	10/25/2021	09:37:00	Contact from Object	N/A	Vegetation	Gas/Spine Wire	Weather - High Winds	
PG&E	11/5/2021	09:08:00	36.729226	-120.0575	Vegetation	N/A	Urban	<0.25	Fire Agency	Kerman FD	252711103, 100063	N	12,000 Conductor - Primary	Overhead	Y	11/5/2021	08:22:00	Contact from Object	N/A	Balloon	Conductor - Primary	N/A	
PG&E	11/4/2021	11:19:00	35.96623763	-121.0912167	Vegetation	N/A	Herbaceous	<0.25	Cal Fire	N/A	101704007	N	12,000 Conductor - Primary	Overhead	Y	11/8/2021	11:13:00	Contact from Object	N/A	Animal	Conductor - Primary	N/A	
PG&E	11/24/2021	07:32:00	38.43394268	-121.943375	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	Duane FD	101600555	Y	12,000 Conductor - Primary	Overhead	Y	11/24/2021	07:31:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	12/4/2021	10:28:00	36.96489055	-121.8920833	Other	Conductor	Urban	Structure-only	Unknown	N/A	101798284	Y	0-750 Service Drop	Overhead	N	N/A	N/A	Contact from Object	N/A	Vegetation	Service Drop	N/A	
PG&E	12/5/2021	07:57:00	36.0144871	-120.1207474	Other	Nest	Herbaceous	<3 meters of linear travel	Fire Agency	Self Extinguished/Kings	C103118674	N	12,000 Insulator	Overhead	Y	12/5/2021	07:35:00	Contact from Object	N/A	Nest	Insulator	N/A	
PG&E	12/14/2021	08:17:00	36.1950054	-120.2745816	Other	Pole	Herbaceous	<0.25	Cal Fire	Fresno County Cal Fire	100718192	N	12,000 Pole	Overhead	Y	12/14/2021	08:19:00	Contact from Object	N/A	Nest	N/A	N/A	
PG&E	10/13/2021	14:59:00	37.46035148	-122.1770504	Vegetation	N/A	Urban	<3 meters of linear travel	Fire Agency	Menlo Park Fire	103954728	Y	0-750 Riser	Overhead	Y	10/13/2021	14:58:00	Contact from Object	N/A	Vegetation	Riser	N/A	
PG&E	12/24/2021	03:20:00	37.1483267	-121.9932917	Vegetation	N/A	Conifer Forest	<3 meters of linear travel	Utility - PG&E	N/A	100554483	N	12,000 Conductor - Primary	Overhead	Y	12/24/2021	03:17:00	Contact from Object	N/A	Vegetation	Conductor - Primary	N/A	
PG&E	6/28/2021	07:18:00	38.9996738	-122.7527889	Vegetation	N/A	Unknown	<0.25	Cal Fire	N/A	102156370	Y	0-750 Conductor - Open I	Overhead	Y	6/28/2021	07:18:00	Contact from Object	N/A	Vegetation	Conductor - Open WNA		

Idaho Power/1308
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

SCE Fire Incident Report Data Compiled from 2014-2021

February 21, 2023

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start				Location Info				Fire Specifics			Utility Facility			Outage Info					Field Observations			
3	Column1	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes
118	SCE	8/2/15	14:00	34.0326300	-117.1610770	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Redlands Fire Department	Pole 1375879E	Phone & Cable	12kV	Conductor	Overhead	Yes	8/2/15	14:00	Equipment/Facility Failure	Other				
119	SCE	8/12/15	12:00	35.1772470	-118.3373190	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		Pole 2135290E		120 V	Conductor	Subsurface									Third Party dug into marked SCE secondary cables.
120	SCE	8/21/15	23:10	36.2355530	-119.3528250	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Tulare Fire Department	4335336E - J STREET S/O CARTMILL AVE		12kV	Other	Overhead	Yes	8/22/15	2:19	Other					Outside Force
121	SCE	8/24/15	22:00	33.8839290	-118.2115660	Building	Urban	Less Than 25 Acres	Fire Agency	Compton Fire Department	2238623E - MAYO AVE PA	Phone & Cable	12kV	Conductor	Overhead	Yes	8/24/15	21:41	Unknown					Unknown
122	SCE	8/27/15	6:21	34.0844690	-117.9810950	Vegetation	Urban	Less Than 25 Acres	Fire Agency	West Covina Fire Department	Pole 534440E		12kV	Conductor	Overhead	Yes	8/27/15	6:21	Contact From Object	Vegetation	Electric Facility	Unknown		Unknown
123	SCE	8/27/15	10:20	34.2538130	-118.8660450	Other	Urban	Less Than 25 Acres	Fire Agency	Ventura County Fire	Morganstein 16kV out of Moorpark Sub		16kV	Conductor	Overhead	Yes	8/27/15	10:20	Contact From Object	Animal	Electric Facility	None		None
124	SCE	9/3/15	17:00	36.8936000	-119.4571000	Vegetation	Rural	10 - 99 Acres	Fire Agency	Cal Fire	East of Watts Valley Rd and Pittman Hill Rd. East		220kV	Conductor	Overhead	Yes	9/3/15	16:15	Contact From Object	Balloons	Electric Facility	None		None
125	SCE	9/7/15	17:58	35.8554700	-119.0944400	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		Welch 12kV at Vestal Sub		12kV	Conductor	Overhead	Yes	9/7/15	17:58	Contact From Object	Balloons	Electric Facility	None		None
126	SCE	9/9/15	13:22	34.0419410	-118.7724050	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Pole 899836E	Phone & Cable	12kV	Other	Overhead	Yes	9/9/15	13:22	Equipment/Facility Failure	Splice/Clamp/Connector				Unknown
127	SCE	9/9/15	13:59	33.5499250	-117.2125150	Other	Urban	Less Than 25 Acres	Fire Agency	Murrieta Fire Department	Tackle Line out of Stadler Sub		12kV	Conductor	Overhead	Yes	9/9/15	13:59	Other					Weather
128	SCE	9/11/15	3:10	34.0875990	-117.4330630	Other	Urban	Less Than 25 Acres	Fire Agency	Fontana Fire Department	Pole 1554125E beyond RC	Phone & Cable	12kV	Lightning Arrestor	Overhead	Yes	9/11/15	3:10	Equipment/Facility Failure					Lightning Arrestor
129	SCE	9/20/15	19:07	34.0243510	-118.1178780	Other	Urban	Less Than 25 Acres	Unknown		1270852E- MERLE DR. SA	Phone & Cable	16kV	Transformer	Overhead	Yes	9/20/15	19:07	Equipment/Facility Failure	Transformer				Unknown
130	SCE	9/20/15	16:31	34.0632990	-118.6479180	Other	Urban	26 - 9.99 Acres	Fire Agency	Los Angeles County Fire	Pole 1576711E		12kV	Conductor	Overhead	Yes	9/20/15	16:31	Contact From Object					None
131	SCE	9/26/15	13:48	34.0712940	-118.9335680	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Pole 770514E		16kV	Conductor	Overhead	Yes	9/26/15	13:48	Contact From Object	Vegetation	Electric Facility	None		Human Error
132	SCE	10/9/15	14:00	33.5752390	-117.1700440	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Riverside Fire Department	BEHIND ADDRESS 28151 CELIA RD / PROPERT		12kV	Other	Overhead	No			Equipment/Facility Failure	Insulator				Unknown
133	SCE	10/9/15	11:39	33.9333110	-117.8530940	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Acapulco 12kV out of Brea Sub		12kV	Conductor	Overhead	Yes	10/9/15	11:39	Contact From Object					Other
134	SCE	10/11/15	10:02	33.9440460	-116.4750350	Other	Urban	Less Than 25 Acres	Fire Agency	Cal Fire	Cafe 12kV Line at Coffee Sub. Pole in Desert Hot S		12kV	Conductor	Overhead	Yes	10/11/15	10:02	Contact From Object	Vehicle	Pole			None
135	SCE	10/12/15	13:02	33.6318500	-117.3378472	Other	Urban	Less Than 25 Acres	Fire Agency	Riverside County Fire	4844065E- 18193 BRIGHTMAN AVE. LAKE ELSIN		12kV	Transformer	Overhead	Yes	10/12/15	13:02	Equipment/Facility Failure	Transformer				Unknown
136	SCE	10/27/15	19:47	33.5350600	-117.7687930	Other	Urban	Less Than 25 Acres	Unknown		4139544E- 818 BLUEBIRD	Phone & Cable	33kV	Conductor	Overhead	Yes	10/27/15	19:47	Equipment/Facility Failure	Splice/Clamp/Connector				Unknown
137	SCE	10/30/15	12:45	34.0538200	-117.2678850	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Loma Linda Fire Department	pole 160900	Phone & Cable	12kV	Conductor	Overhead	No			Contact From Object	Vegetation	Electric Facility	Weather		Unknown
138	SCE	10/30/15	22:23	33.7902580	-116.9605090	Other	Urban	Less Than 25 Acres	Unknown		Pole 1084963E	Phone & Cable	12kV	Other	Overhead	Yes	10/30/15	22:23	Unknown					Unknown
139	SCE	11/2/15	18:07	34.2969760	-118.3763390	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Lopez 16kV out of San Fernando Sub		16kV	Conductor	Overhead	Yes	11/2/15	18:07	Contact From Object	Balloons	Electric Facility	None		Unknown
140	SCE	11/7/15	2:24	34.1708026	-118.8884867	Vegetation	Urban	10 - 99 Acres	Fire Agency	Ventura County Fire	Pole No. 4505352E		16kV	Switch	Overhead	Yes	11/7/15	2:24	Unknown					Unknown
141	SCE	11/13/15	17:04	34.2191980	-118.5282820	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura County Fire	Crosson 16kV at Camarillo Sub		16kV	Conductor	Overhead	Yes	11/13/15	17:04	Contact From Object	Animal	Electric Facility	None		Unknown
142	SCE	11/13/15	7:31	33.6384980	-117.7600710	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire	Santiago-Borrego 66 kV		66kV	Conductor	Overhead	Yes	11/13/15	7:31	Contact From Object	Animal	Electric Facility	None		Unknown
143	SCE	11/18/15	6:31	34.1283510	-117.6895780	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Upland Fire Department	Padua-Layfair 66kV		66kV	Conductor	Overhead	Yes	11/18/15	6:31	Contact From Object	Other	Electric Facility	Unknown		Unknown
144	SCE	11/20/15	20:07	34.0155350	-117.9534360	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	1860773E- 15930 E VALLEY BLVD. city of industry		12kV	Conductor	Overhead	Yes	11/20/15	20:07	Unknown					Unknown
145	SCE	11/20/15	20:07	34.0155350	-117.9534360	Other	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Graziade 12kV out of Walnut Sub		12kV	Conductor	Overhead	Yes	11/20/15	20:07	Contact From Object	Animal	Electric Facility	None		Unknown
146	SCE	11/24/15	1:17	33.7443170	-118.4070210	Other	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	Ambersky 16kV at Marymount Sub. Pole in Rancho Palos Verdes		16kV	Conductor	Overhead	Yes	11/24/15	1:17	Equipment/Facility Failure	Conductor				Unknown
147	SCE	12/8/15	19:08	34.2188030	-119.2492490	Vegetation	Rural	Less Than 25 Acres	Customer		Pole 1748635E	Phone & Cable	16kV	Transformer	Overhead	No			Contamination					Unknown
148	SCE	12/11/15	12:21	34.0380730	-118.7701600	Other	Urban	26 - 9.99 Acres	Fire Agency	Los Angeles County Fire	Cuthbert 12kV at Latigo Sub. Near Latigo Canyon		12kV	Conductor	Overhead	Yes	12/11/15	12:21	Wire-Wire Contact					Weather
149	SCE	1/1/16	10:13	34.0007670	-118.0812670	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-4615530E	FRONTIER COMMUNI	12 kV	Conductor	Overhead	Yes	1/1/16	10:13	Contact From Object	Balloons	Electric Facility	None		Unknown
150	SCE	1/1/16	20:51	34.0232720	-118.0528990	Other	Urban	Less Than 25 Acres	Fire Agency	LACFD	9900 block of East Garvey Ave. El Monte		16 kV	Conductor	Overhead	Yes	1/1/16	20:51	Equipment/Facility Failure	Pole				Unknown
151	SCE	1/16/16	15:20	34.4095710	-118.6815700	Vegetation	Rural	Less Than 25 Acres	Fire Agency	LACFD	OH-8481500E	FRONTIER COMMUNI	16 kV	Conductor	Overhead	Yes	1/16/16	15:20	Contact From Object	Other				Unknown
152	SCE	1/28/16	22:07	33.9642210	-118.1488130	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-820509E	FRONTIER COMMUNI	16 kV	Conductor	Overhead	Yes	1/28/16	22:07	Contact From Object	Balloons	Electric Facility	None		Unknown
153	SCE	2/3/16	17:46	34.7182510	-118.3025180	Vegetation	Rural	Less Than 25 Acres	Fire Agency	LACFD	OH-1355070E	FRONTIER COMMUNI	120/240 V	Conductor	Overhead	No			Unknown					Unknown
154	SCE	2/7/16	9:31	34.1370600	-117.5141240	Vegetation	Rural	Less Than 25 Acres	Fire Agency	SBCFD	OH-4275464E	FRONTIER COMMUNI	12 kV	Conductor	Overhead	Yes	2/7/16	9:31	Equipment/Facility Failure	Conductor				Unknown
155	SCE	2/8/16	8:22	34.1065070	-117.4402780	Vegetation	Urban	Less Than 25 Acres	Fire Agency	SBCFD	OH-1420896E	AT&T WIRELESS SER	12 kV	Conductor	Overhead	Yes	2/8/16	8:22	Equipment/Facility Failure	Conductor				Unknown
156	SCE	2/9/16	19:13	33.7790240	-118.1401670	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Long Beach Fire Department	OH-2381948E	FRONTIER COMMUNI	12 kV	Other	Overhead	Yes	2/9/16	19:13	Equipment/Facility Failure	Other				Unknown
157	SCE	2/10/16	18:56	34.2186560	-119.2539580	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County FD	OH-4423101E		16 kV	Other	Overhead	Yes	2/10/16	18:56	Equipment/Facility Failure	Other				Unknown
158	SCE	2/12/16	20:02	33.9680310	-118.0717540	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-845479E	FRONTIER COMMUNI	12 kV	Conductor	Overhead	Yes	2/12/16	20:02	Contact From Object	Vegetation	Electric Facility	Unknown		Unknown
159	SCE	2/16/16	15:18	34.2059930	-118.6432950	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura County FD	OH-4544669E	FRONTIER COMMUNI	16 kV	Conductor	Overhead	No			Contact From Object	Vegetation	Electric Facility	Unknown		Unknown
160	SCE	2/22/16	17:04	34.4491680	-119.5844980	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Montecito Fire Department	OH-1082380E	FRONTIER COMMUNI	16 kV	Conductor	Overhead	Yes	2/22/16	17:04	Equipment/Facility Failure	Conductor				Unknown
161	SCE	2/24/16	15:08	34.9470000	-118.1417210	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern County Fire Department	OH-706814E	AT&T CALIFORNIA	16 kV	Conductor	Overhead	Yes	11/13/15	7:04	Contact From Object	Animal	Electric Facility	Unknown		Unknown
162	SCE	2/27/16	0:49	33.9134180	-118.8003250	Other	Rural	Less Than 25 Acres	Fire Agency	Cal Fire	OH-1989045E		12 kV	Conductor	Overhead	Yes	2/27/16	0:49	Contact From Object	Vehicle	Pole			Unknown
163	SCE	3/11/16	7:53	33.9059430	-117.9237840	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Fullerton Fire Department	OH-740325H	TIME WARNER CABL	12 kV	Conductor	Overhead	Yes	3/11/16	7:53	Contact From Object	Vegetation	Electric Facility	Unknown		Unknown
164	SCE	3/17/16	14:53	34.0059170	-117.9663880	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-1892254E	TIME WARNER CABL	12 kV	Conductor	Overhead	Yes	3/17/16	14:53	Contact From Object	Vehicle	Pole			Unknown
165	SCE	3/23/16	11:45	34.1369140	-117.5061030	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Rancho Cucamonga Fire Department	OH-4300706E	FRONTIER COMMUNI	12 kV	Conductor</										

1	2	A			B			C			D			E			F			G			H			I			J			K			L			M			N			O			P			Q			R			S			T			U			V			W			X		
		Utility Name	Fire Start	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes																																																		
229	SCE	10/22/16	15:17	34.3812290	-118.4131810	Other	Rural	Less Than 25 Acres	Fire Agency	LACFD	RAR 0038	16kV	Conductor	Overhead	Yes	10/22/16	15:17	Contact From Object	Balloons	Electric Facility	Unknown																																																				
230	SCE	10/23/16	9:40	34.4602810	-119.2852650	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County FD	900 Rice Road Ojai	120/240V	Conductor	Overhead	No			Equipment/Facility Failure	Conductor																																																						
231	SCE	10/26/16	12:19	34.7081290	-118.5367490	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	LACFD	ELIZABETH LAKE ROAD AND KINGS CANYON R	12kV	Conductor	Overhead	Yes	10/26/16	12:19	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
232	SCE	10/28/16	10:13	34.1020580	-117.8206300	Other	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-1180540E	120/240V	Conductor	Overhead	Yes	10/28/16	10:13	Equipment/Facility Failure	Conductor																																																						
233	SCE	10/29/16	18:42	34.2149300	-119.1889710	Other	Urban	Less Than 25 Acres	Self Extinguished		340 Huntswood Way, Oxnard	16kV	Conductor	Overhead	No			Equipment/Facility Failure	Other																																																						
234	SCE	11/3/16	22:37	33.7300240	-117.9839590	Other	Urban	Less Than 25 Acres	Fire Agency	Huntington Fire Department	OH-1787899E	12kV	Conductor	Overhead	Yes	11/3/16	22:37	Contact From Object	Balloons	Electric Facility	Unknown																																																				
235	SCE	11/11/16	4:18	33.6309420	-117.9348070	Other	Urban	Structure Only	Fire Agency	Newport Fire Department	864 Production Pl. Newport Beach	12kV	Conductor	Overhead	Yes	11/16/16	4:18	Equipment/Facility Failure	Conductor																																																						
236	SCE	11/16/16	13:45	33.9168380	-118.0039950	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-1914521E	13kV	Conductor	Overhead	Yes	11/16/16	13:45	Equipment/Facility Failure	Conductor																																																						
237	SCE	11/20/16	11:15	34.1883400	-118.4742520	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		OH-1473501E	16kV	Conductor	Overhead	No			Contact From Object																																																							
238	SCE	11/22/16	15:20	36.3134220	-119.1710520	Vegetation	Rural	Less Than 25 Acres	Unknown		1970 North Anderson Road, Exeter	12kV	Conductor	Overhead	Yes	11/22/16	15:20	Contact From Object	Animal	Electric Facility	Unknown																																																				
239	SCE	12/1/16	8:54	33.8919790	-117.7031110	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Orange County Fire Authority	OH-2257796E	12kV	Conductor	Overhead	No			Contact From Object	Other	Electric Facility	Unknown																																																				
240	SCE	12/2/16	21:26	34.3812290	-118.4131810	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Orange County Fire Authority	OH-457270E	66kV	Conductor	Overhead	No			Contact From Object	Vegetation	Electric Facility	Unknown																																																				
241	SCE	12/16/16	19:31	33.8120810	-118.0238250	Building	Urban	Structure Only	Fire Agency	Orange County Fire Authority	10332 Florence Ave., Buena Park	120/240V	Conductor	Overhead	Yes	12/16/16	19:31	Equipment/Facility Failure	Conductor																																																						
242	SCE	12/19/16	8:18	34.0231980	-117.8529840	Vegetation	Urban	Less Than 25 Acres	Unknown		UG-504396	12kV	Conductor	Subsurface	Yes	12/19/16	8:18	Equipment/Facility Failure	Other																																																						
243	SCE	12/26/16	8:02	34.1675510	-116.1070320	Vegetation	Rural	Less Than 25 Acres	Utility		OH-4803462E	33kV	Conductor	Overhead	Yes	12/26/16	8:02	Contact From Object	Animal	Electric Facility	Unknown																																																				
244	SCE	12/30/16	11:42	34.1231260	-118.7229630	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	LACFD	OH-1927507E	16kV	Conductor	Overhead	Yes	12/30/16	11:42	Contact From Object	Balloons	Electric Facility	Unknown																																																				
245	SCE	11/13/17	11:05	33.7610280	-116.6947830	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-2206325E	12kV	Conductor	Overhead	Yes	11/13/17	11:05	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
246	SCE	11/44/17	1:21	34.2655510	-118.9650270	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County FD	OH-8028595E	16kV	Conductor	Overhead	Yes	11/44/17	1:21	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
247	SCE	12/8/17	18:15	33.9903980	-118.3702570	Vegetation	Urban	Less Than 25 Acres	Self Extinguished		OH-25037878E	120/240V	Conductor	Overhead	Yes	12/8/17	18:15	Equipment/Facility Failure	Conductor																																																						
248	SCE	13/11/17	2:10	33.9903980	-118.3702570	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Hesperia FD	PS 822	115kV	Conductor	Overhead	No			Equipment/Facility Failure	Other																																																						
249	SCE	2/8/17	2:20	33.8897030	-117.8527880	Other	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire Authority	OH-1838346E	66kV	Conductor	Overhead	Yes	2/8/17	2:20	Unknown																																																							
250	SCE	3/10/17	15:46	33.7871030	-117.9122940	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Garden Grove FD	OH-2095520E	12kV	Conductor	Overhead	Yes	3/10/17	15:46	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
251	SCE	3/11/17	17:22	34.1284770	-117.2622540	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		OH-4067378E	12kV	Lightning Arrestor	Overhead	Yes	3/11/17	17:22	Equipment/Facility Failure	Lightning Arrestor																																																						
252	SCE	3/13/17	13:42	33.9536060	-118.0656250	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Santa Fe Springs Fire Department	OH-4209839E	12kV	Conductor	Overhead	Yes	3/13/17	13:42	Contact From Object	Vehicle	Pole	Unknown																																																				
253	SCE	3/15/17	13:23	34.0534485	-116.9710052	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CalFire	OH-2326555E	12kV	Conductor	Overhead	Yes	3/15/17	13:23	Contact From Object	Animal	Electric Facility	Unknown																																																				
254	SCE	3/17/17	17:14	34.5759060	-118.2629170	Vegetation	Rural	Less Than 25 Acres	Fire Agency	LACFD	OH-4493863E	12kV	Conductor	Overhead	Yes	3/17/17	17:14	Contact From Object	Balloons	Electric Facility	Unknown																																																				
255	SCE	3/30/17	14:37	34.890382	-117.0150329	Vegetation	Rural	Structure Only	Fire Agency	Barstow FD	OH-328443S	12kV	Conductor	Overhead	Yes	3/30/17	14:37	Equipment/Facility Failure	Pole		Weather																																																				
256	SCE	4/3/17	1:51	33.9903980	-118.3702570	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ontario Fire Department	PS 493	12kV	Conductor	Overhead	Yes	4/3/17	1:51	Contact From Object	Vehicle	Pole	Unknown																																																				
257	SCE	4/16/17	15:39	34.4556908	-119.2571855	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Ventura County FD	OH-4495331E	16kV	Conductor	Overhead	Yes	4/16/17	15:39	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
258	SCE	4/22/17	11:23	35.8628425	-119.2525648	Vegetation	Rural	Structure Only	Self Extinguished		OH-1501428E	12kV	Conductor	Overhead	Yes	4/22/17	11:23	Unknown																																																							
259	SCE	4/23/17	16:24	34.5961900	-118.2428980	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	PalmDale Fire Department	OH-4336106E	12kV	Conductor	Overhead	Yes	4/23/17	16:24	Unknown																																																							
260	SCE	4/28/17	23:15	33.9903980	-118.3702570	Vegetation	Rural	Less Than 25 Acres	Unknown		PS533	16kV	Conductor	Overhead	Yes	4/28/17	23:15	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
261	SCE	4/28/17	10:59	33.9286440	-116.6421190	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Riverside Fire Department	OH-1905185E	4kV	Conductor	Overhead	Yes	4/28/17	10:59	Unknown																																																							
262	SCE	4/28/17	10:37	36.4356275	-119.1907857	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Tulare Fire Department	OH-4600865E	12kV	Conductor	Overhead	Yes	4/28/17	10:37	Contact From Object	Vehicle	Pole	Unknown	Hit guy wire																																																			
263	SCE	4/29/17	16:08	33.8983710	-117.2207070	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside Fire Department	OH-312923S	12kV	Conductor	Overhead	Yes	4/29/17	16:08	Equipment/Facility Failure	Conductor																																																						
264	SCE	4/29/17	3:17	34.1268230	-118.0734630	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Monrovia Fire Department	OH-695124H	16kV	Conductor	Overhead	Yes	4/29/17	3:53	Equipment/Facility Failure	Conductor																																																						
265	SCE	5/11/17	20:04	34.1571170	-118.0444480	Vegetation	Rural	Less Than 25 Acres	Fire Agency	LACFD	OH-5X5095E	16kV	Conductor	Overhead	Yes	5/11/17	20:04	Contact From Object	Vegetation	Electric Facility	Unknown																																																				
266	SCE	5/11/17	5:40	38.0206760	-119.1607800	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CalFire	OH-158064E	55kV	Conductor	Overhead	Yes	5/11/17	5:40	Contact From Object	Vegetation	Electric Facility	Unknown	Bird Poop																																																			
267	SCE	5/31/17	7:01	33.8718439	-118.2682003	Vegetation	Urban	Less Than 25 Acres	Fire Agency	LACFD	OH-3500025E	16kV	Conductor	Overhead	Yes	5/31/17	7:01	Contact From Object	Balloons	Electric Facility	Unknown																																																				
268	SCE	5/31/17	5:40	34.2644820	-118.7690480	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura County FD	OH-1840416E	16kV	Conductor	Overhead	Yes	5/31/17	5:40	Contact From Object	Animal	Electric Facility	Unknown																																																				
269	SCE	5/11/17	12:27	34.4127010	-118.6702310	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	LACFD	OH-848255E	16kV	Conductor	Overhead	Yes	5/11/17	12:27	Contact From Object	Balloons	Electric Facility	Unknown																																																				
270	SCE	5/14/17	11:15	33.6416147	-117.1676704	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside Fire Department	OH-2283870E	115kV	Conductor	Overhead	Yes	5/14/17	11:15	Contact From Object	Balloons	Electric Facility	Unknown																																																				
271	SCE	5/15/17	13:54	35.427678	-118.8050080	Vegetation	Rural	100 - 299 Acres	Fire Agency	CalFire	OH-1789272E	166kV	Conductor	Overhead	Yes	5/15/17	13:54	Contact From Object	Animal	Electric Facility	Unknown																																																				
272	SCE	5/19/17	17:57	33.8693010	-117.8315319	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Placentia Fire Department	OH-1789272E	12kV	Conductor	Overhead	No	5/19/17	17:57	Contact From Object	Animal	Electric Facility	Unknown																																																				
273	SCE	5/19/17	15:51	33.8443658	-117.8573583	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Newport Fire Department	OH-4248432E	12kV	Conductor	Overhead	Yes	5/19/17	15:51	Contact From Object	Balloons	Electric Facility	Unknown																																																				
274	SCE	5/20/17	17:28	33.7067865	-117.1388210	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside Fire Department	OH-4768465E	12kV	Conductor	Overhead	Yes	5/20/17	17:28	Contact From Object	Balloons	Electric Facility	Unknown																																																				
275	SCE	5/20/17	15:24	33.7816957	-117.9083331	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Garden Grove FD	OH-1435576E	12kV	Conductor	Overhead	Yes	5/20/17	15:24	Contact From Object	Balloons	Electric Facility	Unknown																																																				
276	SCE	5/20/17	9:43	34.0425507	-118.6431934	Vegetation	Urban	Less Than 25 Acres	Self Extinguished		OH-783599E	16kV	Conductor	Overhead	No	5/20/17	9:43	Equipment/Facility Failure	Other																																																						
277	SCE	5/22/17	11:27	34.5100480	-117.2909710	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Bernardino FD	OH-1966164E	12kV	Conductor	Overhead	Yes	5/22/17	11:27	Contact From Object	Other	Electric Facility	Unknown																																																				
278	SCE	5/23/17	12:07	34.4203573	-117.1746778	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Apple Valley FD	OH-4832950E	12kV	Conductor	Overhead	Yes	5/23/17	12:07	Unknown																																																							
279	SCE	5/24/17	10:05	34.4231795	-117.1775193	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CalFire	OH-2300688E	120/240V	Conductor	Overhead	Yes	5/24/17	10:05	Equipment/Facility Failure	Conductor																																																						
280	SCE	5/29/																																																																							

1	A			B		C		D		E		F		G		H		I		J		K		L		M		N		O		P		Q		R		S		T		U		V		W		X	
	Utility Name	Fire Start	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes																										
459	SCE	1/23/19	18:57	34.2768400	-118.7847260	Vegetation	Urban	Less Than 25 Acres	Utility		OH-1831781E	NA	16kV	Other	Overhead	Yes	1/23/19	18:57	Contact From Object		Other	Electric Facility	Other																										
460	SCE	2/8/19	18:11	34.2793220	-118.7787340	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-1542322E	AT&T Communications	12kV	Transformer	Overhead	Yes	2/8/19	18:11	Contact From Object	Animal		Electric Facility	Outside Force																										
461	SCE	3/3/19	14:25	33.8666430	-116.5520750	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-4493741E	NA	12kV	Conductor	Overhead	Yes	3/3/19	14:25	Equipment/Facility Failure	Conductor		Unknown	Unknown																										
462	SCE	3/16/19	17:58	33.8182440	-117.8024740	Vegetation	Rural	26 - 9.99 Acres	Unknown		OH-1729510E	NA	12kV	Conductor	Overhead	Yes	3/16/19	17:58	Equipment/Facility Failure	Crossarm		Unknown	Unknown																										
463	SCE	3/25/19	10:31	33.9906380	-117.8814570	Building	Urban	Less Than 25 Acres	Unknown		OH-4668167E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	3/25/19	10:31	Contact From Object		Balloons	Electric Facility	Unknown																										
464	SCE	3/27/19	14:39	34.0823170	-117.9132300	Other	Urban	Less Than 25 Acres	Unknown		OH-1165772E	FRONTIER COMMUNI	12kV	Conductor	Overhead	No		Contact From Object		Balloons		Electric Facility	Unknown																										
465	SCE	3/30/19	19:30	34.2243670	-119.1403310	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura County Fire Department	OH-4551688E	NA	66kV	Conductor	Overhead	Yes	11/1/19	11:58	Equipment/Facility Failure	Splice/Clamp/Connector		Unknown	Unknown																										
466	SCE	4/8/19	15:30	34.0794620	-118.1515570	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Alhambra Fire Department	OH-4038025E	NA	16kV	Conductor	Overhead	Yes	4/8/19	15:30	Contact From Object		Animal	Electric Facility	Outside Force																										
467	SCE	4/9/19	4:53	34.2770183	-119.3047240	Vegetation	Urban	Less Than 25 Acres	Utility		OH-4754671E	AT&T Communications	16kV	Capacitor Bank	Overhead	No		Equipment/Facility Failure	Capacitor Bank			Weather	Weather																										
468	SCE	4/9/19	13:57	33.8556150	-116.5576770	Other	Urban	Less Than 25 Acres	Unknown		OH-4854654E	NA	12kV	Conductor	Overhead	Yes	4/9/19	13:57	Wire-Wire Contact			Weather	Weather																										
469	SCE	4/14/19	13:40	34.0173670	-117.9171380	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1034259E	NA	12kV	Conductor	Overhead	Yes	4/14/19	13:40	Contact From Object		Balloons	Electric Facility	Other																										
470	SCE	4/15/19	7:28	34.3040230	-119.9417270	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura County Fire Department	UG-5563403	NA	16kV	Other	Padmount	Yes	4/15/19	7:28	Contact From Object		Animal	Electric Facility	Outside Force																										
471	SCE	4/19/19	14:05	34.5113190	-117.3125590	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Victorville Fire Department	OH-4615681E	FRONTIER COMMUNI	12kV	Conductor	Overhead	No		Contact From Object		Vegetation		Electric Facility	Outside Force																										
472	SCE	4/21/19	12:08	36.3061660	-119.6729960	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1643672E	AT&T Communications	12kV	Conductor	Overhead	Yes	4/21/19	12:08	Equipment/Facility Failure	Conductor		Unknown	Unknown																										
473	SCE	4/22/19	1:56	34.2027540	-118.8507500	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-1188370E	FRONTIER COMMUNI	16kV	Switch	Overhead	Yes	4/22/19	1:56	Contact From Object		Vegetation	Electric Facility	Outside Force																										
474	SCE	4/22/19	17:03	34.4143230	-117.2215190	Other	Rural	Less Than 25 Acres	Fire Agency	Apple Valley Fire Department	OH-2155218E	NA	12kV	Transformer	Overhead	Yes	4/23/19	17:03	Contact From Object		Animal	Electric Facility	Outside Force																										
475	SCE	4/23/19	21:06	34.2146700	-117.0973150	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1027559E	FRONTIER COMMUNI	12kV	Conductor	Overhead	No		Unknown					Unknown	Unknown																									
476	SCE	4/23/19	8:08	33.3347710	-118.0544060	Building	Urban	Less Than 25 Acres	Unknown		OH-1802525E	FRONTIER COMMUNI	12kV	Conductor	Overhead	No		Contact From Object		Vehicle		Electric Facility	Human Error																										
477	SCE	4/24/19	9:06	24.6747633	-118.2543775	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-4755152E	NA	16kV	Switch	Overhead	Yes	4/24/19	9:06	Contact From Object		Animal	Electric Facility	Outside Force																										
478	SCE	4/24/19	12:07	34.1360480	-116.1815450	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1692954E	NA	25kV	Conductor	Overhead	Yes	4/24/19	12:07	Wire-Wire Contact			Other	Other																										
479	SCE	5/21/19	21:16	34.4156150	-118.7819640	Vegetation	Urban	26 - 9.99 Acres	Unknown		OH-4510190E	NA	16kV	Conductor	Overhead	Yes	5/21/19	21:16	Contact From Object		Balloons	Electric Facility	Outside Force																										
480	SCE	5/4/19	17:14	33.8403580	-117.5209420	Building	Urban	Less Than 25 Acres	Self Extinguished		OH-728825	NA	16kV	Other	Overhead	Yes	5/4/19	17:14	Contact From Object		Animal	Electric Facility	Outside Force																										
481	SCE	5/10/19	7:31	34.7328350	-118.1841550	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-4487590E	NA	12kV	Switch	Overhead	Yes	5/10/19	7:31	Contact From Object		Animal	Electric Facility	Outside Force																										
482	SCE	5/14/19	18:26	33.5911870	-114.6748840	Other	Rural	Less Than 25 Acres	Fire Agency	Blythe Fire Department	OH-4800765E	NA	33kV	Transformer	Overhead	Yes	5/14/19	18:26	Contamination	Transformer		Animal	Electric Facility	Unknown																									
483	SCE	5/21/19	14:48	33.8559700	-116.5562900	Vegetation	Urban	Less Than 25 Acres	Utility		OH-3354225	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	5/21/19	14:48	Wire-Wire Contact			Unknown	Unknown																										
484	SCE	5/26/19	16:05	34.5326640	-117.3005040	Other	Rural	Less Than 25 Acres	Unknown		OH-4279765	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	5/26/19	14:27	Wire-Wire Contact			Weather	Weather																										
485	SCE	6/1/19	11:30	34.5198150	-118.2147730	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		OH-692807E	AT&T Communications	12kV	Conductor	Overhead	No		Equipment/Facility Failure	Conductor		Animal		Human Error																										
486	SCE	6/21/19	14:13	34.5363693	-117.6846770	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-6933081E	NA	12kV	Fuse	Overhead	No		Contact From Object	Transformer			Electric Facility	Human Error																										
487	SCE	6/21/19	18:43	34.0709790	-117.4860040	Building	Urban	Less Than 25 Acres	Fire Agency	Fontana Fire Department	OH-872188E	AT&T Communications	12kV	Conductor	Overhead	Yes	6/21/19	18:43	Contact From Object		Animal	Electric Facility	Outside Force																										
488	SCE	6/5/19	10:34	35.9136330	-119.2059640	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1441940E	NA	12kV	Transformer	Overhead	Yes	6/5/19	10:04	Contact From Object		Vehicle	Electric Facility	Outside Force																										
489	SCE	6/6/19	9:00	34.4733550	-118.3921240	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Valencia Fire Department	OH-4419830E	NA	16kV	Conductor	Overhead	Yes	6/6/19	9:10	Equipment/Facility Failure	Conductor		Human Error	Human Error																										
490	SCE	6/6/19	13:52	36.4167860	-118.9102420	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1382763E	AT&T Communications	12kV	Conductor	Overhead	No		Contact From Object		Vehicle		Electric Facility	Outside Force																										
491	SCE	6/7/19	7:54	36.0550210	-118.9491070	Other	Rural	Less Than 25 Acres	Fire Agency	Porterville Fire Department	OH-4099154E	AT&T Communications	12kV	Conductor	Overhead	Yes	6/7/19	7:54	Contact From Object		Vehicle	Electric Facility	Outside Force																										
492	SCE	6/10/19	15:43	34.4684090	-117.4435520	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Victorville Fire Department	OH-4185203E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	6/10/19	15:43	Contact From Object		Other	Electric Facility	Outside Force																										
493	SCE	6/11/19	16:31	34.0550590	-117.8815050	Vegetation	Urban	Less Than 25 Acres	Fire Agency	West Covina Fire Department	OH-1528040E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	6/11/19	16:20	Other			Electric Facility	Human Error																										
494	SCE	6/11/19	17:03	33.8240130	-117.2974470	Vegetation	Rural	Less Than 25 Acres	Utility		UG-5608461	NA	12kV	Conductor	Padmount	No		Contact From Object		Vegetation		Electric Facility	Human Error																										
495	SCE	6/13/19	7:05	33.812375E	-118.1784180	Other	Urban	Less Than 25 Acres	Unknown		OH-1621549E	NA	12kV	Conductor	Overhead	Yes	6/13/19	9:37	Wire-Wire Contact			Outside Force	Outside Force																										
496	SCE	6/17/19	11:48	34.6171810	-118.4247590	Other	Rural	Less Than 25 Acres	Fire Agency	Tulare Fire Department	OH-1254272E	AT&T Communications	12kV	Conductor	Overhead	Yes	6/17/19	11:48	Contact From Object		Vehicle	Communication Facility	Outside Force																										
497	SCE	6/18/19	15:04	34.0464018	-117.6763894	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ontario Fire Department	OH-2194146E	NA	12kV	Switch	Overhead	Yes	6/18/19	15:04	Equipment/Facility Failure	Switch		Other	Other																										
498	SCE	6/20/19	6:18	34.1140480	-117.2340520	Vegetation	Urban	Less Than 25 Acres	Fire Agency	CAL Fire	OH-622103E	AT&T Communications	12kV	Conductor	Overhead	Yes	6/20/19	6:18	Equipment/Facility Failure	Insulator		Other	Other																										
499	SCE	6/20/19	14:08	34.2298460	-117.4048020	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Bern. Fire Department	OH-2013715E	FRONTIER COMMUNI	12kV	Conductor	Overhead	No		Contact From Object		Vegetation		Electric Facility	Human Error																										
500	SCE	6/23/19	14:38	33.6416340	-117.2420260	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Local Fire Department	OH-4561512E	NA	12kV	Conductor	Overhead	Yes	6/23/19	14:38	Contact From Object		Balloons	Electric Facility	Outside Force																										
501	SCE	6/25/19	14:31	34.2903060	-118.2884600	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-31341E	LADWP	16kV	Conductor	Overhead	Yes	6/25/19	14:31	Wire-Wire Contact			Weather	Weather																										
502	SCE	6/27/19	9:07	36.0329840	-119.0972800	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		OH-4351620E	NA	12kV	Conductor	Overhead	Yes	6/27/19	9:07	Contact From Object		Animal	Electric Facility	Outside Force																										
503	SCE	6/27/19	12:18	34.8928460	-116.9787500	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1793713E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	6/27/19	12:18	Contact From Object		Balloons	Electric Facility	Outside Force																										
504	SCE	7/4/19	1:09	36.0633400	-119.1469060	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-820741E	AT&T Communications	12kV	Conductor	Overhead	Yes	7/8/19	12:47	Equipment/Facility Failure	Conductor		Vehicle	Electric Facility	Outside Force																									
505	SCE	7/8/19	12:47	34.5220620	-117.4380290	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	San Bern. Fire Department	OH-2083087E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	7/8/19	12:47	Contact From Object		Vehicle	Electric Facility	Outside Force																										
506	SCE	7/7/19	6:28	36.0991133	-119.4290390	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Local Fire Department	OH-476111E	NA	12kV	Conductor	Overhead	Yes	7/7/19	6:28	Equipment/Facility Failure			Splice/Clamp/Connector	Electric Facility	Outside Force																									
507	SCE	7/7/19	8:39	34.1468990	-117.8897280	Other	Urban	Less Than 25 Acres	Fire Agency	LA County Fire Department	OH-4110272E	FRONTIER COMMUNI	12kV	Conductor	Overhead	Yes	7/7/19	8:09	Contact From Object		Animal	Electric Facility	Other																										
508	SCE	7/15/19	22:43	34.1087230	-118.0169070	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Local Fire Department	OH-4437103E	NA	16kV	Conductor																																			

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start		Location Info			Fire Specifics			Utility Facility			Outage Info			Field Observations								
3	Column1	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes
575	SCE	7/27/19	12:02	34.493200	-117.573065	Other	Rural	Less Than 25 Acres	Unknown		OH-2122305E	NA	12kV	Conductor	Overhead	No			Vandalism/Theft			Electric Facility	Unknown	
576	SCE	9/7/19	17:36	33.766729	-117.22938	Other	Rural	Less Than 25 Acres	Fire Agency	Riverside County Fire Department	OH-4112261E	NA	12kV	Conductor	Overhead	No			Other				Unknown	
577	SCE	9/24/19	14:50	34.157427	-117.344169	Vegetation	Urban	Less Than 25 Acres	Fire Agency	San Bern. Fire Department	OH-4809453E	NA	4kV	Conductor	Overhead	Yes	9/24/19	14:50	Contact From Object		Vegetation	Electric Facility	Unknown	
578	SCE	10/8/19	8:22	34.137645	-118.028901	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Arcadia Fire Department	OH-4757377E	AT&T Communications	16kV	Conductor	Overhead	Yes	10/8/19	8:22	Contact From Object		Vegetation	Electric Facility	Unknown	
579	SCE	11/24/19	11:40	33.7412000	-117.1549000	Other	Urban	Less Than 25 Acres	Fire Agency	CAL Fire	M15-T2	NA	33kV	Conductor	Overhead	No			Equipment/Facility Failure	Insulator			Unknown	
580	SCE	11/29/19	13:02	34.443255	-119.78964	Other	Urban	Less Than 25 Acres	Unknown		OH-1453784E	Crown Castle	16kV	Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Unknown	
581	SCE	8/13/19	12:00	36.083424	-119.023454	Building	Rural	Less Than 25 Acres	Unknown		OH-1687439E	Charter Communicatio	12kV	Meter	Overhead	No			Vandalism/Theft			Electric Facility	Human Error	
582	SCE	6/19/19	16:54	34.0078000	-117.9515000	Other	Urban	Less Than 25 Acres	Unknown		N/A	NA	66kV	Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Other	

Utility Name	Fire Start		Location		Fire		Utility Facility							Outage		Field Observations							
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage?	Date	Time	Suspected Initiating Event	Equipment/Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	
SCE	11/21	1:15	35.8830330	-119.2702480	Other	Rural	Less Than 25 Acres	Fire Agency	Earlmarl Fire Department	OH-1710389E	AT&T California	12 kV	Conductor	Overhead	Yes	11/21	0:27	Equipment/Facility Failure	Conductor			Outside Force	
SCE	11/22	14:26	33.9589600	-118.0352720	Other	Urban	Less Than 25 Acres	Unknown		OH-869619E	Frontier Communications	12 kV	Other	Overhead	Yes	11/22	15:17	Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	11/21	22:36	34.0551700	-118.3870460	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Bernardino County Fire Department	OH-215529E	None	12 kV	Other	Overhead	No			Contact From Object		Animal	Electric Facility	Outside Force	
SCE	11/22	19:32	34.1131310	-116.9235360	Other	Rural	Less Than 25 Acres	Fire Agency	San Bernardino Fire Department	OH-2009982E	None	12 kV	Other	Overhead	No			Wire-Wire Contact				Human Error	
SCE	11/22	20:42	33.8726200	-118.3875800	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Redondo Beach Fire Department	OH-1726218E	Frontier Communications	16 kV	Other	Overhead	Yes	11/22	20:42	Contact From Object	Conductor		Balloons	Electric Facility	Outside Force
SCE	11/23	5:42	33.9623980	-118.2139680	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-4351059E	None	4 kV	Conductor	Overhead	No			Equipment/Facility Failure				Other	
SCE	11/4/21	21:11	34.0194570	-118.8107870	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-1988514E	Crown Castle NG West, Inc.	16 kV	Other	Overhead	Yes	11/4/21	21:11	Equipment/Facility Failure		Splice/Clamp/Connector		Other	
SCE	11/21	14:45	34.0007700	-117.4312760	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1712010E	AT&T California	12 kV	Conductor	Overhead	No			Wire-Wire Contact				Weather	
SCE	11/6/21	14:52	34.8486800	-118.2490240	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern County Fire Department	OH-826052E	None	12 kV	Lightning Arrestor	Overhead	No			Equipment/Facility Failure		Lightning Arrestor		Other	
SCE	12/2/21	12:36	36.3479890	-119.4163710	Other	Urban	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-1012206E	AT&T California	12 kV	Other	Overhead	No			Equipment/Facility Failure				Other	
SCE	12/1/21	0:10	34.1536130	-118.7918220	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	Los Angeles County Fire Department	OH-1730517E	None	66 kV	Conductor	Overhead	No			Contact From Object		Other	Electric Facility	Outside Force	
SCE	2/13/21	6:33	34.6158530	-117.9355280	Other	Urban	Less Than 25 Acres	Unknown		OH-2156930E	None	33 kV	Conductor	Overhead	Yes	2/13/21	6:33	Contact From Object		Animal	Electric Facility	Outside Force	
SCE	2/14/21	20:05	34.0550700	-118.1638180	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Montev Park Fire Department	OH-836113E	None	16 kV	Other	Overhead	Yes	2/14/21	20:05	Contact From Object		Vegetation	Electric Facility	Other	
SCE	2/16/21	8:39	34.8192970	-118.2904130	Vegetation	Rural	Less Than 25 Acres	Utility		OH-843713E	None	12 kV	Switch	Overhead	Yes	2/16/21	8:39	Equipment/Facility Failure		Switch		Other	
SCE	2/17/21	16:03	36.2033590	-119.1063710	Other	Rural	Less Than 25 Acres	Unknown		OH-4247467E	Frontier Communications	12 kV	Conductor	Overhead	Yes	2/17/21	14:46	Equipment/Facility Failure			Vehicle	Electric Facility	Outside Force
SCE	2/19/21	12:26	33.6942680	-116.4132440	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside Fire Department	OH-4856174E	Verizon Wireless, Frontier Comm	12 kV	Conductor	Overhead	Yes	2/19/21	12:25	Equipment/Facility Failure		Other		Outside Force	
SCE	2/21/21	0:04	34.0418620	-118.6807790	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-1408744E	None	16 kV	Other	Overhead	Yes	2/21/20	0:04	Contact From Object		Vegetation	Electric Facility	Other	
SCE	2/22/21	23:16	34.2038300	-118.7360750	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ventura Company Fire Department	OH-1473103E	AT&T California	16 kV	Conductor	Overhead	Yes	2/21/21	23:33	Contact From Object		Vegetation	Electric Facility	Other	
SCE	2/22/21	13:00	33.8981110	-118.0144230	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-4245360E	Frontier Communications	12 kV	Other	Overhead	No			Unknown				Unknown	
SCE	2/23/21	18:59	33.9523030	-118.2534820	Other	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire	OH-1777028E	None	16 kV	Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	2/24/21	17:35	34.7809620	-117.2680520	Vegetation	Urban	Less Than 25 Acres	Fire Agency	San Bernardino County Fire Department	OH-426330S	Frontier Communications	12 kV	Capacitor Bank	Overhead	No			Contact From Object		Other	Electric Facility	Other	
SCE	2/28/21	10:39	33.7748550	-117.9455390	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire Authority	OH-179952E	AT&T California	12 kV	Conductor	Overhead	Yes	2/28/21	10:38	Wire-Wire Contact				Weather	
SCE	3/1/21	0:04	33.9838440	-119.1677010	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-409565S	None	12 kV	Other	Overhead	No			Equipment/Facility Failure		Conductor		Other	
SCE	3/17/21	18:32	34.6880440	-118.1707810	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-1184317E	Frontier Communication	12 kV	Transformer	Overhead	Yes	3/17/21	16:57	Contact From Object		Other	Electric Facility	Other	
SCE	3/18/21	20:50	33.9148740	-118.2811630	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-796721E	None	16 kV	Conductor	Overhead	No			Equipment/Facility Failure		Conductor		Other	
SCE	3/19/21	11:19	N/A	N/A	Other	Rural	Less Than 25 Acres	Unknown		Sun Village circuit	None	12 kV	Conductor	Overhead	Yes			Contact From Object		Other	Electric Facility	Outside Force	
SCE	3/21/21	9:10	34.4274820	-118.0980800	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County Fire Department	OH-1832446E	Frontier Communications	16 kV	Conductor	Overhead	No			Equipment/Facility Failure		Conductor		Other	
SCE	3/22/21	14:22	34.8232010	-119.6903900	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-232251E	None	12 kV	Other	Overhead	No			Equipment/Facility Failure		Other		Other	
SCE	3/31/21	14:06	33.7405500	-117.9155980	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire Authority	OH-1360410E	AT&T California	12 kV	Conductor	Overhead	Yes	3/31/21	14:06	Contact From Object		Other	Other	Electric Facility	Other
SCE	4/1/21	20:01	36.312063	-119.170245	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-4832054E	N/A	12 kV	Other	Overhead	Yes	4/1/21	19:51	Equipment/Facility Failure		Splice/Clamp/Connector		Other	
SCE	4/1/21	20:40	34.473253	-117.223071	Other	Urban	Less Than 25 Acres	Fire Agency	Apple Valley Fire Department	OH-2384281E	None	12 kV	Transformer	Overhead	No			Contact From Object		Animal	Electric Facility	Outside Force	
SCE	4/2/21	14:37	34.144292	-116.084262	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-4037169E	Frontier Communications	12 kV	Lightning Arrestor	Overhead	No			Equipment/Facility Failure		Lightning Arrestor		Other	
SCE	4/3/21	11:09	34.442405	-118.054056	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Bernardino County Fire Department	OH-144249E	None	66 kV	Other	Overhead	No			Contact From Object		Animal	Electric Facility	Outside Force	
SCE	4/3/21	11:09	36.138663	-118.95559S	Other	Rural	Less Than 25 Acres	Fire Agency	Cal Fire	1120693E	None	66 kV	Other	Overhead	Yes	4/3/21	10:55	Contact From Object		Other	Electric Facility	Outside Force	
SCE	4/3/21	21:18	33.728741	-117.14683	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-4768419E	None	12 kV	Other	Overhead	Yes	4/3/21	19:26	Equipment/Facility Failure		Splice/Clamp/Connector		Other	
SCE	4/5/21	19:22	35.723275	-118.108187	Vegetation	Rural	26 - 9.99 Acres	Unknown		OH-4778323E	None	12 kV	Fuse	Overhead	Yes	4/5/21	15:34	Equipment/Facility Failure		Fuse		Other	
SCE	4/5/21	20:57	34.749321	-119.799564	Vegetation	Rural	Less Than 25 Acres	Fire Agency	USDA/CA Forestry	OH-4127954E	None	16 kV	Conductor	Overhead	Yes	4/5/21	20:58	Equipment/Facility Failure		Conductor		Other	
SCE	4/8/21	14:27	34.278119	-119.191127	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County Fire Department	OH-146198E	AT&T California	12 kV	Conductor	Overhead	Yes	4/8/21	3:34	Contact From Object		Other	Other	Electric Facility	Unknown
SCE	4/9/21	12:14	34.493769	-117.20775	Other	Urban	Less Than 25 Acres	Unknown		OH-18978CIT	Frontier Communications,Crown	12 kV	Conductor	Overhead	No			Contact From Object		Other	Electric Facility	Unknown	
SCE	4/10/21	15:36	34.119212	-117.235058	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Hopland Fire Department	OH-805049E	None	12 kV	Conductor	Overhead	Yes	4/10/21	15:35	Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	4/12/21	14:55	34.897324	-118.291278	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-1586639E	None	12 kV	Other	Overhead	Yes	4/12/21	14:48	Contact From Object		Vehicle	Electric Facility	Outside Force	
SCE	4/12/21	19:13	33.837081	-117.145842	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Riverside County Fire Department	OH-1885700E	None	33 kV	Conductor	Overhead	Yes	4/12/21	19:13	Equipment/Facility Failure		Conductor		Other	
SCE	4/16/21	15:19	34.8282010	-117.2350390	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Apple Valley Fire Department	OH-2152161E	None	12 kV	Other	Overhead	No			Contact From Object		Vegetation	Electric Facility	Other	
SCE	4/25/21	20:49	34.482849	-117.913608	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-1875844E	None	12 kV	Conductor	Overhead	Yes	4/25/21	21:42	Equipment/Facility Failure		Conductor		Unknown	
SCE	4/30/21	17:00	36.3425	-119.708566	Vegetation	Rural	Less Than 25 Acres	Unknown		OH-4274254E	AT&T California	12 kV	Conductor	Overhead	Yes	4/30/21	17:00	Contact From Object		Vegetation	Electric Facility	Other	
SCE	5/3/21	20:13	36.380698	-119.28662	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Visalia Fire Department	OH-1061311E	None	12 kV	Conductor	Overhead	Yes	5/3/21	20:13	Contact From Object		Animal	Electric Facility	Outside Force	
SCE	5/5/21	7:05	34.967708	-118.140992	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern City Fire Department	OH-1699778E	AT&T California	12 kV	Transformer	Overhead	No			Equipment/Facility Failure		Transformer		Other	
SCE	5/8/21	20:00	33.46902	-117.560328	Vegetation	Rural	Less Than 25 Acres	Fire Agency	City of Escondido Fire Department	OH-404591E	None	12 kV	Other	Overhead	No			Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	5/8/21	6:50	35.117588	-118.226437	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern County Fire Department	OH-4041670E	None	12 kV	Conductor	Overhead	Yes	5/8/21	0:20	Equipment/Facility Failure		Conductor		Other	
SCE	5/17/21	17:46	36.424768	-119.094567	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-449608E	None	12 kV	Conductor	Overhead	Yes	5/17/21	16:27	Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	5/18/21	14:28	35.638831	-118.403937	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern County Fire Department	OH-4410369E	None	12 kV	Switch	Overhead	No			Equipment/Facility Failure		Switch		Other	
SCE	5/18/21	22:59	33.957612	-118.239573	Vegetation	Urban	Less Than 25 Acres	Unknown		OH-4450122E	None	16 kV	Conductor	Overhead	Yes	5/18/21	19:30	Contact From Object		Animal	Electric Facility	Outside Force	
SCE	5/19/21	19:05	34.198019	-118.903841	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ventura County Fire Department	OH-1344169E	Frontier Communications	16 kV	Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Outside Force	
SCE	5/19/21	21:32	33.8451280	-117.1267850	Other	Rural	26 - 9.99 Acres	Fire Agency	AL FIRE Riverside County Fire Deptarme	OH-4213116E	None	33 kV	Conductor	Overhead	Yes	5/25/21	22:03	Other					

SCE	7/14/21	3:02	34.442723	-119.248608	Vegetation	Rural	Less Than 25 Acres	Unknown	Tulare County Fire Department	OH-171884E	AT&T California	16 kV	Conductor	Overhead	Yes	7/14/21	3:02	Contact From Object	Vegetation	Electric Facility	Other
SCE	7/14/21	5:00	36.060865	-118.922854	Other	Rural	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-4700916E	None	12 kV	Conductor	Overhead	Yes	7/14/21	5:18	Contact From Object	Vehicle	Electric Facility	Outside Force
SCE	7/16/21	15:53	33.820826	-117.884399	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire Department	UG-538910Z	None	12 kV	Other	Underground	Yes	7/16/21	15:53	Other	Other	Other	Other
SCE	7/16/21	17:43	33.862869	-118.327115	Building	Urban	Less Than 25 Acres	Unknown	Unknown	OH-587268E	Frontier Communications	16 kV	Other	Overhead	Yes	7/16/21	17:43	Equipment/Facility Failure	Splice/Clamp/Connector	Other	Other
SCE	7/17/21	9:45	34.503419	-117.326717	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Victorville Fire Department	OH-4134444E	None	12 kV	Lighting Arrestor	Overhead	No			Contact From Object	Animal	Electric Facility	Outside Force
SCE	7/19/21	10:00	33.850363	-117.990003	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Orange County Fire Department	OH-1171029E	None	12 kV	Lighting Arrestor	Overhead	No			Contact From Object	Animal	Electric Facility	Outside Force
SCE	7/20/21	4:00	34.361184	-117.247443	Vegetation	Rural	Less Than 25 Acres	Fire Agency	California Department of Forestry	OH-4843044E	Frontier Communications	12 kV	Other	Overhead	Yes	7/20/21	3:38	Contact From Object	Vehicle	Pole	Outside Force
SCE	7/20/21	21:31	33.926514	-116.500943	Other	Rural	Less Than 25 Acres	Unknown	Unknown	OH-805262E	None	12 kV	Other	Overhead	Yes	7/20/21	19:52	Other	Other	Other	Unknown
SCE	7/21/21	9:30	35.1152660	-117.9828920	Building	Urban	Less Than 25 Acres	Unknown	Unknown	OH-526176E	Frontier Communications	12 kV	Other	Overhead	No			Vandalism/Theft	Other	Other	Other
SCE	7/23/21	00:06	34.204358	-119.097126	Vegetation	Rural	Less Than 25 Acres	Self Extinguished	Unknown	OH-4365411E	None	16 kV	Other	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector	Other	Weather
SCE	7/23/21	10:06	35.132629	-117.938648	Vegetation	Rural	Less Than 25 Acres	Self Extinguished	Unknown	OH-1649268E	Frontier Communications	12 kV	Conductor	Overhead	Yes	7/23/21	8:14	Equipment/Facility Failure	Other	Other	Other
SCE	7/23/21	10:47	36.049086	-118.861898	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire, Tulare Fire Department	OH-4390344E	None	12 kV	Conductor	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector	Other	Other
SCE	7/23/21	11:07	34.496562	-117.380717	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Victorville Fire Department	OH-4185387E	None	12 kV	Conductor	Overhead	No			Contact From Object	Balloons	Electric Facility	Outside Force
SCE	7/24/21	4:46	34.1131070	-117.9918190	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-4323669E	AT&T California	16 kV	Other	Overhead	Yes	8/11/21	13:55	Contact From Object	Vehicle	Electric Facility	Outside Force
SCE	7/24/21	16:50	34.106163	-118.086108	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-4354576E	AT&T California	16 kV	Conductor	Overhead	Yes	7/24/21	17:00	Equipment/Facility Failure	Lighting Arrestor	Other	Other
SCE	7/25/21	11:31	35.056116	-115.433721	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Nate	OH-2151267E	N&T	33 kV	Conductor	Overhead	Yes	7/25/21	11:30	Equipment/Facility Failure	Insulator	Other	Other
SCE	7/31/21	14:43	34.538271	-117.318729	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Victorville Fire Department	OH-2156031E	Frontier Communication	12 kV	Conductor	Overhead	Yes	7/31/21	14:43	Contact From Object	Other	Electric Facility	Other
SCE	8/2/21	12:19	33.875987	-118.088879	Other	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-M9867Y	Frontier Communications	12 kV	Conductor	Overhead	Yes	8/2/21	13:45	Contact From Object	Vehicle	Electric Facility	Outside Force
SCE	8/3/21	17:25	34.307700	-118.924301	Vegetation	Rural	Less Than 25 Acres	Self Extinguished	Unknown	OH-4727232E	AT&T California	16 kV	Conductor	Overhead	Yes	8/3/21	17:25	Equipment/Facility Failure	Conductor	Other	Other
SCE	8/5/21	7:08	33.834565	-116.466551	Other	Rural	Less Than 25 Acres	Unknown	Unknown	OH-Z267109E	None	12 kV	Other	Overhead	Yes	8/5/21	6:56	Equipment/Facility Failure	Other	Other	Other
SCE	8/6/21	19:53	34.126806	-117.247781	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-688519E	Frontier Communications	4 kV	Other	Overhead	No			Contact From Object	Vegetation	Electric Facility	Other
SCE	8/8/21	21:00	34.069626	-117.717771	Vegetation	Urban	Less Than 25 Acres	Customer	Unknown	OH-762697E	Frontier Communications	12 kV	Conductor	Overhead	Yes	8/8/21	20:14	Equipment/Facility Failure	Conductor	Other	Other
SCE	8/9/21	12:19	34.143037	-117.215911	Vegetation	Urban	Less Than 25 Acres	Utility	Unknown	OH-1699343E	None	12 kV	Fuse	Overhead	Yes	8/9/21	10:05	Equipment/Facility Failure	Transformer	Other	Other
SCE	8/11/21	14:09	36.089207	-119.187717	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-2041881E	None	12 kV	Other	Overhead	Yes	8/11/21	13:55	Contact From Object	Other	Electric Facility	Human Error
SCE	8/13/21	1:58	33.817980	-118.201802	Other	Urban	Less Than 25 Acres	Fire Agency	Long Beach Fire Department	OH-1025074E	Frontier Communications	4 kV	Other	Overhead	Yes	8/13/21	16:24	Equipment/Facility Failure	Splice/Clamp/Connector	Other	Other
SCE	8/15/21	17:13	36.067057	-119.003943	Building	Urban	Less Than 25 Acres	Fire Agency	Porterville Fire Department	OH-1571608E	None	12 kV	Conductor	Overhead	No			Contact From Object	Vegetation	Electric Facility	Other
SCE	8/16/21	15:11	34.074562	-117.264709	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	UG-5187337	None	12 kV	Transformer	Underground	Yes	8/16/21	13:51	Equipment/Facility Failure	Transformer	Other	Unknown
SCE	8/16/21	16:41	34.039211	-117.411871	Other	Urban	3 Three (3) meters of In	Unknown	Unknown	OH-889960H	AT&T California	4 kV	Transformer	Overhead	No			Equipment/Facility Failure	Fuse	Other	Other
SCE	8/18/21	11:01	35.709203	-118.469247	Vegetation	Rural	Less Than 25 Acres	Unknown	Unknown	OH-4379278E	Frontier Communications	12 kV	Other	Overhead	Yes	8/18/21	11:18	Contact From Object	Other	Electric Facility	Other
SCE	8/22/21	12:45	34.761942	-118.237858	Other	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-1847352E	None	16 kV	Transformer	Overhead	Yes	8/22/21	12:45	Contact From Object	Other	Electric Facility	Other
SCE	8/24/21	2:54	34.416624	-119.516619	Other	Rural	Less Than 25 Acres	Unknown	Unknown	OH-4630231E	None	12 kV	Switch	Overhead	No			Equipment/Facility Failure	Switch	Other	Other
SCE	8/25/21	18:05	34.2051690	-119.0960420	Vegetation	Urban	Less Than 25 Acres	Utility	Unknown	OH-280425E	Frontier Communications	16 kV	Switch	Overhead	Yes	8/25/21	18:05	Equipment/Facility Failure	Switch	Other	Other
SCE	8/26/21	10:57	33.850291	-118.179813	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-126301Y	Frontier Communications	4 kV	Conductor	Overhead	No			Equipment/Facility Failure	Conductor	Other	Outside Force
SCE	8/26/21	11:46	34.454501	-117.349504	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Department	OH-1698670E	Frontier Communications	12 kV	Other	Overhead	No			Contact From Object	Vegetation	Pole	Other
SCE	8/26/21	21:21	34.143880	-117.882783	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-1025796E	Frontier Communications	12 kV	Conductor	Overhead	No			Equipment/Facility Failure	Conductor	Other	Other
SCE	8/27/21	11:03	34.078141	-117.3745890	Other	Urban	Less Than 25 Acres	Fire Agency	San Bernardino Fire Department	OH-4887716E	None	12 kV	Conductor	Overhead	No			Vandalism/Theft	Pole	Other	Other
SCE	8/28/21	16:27	35.982266	-119.024950	Other	Rural	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-529184E	AT&T California	12 kV	Other	Overhead	Yes	8/28/21	15:27	Contact From Object	Vehicle	Electric Facility	Outside Force
SCE	8/30/21	9:19	34.861992	-116.750479	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	OH-4661020E	None	12 kV	Conductor	Overhead	No			Vandalism/Theft	Other	Other	Other
SCE	8/30/21	17:05	34.732976	-118.307169	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	Los Angeles County Fire Department	OH-430214E	None	12 kV	Conductor	Overhead	No			Contact From Object	Vehicle	Pole	Outside Force
SCE	9/4/21	8:50	34.3902730	-118.5250980	Vegetation	Urban	Less Than 25 Acres	Customer	Unknown	OH-Z229424E	AT&T California	16 kV	Lighting Arrestor	Overhead	Yes	9/4/21	9:10	Contact From Object	Animal	Electric Facility	Outside Force
SCE	9/5/21	12:54	34.264499	-118.946887	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-2177032E	AT&T California	16 kV	Conductor	Overhead	No			Equipment/Facility Failure	Conductor	Other	Other
SCE	9/9/21	22:32	34.162183	-117.564728	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Rancho Cucamonga Fire Department	UG-5385331	None	12 kV	Other	Underground	No			Equipment/Facility Failure	Splice/Clamp/Connector	Other	Other
SCE	9/10/21	12:07	34.192351	-119.108580	Vegetation	Rural	Less Than 25 Acres	Utility	Unknown	OH-875232E	None	12 kV	Conductor	Overhead	Yes	9/10/21	12:07	Contact From Object	Balloons	Electric Facility	Outside Force
SCE	9/10/21	22:44	35.134606	-117.954291	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside County Fire Department	OH-4002517E	None	12 kV	Transformer	Overhead	Yes	9/10/21	22:44	Equipment/Facility Failure	Transformer	Other	Other
SCE	9/12/21	12:28	34.0200110	-117.4864310	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Riverside County Fire Department	OH-2039689E	None	12 kV	Other	Overhead	Yes	9/12/21	12:28	Equipment/Facility Failure	Other	Other	Other
SCE	9/12/21	20:09	33.678849	-114.606019	Vegetation	Urban	Less Than 25 Acres	Unknown	Unknown	OH-391795	Frontier Communications	12 kV	Transformer	Overhead	Yes	9/12/21	19:53	Equipment/Facility Failure	Transformer	Other	Other
SCE	9/19/21	10:26	34.069102	-118.004389	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	UG-5351883	None	16 kV	Transformer	Overhead	Yes	9/19/21	10:26	Equipment/Facility Failure	Transformer	Other	Other
SCE	9/22/21	16:19	34.034592	-117.956725	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-1072790E	Frontier Communications	12 kV	Conductor	Overhead	Yes	9/22/21	16:19	Contact From Object	Balloons	Electric Facility	Outside Force
SCE	9/26/21	16:16	0.0000000	0.0000000	Other	Urban	Less Than 25 Acres	Unknown	Unknown	OH-2177076E	None	12 kV	Conductor	Overhead	Yes	9/26/21	17:37	Equipment/Facility Failure	Conductor	Other	Unknown
SCE	9/28/21	4:42	35.117671	-118.227232	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Kern County Fire Department	OH-4041671E	None	12 kV	Conductor	Overhead	Yes	9/28/21	5:03	Equipment/Facility Failure	Conductor	Other	Other
SCE	9/30/21	14:08	33.747360	-118.342647	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Los Angeles County Fire Department	OH-4579818E	Frontier Communications	16 kV	Other	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector	Other	Other
SCE	10/1/21	16:38	36.105448	-118.845129	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	OH-X15823E	None	12 kV	Transformer	Overhead	Yes	10/1/21	18:07	Equipment/Facility Failure	Transformer	Other	Human Error
SCE	10/1/21	18:38	34.051992	-118.072993	Vegetation	Urban	26 - 9.99 Acres	Unknown	Unknown	OH-1206522E	None	16 kV	Other	Overhead	Yes	10/1/21	18:38	Other	Other	Other	Other
SCE	10/6/21	13:23	36.200630	-119.0892080	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Lindsay Fire Department	OH-4368924E	Frontier Communications	12 kV	Conductor	Overhead	Yes	10/6/21	13:23	Contact From Object	Vehicle	Electric Facility	Outside Force
SCE	10/6/21	13:34	36.0550630	-118.975890	Other	Urban	Less Than 25 Acres	Fire Agency	Tulare County Fire Department	OH-4677220E	None	12 kV	Conductor	Overhead	Yes	10/6/21	14:28	Equipment/Facility Failure	Conductor	Other	Unknown
SCE	10/8/21	8:45	36.329183	-119.351557	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Vassala Fire Department	UG-5059713	None	12 kV	Transformer	Underground	Yes	10/8/21	1				

Idaho Power/1309
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

SDG&E Fire Incident Report Data Compiled from 2014-2021

February 21, 2023

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Utility Name	Fire Start	Time	Latitude	Longitude	Location Info	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Utility Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes
SDG&E	1/1/14	18:45	33.1179000	-117.0780000	Vegetation	Urban	Less Than 25 Acres	Customer		P11112		12kV	Other	Overhead	Yes	1/1/14	18:45	Equipment/Facility Failure	Splice/Clamp/Connector			Other	
SDG&E	3/5/14	9:49	33.2038000	-117.1142000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire	P515262		12kV	Conductor	Overhead	Yes	3/12/14	9:49	Equipment/Facility Failure	Splice/Clamp/Connector			Other	
SDG&E	4/15/14	8:20	32.6778000	-117.0460000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	S.D.F.D.	Z180434		12kV	Conductor	Overhead	No			Equipment/Facility Failure	Guy/Span Wire			None	
SDG&E	4/17/14	16:42	33.2203000	-117.3380000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	OFD	TL23010		230kV	Conductor	Overhead	No			Equipment/Facility Failure		Vehicle	Electric Facility	Human Error	
SDG&E	4/27/14	12:00	32.2415000	-117.3470000	Vegetation	Rural	Less Than 25 Acres	Utility		TL 6912, Z122445	none	69kV	Other	Overhead	No			Equipment/Facility Failure				None	
SDG&E	4/28/14	13:30	33.2926	-116.948	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	Circuit 214, P215546	none	12kV	Conductor	Overhead	Yes	4/28/2014	13:30	Equipment/Facility Failure	Splice/Clamp/Connector			None	
SDG&E	4/28/14	16:20	33.2887000	-116.9560000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Cal Fire	P812595		12kV	Conductor	Overhead	Yes	4/28/14	16:20	Contact From Object		Vehicle	Pole	Human Error	
SDG&E	4/29/14	10:05	33.3181000	-117.2200000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	Circuit 233, P213051	none	12kV	Conductor	Overhead	Yes	4/29/14	10:05	Contact From Object		Vehicle	Electric Facility	Outside Force	
SDG&E	4/29/14	13:40	33.1264000	-117.0160000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Escondido FD	Circuit 455, P316707	none	12kV	Conductor	Overhead	Yes	4/29/14	13:40	Contact From Object		Vehicle	Pole	Outside Force	
SDG&E	4/29/14	16:49	32.7186000	-117.0960000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	SD Fire-Rescue	Circuit 323, P476600	none	12kV	Conductor	Overhead	Yes	4/29/14	16:49	Contact From Object		Vegetation	Electric Facility	Weather	
SDG&E	5/1/14	6:48	32.8640000	-116.8990000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Lakeside Fire	Circuit 242, P372465	AT&T	12kV	Conductor	Overhead	Yes	5/1/14	6:48	Contact Between Third Party Facility on Pole and Supply Lines				Weather	
SDG&E	5/13/14	9:00	32.8405000	-116.7720000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	P177622		12kV	Conductor	Overhead	No			Wire-Wire Contact				Weather	
SDG&E	5/13/14	8:35	32.7543000	-116.7780000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P274777		240V	Conductor	Overhead	No			Contact From Object				Other	
SDG&E	5/19/14	18:30	33.1073000	-117.1640000	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	Cal Fire	P211709	AT&T	12kV	Conductor	Overhead	Yes	5/19/14	18:30	Contact From Object				Other	
SDG&E	5/28/14	15:50	32.9808000	-117.2482000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Cal Fire	P313228		12kV	Conductor	Overhead	Yes			Contact From Object		Vehicle	Pole	Human Error	
SDG&E	5/31/14	11:30	33.3146000	-116.8661000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire	P219919		12kV	Conductor	Overhead	Yes	5/31/14	11:30	Contact From Object				Other	
SDG&E	6/4/14	9:30	33.0191000	-116.8280000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	TL 637, Circuit 970, Z416592	none	69kV	Conductor	Overhead	Yes	6/4/14	9:30	Contact From Object				Human Error	
SDG&E	6/17/14	15:30	32.5640000	-117.0320000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	SDFD	P192047		12kV	Switch	Overhead	Yes	6/17/14	15:30	Equipment/Facility Failure		Switch		None	
SDG&E	7/4/14	12:00	32.7563000	-116.9260000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	CALFIRE	Circuit 96, P471597	none	12kV	Conductor	Overhead	No			Contact From Object				None	
SDG&E	7/6/14	11:14	33.0283000	-116.9260000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	Circuit 972, P319081	none	12kV	Conductor	Overhead	Yes	7/6/14	11:14 a.m.	Contact From Object				None	
SDG&E	7/22/14	10:25	32.7899000	-116.8455000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Cal Fire	P276288	AT&T	12kV	Conductor	Overhead	Yes			Contact From Object				None	
SDG&E	8/28/14	9:30	33.0191000	-116.8281000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	Z416585		12kV	Conductor	Overhead	No			Contact From Object				Human Error	
SDG&E	9/2/14	11:15	33.1527200	-117.1607800	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Marcos	P219744	none	12kV	Fuse	Overhead	Yes	9/2/14	11:15	Contact From Object		Balloons	Pole	Outside Force	
SDG&E	9/11/14	11:56	33.2769000	-117.1345000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	P619040	none	12kV	Transformer	Overhead	Yes	9/11/14	11:56	Equipment/Facility Failure	Transformer			None	
SDG&E	9/13/14	20:30	32.7211000	-116.7801000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Cal Fire	Cir 157, P106190		12kV	Conductor	Overhead	Yes	9/13/14	20:00	Unknown				Unknown	
SDG&E	9/15/14	12:53	32.7360000	-117.0137000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	San Miguel FD	Cir 162, P161277		240V	Conductor	Overhead	Yes	9/15/14	12:53	Contact From Object				Other	
SDG&E	9/24/14	19:45	33.0513000	-116.8479000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	Cir. RA1 P169791		4kV	Conductor	Overhead	Yes	9/24/12	19:45	Contact From Object		Vegetation	Electric Facility	Other	
SDG&E	10/7/14	13:38	33.0389800	-117.1705000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CALFIRE	Z519759		240kV	Conductor	Overhead	Yes	10/7/2014	13:42	Contact From Object		Other	Electric Facility	Outside Force	
SDG&E	10/11/14	4:00	32.9460000	-116.8466000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	P972639		12kV	Conductor	Overhead	Yes	10/11/14	4:00	Contact From Object				Outside Force	
SDG&E	11/19/14	9:30	32.8421000	-116.8605000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	Cir. 246 P272232	none	12kV	Conductor	Overhead	Yes	11/19/14	18:00	Contact From Object				Outside Force	
SDG&E	2/7/15	13:36	32.9210000	-117.0137000	Vegetation	Rural	Less Than 25 Acres	Utility		TL 23041	none	230kV	Conductor	Overhead	Yes	2/7/15	13:36	Contact From Object		Animal	Electric Facility	Unknown	
SDG&E	6/9/15	5:50	32.9003000	-117.2309000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	S.D. City	Z53404		69kV	Conductor	Overhead	Yes	6/9/15	5:45	Contact From Object		Animal	Electric Facility	Outside Force	
SDG&E	10/31/15	13:04:00	33.3391670	-117.4947500	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Pendleton	Z233694		230V	Conductor	Overhead	No			Contact From Object		Animal	Electric Facility	Outside Force	
SDG&E	4/9/15	17:23	32.7233000	-116.8922000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	P171928		12kV	Other	Overhead	No			Unknown				Unknown	
SDG&E	5/28/15	12:45	32.7265000	-116.9922000	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		P196508		12kV	Conductor	Overhead	Yes	5/28/15	12:45	Contact From Object				None	
SDG&E	4/12/15	14:30	32.7523000	-117.3257000	Vegetation	Rural	100 - 299 Acres	Fire Agency	Pendleton	P164638		12kV	Lightning Arrestor	Overhead	No			Equipment/Facility Failure	Lightning Arrestor			None	
SDG&E	7/13/15	23:45	32.7629700	-116.8994900	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		Z971870 Cir 23041		230kV	Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Outside Force	
SDG&E	8/8/15	10:00	33.1973000	-117.2308000	Vegetation	Urban	Less Than 25 Acres	Customer		P17530J		4kV	Conductor	Overhead	Yes	8/8/15	10:00	Contact From Object		Balloons	Electric Facility	None	
SDG&E	4/12/15	12:31	33.0117000	-116.8660000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	P214319		12kV	Conductor	Overhead	Yes	4/12/15	12:30	Contact From Object				None	
SDG&E	4/29/15	12:00	32.6061000	-116.6960400	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P175961	none	12kV	Conductor	Overhead	Yes	4/29/15	12:00	Equipment/Facility Failure	Splice/Clamp/Connector			Unknown	
SDG&E	5/17/15	6:55	33.1808000	-117.2064000	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		P15839		12kV	Conductor	Overhead	Yes	5/17/15	7:06	Contact From Object		Other	Electric Facility	Human Error	
SDG&E	7/7/15	15:00	32.7443000	-117.0498000	Vegetation	Urban	Less Than 25 Acres	Utility		Z371043 Cir. 160		12kV	Conductor	Overhead	Yes	7/7/15	13:00	Contact From Object		Other	Electric Facility	Human Error	
SDG&E	2/11/15	15:30	32.8941000	-116.9393000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Lakeside Fire	Service span off 237657		12kV	Conductor	Overhead	Yes			Contact From Object				Weather	
SDG&E	4/18/15	12:00	32.7764000	-116.9309000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P677849		220v	Conductor	Overhead	No			Contact From Object				None	
SDG&E	7/17/15	9:48	33.1750420	-117.0125000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P213348		12kV	Conductor	Overhead	No			Contact From Object				Human Error	
SDG&E	7/27/15	14:30	33.0665000	-116.5790000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P212008		12kV	Conductor	Overhead	Yes	7/27/15	14:30	Contact From Object				None	
SDG&E	8/23/15	15:00	32.2729100	-117.1521000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CAL FIRE	P415300		12kV	Conductor	Overhead	Yes	8/23/15	15:00	Contact From Object				Weather	
SDG&E	12/26/15	3:04	33.1323000	-117.0895000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Escondido	P218563		12kV	Conductor	Overhead	Yes	12/26/15	3:04	Contact From Object				Weather	
SDG&E	8/13/15	20:33	33.2457100	-116.6769000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P19586		12kV	Conductor	Overhead	Yes	8/13/15	20:33	Unknown				Unknown	
SDG&E	8/15/15	17:30	32.7417200	-116.9685000	Other	Urban	Less Than 25 Acres	Customer		P273868		4kV	Other	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector			None	
SDG&E	3/19/15	23:50	33.0323780	-117.0159000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	S.D. City	P1719156		12kV	Conductor	Overhead	Yes	3/19/15	23:50	Contact From Object		Vehicle	Pole	Human Error	
SDG&E	9/1/15	8:50	32.6690000	-116.2860000	Vegetation	Rural	Less Than 25 Acres	Utility		P41145 cir. 445													

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
2	Utility Name	Fire Start	Latitude	Longitude	Location Info	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Utility Facility	Equipment Involved With Ignition	Type	Was There an Outage	Date2	Time3	Suspected Initiating Event	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor	Notes
115	SDG&E	10/25/17	13.02	33.2856840	-117.0275340	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CALFIRE	P416197 Cir. 908		12kV Other	Overhead	No			Equipment/Facility Failure	Other				Weather	None
116	SDG&E	12/10/17	2.58	33.2738680	-116.9536750	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CALFIRE	P813516		12kV Transformer	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector				Weather	None
117	SDG&E	12/10/17	5.26	33.2800000	-116.9550000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	CALFIRE	P32240		12kV Conductor	Overhead	Yes	12/10/17	5:26	Contact From Object		Vegetation	Electric Facility	Weather	None	
118	SDG&E	2/8/18	10.07	33.2071000	-117.2072000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	North County Fire	P219833		12kV Conductor	Overhead	Yes	2/8/18	10:07	Contact From Object		Vegetation	Electric Facility	Human Error	None	
119	SDG&E	2/16/18	16.50	32.6275960	-116.9408520	Vegetation	Urban	Less Than 25 Acres	Utility		C-594		12kV Conductor	Overhead	Yes	2/16/18	14:02	Contact From Object		Balloons	Electric Facility	Outside Force	None	
120	SDG&E	4/12/18	19.33	32.6965100	-117.0492940	Vegetation	Urban	Less Than 25 Acres	Fire Agency	SDFD	Z89883		12kV Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Other	None	
121	SDG&E	4/16/18	14.24	33.4176000	-117.6058000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	OCFA	P121389		12kV Conductor	Overhead	No			Contact From Object		Vegetation	Electric Facility	Weather	None	
122	SDG&E	4/18/18	15.25	33.2410000	-117.3470000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CPFD	Z223638		230kV Conductor	Overhead	No			Contact From Object		Animal	Electric Facility	Other	None	
123	SDG&E	4/22/18	14.00	32.8370000	-117.1840000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	SDFD	P729991 Cir. 275		12kV Conductor	Overhead	Yes	4/22/18	14:00	Contact From Object		Balloons	Electric Facility	None	None	
124	SDG&E	5/1/18	21.29	32.6847520	-117.1011690	Vegetation	Urban	Less Than 25 Acres	Fire Agency	National City	Z730733		69kV Conductor	Overhead	No			Contact From Object		Vehicle	Electric Facility	Outside Force	None	
125	SDG&E	5/22/18	14.23	33.3620000	-117.0320000	Vegetation	Rural	10 - 99 Acres	Fire Agency	CALFIRE	P214790 Cir.217		12kV Conductor	Overhead	Yes	5/22/18	14:02	Contact From Object		Balloons	Electric Facility	Other	None	
126	SDG&E	6/1/18	14.00	33.0990000	-117.0440000	Vegetation	Rural	Less Than 25 Acres	Utility		P618454		12kV Conductor	Overhead	No			Wire-Wire Contact					Other	None
127	SDG&E	6/12/18	9.00	32.7060000	-116.3960000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P44708 Cir. 458		12kV Conductor	Overhead	Yes	6/12/18	9:00	Contact From Object		Animal	Electric Facility	None	None	
128	SDG&E	6/12/18	15.14	32.8640000	-116.7470000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Fire Agency	P871937 Cir. 357		12kV Conductor	Overhead	Yes	6/12/18	14:38	Contact From Object		Balloons	Electric Facility	None	None	
129	SDG&E	6/22/18	9.46	32.5670000	-116.9410000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	SDFD	Z100698 Cir. 535		12kV Switch	Overhead	Yes	6/22/18	9:42	Switch					Unknown	None
130	SDG&E	6/29/18	13.06	32.8450000	-117.0560000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Chula Vista	Z182447 Cir. 341		12kV Other	Overhead	Yes	6/29/18	13:06	Equipment/Facility Failure		Guy/Span Wire			Unknown	None
131	SDG&E	7/6/18	10.26	32.6203150	-116.7649300	Vegetation	Rural	10 - 99 Acres	Fire Agency	CalFire	P177572 Station 157-825, C157		12kV Transformer	Overhead	No			Equipment/Facility Failure		Transformer			Unknown	None
132	SDG&E	7/8/18	16.16	32.6348850	-117.1030420	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Chula Vista	P100601, C255		12kV Switch	Overhead	Yes	7/8/18	16:16	Other			Electric Facility	Other	None	
133	SDG&E	7/22/18	23.19	33.3010000	-116.3510000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Borrego Springs FD	Z74759 Cir 170		12kV Conductor	Overhead	Yes	7/22/18	23:19	Contact From Object		Vegetation	Electric Facility	None	None	
134	SDG&E	7/30/18	12.11	32.8680680	-117.1902260	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	SDFD&MCMIR	Z90115 Cir 968		12kV Conductor	Overhead	No			Contact From Object		Balloons	Electric Facility	Other	None	
135	SDG&E	8/9/18	12.00	33.2130000	-117.3350000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Oceanside FD	P226873 Cir 194		12kV Conductor	Overhead	No			Equipment/Facility Failure		Other			Other	None
136	SDG&E	8/19/18	18.35	32.7001804	-116.8638674	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CAL FIRE	P254640 Cir 75		12kV Conductor	Overhead	Yes			Contact From Object			Electric Facility	Other	None	None
137	SDG&E	9/14/18	10.00	33.3177060	-117.2228440	Vegetation	Rural	Less Than 25 Acres	Fire Agency	MVU & NCFPD	P213051 Cir 233	Telecom/cable	12kV Conductor	Overhead	No			Contact Between Third Party Facility on Pole and Supply Lines		Vehicle	Communication Facility	Human Error	None	
138	SDG&E	9/14/18	15.02	32.7896790	-117.0808820	Vegetation	Urban	Less Than 25 Acres	Fire Agency	SDFD	P279980J Cir 702		12kV Other	Overhead	Yes	9/14/18	15:48	Equipment/Facility Failure					None	None
139	SDG&E	10/12/18	12.30	32.8019070	-117.1493760	Vegetation	Urban	Less Than 25 Acres	Utility		Z96245		69kV Other	Overhead	No			Contact From Object		Vehicle			Human Error	None
140	SDG&E	10/12/18	10.00	33.3013270	-116.9129450	Vegetation	Rural	Less Than 25 Acres	Utility		Z118027		69kV Conductor	Overhead	No			Contact From Object		Vehicle			Human Error	None
141	SDG&E	10/15/18	10.21	33.3190990	-117.2596710	Vegetation	Rural	Less Than 25 Acres	Customer		P112366		12kV Conductor	Overhead	Yes	10/15/18	12:02	Equipment/Facility Failure					None	None
142	SDG&E	11/26/18	1.51	33.4313920	-117.5951950	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	OCFA	P25325		12kV Conductor	Overhead	Yes	11/26/18	1:45	Contact From Object		Balloons	Electric Facility	Other	None	None
143	SDG&E	12/2/18	11.25	33.2800000	-117.4040000	Vegetation	Rural	Less Than 25 Acres	Self Extinguished		Z223659		230kV Conductor	Overhead	Yes	12/2/18	11:25	Contact From Object		Other	Electric Facility	None	None	
144	SDG&E	1/16/19	16.55	33.4210000	-117.6100000	Vegetation	Urban	Less Than 25 Acres	Fire Agency	OCFA	P29955		12 kV Other	Overhead	No			Equipment/Facility Failure		Crossarm			Weather	None
145	SDG&E	4/15/19	14.05	32.7883007	-116.8898419	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CalFire	P74970 and P74971	Telco	12 kV Conductor	Overhead	Yes	4/15/19	12:51	Wire-Wire Contact					Outside Force	None
146	SDG&E	6/12/19	22.05	33.0484270	-116.8578150	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CalFire	W100304		12 kV Switch	Overhead	Yes	6/12/19	22:17	Contact From Object		Vehicle	Electric Facility	None	None	
147	SDG&E	7/3/19	15.15	33.0112640	-116.8492200	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Ramona	P815903	Telco	120/208 Conductor	Overhead	No			Equipment/Facility Failure		Conductor			Unknown	None
148	SDG&E	7/5/19	12.32	33.1584479	-117.2220482	Vegetation	Urban	Less Than 25 Acres	Fire Agency	San Marcos	P415472		12kV Conductor	Overhead	Yes	7/5/19	12:19	Contact From Object		Vehicle	Pole	Human Error	None	
149	SDG&E	7/12/19	13.52	33.1268020	-117.3034710	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Carlsbad	Z710094		230 kV Conductor	Overhead	Yes	7/12/19	13:51	Contact From Object		Balloons	Electric Facility	Other	None	
150	SDG&E	7/16/19	7.36	33.1696590	-117.1460730	Vegetation	Rural	Less Than 25 Acres	Fire Agency	San Marcos	P114649		12kV Conductor	Overhead	Yes	7/16/19	7:53	Wire-Wire Contact					Other	None
151	SDG&E	7/16/19	19.08	33.1904440	-117.1212380	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Deer Springs	P610712	Telco	12kV Conductor	Overhead	Yes	7/16/19	19:08	Contact Between Third Party Facility on Pole and Supply Lines		Vegetation	Electric Facility	Other	None	
152	SDG&E	8/5/19	14.14	32.7885890	-117.1232970	Vegetation	Urban	Less Than 25 Acres	Utility		Z479779		12 kV Switch	Overhead	No			Equipment/Facility Failure		Other			None	None
153	SDG&E	8/30/19	17.50	33.2452250	-117.3729400	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Camp Pendleton	Z223445		230kV Other	Overhead	Yes	8/30/19	17:50	Unknown					Unknown	None
154	SDG&E	9/10/19	12.59	32.5640000	-117.0330000	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	San Diego	P194970		12kV Switch	Overhead	Yes	9/10/19	12:55	Equipment/Facility Failure		Switch			None	None
155	SDG&E	9/11/19	14.17	33.2260000	-117.0850000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	CalFire	P228412		12kV Lightning Arrestor	Overhead	Yes	9/11/19	14:17	Contact From Object		Animal	Electric Facility	None	None	
156	SDG&E	9/13/19	11.27	32.7870000	-117.0070000	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Heartland	P378838		12kV Other	Overhead	Yes	9/13/19	11:27	Equipment/Facility Failure		Splice/Clamp/Connector			Unknown	None
157	SDG&E	9/30/19	2.59	33.2618110	-116.3705100	Vegetation	Urban	Less Than 25 Acres	Fire Agency	Ramona	P277947		12kV Other	Overhead	Yes	9/30/19	2:59	Equipment/Facility Failure		Guy/Span Wire			Other	None
158	SDG&E	10/17/19	12.15	33.2736111	-116.3930556	Vegetation	Urban	Less Than 25 Acres	Utility		P236651J		120/240 Conductor	Overhead	No			Other					Human Error	None
159	SDG&E	10/19/19	13.10	33.2316810	-117.2593290	Vegetation	Rural	26 - 9.99 Acres	Fire Agency	Oceanside	meter pole Station 901-1460		240V Conductor	Overhead	Yes	10/19/19	13:10	Other		Other			Human Error	None
160	SDG&E	10/24/19	10.13	32.8357120	-116.7251660	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Alpine FD	P377113	Telco	12kV Fuse	Overhead	Yes	10/24/19	10:13	Equipment/Facility Failure		Fuse			None	None
161	SDG&E	10/25/19	3.26	33.1209560	-117.1585700	Vegetation	Urban	26 - 9.99 Acres	Fire Agency	CalFire	P211697	Telco	12kV Other	Overhead	Yes	10/25/19	3:26	Equipment/Facility Failure					Other	None
162	SDG&E	11/1/19	5.49	33.0924247	-117.0206295	Vegetation	Rural	Less Than 25 Acres	Fire Agency	Escondido FD	P15147	Telco	12kV Conductor	Overhead	Yes	11/1/19	5:48	Contact From Object			Pole		None	None
163	SDG&E	11/4/19	15.30	33.2284550	-116.7574580	Vegetation	Rural	Less Than 25 Acres	Utility		P19533		12kV Conductor	Overhead	Yes	11/4/19	15:30	Equipment/Facility Failure		Other			None	None
164	SDG&E	11/12/19	7.51	33.1902760	-117.3697730	Other	Urban	Less Than 25 Acres	Fire Agency	Oceanside FD	P22213	Tele&Cbl	120/240 Conductor	Overhead	Yes									

Utility Name	Fire Start		Location				Fire			Utility Facility				Outage			Suspected Cause					
	Date	Time	Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Comp anies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Ignition Cause	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor
SDG&E	1/29/20	19:00	33.4148600	-117.5810880	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Camp Pendleton FD	Z100041		230kV	Lightning Arrestor	Overhead	Yes	1/29/20	19:00	Equipment/Facility Failure	Other			Weather
SDG&E	2/11/20	1:30	32.7910060	-116.9194010	Vegetation	Urban	Less Than .25 Acres	Fire Agency	Heartland Fire	P477433J	telco	12kV	Conductor	Overhead	Yes	2/11/20	1:13	Equipment/Facility Failure	Splice/Clamp/Connector			Outside Force
SDG&E	2/26/20	0:17	32.9140000	-116.6400000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Cal Fire	P972695		12kV	Lightning Arrestor	Overhead	Yes	2/26/20	0:17	Equipment/Facility Failure	Lightning Arrestor			Unknown
SDG&E	5/17/20	8:52	33.2373400	-117.0301420	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE	P515883		12kV	Conductor	Overhead	Yes	5/17/20	8:52	Contact From Object		Balloons		Other
SDG&E	5/31/20	2:01	32.5430160	-117.0277130	Vegetation	Urban	Less Than .25 Acres	Fire Agency	Chula Vista	P83770		12kV	Conductor	Overhead	Yes	5/31/20	1:42	Contact From Object		Balloons	Electric Facility	Outside Force
SDG&E	6/2/20	18:00	33.0700000	-116.8630000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Cal Fire	P111476		12kv	Conductor	Overhead	Yes	6/2/20	18:00	Contact From Object		Vehicle		Human Error
SDG&E	6/3/20	11:17	33.1234000	-117.0250000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Escondido	P714414		12kv	Transformer	Overhead	Yes	6/3/20	11:17	Contact From Object		Animal	Electric Facility	None
SDG&E	6/26/20	5:50	33.3533990	-117.5168360	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Camp Pendleton FD	Z222452		230kV	Conductor	Overhead	Yes	6/26/20	5:50	Unknown				Unknown
SDG&E	7/5/20	14:08	33.0871900	-116.9855510	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	SDFR, Cal Fire	P14263	telco	12kV	Lightning Arrestor	Overhead	Yes	7/5/20	20:55	Equipment/Facility Failure	Lightning Arrestor			Unknown
SDG&E	7/17/20	16:30	33.0903510	-116.5797730	Vegetation	Rural	Less Than .25 Acres	Customer		P115116	telco	12kV	Transformer	Overhead	Yes	7/17/20		Contact From Object		Animal	Electric Facility	None
SDG&E	7/26/20	13:44	32.8190410	-116.9561490	Vegetation	Urban	Less Than .25 Acres	Customer		P101639		12kV	Fuse	Overhead	Yes	7/26/20	13:44	Equipment/Facility Failure	Fuse			Unknown
SDG&E	7/29/20	17:14	32.7370000	-116.8750000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE	P678395		12kV	Conductor	Overhead	Yes	7/29/20	17:12	Equipment/Facility Failure	Splice/Clamp/Connector			Unknown
SDG&E	8/1/20	11:11	32.6310000	-116.1740000	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CAL FIRE	P45248		12kV	Other	Overhead	Yes	8/1/20	11:10	Equipment/Facility Failure	Other			Unknown
SDG&E	8/18/20	13:16	32.6248090	-117.0960310	Vegetation	Urban	Less Than .25 Acres	Fire Agency	Chula Vista	P192585		12kV	Switch	Overhead	Yes	8/18/20	13:29	Equipment/Facility Failure	Switch			Unknown
SDG&E	8/22/20	13:38	33.0744160	-116.5773400	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE	P31591	Secondary	Conductor	Overhead	Yes	8/22/20	13:38	Equipment/Facility Failure	Conductor			Unknown	
SDG&E	8/31/20	14:05	33.1090000	-117.0055440	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	Escondido	P310132		12kV	Conductor	Overhead	Yes	8/31/20	14:05	Contact From Object		Vehicle	Pole	Other
SDG&E	9/2/20	19:30	33.3620000	-117.1360000	Vegetation	Rural	Less Than .25 Acres	Utility		P215301		12kV	Conductor	Overhead	Yes	9/2/20	19:30	Equipment/Facility Failure	Splice/Clamp/Connector			None
SDG&E	9/4/20	20:30	33.0658210	-116.8592170	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE	P216155	telco	12kV	Conductor	Overhead	Yes	9/4/20	20:30	Contact From Object		Vehicle	Pole	Other

Utility Name	Date	Time	Location				Fire			Utility Facility					Outage			Suspected Cause				
			Latitude	Longitude	Material at Origin	Land Use at Origin	Size	Suppressed by	Suppressing Agency	Facility Identification	Other Companies	Voltage (Volts)	Equipment Involved With Ignition	Type	Was There an Outage	Date	Time	Suspected Ignition Cause	Equipment /Facility Failure	Contact From Object	Facility Contacted	Contributing Factor
SDG&E	2/28/21	14:00	33.4370000	-117.5690000	Vegetation	Rural	Less Than .25 Acres	Self Extinguished		P227391		12kv	Transformer	Overhead	Yes	2/28/21	14:00	Contact From Object		Animal	Electric Facility	Outside Force
SDG&E	3/22/21	8:00	33.2431370	-117.3598300	Vegetation	Rural	Less Than .25 Acres	Self Extinguished		Z222386		230kV	Conductor	Overhead	No			Contact From Object		Balloons		Other
SDG&E	3/25/21	10:00	32.9710000	-117.2620000	Vegetation	Urban	Less Than .25 Acres	Utility		Z12304		12kv	Transformer	Overhead	Yes	3/25/21	10:00	Equipment/Facility Failure	Transformer			Unknown
SDG&E	4/30/21	13:55	33.0177830	-116.8660840	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Ramona CAL FIRE	P110643		120v	Conductor	Overhead	No			Equipment/Facility Failure	Conductor			Unknown
SDG&E	5/7/21	13:10	33.3380000	-117.1540000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE/ NCFPD			12kv	Conductor	Overhead	Yes	5/7/21	13:10	Unknown				Outside Force
SDG&E	5/11/21	10:48	32.8500000	-116.9360000	Vegetation	Urban	Less Than .25 Acres	Fire Agency	Lakeside FD			12kv	Conductor	Overhead	Yes	5/11/21	10:48	Contact From Object		Balloons	Electric Facility	Outside Force
SDG&E	5/19/21	11:00	32.8340000	-117.1834000	Vegetation	Urban	Less Than .25 Acres	Utility		Z92509		12kv	Conductor	Overhead	No			Wire-Wire Contact				Human Error
SDG&E	5/24/21	13:40	32.7420000	-117.1450000	Vegetation	Urban	Less Than .25 Acres	Fire Agency	San Diego FD	P2107172488		120v	Conductor	Overhead	Yes	5/24/21	13:40	Contact From Object		Vegetation	Electric Facility	None
SDG&E	6/13/21	12:00	33.0264960	-116.8580050	Vegetation	Rural	Less Than .25 Acres	Fire Agency	Ramona CAL FIRE	P107449		12kv	Conductor	Overhead	Yes	6/13/21	12:00	Contact From Object		Balloons	Electric Facility	Other
SDG&E	6/16/21	14:27	33.3483319	-116.7324407	Vegetation	Rural	Less Than .25 Acres	Utility		P239535		12kv	Switch	Overhead	Yes	6/16/21	14:27	Equipment/Facility Failure	Switch			Unknown
SDG&E	6/17/21	9:51	32.6037431	-116.6113496	Vegetation	Rural	Less Than .25 Acres	Utility		P176917		12kv	Conductor	Overhead	Yes	6/17/21	9:52	Equipment/Facility Failure	Conductor			Unknown
SDG&E	6/18/21	10:51	33.1461820	-117.0477510	Other	Urban	Less Than .25 Acres	Fire Agency	Escondido	Z314050, 456-23CW, C456	telco	12kv	Capacitor Bank	Overhead	Yes	6/18/21	10:51	Equipment/Facility Failure	Capacitor Bank			None
SDG&E	7/1/21	7:42	33.2805900	-117.1574150	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL FIRE/ NCFPD	P119250		12kv	Conductor	Overhead	Yes	7/1/21	7:42	Vandalism/Theft				Outside Force
SDG&E	7/14/21	18:26	32.5038000	-116.5553000	Vegetation	Urban	Less Than .25 Acres	Self Extinguished		372756J		12kv	Other	Overhead	No			Equipment/Facility Failure	Conductor			Unknown
SDG&E	7/18/21	6:18	33.2620000	-117.4290000	Vegetation	Rural	Less Than .25 Acres	Self Extinguished		Z21137		12kv	Other	Overhead	No			Other				Weather
SDG&E	7/24/21	15:19	32.7058116	-116.7315325	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CAL FIRE/ USFS	P74739		12kv	Other	Overhead	Yes	7/24/21	15:19	Contact From Object		Animal	Electric Facility	Outside Force
SDG&E	7/28/21	13:51	33.2281890	-116.9829530	Vegetation	Rural	.26 - 9.99 Acres	Fire Agency	CAL FIRE	Z16445		12kv	Conductor	Overhead	Yes	7/28/21	13:51	Contact Between Third Party Facility on Pole and Supply Lines				Human Error
SDG&E	7/29/21	18:31	33.0993290	-117.0661590	Vegetation	Urban	Less Than .25 Acres	Fire Agency	Escondido	P511401		240v	Conductor	Overhead	Yes	7/29/21	18:31	Contact From Object		Vegetation	Electric Facility	Outside Force
SDG&E	8/6/21	14:00	32.7160000	-116.8140000	Vegetation	Rural	Less Than .25 Acres	Fire Agency	CAL Fire	P278802		240v	Conductor	Overhead	No			Equipment/Facility Failure	Splice/Clamp/Connector			Weather

Idaho Power/1310
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

Docket UM 2209, Idaho Power Company's 2023 Wildfire Mitigation Plan
(Dec. 29, 2022)

February 21, 2023



ALISON WILLIAMS
Regulatory Policy & Strategy Leader
Idaho Power
awilliams@idahopower.com

December 29, 2022

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Filing Center
201 High Street SE, Suite 100
Salem, Oregon 97301

Re: Docket UM 2209
Idaho Power Company Wildfire Protection Plan

Attention Filing Center:

Please find attached for filing an electronic copy of Idaho Power Company's (Idaho Power or Company) 2023 Wildfire Mitigation Plan (WMP), which is submitted in compliance with Oregon Administrative Rule 860-300-0020(2).

Idaho Power's 2023 WMP reflects significant progress in the evolution of its wildfire mitigation efforts and builds on the 2022 WMP as approved by the Commission. The 2023 WMP includes a new Executive Summary and an additional appendix, both of which serve as aides in understanding and tracking Idaho Power's wildfire mitigation work. The Executive Summary provides a review of the 2022 wildfire season and the Company's actions over that time period, as well as discussion of lessons learned that will be applied to the 2023 wildfire season and beyond. The new appendix, Appendix C, provides Oregon-specific insights and maps Oregon requirements and Commission recommendations to relevant sections of the WMP. Additionally, the Company has revised and/or expanded several sections of its WMP to provide more comprehensive coverage of topics—for example, Section 10 of the WMP has been entirely rewritten to better explain the Company's communication efforts with its customers, public safety partners, and within the communities in which it serves.

The 2023 WMP also complies with the Commission's requirement to identify wildfire-related expenditures. In addition, the Company has filed an application for the deferral of its wildfire-related costs in docket UM 2270 contemporaneously with this 2023 WMP that details the jurisdictional allocation of wildfire-related costs between Oregon and Idaho.

Idaho Power appreciates Commission Staff's ongoing wildfire-related work and looks forward to Staff's review of the Company's 2023 WMP.

Very truly yours,

A handwritten signature in black ink, appearing to read "Alison Williams", with a long horizontal flourish extending to the right.

Alison Williams

AW:sg
Enclosures

WILDFIRE MITIGATION PLAN

Version 5 - Updated December 2022
2023



TABLE OF CONTENTS

Table of Contents	i
List of Tables	v
List of Figures	vi
List of Appendices	vii
Review/Revision History	viii
Executive Summary	1
Regulatory Context	13
1. Introduction	15
1.1. Background	15
1.2. Idaho Power Profile and Service Area	15
1.3. Asset Overview	16
1.4. Objectives of this Wildfire Mitigation Plan	17
2. Government, Industry, and Peer Utility Engagement	19
2.1. Objective	19
2.2. Government Engagement	19
2.3. Industry and Peer Utility Engagement	19
3. Quantifying Wildland Fire Risk	22
3.1. Objective	22
3.2. Identifying Areas of Elevated Wildfire Risk	22
3.2.1. Wildfire Risk Modeling Process	23
3.2.2. Wildfire Risk Areas	24
3.2.2.1. Boardman to Hemingway Proposed Transmission Line	30
4. Costs and Benefits of Wildfire Mitigation	32
4.1. Objective	32
4.2. Risk-Based Cost and Benefit Analysis of Wildfire Mitigation	32
4.3. Wildfire Mitigation Cost Summary	34

4.4. Mitigation Activities	36
4.4.1. Quantifying Wildland Fire Risk.....	36
4.4.2. Situational Awareness—Weather Forecasting Activities and Personnel	36
4.4.3. Situational Awareness—Advanced Technologies	37
4.4.4. Field Personnel Practices	38
4.4.5. Transmission and Distribution (T&D) Programs for Wildfire Mitigation	39
4.4.5.1. Annual T&D Patrol, Maintenance, and Repairs	39
4.4.5.2. Thermography Inspections.....	39
4.4.5.3. Wood Pole Fire-Resistant Wraps.....	40
4.4.5.4. Covered Conductor Pilot.....	41
4.4.6. Enhanced Vegetation Management	41
4.4.7. Communications and Information Technology Customer Notification Enhancements	43
4.4.8. Incremental Capital Investments.....	43
4.4.8.1. Circuit Hardening and Infrastructure Upgrades.....	43
4.4.8.2. Overhead to Underground Conversions.....	46
4.4.8.3. Transmission Steel Poles	46
5. Situational Awareness.....	47
5.1. Overview	47
5.2. Fire Potential Index.....	47
5.3. FPI Annual Process Review.....	49
6. Mitigation—Field Personnel Practices	50
6.1. Overview	50
6.2. Wildland Fire Preparedness and Prevention Plan	50
7. Mitigation—Operations	51
7.1. Overview	51
7.2. Operational Protection Strategy	51
7.3. Transmission Line Operational Strategy	52
7.3.1. Fire Season Temporary Operating Procedure for Transmission Lines.....	52

7.3.2. Red Risk Zone Transmission Operational Strategy	52
7.4. Distribution Line Operational Strategy	53
7.4.1. Red Risk Zone Distribution Operational Strategy	53
7.5. Public Safety Power Shutoff	53
7.5.1. PSPS Definition	53
7.5.2. PSPS Plan	54
8. Mitigation—T&D Programs	55
8.1. Overview	55
8.2. T&D Asset Management Programs	55
8.2.1. Transmission Asset Management Programs	57
8.2.1.1. Aerial Visual Inspection Program	57
8.2.1.2. Ground Visual Inspection Program	58
8.2.1.3. Detailed Visual (High-resolution Photography) Inspection Program	58
8.2.1.4. Wood Pole Inspection and Treatment Program	58
8.2.1.5. Cathodic Protection and Inspection Program	59
8.2.1.6. Thermal Imaging (Infra-red) Inspections	59
8.2.1.7. Wood Pole Wildfire Protection Program	59
8.2.1.8. Transmission Steel Poles	59
8.2.2. Distribution Asset Management Programs	60
8.2.2.1. Ground Visual Inspection Program	60
8.2.2.2. Wood Pole Inspection and Treatment Program	60
8.2.2.3. Line Equipment Inspection Program	61
8.2.2.4. Thermal Imaging (Infra-red) Inspections	61
8.2.2.5. Overhead Primary Hardening Program	61
8.2.2.5.1. Conductor “Small” Replacement	61
8.2.2.5.2. Wood Pin and Crossarm Replacement	61
8.2.2.5.3. Porcelain Switch Replacement	61
8.2.2.5.4. Fuse Options	61

8.2.2.5.5. Wood Pole Wildfire Protection Program	62
8.3. T&D Vegetation Management.....	62
8.3.1. Definitions.....	64
8.3.2. Transmission Vegetation Management.....	64
8.3.2.1. Transmission Vegetation Inspections	64
8.3.2.2. Transmission Line Clearing Cycles	64
8.3.2.3. Transmission Line Clearing Quality Control and Assurance	65
8.3.3. Distribution Vegetation Management.....	65
8.3.3.1. Distribution Line Clearing Cycles	65
8.3.3.2. Distribution Vegetation Inspections	65
8.3.3.3. Distribution Line Clearing Procedures	66
8.3.3.4. Distribution Line Clearing Quality Control and Assurance	66
8.3.4. Pole Clearing of Vegetation.....	66
9. Wildfire Response.....	68
9.1. Overview.....	68
9.2. Response to Active Wildfires	68
9.3. Emergency Line Patrols.....	68
9.4. Restoration of Electrical Service	68
9.4.1. Mutual Assistance.....	69
9.5. Public Outreach and Communications.....	69
10. Communicating About Wildfire	70
10.1. Objective.....	70
10.2. Community Outreach.....	70
10.2.1. Community Engagement	70
10.2.2. Community Resource Centers	72
10.3. Customer Communications.....	73
10.3.1. Key Communication Methods	75
10.3.2. Timing of Outreach.....	79

10.3.3. Communication Metrics.....	79
10.4. Idaho Power Internal Communications—Employees.....	82
11. Performance Monitoring and Metrics.....	83
11.1. Wildfire Mitigation Plan Compliance.....	83
11.2. Internal Audit.....	83
11.3. Annual Review.....	83
11.4. Wildfire Risk Map.....	83
11.5. Situational Awareness.....	83
11.6. Wildfire Mitigation—Field Personnel Practices.....	83
11.7. Wildfire Mitigation—Operations.....	84
11.8. Wildfire Mitigation—T&D Programs.....	84
11.9. Long-term Metrics.....	86

LIST OF TABLES

Table 1	
Wildfires impacting Idaho Power operations and facilities in 2022.....	3
Table 2	
2022 WMP activity summary and results.....	5
Table 3	
Overhead transmission voltage level and approximate line mileage by state (Dec. 31, 2021).....	17
Table 4	
Idaho Power’s transmission and distribution lines by risk zone in Idaho and Oregon*.....	25
Table 5	
CAL FIRE wildfire data by year.....	33
Table 6	
Estimated system-wide incremental O&M expenses for wildfire mitigation, \$000s (2023–2025).....	35
Table 7	
Summarized T&D asset management programs (associated with the WMP).....	55
Table 8	
Summary of asset inspections and schedules by state and zone.....	57

Table 9
VMP summary62

Table 10
Summary of vegetation management activities and schedules63

Table 11
T&D programs metrics84

LIST OF FIGURES

Figure 1
A field team installs a mesh wrap on a wood pole in 20222

Figure 2
A line worker installs a spark prevention unit near Eagle, Idaho4

Figure 3
Idaho Power developed an educational video to explain PSPS6

Figure 4
A contractor trims trees in a bucket truck7

Figure 5
Idaho Power uses visual graphics to illustrate the conditions that could require a PSPS event8

Figure 6
Idaho Power service area16

Figure 7
Wildfire Mitigation Plan—Risk Map26

Figure 8
Wildfire Risk Map—western Idaho and eastern Oregon.....27

Figure 9
Oregon-specific zones28

Figure 10
Wildfire Risk Map—southern Idaho.....29

Figure 11
Wildfire Risk Map—eastern Idaho30

Figure 12
B2H proposed route risk zones31

Figure 13
Comparison of reclosing strategies with respect to customer reliability and wildfire risk.....52

Figure 14
Outreach samples for the 2022 wildfire season74

Figure 15
May 2022 edition of *Connections*75

Figure 16
Idaho Power developed an educational video on how we protect wooden poles from wildfire76

Figure 17
Sample image of social media post.....77

Figure 18
Sample image of social media post.....77

Figure 19
Idaho Power’s Wildfire Safety landing webpage78

Figure 20
Wildfire mitigation meeting PowerPoint cover slide.....79

Figure 21
Wildfire safety webpage views80

Figure 22
May 2, 2022, edition of *News Scans*82

LIST OF APPENDICES

- Appendix A**
The Wildland Fire Preparedness and Prevention Plan.
- Appendix B**
The Public Safety Power Shutoff (PSPS) Plan.
- Appendix C**
Oregon Wildfire Requirements and Recommendations.

Review/Revision History

This document has been approved and revised according to the revision history recorded below.

Review Date	Revisions
Jan. 22, 2021	WMP Version 1 was filed with the Idaho Public Utilities Commission and posted to the Idaho Power website.
Dec. 29, 2021	Modifications including expanded cost-benefit discussion, plan progress and updates, and inclusion of Idaho Power's Public Safety Power Shutoff plan.
March 18, 2022	Added Appendix C.
June 28, 2022	Added information to comply with the Public Utility Commission of Oregon's conditions of approval of Idaho Power's 2022 Wildfire Mitigation Plan.
Oct. 19, 2022	Updated cost table within the WMP and filed with the Idaho Public Utilities Commission.
Dec. 29, 2022	WMP Version 5.0, including 2022 season in review, changes for 2023 season, and addition of Appendix C—Oregon Wildfire Requirements and Recommendations.

EXECUTIVE SUMMARY

Idaho Power is dedicated to the safety of our customers and communities, and to delivering reliable, affordable energy. In pursuit of that mission, we built off our existing Wildfire Mitigation Plan (WMP) and took major steps in 2022 to enhance our situational awareness in the field, enhance vegetation management, further harden the electrical system, and expand and better the ways in which we communicate and alert customers and communities about wildfire and wildfire risk. As the company enters its third year with a WMP, this new edition (Version 5.0) has been improved to reflect key learnings, feedback from stakeholders, and a focus on new technology. The WMP also provides supporting information on wildfire requirements and actions specific to our Idaho and Oregon regulators, but the document remains—first and foremost—an evolving guide that provides holistic and prudent strategies for reducing wildfire risk.

This Executive Summary—a new introduction in the 2023 WMP—provides a comprehensive summary of the 2022 wildfire season and the company’s lessons learned and progress toward our wildfire mitigation objectives. Additionally, the Executive Summary previews changes to the company’s risk management framework and lessons learned that will inform 2023 wildfire mitigation efforts and beyond.

2022 Weather and Fire Potential

The spring of 2022 brought above normal precipitation and below normal temperatures. As an example, parts of southern Idaho—including the Boise area—experienced heavy snowfall in the second week of May 2022.¹ This led to an abundance of fuels across the region. The summer months saw record high temperatures and below normal relative humidity that increased wildfire potential. Idaho Power atmospheric scientists conducted regular forecasts during wildfire season to determine a daily Fire Potential Index (FPI) value across the company’s service area. The FPI is used to inform Idaho Power’s on-the-ground, operational strategies when the fire potential is high.

A combination of record heat and low humidity led to a dramatic increase in FPI levels throughout the summer of 2022. There were nearly three times as many high-fire-potential days as in 2021. Despite the seasonal challenges, the company fulfilled and executed the WMP as planned for 2022.

¹ Carolyn Komatsoulis. 2022. Idaho Press. It’s Pretty Unusual: Half-Inch of Snow, Power Outages Make for Manic Monday in Boise. May 2, 2022.



Figure 1
A field team installs a mesh wrap on a wood pole in 2022

Idaho Power continues to monitor climate variability and changing conditions to determine how wildfire risk is shifting season to season and in the longer term. Historical data shows temperature has increased over the past 80 years in southern Idaho and eastern Oregon. Studies show a connection between higher temperatures and increased wildfire activity, both in intensity and size of wildfires.² Further, extreme fire weather days are increasing, and fire season is getting longer.³

As climate conditions change, the company is committed to monitoring increased wildfire risk and enhancing the WMP to keep customers and communities safe.

Impacts of Wildfires in 2022

This year, both Idaho and Oregon had fewer wildfires and acres burned during wildfire season than the previous 20-year average.⁴ However, wildfires did affect Idaho Power equipment both

² Idaho reviewed academic, scientific, and governmental climate change studies, including those from the Center for Climate and Energy Solutions, the US Environmental Protection Agency, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, North Carolina State University, and National Geographic.

³ In late 2022, Idaho Power analyzed temperatures over the last 80 years in the Idaho Power service area to assess changing climate conditions. The analysis showed that daily high temperatures and extreme weather events are increasing.

⁴ Interagency Fire Center. Current National Statistics. www.nifc.gov/fire-information/statistics.

inside and outside of our service area. Three major wildfires threatened or burned wood structures. In some cases, we de-energized lines to keep firefighters safe.

Table 1

Wildfires impacting Idaho Power operations and facilities in 2022

Incident Name	Location	Fire Discovery Date	Containment Date	Acres	Cause	Facilities Impacted
Moose	17 Miles North of Salmon, ID	7/17/2022	11/9/2022	130,144	Unattended Campfire	Transmission
Four Corners	6 Miles west of the City of Cascade, ID	8/13/2022	10/20/2022	13,702	Lightning	Distribution
Double Creek	10 miles SE of Imnaha, OR	8/30/2022	10/25/2022	175,937	Lightning	Transmission

Idaho Power's mapping applications include geographic information system (GIS) data for active wildfires to inform operational planning and provide insight into areas that could be threatened throughout the fire season. The company monitored fire activity throughout the season to compare fire behavior to modeling. We expect to learn more about how real-time fire analytics can inform risk-based decision-making in coming fire seasons.

Key Objectives of 2022 WMP

Idaho Power met the 2022 WMP's key objectives, including the completion of major projects to ensure the WMP could be effectively carried out. A new Public Safety Power Shutoff (PSPS) program was implemented and all processes and procedures guiding customer communication, weather forecasting, switching plans and de-energization criteria were completed before fire season. This includes the installation and commissioning of a new communication system used to expedite notifications of PSPS events via voice, text messaging, and e-mail. We also installed 17 protective devices to isolate line segments and provide a means of remote de-energization.



Figure 2
A line worker installs a spark prevention unit near Eagle, Idaho

Overview of 2022 WMP Progress

By almost all measures, Idaho Power met or exceeded its WMP goals in 2022. Work plans are established at the beginning of the year and these items are tracked throughout the year to identify areas needing corrective action or attention. As some wildfire mitigation work is on a rotating cycle based on wildfire season (and not the calendar year), some of the items listed are still in progress at the time of writing this 2023 WMP.

Idaho Power's Progress Toward 2022 Wildfire Mitigation Goals

Table 2
2022 WMP activity summary and results

Plan Area	Wildfire Mitigation Plan Activities	2022 Goal	Completed	% Complete	2023 Goal
System Hardening	Distribution System Hardening				
	System Hardening Line Miles	48	48.91*	102%	69
	Overhead Line Miles Converted to Underground	1.85	1.85	100%	1
	Expulsion Fuse Replacement	930	942	101%	1319
Feeder Segmentation	Surge Arrester Replacement				
	Surge Arrester Replacement	830	839	101%	1175
Fire Mesh Installation	Segmentation Devices				
	Installation or Relocation of Automatic Reclosing Devices	17	17	100%	8
Asset Inspections	Transmission Fire Mesh Installation				
	Red Risk Zone Poles	492	492	100%	-
	Yellow Risk Zone Poles	406	585	144%	870
Vegetation Management	Transmission Inspections				
	Wildfire Pre-Season Patrol - Red Risk Zones (Structures)	923	923	100%	923
	Infrared Thermography Patrol (Structures)	923	923	100%	923
	Distribution Inspections				
Meteorology	Pruning Cycle				
	Transition to a 3-Year Pruning Cycle (circuits)	282	173	70%**	320
	Enhanced Vegetation Management				
	Annual Patrol - Red & Yellow Risk Zones (circuits)	65	65	100%	65
	Annual Mitigation - Red & Yellow Risk Zones (circuits)	65	65	100%	65
	Mid-Cycle Patrols - Red & Yellow Risk Zones (circuits)	47	47	100%	1
	Mid-Cycle Pruning - Red & Yellow Risk Zones (circuits)	47	47	100%	1
	Hazard Trees Identified and Pruned	-	77	100%	100% of All Identified
	Hazard Trees Identified and Removed	-	49	100%	100% of All Identified
	Audits of Pruning Activities - Red & Yellow Risk Zones (worksites)	6,324	977	15%**	100% of All Identified
Idaho Power Weather Stations	Idaho Power Weather Stations				
	Weather Station Installations	5	5	100%	5

*Excludes hardening work outside of wildfire risk zones

**Estimated year end completion

As can be observed from the numbers above, vegetation management is a challenging area. Much of the delay in reaching 2022 goals is attributable to broader challenges in the workforce. Idaho Power uses contractors to perform vegetation management and audit work. The company witnessed labor shortages, more inexperienced contract workers than in the past, and increased turnover that led to lower vegetation management production levels throughout the year. Vegetation management production was also lower than anticipated because more climbing work was required than originally expected. Climbing to prune or remove vegetation requires contractors with more skill and takes more time. Despite these challenges, Idaho Power continues to work with contractors to push toward its goals and estimates that, by the end of the calendar year, the production level will be near 70% of target.

Audits were also impacted by resource availability, as contractors did not reach full staff levels until December 2022. Because of this, random sampling was used in lieu of auditing all vegetation management work in wildfire risk zones. Idaho Power will work with contractors at the end of 2022 to develop corrective action plans and make necessary adjustments to meet targeted performance levels in 2023.

Regarding customer communication in 2022, Idaho Power used several methods to inform customers throughout the year of our WMP and PSPS plan. These included social media, radio, customer newsletters, postcards, and voice and text messaging. Before the 2022 wildfire season, the company focused on asking customers—especially those in PSPS potential zones—to update their contact information and prepare for potential PSPS events. Additionally, the company conducted over 20 in-person and virtual meetings to engage with customers, counties, and fire and other public agencies to discuss and seek feedback on the WMP and PSPS efforts.



Figure 3
[Idaho Power developed an educational video to explain PSPS](#)

Fortunately, the company did not need to fully implement a PSPS in 2022. However, the company's planning and communication apparatuses were tested in one instance in Pocatello, Idaho, where the company anticipated a PSPS event due to high winds and extremely high fire potential. The company took the steps to inform public safety partners, critical facilities, and customers in the area that a PSPS was imminent. Rain showers preceded high winds in the area and the PSPS event was canceled before de-energization took place.

Looking Ahead—Expanded Mitigation Activities

As detailed in the WMP, Idaho Power deploys a comprehensive and multi-faceted strategy to reduce wildfire risk. The company plans to implement new activities and expand existing ones in 2023. The list below summarizes new or expanded activities.

Infrastructure Hardening

In 2022, we hardened approximately 49 line miles to decrease the risk of wildfire in Red Risk Zones—areas with the highest wildfire risk based on wildfire probability and potential impacts. The hardening program is 26% complete, with Red Risk Zones given the highest priority at this time. This work will increase in 2023 by 40% and include hardening to 69 line miles.

Strategic Undergrounding

In 2022, Idaho Power buried approximately 1.85 miles of overhead distribution line in areas of highest wildfire risk. This work primarily targeted the main trunk of distribution feeders. In 2023, we will target a smaller line segment in an area that includes residences.

The company's goal is to work through the complexities and costs associated with burying primary overhead powerlines, overhead services, and converting customer-owned service-entrance equipment. This work will take place in a PSPS zone in Idaho with high fire probability and potential impact. The projects in 2022 and upcoming work in 2023 will inform future underground conversion strategies by helping us weigh costs and risk-reduction benefits against those of traditional feeder hardening and covered conductor conversions.

Vegetation Management

Idaho Power's effort to achieve a three-year pruning cycle will continue in 2023. It is a critical aspect of meeting our objective to reduce wildfire risk. We will expand brush clearing and applying ground sterilant around wood poles to reduce fuels. We are also exploring an opportunity to partner with the National Forest Foundation, Boise National Forest, Bureau of Land Management, and local fire districts on a shared stewardship program in the Boise Front. This work is expected to provide a means for Idaho Power to participate in fuel reduction activities outside of the right of way, which will reduce wildfire risk by decreasing surface fuels and the potential of tree contact.



Figure 4

A contractor trims trees in a bucket truck

Risk Modeling

Risk modeling of Idaho Power's service area is used to prioritize mitigation activities. In 2023, we will re-evaluate our risk modeling by incorporating new structure information based on 2020 Census data and explore new areas of consequence based on the feedback received in the past year from fire agencies and customers.

Situational Awareness

The FPI is forecasted daily during fire season and provides critical information that informs operational changes during days with high fire potential. In 2023, we will work to improve the communication and calculation of the FPI by creating more clear and concise messaging to stakeholders.

PSPS

While the company did not proactively de-energize any customers as part of its PSPS program in 2022, engagement with communities and customers this year highlighted their concerns—specifically the inability to communicate or suppress fire via electric wells and water pumps without power. This feedback highlights the need for the company to find ways to limit the impact and frequency of future PSPS events. Many of the activities being pursued here, such as strategic undergrounding and utilizing covered conductor, will decrease the likelihood of PSPS. However, PSPS will remain a tool available to the company to mitigate wildfire risk during extreme fire weather conditions.



Figure 5

Idaho Power uses visual graphics to illustrate the conditions that could require a PSPS event

Segmentation

We completed the installation of 17 automatic reclosing devices (reclosers) in Red Risk Zones as part of an effort to isolate circuit segments and improve reliability for customers outside of those zones. In 2023, we will continue this work and install an additional eight reclosers in Red Risk Zones.

New Technology and Innovations

New technology and innovative programs were explored in 2022 to find new ways to reduce the risk and impacts of wildfire. In 2023, we will conduct pilots based on our findings with the goal of learning more about their implementation complexities and to analyze costs and risk reduction benefits prior to fully integrating into the WMP. These pilots or trials include the following:

- Satellite Imagery—Using satellite imagery to detect vegetation encroachment and hazard trees.

- **Covered Conductor**—Covered conductor is a solution used throughout the industry to decrease the potential of ignition if an object contacts powerlines. A trial of covered conductor will be carried out in our training yard to determine overall costs, tooling requirements, work methods, and construction standards and specifications.
- **Structural Resilience of Wood Poles**—We will increase situational awareness in Red Risk Zones by performing a survey of distribution poles using Light Detection and Ranging (LiDAR) technology to identify structural loading capacity of existing wood poles.
- **Shared Stewardship**—We will partner with federal agencies on a shared stewardship fuel reduction program in forested areas and evaluate the benefits in terms of reduced surface fuels and fire spread potential. The collaboration will also provide the company with the opportunity to work with land managers and owners to expand vegetation management and reduce the potential of ignition from vegetation contact.
- **Fire Detection Cameras**—In 2022, we explored the benefits that cameras can have in early fire detection and became part of the Wildfire Detection Camera Strategy Work Group in Oregon. We are working to identify optimal locations and developing partnerships with state and federal agencies and will expand our knowledge of cameras that utilize artificial intelligence for fire detection. We plan on piloting cameras in 2023 to further understand the complexities of installations, permitting, systems used for notification, and overall accuracy. The pilot will be critical in determining a long-term strategy for the use of cameras to reduce wildfire risk.

Lessons Learned

Idaho Power has conducted its own assessment of lessons from the 2022 wildfire season and the company's wildfire mitigation practices. The following lessons learned were developed by supplementing this analysis with feedback heard from stakeholders, customers, public safety partners, peer utilities, and through wildfire-related forums, research, and education.

Pre-Wildfire Season Patrols

Idaho Power strives to complete wildfire patrols prior to the start of each wildfire season to identify issues that may pose a risk of ignition if left unchecked. Above-normal precipitation and below-normal temperatures in the spring months of 2022 created access issues in mountain areas where snow levels were several feet deep. Late, heavy snow delayed completion of these patrols until mid-June, which, while later than target, was still prior to the onset of conditions conducive for wildfire.

Situational Awareness

The FPI is an essential tool to support operational decision making. It includes detailed forecasts of 148 different geographical areas or zones throughout the service area and is used to determine when a PSPS is necessary. The preparation for a PSPS event in August 2022 highlighted an opportunity to improve the communication and precision of the forecasts. In that case, a line segment subject to the potential PSPS was included in two different FPI zones that had different fire potential across their geographical areas. Initially, this created

confusion as to which forecast to use for decision-making purposes. In 2023, we will review areas that have overlapped FPI zones and refine mapping and forecasted boundaries to eliminate the potential of this situation occurring again.

Vegetation Management

Pruning levels in 2022 did not meet the target established for the year largely due to labor issues. We added outsourced crews from throughout the country to assist in conducting vegetation management activities and expect to reach approximately 70% of targeted vegetation management pruning by the end of 2022. In 2023, we will conduct a thorough review of all activities and assess means of working with contractors to drive towards 2023 production goals.

Expansion of the Wildland Urban Interface

As the population in Idaho Power's service area continues to grow, we've seen an expansion of new construction in the wildland urban interface (WUI). This expansion creates challenges for wildfire mitigation as new wildfire risks emerge. In 2023, we will analyze the growth of the WUI and create new strategies to address new risks.

Functional Exercises

Two functional exercises were conducted in the spring of 2022 to test processes and procedures needed to fully execute the PSPS program. The exercises were beneficial and ensured that the company was prepared to effectively carry out a PSPS prior to the onset of severe fire weather. Forty action items were identified throughout the exercises and consisted of refining and improving communication methods, timing, documentation, and website functionality. We found that PSPS events can be complex and occur within different parts of the company's service area simultaneously. To help ensure expedited and accurate communication for all potential scenarios, templates were developed for communication activities involving customers, Public Safety Partners, Emergency Support Function (ESF-12), and departments within the company. The templates will be reviewed and improved as needed in 2023.

List of Stakeholders

The PSPS functional exercises highlighted the need for accurate and readily available lists of Public Safety Partners and critical facilities. We developed a central repository for all information related to PSPS which includes contacts for Public Safety Partners, operators of critical facilities, and Emergency Support Function ESF-12 personnel.

Estimated Time of Restoration

As with all outages, having accurate estimates for the time or restoration (ETR) is a priority. The PSPS functional exercises highlighted that setting an initial ETR for PSPS events is more challenging than ordinary unplanned or planned outages. The company determined that the ETR for a PSPS should take into consideration the duration of the weather event and the time needed for safety patrols to occur. Internal atmospheric scientists became a crucial part of determining the duration of weather events. Operational plans were developed for each region to guide restoration and switching procedures to expeditiously restore power during a PSPS. These plans include estimated patrol times which are also used for establishing an initial ETR. We plan on reviewing any assumptions in the operational plans each year and

include lessons learned from the previous year into the patrol estimates to ensure we are providing the best information possible.

Field Observer Program

PSPS events are carefully evaluated by an assessment team to balance wildfire risk with potential PSPS impacts on the customers and the communities we serve. In 2022, we expanded the PSPS decision-making process to include real-time on-site conditions from Field Observers (FOBs). FOBs are Idaho Power personnel positioned within pre-defined PSPS zones to monitor system conditions and periodically report observations to help inform the PSPS assessment team. The location of FOBs in PSPS zones was examined to ensure their safety during severe weather conditions and communication templates were developed to ensure accurate and consistent fire weather reporting. We found that, in some areas, cellular and radio communication does not exist and we had to rely on satellite messaging services. The FOB program became more complex than anticipated, and we will work in 2023 to improve the documentation and procedures as well as increase the number of qualified resources to perform FOB duties in situations where multiple areas are at risk of PSPS.

Customer Communication

Notifying customers in PSPS zones was a priority this year and consisted of telephone, text, and e-mail outreach. We found that some of the targeted customers did not have up-to-date contact information associated with their account. Several efforts were made to encourage customers to update their contact information, and additional information was mailed to those customers without current contact information. This will be a continued focus in 2023.

Community Feedback

The company conducted over 20 WMP and PSPS plan presentations throughout the service area, to advise customers of our plans and to solicit feedback to help inform future versions of the WMP. Seven public meetings were held in Oregon at the end of fire season, and we received good feedback from local fire chiefs, emergency managers, and the general public. Feedback and themes from these meetings and others throughout the year will be incorporated into the 2023 WMP and include:

- Adjusting the timing of public meetings in Oregon to coincide with fire season
- Partnering with agencies and other programs, such as Firewise, when conducting public meetings
- Reviewing risk modeling to include additional areas of consequence
- Having more collaboration with fire agencies including the Idaho Bureau of Land Management (BLM), Forest Service, Baker County, and La Grande Rural Fire Protection District

Vulnerable Populations

Idaho Power participated in two mock events, one conducted by Malheur County in Oregon and another as part of the Idaho Office of Emergency Management's Cascade Rising event. These two events highlighted two opportunities to improve our support for vulnerable populations during an outage or PSPS event. First, the Red Cross was added as a Public Safety Partner in Malheur County based on their role in coordinating Community Resource Centers (CRC). Second, the emPower program was identified as a tool to help notify customers on durable medical devices (DME) if a PSPS event is predicted. Targeted outreach to vulnerable populations was also conducted to include outage preparedness flyers sent to Meals on Wheels participants. In 2023, Idaho Power will further the efforts made in identifying and communicating with vulnerable populations.

Risk Management Process

A review of Idaho Power's risk management process used in developing previous versions of the WMP was completed in 2022. The review found opportunities to improve by strategically incorporating a more formalized risk management process into the WMP. The International Standardization Organization (ISO 31000-2018) is a recognized standard for risk management and will be integrated into the 2023 plan. The standard will help position the company to achieve the objectives of the WMP by fostering continuous improvement and ensuring a consistent approach to risk-based decision making.

REGULATORY CONTEXT

As part of Idaho Power Company's (Idaho Power or company) commitment to deliver safe, reliable, and affordable energy, the company developed a comprehensive Wildfire Mitigation Plan (WMP) to reduce wildfire risk associated with its facilities. The WMP has three core objectives:

1. Reducing wildfire risk for the safety of Idaho Power's customers and the communities in which it operates.
2. Ensuring the continued and reliable delivery of electricity to more than 600,000 retail customers in Southern Idaho and Eastern Oregon.
3. Furthering the company's good stewardship of the beautiful and natural lands within Idaho Power's service area and beyond.

Idaho Power released its inaugural WMP in January 2021. The company's WMP is a living document that will evolve over time. Idaho Power will seek to review, modify, and expand the WMP in the coming years to reflect shifts in industry best practices and to ensure the company is following procedures and requirements established by its regulators. Given that Idaho Power operates in both Oregon and Idaho, below is a description of recent wildfire-related regulatory activities by state.

Idaho

On January 22, 2021, Idaho Power proactively filed its first WMP with the Idaho Public Utilities Commission (IPUC). The company's [application](#) provided a narrative of Idaho Power's effort to develop the WMP, including discussion of risk analysis across its service area and evaluation of specific wildfire mitigation activities (e.g., enhanced vegetation management and system hardening) the company would undertake in the coming fire season. Idaho Power asked the IPUC for authority to defer the Idaho jurisdictional share of incremental operations and maintenance expenses and capital depreciation expenses related to implementing the measures in the WMP, as well as incremental insurance costs.

On June 17, 2021, the IPUC issued [Order No. 35077](#), granting the company's application and allowing cost deferral of all incremental wildfire mitigation and insurance expenses identified in Idaho Power's application.

On October 20, 2022, the company filed an updated WMP and a new application for deferral of newly identified wildfire mitigation-related costs.

Oregon

In August 2020, the Public Utility Commission of Oregon (OPUC) opened an informal rulemaking related to mitigating wildfire risks to utilities, utility customers, and the public. The scope of this docket ([AR 638](#)) shifted following the 2020 wildfire season, splitting into two

tracks—a temporary wildfire rulemaking to govern the 2021 wildfire season and a secondary track to establish replacement permanent rules for the 2022 fire season.

On July 19, 2021, Oregon Governor Kate Brown signed into law [Senate Bill 762](#) (SB 762), a wildfire bill that, among other actions, established minimum requirements for utility wildfire protection (or mitigation) plans. The bill required that utilities file inaugural plans no later than December 31, 2021.

In response to the passage of SB 762, the OPUC halted the permanent wildfire rulemaking in AR 638 and opened docket AR 648 to develop interim permanent rules adhering to the requirements and timing of the new law. On September 8, 2022, the OPUC issued Order No. 22-335 in AR 638 finalizing requirements specific to requirements for utility WMPs.

Idaho Power added Appendix C to the WMP to provide Oregon-specific information related to wildfire requirements and recommendations.

1. INTRODUCTION

1.1. Background

In recent years, the Western United States has experienced an increase in the frequency and intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend including climate change, increased human encroachment in wildland areas, historical land management practices, and changes in wildland and forest health, among other factors.

While Idaho Power has not experienced catastrophic wildfires within its service area at the same level experienced in other western states, such as California and more recently certain areas in Oregon, millions of acres of rangeland and southern Idaho forests have burned in the last 30 years.⁵ In that same time period, the wildfire season in Idaho has expanded by 70 days.⁶ Idaho's wildfire season is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season is designated by the State Forester each year pursuant to Oregon Revised Statute § 477.505 and typically begins in June. Idaho Power's operational practices account for the differences between Idaho and Oregon's wildfire seasons and requirements.

1.2. Idaho Power Profile and Service Area

Idaho Power is an investor-owned utility headquartered in Boise, Idaho, engaged in the generation, transmission, and distribution of electricity. Idaho Power is regulated by the Federal Energy Regulatory Commission (FERC) and the state regulatory commissions of Idaho and Oregon. Idaho Power serves approximately 600,000 retail customers throughout a 24,000 square mile area in southern Idaho and eastern Oregon (see Figure 6).

⁵ Rocky Barker, *70% of S. Idaho's Forests Burned in the Last 30 Years. Think That Will Change? Think Again.*, Idaho Statesman, October 4, 2020.

⁶ Ibid.

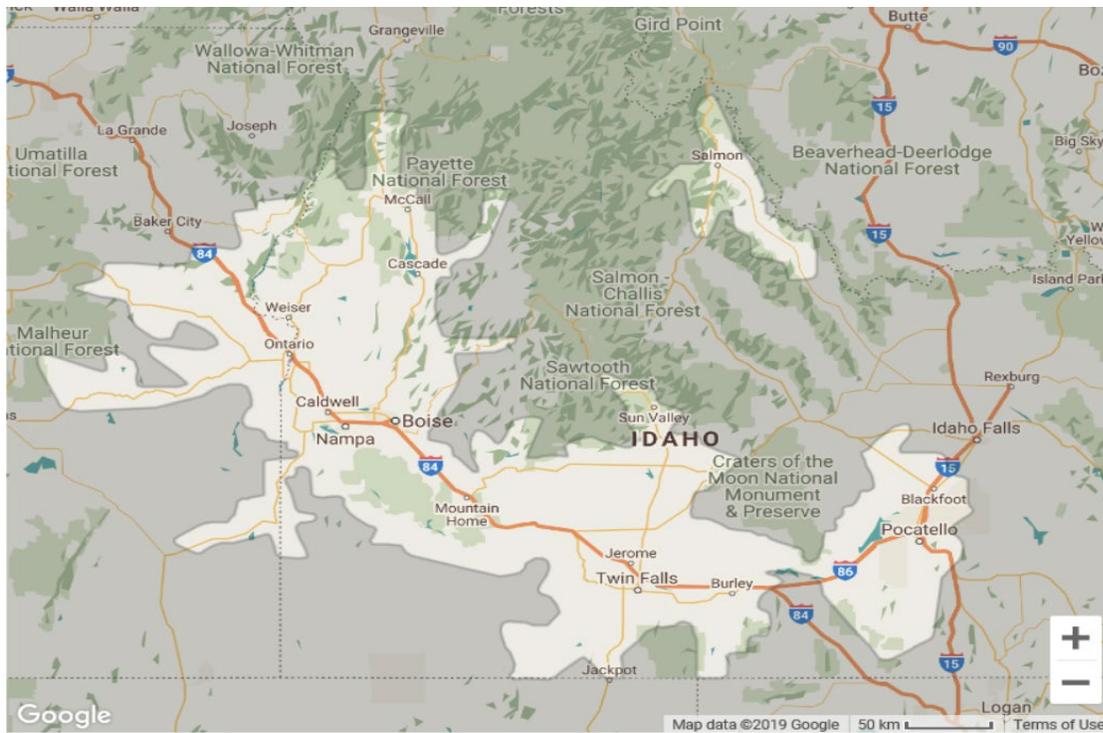


Figure 6
Idaho Power service area

Of Idaho Power’s 24,000 square mile service area, approximately 4,745 square miles are located in Oregon and 19,255 in Idaho. Approximately 20,000 customers are served in Oregon and 580,000 in Idaho.

1.3. Asset Overview

Idaho Power delivers electricity to its customers via more than 310 substations, 4,800 miles of overhead transmission lines, and 19,300 miles of overhead distribution lines. Table 3 summarizes the overhead powerline asset information by state. Approximately 2,871 pole miles (12%) are in Oregon and 21,042 (87%) are in Idaho.

Table 3

Overhead transmission voltage level and approximate line mileage by state (Dec. 31, 2021)

ASSET	TOTAL	IDAHO		OREGON		MONTANA		NEVADA		WYOMING	
	Pole Miles	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
46 kV Transmission Lines	383	383	100								
69 kV Transmission Lines	1,136	743	65	344	30	50	4				
115 kV Transmission Lines	3			3	100						
138 kV Transmission Lines	1,448	1,242	86	141	10			65	4		
161 kV Transmission Lines	84	84	100								
230 kV Transmission Lines	1,148	927	81	219	19						
345 kV Transmission Lines	473	364	77							110	23
500 kV Transmission Lines	103	53	51	50	49						
Total OH Transmission Lines	4,778	3,796	80	757	16	50	1	65	1	110	2
Total OH Distribution	19,297	17,183	89	2,114	11						
Total OH Pole Miles	24,075	20,979	87	2,871	12	50	0.21	65	0.27	110	0.46

1.4. Objectives of this Wildfire Mitigation Plan

The primary objectives of this WMP are to identify and implement strategies to accomplish the following:

1. Reduce wildfire risk associated with Idaho Power’s transmission and distribution (T&D) facilities and associated field operations.
2. Improve the resiliency of Idaho Power’s T&D system in a wildfire event, independent of the ignition source.
3. Comply with all wildfire mitigation requirements established by its regulators.⁷

Idaho Power’s approach to achieving these objectives includes the following actions:

- Engage with government and industry entities and electric utility peers to ensure understanding and commonality of wildfire mitigation plans.
- Utilize a risk-based approach to quantify wildland fire risk that considers *wildfire probability* and *consequence* to identify areas of elevated wildfire risk within Idaho Power’s service area. These identified areas are then incorporated in Idaho Power’s geographic information system (GIS) mapping.
- Create specific and targeted operations and maintenance practices, system hardening programs, vegetation management, and field personnel practices to mitigate wildfire risk.

⁷ The OPUC established docket AR 648, the interim permanent wildfire rulemaking, after the Oregon legislature passed Senate Bill 762. The bill created a requirement for public utilities in Oregon to submit “wildfire protection plans” to the OPUC by December 31, 2021.

- Incorporate information regarding current and forecasted weather and field conditions into operational practices to increase situational awareness.
- Employ public safety power shutoff (PSPS) protocols for Idaho Power’s service area and transmission corridors.
- Evaluate the performance and effectiveness of strategies identified in this WMP through metrics and monitoring. The WMP and all its components will be reviewed prior to wildfire season each year.

2. GOVERNMENT, INDUSTRY, AND PEER UTILITY ENGAGEMENT

2.1. Objective

Idaho Power recognizes the importance of engaging with federal, Idaho and Oregon State governments, and local governments as an integral part of mitigating wildfire risk. Idaho Power also recognizes the importance of engagement and outreach with respect to potential future PSPS events to minimize customer impact.

Idaho Power's wildfire mitigation plan and outage preparedness strategy includes specific activities to engage with key stakeholders to share information, gain feedback, and incorporate lessons learned. Peer utility engagement is crucial to ensure the company's efforts are informed by the best practices of its peers in Idaho and Oregon.

2.2. Government Engagement

Much of Idaho Power's service area extends over land managed by the BLM and U.S. Forest Service. Idaho Power engages with both agencies to share information and identify areas and activities that are mutually beneficial. For example, Idaho Power allowed for an extended firebreak along Highway 93 in Jerome County, Idaho, on its property to help with BLM wildfire mitigation initiatives.

Idaho Power is also a member of the Idaho Fire Board, which was initiated by the U.S. Forest Service. Membership is voluntary and currently includes the Forest Service, BLM, Federal Emergency Management Agency (FEMA), Idaho State Lands Department, Idaho Department of Insurance, Idaho Military Division, City of Lewiston, Idaho Power, and The Nature Conservancy in Idaho.

Idaho Power is actively engaged with both the IPUC and the OPUC with respect to wildfire mitigation activities. Idaho Power filed its WMP with the IPUC in 2021 and again in 2022. In Oregon, the company is required to submit an updated WMP by the end of each calendar year. Idaho Power continues to participate in the OPUC's Oregon Wildfire and Electric Collaborative (OWEC) and ongoing rulemaking efforts.

2.3. Industry and Peer Utility Engagement

Although Idaho Power relied on plans developed by several California utilities in drafting its own WMP, modifications were made to account for Idaho Power's considerably different risk profile. Additionally, Idaho Power participated in multiple workshops with San Diego Gas and Electric, Southern California Edison, Pacific Gas and Electric, Sacramento Municipal Utility District, and PacifiCorp. The company continues to engage with these utilities to learn about California's evolving practices.

In the Pacific Northwest, many utilities work collaboratively to understand and ensure commonality of their various wildfire mitigation plans, while accounting for the variation in each

utility's unique service area. These utilities include Idaho Power, Avista Utilities, Portland General Electric, Rocky Mountain Power, Pacific Power, Chelan County Public Utility District, Puget Sound Energy, NV Energy, Bonneville Power Administration (BPA), and Northwestern Energy.

Idaho Power is also a member of both the Edison Electric Institute (EEI) and the Western Electric Institute (WEI). The company participated in multiple workshops and conferences with both entities and member utilities to evaluate the strength and effectiveness of Idaho Power's WMP in comparison to other members' plans. Additionally, Idaho Power's CEO and President is an active member of the EEI Electricity Subsector Coordinating Council Wildfire Working Group. This working group has been partnering with the U.S. Department of Energy and other government agencies to collectively minimize wildfire threats and potential impacts.

These workshops continue to prove valuable for sharing wildfire mitigation best practices and discussing new and existing technology related to wildfire mitigation. For example, EEI and WEI workshops, as well as independent investigations, led Idaho Power to expand its use of Unmanned Aircraft Systems ([UAS] also known as drones) during line patrols, replace expulsion fuses with energy limiting fuses, and add mesh wraps to wood poles in wildfire risk zones. Idaho Power has also enlisted a team of employees to focus on wildfire mitigation technologies by identifying opportunities to incorporate new and innovative technologies into Idaho Power's wildfire mitigation efforts.

2022 Industry and Peer Utility Engagement

Idaho Power continues to engage with industry groups and peer utilities to gain knowledge of new mitigation activities, industry best practices, and employing technology to reduce wildfire risk. The following summarizes 2022 activities:

- Technology—Held meetings with over 30 vendors and manufacturers to identify new technology and innovations used to mitigate wildfire risk. The findings were used to develop a roadmap and led to the creation of pilot projects in 2022 and 2023.
- Electric Power Research Institute (EPRI)—Engaged with EPRI to learn more about new technology and the attributes of covered conductor, particularly the UV performance and reliability performance.
- Utility Wildfire Symposium—Attended a symposium hosted by EPRI and Portland General Electric focused on new technology, trends, and ways to mature risk modeling.
- NW Wildfire Group—Attended biennial meetings and shared details of Idaho Power’s WMP and PSPS plan with attendees including how new technology and innovative materials are being incorporated.
- WEI—Provided a presentation and details of Idaho Power’s documented processes and procedures used in PSPS execution and customer notifications.
- WEI Wildfire Planning and Mitigation Virtual Meeting—Attended a two-day conference to gain insight into mitigation activities and strategies other utilities are pursuing.
- International Wildfire Risk Mitigation Consortium—Held meetings throughout the year with program managers and participated in a risk reduction seminar focused on vegetation management.
- Oregon Wildfire Detection Camera Strategy Group—Became a member of a workgroup focused on the interoperability of different camera platforms to improve fire detection, suppression efficiency, and response time. This group has provided valuable information into the benefits that cameras hold for early fire detection and how partnerships can be utilized to expedite the installation.
- Wildfire Technology Webinar—Attended webinar focused on using artificial intelligence (AI) drones for grid inspections, aerial sensors, and cameras to gain situational awareness.
- National Forest Foundation (NFF)—Attended multiple meetings with the NFF and other agencies to learn more about the benefits of fuel treatments and shared stewardship programs and how utilities have participated in other locations. Lessons learned include details of the success achieved in the Upper Arkansas Forest Fund in the State of Colorado.
- British Standards Institute (BSI) —Attended a two-day course taught by BSI to gain knowledge of the International Organization for Standardization (ISO) 31000 risk management framework and how it can be applied to the company’s WMP.

3. QUANTIFYING WILDLAND FIRE RISK

3.1. Objective

Idaho Power's approach to quantifying wildland fire risk is to identify geographic areas of elevated wildfire risk if a wildfire ignites near a power line. Mitigation actions and programs are prioritized in those areas identified as elevated wildfire risk areas.

3.2. Identifying Areas of Elevated Wildfire Risk

Idaho Power hired an external consultant that specializes in assessing and quantifying the threat of wildfire through a risk-based methodology that leverages weather modeling, wildfire spread modeling, and Monte Carlo simulation. This methodology is not unique to Idaho Power's WMP. The California Public Utilities Commission (CPUC) used the same modeling approach (and in fact, the same consultant) in developing its CPUC Fire Threat Map. In addition, other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling to identify and quantify wildfire risk.

This methodology is consistent with conventional definitions of *risk*, which is usually taken as an event's *probability* multiplied by its potential negative *consequences* or impacts should that event occur. For Idaho Power's wildfire risk assessment, this formula is:

$$\text{Wildfire Risk} = \text{Fire Probability} \times \text{Consequence}$$

The definition of each component is as follows:

Fire Probability. Fire volume (i.e., spatial integral of fire area and flame length) is used as Fire Probability because rapidly spreading fires are more likely to escape initial containment efforts and become extended fires than slowly developing fires. Data inputs used in the fire spread model to determine the fire volume (Fire Probability) include:

- Historical weather (temperature, wind speed/direction, relative humidity)
- Topography
- Fuel types present
- Fuel moisture content (both dead and live fuels)

Consequence. Number of structures (i.e., homes, businesses, other man-made structures) that may be impacted by a wildfire.

Wildfire Risk. Fire Probability multiplied by the Consequence. The highest Wildfire Risk areas are those where both the Fire Probability and Consequence are elevated. Conversely, combinations of low Fire Probability and elevated Consequence, or elevated Fire Probability and low Consequence typically indicate lower Wildfire Risk.

3.2.1. Wildfire Risk Modeling Process

The wildfire risk modeling process incorporated the following major steps:

1. A 20-year (2000–2019) fire weather climatology was developed utilizing the Weather Research and Forecasting (WRF) model to recreate historical days of fire weather significance across Idaho Power’s service area. This analysis generated high-resolution hourly gridded fields of relative humidity, temperature, dead fuel moisture, and wind speed/direction that was used as input to a Monte Carlo-based fire modeling analysis.
2. Estimates of seasonal variation in live fuel moisture across Idaho Power’s service area were developed. This was accomplished by analyzing historical fuel measurements and/or weather station observations. This step was necessary because live fuel moisture data is needed for fire spread modeling, but the WRF weather model does not provide live fuel moistures.
3. The federal LANDFIRE program was utilized to provide high-resolution (approximately 100 feet) fuel rasters for use in fire spread modeling.⁸
4. The data developed above (WRF climatology, live fuel moisture, and LANDFIRE data) was used to drive a Monte Carlo⁹ fire spread modeling analysis. This Monte Carlo simulation was accomplished by randomly selecting an ignition location and a randomly selected day from the fire weather climatology developed in step 1 above. Ignition locations were limited in the model to be within a two-kilometer buffer surrounding Idaho Power’s overhead T&D lines (i.e., 1 kilometer on either side). The model used equal ignition probability for all overhead distribution and transmission asset types. Urbanized areas having underground circuitry were not included in the model due to a low probability of wildfire associated with underground electrical equipment. Note that transmission lines jointly owned by Idaho Power and PacifiCorp were included in the analysis. Furthermore, the proposed Boardman to Hemingway (B2H) 500 kilovolt (kV) line route was also included in this analysis. For each combination of ignition location and time of ignition, fire progression was then modeled for 6 hours. For each modeled fire, potential fire impacts to structures were quantified using structure data. This was repeated across Idaho Power’s service area for millions of combinations of ignition location and time of ignition.
5. The Monte Carlo results were processed, and GIS based data depicting fine grained wildfire risk was developed. This risk was then visually depicted on GIS based wildfire risk maps.

⁸ Chris Lautenberger, Mapping areas at elevated risk of large-scale structure loss using Monte Carlo simulation and wildland fire modeling. IAFSS 12th Symposium 2017.

⁹ Ibid.

2023 Risk Modeling Update

With the help of our consultant in 2023, Idaho Power will strive to improve risk modeling to better understand wildfire risk and estimations of wildfire consequences along electric lines and equipment. Areas of focus include:

- Incorporate structure density information using 2020 Census data
- Incorporate proposed building developments in or near wildfire risk zones
- Explore new available data to potentially incorporate into wildfire probability and consequence. Examples include:
 - Fire history
 - Land use changes

Additionally, Idaho Power's risk modeling update will include assessing feedback from customers and agencies received throughout the year. Enhancements made will provide more understanding and improved methods to better inform operational decision-making and risk treatments.

Idaho Power's broader risk framework is discussed in Section 4.

3.2.2. Wildfire Risk Areas

Based on the previously described modeling, draft risk tiers were generated algorithmically¹⁰ by an automated process. Tiers were established which, if exceeded, would classify an area as Tier 2 (elevated risk) or Tier 3 (high risk). To aid in customer and public understanding, Idaho Power also color-coded the tiers to reflect relative risk—Yellow Risk Zones (YRZ) for Tier 2 and Red Risk Zones (RRZ) for Tier 3. This was accomplished by manually setting threshold values at naturally occurring breaks. Idaho Power held several public workshops wherein tiers were reviewed and adjusted based upon consideration of local and institutional knowledge and potential impacts to communities. This was a similar approach taken by the California Public Utilities Commission in developing a state wildfire risk map.

Consequently, the resulting risk tiers reflect risk relative to Idaho Power's service area only and not absolute risk. As set forth later in this plan, Idaho Power's risk profile is significantly lower than utilities serving California.

An integral part of the consultant's mapping process involved reviewing the tiers and making necessary adjustments to account for unique aspects of certain areas, including factors that may increase or decrease risk, which would not be accounted for in the computer modeling. Several factors were considered, including the following:

¹⁰ Ibid.

- Topography and resistance to fire control
- Means of ingress and egress
- Presence/absence of defensible space
- Vulnerable populations
- Cell phone coverage
- Non-burnable land cover such as built-up urban areas

This review helped define overall tier boundaries and, in some cases, expanded Tier 3 areas or moved certain Tier 2 areas into Tier 3. For example, the Charlotte fire was a human-caused fire that occurred in Pocatello in 2012 and burned more than 1,000 acres and destroyed 66 homes and 29 outbuildings. It was a difficult fire to control and highlighted the dangers of juniper trees intermixed within the wildland urban interface (WUI). Local knowledge of this event was used to expand outlying Tier 2 areas in the vicinity of the Charlotte fire into Tier 3. As part of integrating the ISO 31000 risk management processes into the WMP, Idaho Power plans to review tier levels and boundaries as part of continuous improvement and maturing our risk modeling methods.

Table 4 provides a breakdown of pole miles in risk zones on a system-wide basis and by state. Across Idaho Power’s service area, 8% of pole miles exist in elevated risk zones (either RRZs or YRZs). In Idaho, 5% of pole miles exist in YRZs and 3% exist in RRZs. In Oregon, less than 1% of pole miles exist in YRZs. The company has no RRZs in Oregon.

Table 4
Idaho Power’s transmission and distribution lines by risk zone in Idaho and Oregon*

Asset	Total Pole Miles	Total Pole Miles within Wildfire		Wildfire Risk Zone by State											
		Pole Miles	%	Tier 2 - Idaho		Tier 3 - Idaho		Tier 2 - Oregon		Tier 3 - Oregon		Tier 2 - Nevada		Tier 3 - Nevada	
				Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%	Pole Miles	%
Transmission Lines	4,778	517	11%	376	8%	110	2%	20	0.42%	0	0%	11	0.23%	0	0%
Distribution Lines	19,297	1,447	7%	837	4%	581	3%	29	0.15%	0	0%	0	0%	0	0%
Total Pole Miles	24,075	1,964	8%	1,213	5%	691	3%	49	0.20%	0	0%	11	0.05%	0	0%

*Geospatial analysis was performed in 2022 to reconfirm the pole miles in wildfire risk zones.

The final two-tier risk map reflecting relative increased risk in YRZs and RRZ is shown in Figure 7. The map is the foundation of Idaho Power’s wildfire mitigation and risk reduction strategies. It is used to determine and prioritize targeted investments, inspection activities, and increase situational awareness for field personnel.

The [risk zone map](#) can be viewed in detail on Idaho Power’s website. Individual addresses can be entered on the map to determine proximity to identified risk zones.

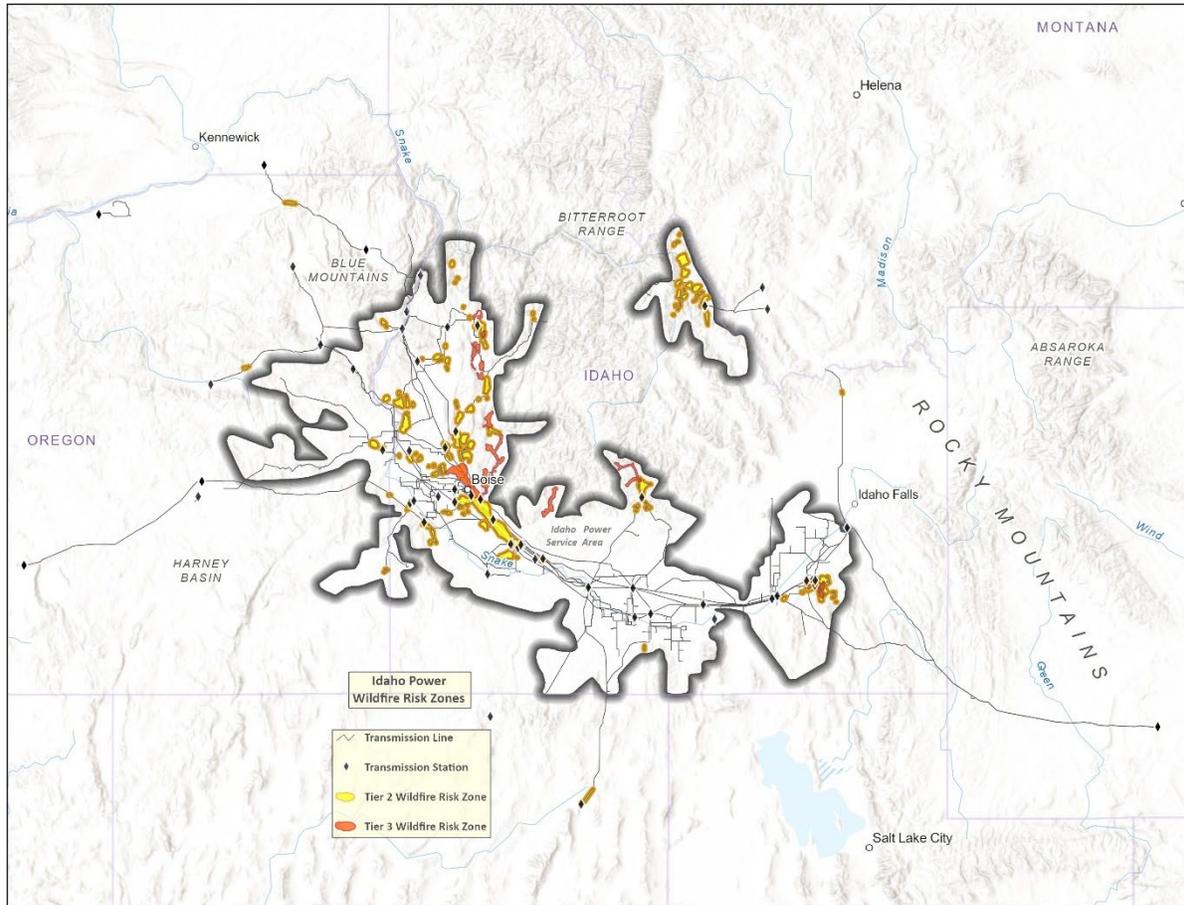


Figure 7
Wildfire Mitigation Plan—Risk Map

Additionally, Figures 8 through 11 delineate risk zones in Idaho and Oregon.

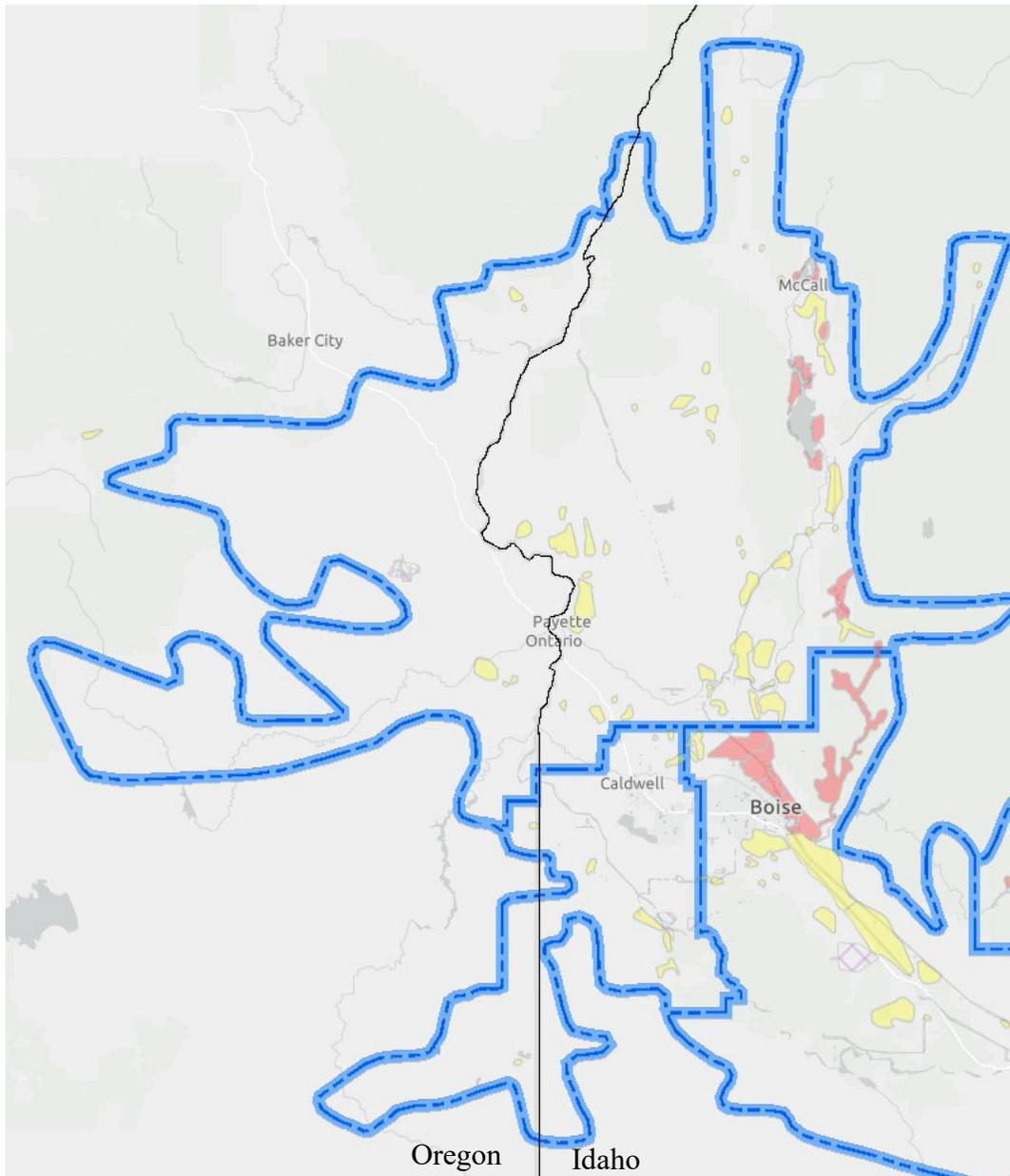
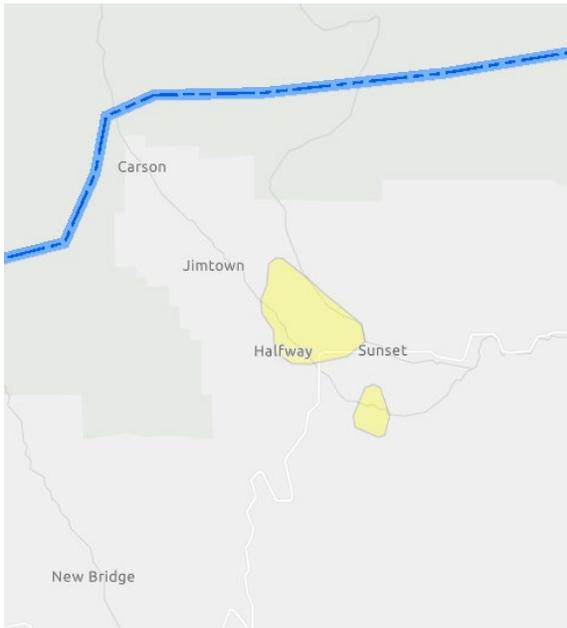
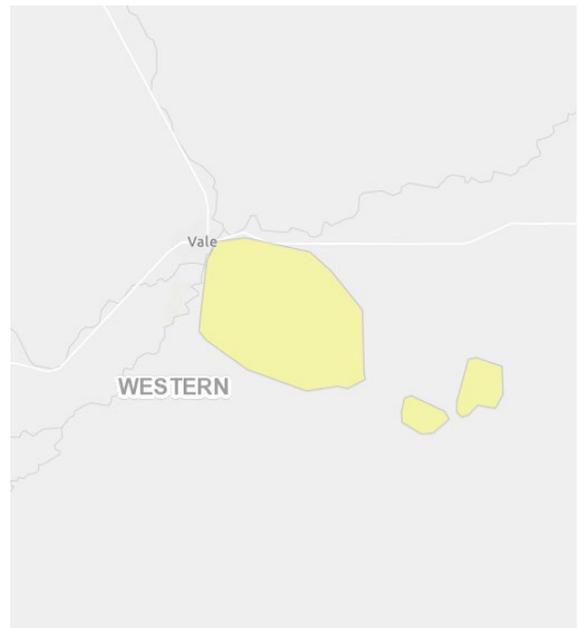


Figure 8
Wildfire Risk Map—western Idaho and eastern Oregon

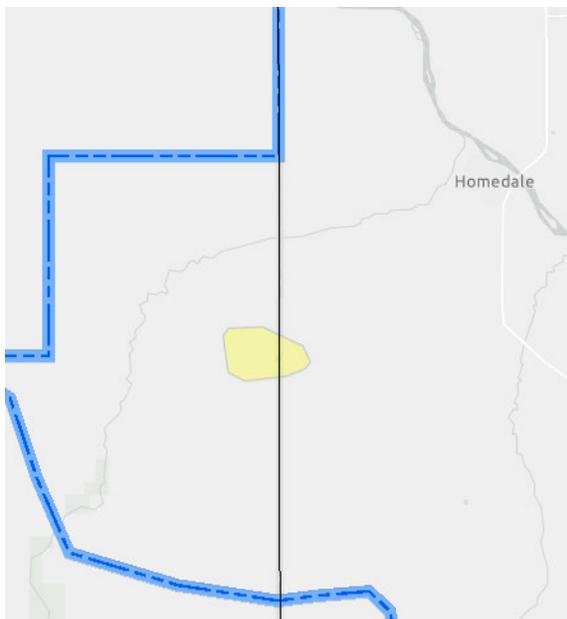
Halfway



Vale



Idaho-Oregon Boarder



Jordan Valley

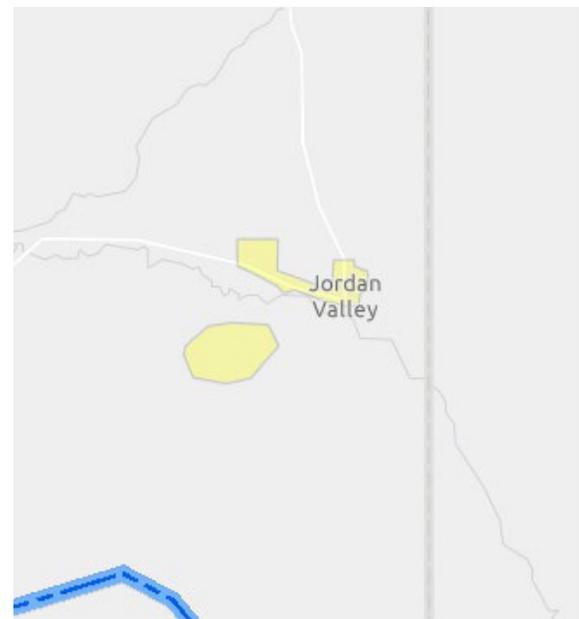


Figure 9
Oregon-specific zones

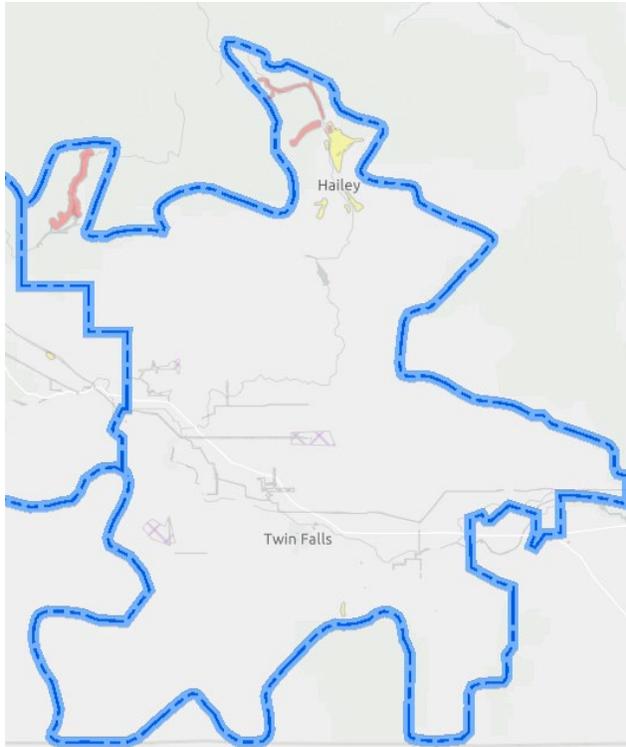
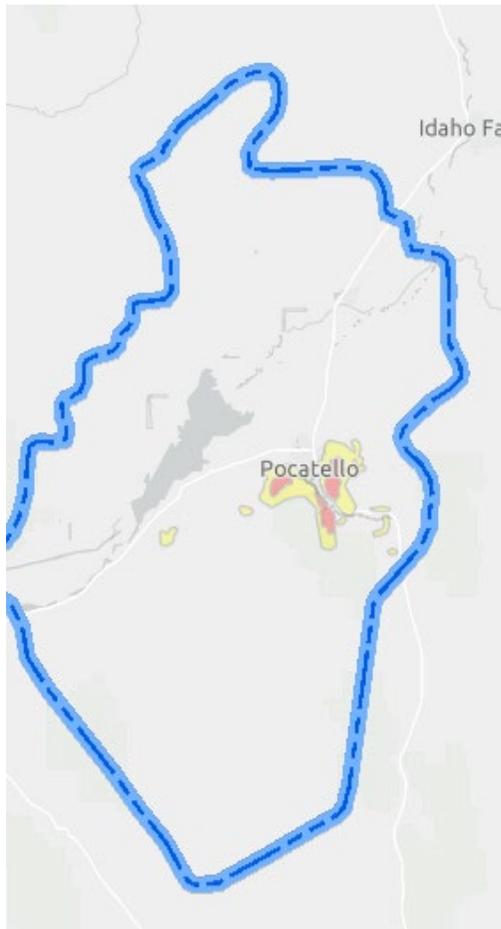


Figure 10
Wildfire Risk Map—southern Idaho

Pocatello



Salmon

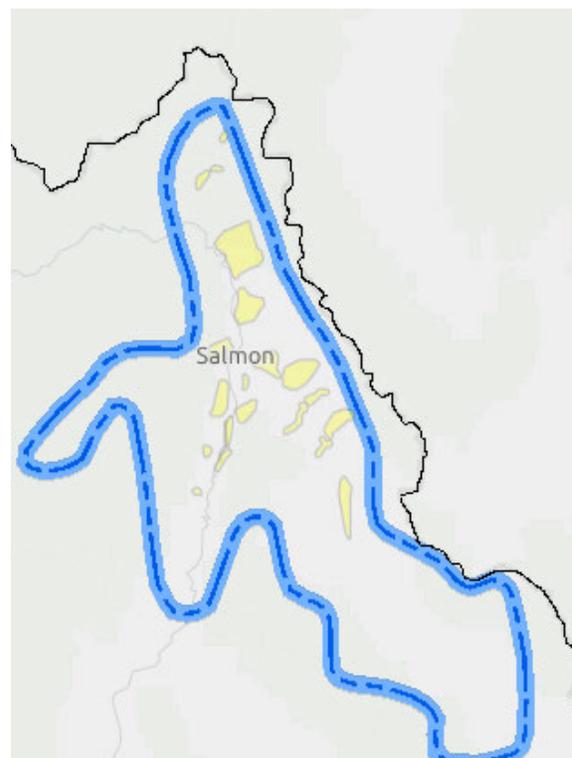


Figure 11
Wildfire Risk Map—eastern Idaho

3.2.2.1. Boardman to Hemingway Proposed Transmission Line

Idaho Power specifically considered the proposed route of the B2H 500 kV transmission line as part of the WMP. The proposed B2H route was included in the wildfire risk assessment and associated map analysis (see Figure 3). Two locations are identified along the route as having increased wildfire risk (YRZs), and there were no areas of higher risk (RRZs). Although the B2H transmission line has not been constructed as of the publication of this 2023 WMP, Idaho Power intends this WMP (as it will be reviewed annually) will apply to B2H. Additionally, Idaho Power will continue to update its fire risk mapping periodically and address the locations with elevated risk consistent with the mitigation strategy for transmission lines as described in sections 5–9 of this WMP.

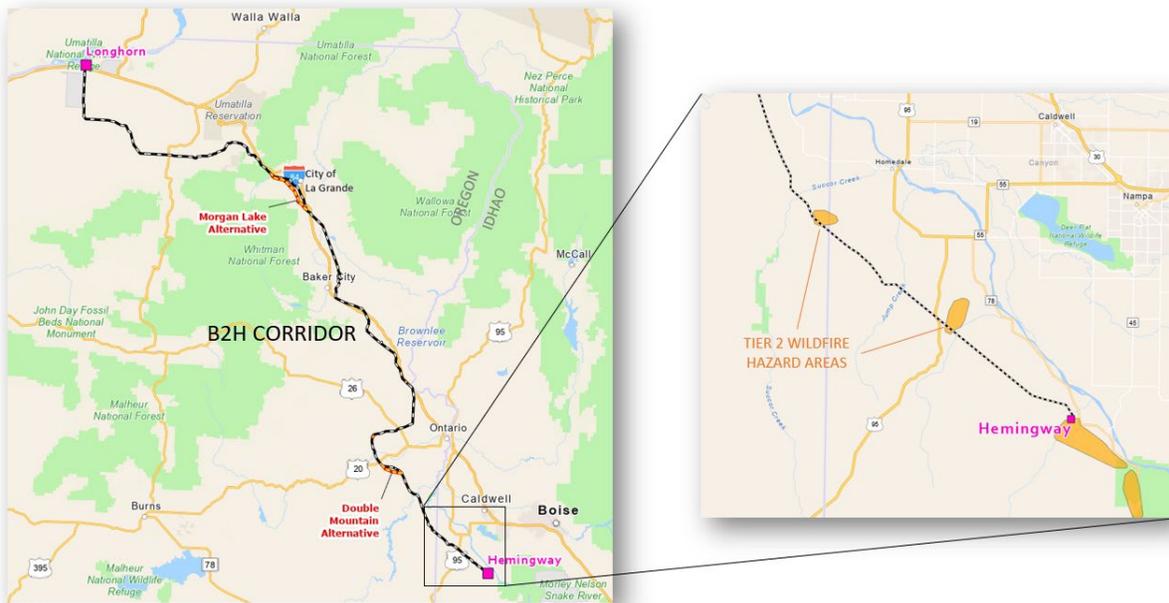


Figure 12
B2H proposed route risk zones

4. COSTS AND BENEFITS OF WILDFIRE MITIGATION

4.1. Objective

This section details Idaho Power’s assessment of high-level risk with respect to undertaking wildfire mitigation activities. This assessment provides a framework for understanding the potential consequences of wildfire damage and the possibility of diminishing those consequences through targeted mitigation activities.

To that end, Section 4.3 identifies selected mitigation activities and the estimated costs of those activities on a system level. In Section 4.4, each mitigation activity is discussed in detail, with an assessment of why it was selected, what alternatives (if any) may be available, and any additional benefits (referred to as “co-benefits”) the company believes may result from pursuing it.

4.2. Risk-Based Cost and Benefit Analysis of Wildfire Mitigation

In assessing the probability and consequence of wildfire risk, and to identify benefits of various wildfire mitigation efforts, Idaho Power engaged with its external consultant and considered several sources of empirical data on the costs of major wildfires—both in terms of fires that burn into Idaho Power’s facilities or that originate from electric infrastructure. These costs can include replacement costs of the company’s property; the cost of fire suppression and environmental damage; third-party claims for property damage; employee and public injuries and fatalities; and other economic losses.

Through its research, Idaho Power found that obtaining a precise calculation of the potential costs of future wildfires is not realistic. The damage that any fire may cause depends on factors such as wind and weather, vegetation, fire risk levels, location, and population and structure density.

Idaho Power’s assessment of the potential costs of wildfires—used in developing the WMP and the scope of proposed updates to practices—involved a review of prior major fires in other states, as well as calculations by other western utilities. While this assessment did not yield a precise quantification of potential benefits specific to Idaho Power, it provides a helpful illustration of the potential costs of not taking actions aimed at reducing wildfire risk.

Idaho Power reviewed and considered calculations analyzing the potential reduction in probability of igniting wildfires based on risk-mitigating activities. For instance, in a June 2020 filing before the IPUC, Avista Corporation (Avista) stated that its “analysis indicates a 10-year inherent potential risk exposure of at least \$8 billion dollars,” though noted the figure should not

be interpreted as a precise financial estimate.¹¹ Avista further noted that the actions it proposes in its own wildfire resiliency plan result in an average percentage of risk mitigation of 89% for the overall plan.¹²

In California, costs and damages associated with wildfires in recent years have exceeded \$10 billion per year, with those associated with the 2020 fires alone potentially set to exceed \$20 billion.¹³ This increase¹⁴ is consistent with the fact that, with few exceptions, the prevalence, intensity, and impact of wildfires continues to escalate year after year as evidenced by information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) and detailed in Table 5.

Table 5
CAL FIRE wildfire data by year

Year	Estimated Acres Burned	No. of Wildfires	No. of Confirmed Fatalities	No. of Structures Damaged or Destroyed
2020	4,197,628	9,279	31	10,488
2019	259,823	7,860	3	732
2018	1,975,086	7,948	100	24,226
2017	1,548,429	9,270	47	10,280
2016	669,534	6,954	6	1,274

The data compiled by peer utilities, historic fire costs, and known damage from prior fires are instructive. Considering peer metrics and analyses on probability and magnitude, as well as Idaho Power's own empirical review of wildfire events such as those in California and Oregon—and the resulting loss of lives—it is reasonable to conclude that the potential human and capital costs and damage from wildfire events vastly exceed any incremental costs of wildfire mitigation efforts identified in this WMP.

¹¹ *In the Matter of Avista Corporation's Application for an Order Authorizing Accounting and Ratemaking Treatment of Costs Associated with the Company's Wildfire Resiliency Plan*, Case No. AVU-E-20-05, Application at 17.

¹² *Ibid.*

¹³ Jill Cowan, *How Much Will the Wildfires Cost?*, The New York Times, Sept. 16, 2020, at <https://www.nytimes.com/2020/09/16/us/california-fires-cost.html>.

¹⁴ Idaho Power believes that its system is in notably better condition than some utilities in California. Nevertheless, these figures illustrate the destruction that can occur from vegetation contact if vegetation is not actively managed.

2023 Wildfire Mitigation Analysis Framework

In 2022, Idaho Power reviewed the risk management process used in developing previous versions of the WMP. The review consisted of reexamining existing risk management practices, specifically how risk is analyzed, evaluated, treated, and continuous improvement is applied. We also benchmarked against other western utilities' risk management approaches and consulted with risk management professionals, both internal and external to Idaho Power.

A formalized risk management process will provide greater structure and consistency in decision making, continuous improvement, and maturing our analytical approach to balancing costs and mitigation benefits. As part of this work, the company determined that the international standard ISO 31000 is widely used by other utilities as a guide or foundation for their WMPs and was recommended to be incorporated by risk management professionals. The ISO 31000 is one of several guides to effective risk management and much of the processes used to create previous versions of the WMP align with the recommended practices found in the standard.

However, the ISO 31000 provides a more comprehensive approach to risk management than what was being employed prior and will be integrated into the plan in 2023. This effort will start by performing the following:

- Engage Idaho Power stakeholders to participate in risk review processes and activities with the goal that all employees become managers of risk
- Develop a comprehensive picture of all risk management activities associated with the WMP and how they compare to the ISO 31000
- Determine how the ISO 31000 principles can be applied, achieved, measured, and tracked
- Develop a framework based on the ISO 31000 that provides a structured and effective approach to managing wildfire-related risk and includes a process of reviewing and maturing the methods used for risk identification, analysis, evaluation, and treatment

4.3. Wildfire Mitigation Cost Summary

From 2022–2025, Idaho Power estimates investing \$46.8 million in incremental operations and maintenance (O&M) expenses to further wildfire mitigation measures. The following table summarizes the company's planned expenditures associated with executing its WMP through 2025. Estimated amounts reflect the company's best estimates and plans as of the 2022 WMP. These estimates will likely change in the future as the company reviews and refines its WMP and associated mitigation activities. For the 2022 WMP, each wildfire mitigation category—and associated estimated expenditures in Oregon and Idaho—is discussed in Section 4.4.

Table 6Estimated system-wide incremental O&M expenses for wildfire mitigation, \$000s (2023–2025)¹⁵

	2023	2024	2025	Idaho Power System Total 2023 - 2025
A. Quantifying Wildland Fire Risk				
Risk Map Updates	\$ 67	\$ -	\$ 69	\$ 136
B. Situational Awareness				
Weather Forecasting - System development and support	\$ 47	\$ 74	\$ 74	\$ 195
Weather Forecasting Personnel - Fire Potential Index (FPI) and Public Safety Power Shutoff (PSPS)	\$ 178	\$ 99	\$ 102	\$ 379
Weather Forecasting - Weather Station Maintenance	\$ 19	\$ 24	\$ 30	\$ 73
Pole Loading Modeling & Assessment (Contract service)	\$ 75	\$ 75	\$ 75	\$ 225
Cameras	\$ 165	\$ 220	\$ 220	\$ 605
C. Mitigation - Field Personnel Practices				
Tools/Equipment	\$ 5	\$ 5	\$ 5	\$ 15
Mobile Weather Kits for Field Observers	\$ 10	\$ -	\$ -	\$ 10
International Wildfire Risk Mitigation Consortium	\$ 40	\$ 40	\$ 40	\$ 120
D. Mitigation - Transmission & Distribution Programs				
O&M Component of Capital Work	\$ 61	\$ 60	\$ 54	\$ 175
Annual O&M T&D Patrol Maintenance Repairs	\$ 50	\$ 50	\$ 50	\$ 150
Environmental Management Practices	\$ 25	\$ 25	\$ 25	\$ 75
Transmission Thermography Inspection Mitigation - Red Risk Zone	\$ 20	\$ 20	\$ 20	\$ 60
Distribution Thermography Inspection Mitigation - Red Risk Zone	\$ 30	\$ 30	\$ 30	\$ 90
Thermography Technician Personnel	\$ 160	\$ 165	\$ 170	\$ 495
Transmission Wood Pole Fire Resistant Wraps - Red Risk Zone	\$ 88	\$ -	\$ -	\$ 88
Transmission Wood Pole Fire Resistant Wraps - Yellow Risk Zone	\$ 163	\$ 163	\$ 163	\$ 489
Wildfire Mitigation Program Manager	\$ 191	\$ 196	\$ 202	\$ 589
Covered Wire Evaluation - Pilot Program in PSPS Zones	\$ 50	\$ 50	\$ -	\$ 100
E. Vegetation Management				
Transition to/Maintain 3-year Vegetation Management Cycle	\$ 11,196	\$ 13,347	\$ 12,172	\$ 36,715
Enhanced Practices for Distribution Red & Yellow Risk Zones (Pre-Fire Season Patrols/Mitigation, Pole Clearing, Removals, Work QA)	\$ 1,284	\$ 1,349	\$ 1,416	\$ 4,049
Line Clearing Personnel	\$ 159	\$ 164	\$ 169	\$ 492
Fuel Reduction Program	\$ 75	\$ 75	\$ 75	\$ 225
Vegetation Mgmt Satellite and Aerial patrols	\$ 150	\$ 300	\$ 300	\$ 750
F. Communications				
Wildfire/Wildfire Mitigation Education/Communication - Advertisements, Bill Inserts, Meetings, Other	\$ 100	\$ 100	\$ 100	\$ 300
PSPS Customer Education/Communication - Advertisements, Bill Inserts, Other	\$ 71	\$ 71	\$ 71	\$ 213
G. Information Technology				
Communication/Alert Tool for PSPS Customer Alerts/Extended Use	\$ 129	\$ 129	\$ 129	\$ 387
Forecast Incremental O&M Expenditures Total	\$ 14,608	\$ 16,831	\$ 15,761	\$ 47,200

¹⁵ As of December 29, 2022.

4.4. Mitigation Activities

Idaho Power selected individual wildfire risk mitigation activities based on a variety of factors, including assessment of industry best practices in wildfire mitigation; discussions with peer utilities; consultation with government entities and agencies; and with consideration of alternatives that could be pursued.

Below is a narrative of each mitigation activity, its purpose, estimated near-term cost, potential co-benefits of the activity to Idaho Power and its customers, and potential alternatives.

With respect to Idaho and Oregon cost estimates, the estimated costs identified below are grounded in cost assignment between the company's Idaho and Oregon service areas and further informed by anticipated work in the two service areas.

4.4.1. Quantifying Wildland Fire Risk

Idaho Power's assessment of wildland fire risk is discussed in Section 3 of this WMP.

The first step in developing Idaho Power's WMP was to conduct a comprehensive assessment of the company's service area and transmission corridors. The company worked with Reax Engineering, a consulting firm that specializes in wildfire risk modeling and fire science, to conduct Idaho Power's wildfire risk analysis. The company determined that hiring an external consultant was beneficial for two reasons: (1) an external consultant was more cost effective than hiring additional resources within Idaho Power to perform the modeling, and (2) an outside consultant helped ensure Idaho Power's risk analysis approach was similar to its peer utilities.

An additional co-benefit of hiring an external consultant is aligning risk analysis with other utilities' practices to create a basis for comparison of risk and also a standard terminology and methodology in discussing risk. Idaho Power deemed Reax Engineering a qualified consultant to perform wildfire risk analysis based on the work it performed for the CPUC in developing the CPUC Fire Threat Map. Other utilities in Oregon, Idaho, Nevada, and Utah have utilized similar modeling approaches to identify and quantify wildfire risk.

Cost Estimate for Quantifying Wildland Fire Risk (2023–2025)

Idaho Power intends to re-evaluate its risk analysis using an external consultant on two more occasions between 2023 and 2025. Idaho Power estimates system-wide expenditure for these services to be approximately is \$136,000.

4.4.2. Situational Awareness—Weather Forecasting Activities and Personnel

Idaho Power discusses specific situational awareness practices in Section 5 of this WMP.

In developing the WMP, Idaho Power created a new Fire Potential Index (FPI) tool to support operational decision-making to reduce wildfire threats and risks. The tool takes data on weather,

prevalence of fuel (i.e., trees, shrubs, grasses), and topography, and converts that data into an easily understood forecast of the short-term fire threat for different geographic regions in Idaho Power's service area. Additionally, Idaho Power plans to continue to enhance meteorological and weather forecasting capabilities to further improve FPI forecasting and help determine when a Public Safety Power Shutoff may be necessary in Idaho Power's service area.

The benefits of developing the FPI and enhancing the company's meteorological forecasting capabilities is greater situational awareness of Idaho Power's system during critical peak summer months. To continue to generate useful information and system benefits, Idaho Power's situational awareness activities will be evaluated and updated annually as necessary to support the company's wildfire preparedness.

The company considers the FPI and related efforts an essential part of reducing the risk of ignition from work activities. This provides Idaho Power field personnel would not have a tool to assess the fire potential on a consistent basis. Given the distinct benefits that result from the FPI and enhanced forecasting capabilities, Idaho Power did not consider alternatives to the development of these critical tools.

Cost Estimate for Situational Awareness—Weather Forecasting Activities and Personnel (2023–2025)

The estimated expenditure for weather forecasting activities (weather forecasting tools, system development, weather station maintenance, and personnel) is \$647,000 between 2023 and 2025.

4.4.3. Situational Awareness—Advanced Technologies

Beginning in 2022, Idaho Power created a Technology Strategy Initiative team aimed at determining how new technologies and innovative practices can be incorporated into the company's wildfire mitigation practices to further decrease wildfire risk. Technology-based practices being considered include—amongst others—strategic use of cameras, satellite, and aerial imagery to detect vegetation hazards, pole loading modeling (to assess the structural integrity of poles), as well as covered conductors. With regard to cameras, the company is evaluating a pilot to test placement of cameras in strategic, high-risk locations to enhance situational awareness. Additionally, the company is learning more about artificial intelligence and how it can be leveraged to detect wildfire ignitions. Multiple camera and analytics companies are being considered to determine potential cost-effective solution(s). The company is also working with local agencies to explore the possibility of partnering on the installation and ongoing use of cameras which may lead to reduced cost.

Cost Estimate for Situational Awareness—Pole Loading Modeling and Assessment (2023–2025)

The estimated system-wide expenditure to conduct pole loading modeling and assessment, which includes LIDAR assessment, is \$225,000 for 2023 through 2025. Idaho Power plans to conduct the assessment in its highest risk zones, which are located exclusively in Idaho, as detailed in Table 4.

Cost Estimate for Situational Awareness—Cameras (2023–2025)

The estimated system-wide expenditure for the pilot evaluation installation of cameras in high-risk areas is \$605,000 from 2023 through 2025. Idaho Power plans to prioritize the use of cameras in its highest risk zones, which are located exclusively in Idaho as detailed in Table 4.

4.4.4. Field Personnel Practices

Idaho Power discusses its field personnel practices in Section 6 of this WMP.

Idaho Power’s wildfire mitigation strategy includes procedural measures to reduce potential ignition and spread of wildfires. Idaho Power developed a *Wildland Fire Preparedness and Prevention Plan* (included as Appendix A to this WMP) to provide guidance to Idaho Power employees and contractors. The plan includes information regarding fire season tools and equipment available on the job site; daily situational awareness relative to areas with heightened fire conditions; expected actions and mechanisms for reducing on-the-job wildfire risk as well as reporting requirements in the event of an ignition; and training and compliance requirements.

All Idaho Power crews, and certain field personnel and contractors performing work on or near Idaho Power’s facilities are required to operate in accordance with the provisions of the *Wildland Fire Preparedness and Prevention Plan* and expected to conduct themselves in a fire-safe manner. They should be prepared for wildfire by carrying specific tools, including but not limited to, shovels, Pulaskis,¹⁶ and water for initial suppression. Additionally, Idaho Power’s PSPS program (included as Appendix B to this WMP) includes employees acting as Field Observers to report on site conditions as part of the de-energization process. Field Observers are equipped with mobile weather kits that include wind meters, compasses, and satellite communication devices to report real-time conditions.

The preparedness of Idaho Power crews and contractors is critical to comprehensive wildfire risk reduction practices. The incremental investment in field personnel equipment is focused on additional tools carried by employees working in elevated risk zones. Additionally, Idaho Power will join the International Wildfire Risk Mitigation Consortium (IWRMC), a group whose mission is to share lessons learned, best practices, and innovation in the area of wildfire mitigation. Many of Idaho Power’s utility peers are part of the consortium. The company is not aware of any other effort or group that provides a similar level of access or insight into global thinking and advancements in wildfire mitigation as the IWRMC.

Cost Estimate for Field Personnel Equipment (2022–2025)

The estimated system-wide expenditure for field personnel equipment (tools, mobile weather kits, and participation in the IWRMC) is \$145,000 between 2023 and 2025.

¹⁶ A Pulaski is a hand tool specifically used for fighting fires that combines an axe and an adze atop a single handle. The tool is the invention of Edward Crockett Pulaski, a ranger with the U.S. Forest Service who was based in Wallace, Idaho, in the early 1900s.

4.4.5. Transmission and Distribution (T&D) Programs for Wildfire Mitigation

Idaho Power's T&D-related wildfire mitigation activities primarily involve expanded asset management programs and system hardening efforts, discussed in detail in Section 8.2 of this WMP. The narratives below provide insight into Idaho Power's consideration and selection of certain mitigation and hardening practices.

4.4.5.1. Annual T&D Patrol, Maintenance, and Repairs

Visual inspections are a critical component of T&D line-related wildfire mitigation efforts. On an annual basis, Idaho Power uses helicopters for visual aerial inspection of transmission lines that are Western Electricity Coordinating Council (WECC) path lines. Under the WMP, Idaho Power will continue to use this method of line inspection for all transmission lines located in Red Risk Zones. Idaho Power strives to complete these inspections prior to the start of the wildfire season; however, spring weather and snow levels may create access issues and delay the completion until June 15 in some areas.

Distribution lines that are located within RRZs are inspected on an annual basis to identify 'Priority 1' defects, or conditions that may result in an outage or potential ignition. The patrols will be completed by personnel that have been trained in distribution line inspection procedures and have experience in distribution line construction. Targeted defects may include cracked/broken crossarms, avian nesting hazards, damaged equipment and hardware, floating conductors, NESC violations, and other obvious defects that pose an immediate threat to the continued operation of the line. Similar to visual inspections for transmission lines, Idaho Power will strive to complete distribution inspections prior to the start of each wildfire season; however, access issues may delay the completion until June 15 in some areas.

Helicopters are not practical for carrying out all distribution patrols due to greater population, structural, and vegetation density, so unmanned aerial vehicles (UAV) with high-definition cameras are used to aid in these inspections in certain situations. These inspections allow personnel to look for potential line defects that may not be obvious from the ground. Priority 1 defects are immediately reported and repaired as soon as possible.

The company will continue to explore the expanded use of UAVs, as the detailed images and data collected through high-resolution aerial inspections can provide several co-benefits, including more granular data on vegetation growth and line and facility conditions.

Cost Estimate for Annual T&D Patrol, Maintenance, and Repairs (2023–2025)

The estimated system-wide incremental expenditure for annual T&D patrols, maintenance, and repairs is \$150,000 from 2023 to 2025.

4.4.5.2. Thermography Inspections

While Idaho Power periodically conducts infrared thermography inspections as part of reliability and maintenance programs, the company is expanding these inspections in Red Risk Zones on an

annual basis. These inspections are conducted using hand-held and drone-mounted cameras with thermal-sensing technology and can help identify defects associated with the overheating of equipment, connections, splices, or conductors.

As part of the thermography inspections, temperature gradients are analyzed to detect potential problems and issues found are prioritized based on their severity and repaired. Idaho Power recently created a new Thermography Technician position to carry out the inspections and coordinate repair activities, and additional resources may be added to perform this function across more of Idaho Power's service area if a single technician proves insufficient. To prioritize the use and information gained from this technology, it will initially be employed only in RRZs. 2022 is the test year to determine how many inspections can be performed, and the overall cost-benefit of the technology to help evaluate the possibility of expanding use and adding more resources.

Thermography inspections are uniquely valuable in that they are able to uncover problems undetectable to the naked eye. From the company's perspective, there is not a viable alternative to this practice. The technology enables more proactive identification of potential issues than would otherwise be possible.

Cost Estimate for Thermography Inspections (2023–2025)

The estimated expenditure for thermography inspections is \$645,000 from 2023 to 2025. Idaho Power will prioritize the use of this mitigation practice in its highest risk zones, which are exclusively in Idaho, as detailed in Table 4.

4.4.5.3. Wood Pole Fire-Resistant Wraps

To help improve the resiliency of the company's wood transmission poles, Idaho Power now wraps them with a fire-resistant mesh in Red and Yellow Risk Zones. The mesh wrap helps protect the integrity of the pole if it is exposed to fire and improves the resiliency of Idaho Power's transmission system. An alternative to installing fire-proof mesh wrap is to replace wood poles with structures made of non-combustible material, such as steel. With 3,863 existing wood transmission poles in Idaho Power's Red and Yellow Risk Zones, the cost of replacing all wood poles is much higher than the cost of covering with a fire-resistant mesh.

Prior to developing the WMP, Idaho Power evaluated different products to determine the most cost-effective approach for protecting existing wood poles from fire. Several products were considered and trialed, including short-term spray-on and paint-on fire retardants, long-term retardants, and steel wraps. In 2020, the company evaluated a protective mesh wrap and compared the cost and performance to the alternatives. The evaluation found that the mesh wrap was approximately 53% less costly than the alternatives and offered the same level of risk reduction. The decision to use a mesh wrap product was not based solely on cost; other criteria were considered, including availability of the product, ease of installation, expected protective life span, and performance when exposed to fire. By all these measures, fire-resistant mesh was the best solution.

Cost Estimate for Wood Pole Fire-Resistant Wraps (2023–2025)

The estimated system-wide expenditure for applying fire-resistant mesh wraps to transmission poles in Red and Yellow Risk Zones is \$577,000 between 2023 and 2025.

4.4.5.4. Covered Conductor Pilot

Idaho Power’s Technology Strategy Initiative identified covered conductor as a potential mitigation measure to pilot. Benchmarking and feedback from other utilities highlighted the potential benefit of covered conductor as a mitigation measure. The company will conduct a pilot of covered conductor through 2024 to explore the benefits, tooling requirements for field personnel, and design parameters. While covered conductor may reduce the risk of wildfire, the company will analyze potential co-benefits, including improved reliability outside of wildfire season and reduced outage restoration costs.

Cost Estimate for the Covered Conductor Pilot (2023–2024)

The estimated cost of the pilot is \$100,000 from 2023–2024. While this pilot will take place in Idaho, the lessons from it will extend across the company’s service area.

4.4.6. Enhanced Vegetation Management

Idaho Power’s enhanced vegetation management practices are discussed in detail in Section 8.3 of this WMP.

In the initial stage of developing its WMP, Idaho Power conducted an analysis to determine the most likely sources of ignition across the company’s service area. Reliability data revealed vegetation contact as one of the most common causes of outages on Idaho Power’s system. With the goal of eliminating potential ignition sources and to reduce risk, enhanced vegetation management was recognized as a critical aspect of Idaho Power’s WMP.

To prioritize risk reduction from vegetation contact, Idaho Power determined it would move to a three-year pruning cycle and apply enhanced vegetation management practices in Red and Yellow Risk Zones. These enhanced practices include pre-fire season vegetation patrols, more targeted pole clearing and vegetation removal, and additional quality assurance for vegetation management practices.

The company considered other vegetation management alternatives, including shorter trimming cycles, longer trimming cycles, and strategies that evaluate each tree individually and only trim it once it has nearly grown back to the power line (known as “just-in-time trimming”). Each alternative presented challenges or resulted in negative impacts that undermined any potential benefits.

While shorter trimming cycles result in less vegetation being removed during each trimming cycle, this practice costs more due to the need for more resources and more frequent trimming of trees near the power lines. In contrast, longer cycles result in less frequent trimming of each tree but larger amounts of vegetation that must be removed to maintain larger clearance

envelopes around the power lines to accommodate additional years of vegetative growth. Further, longer trimming cycles create logistical challenges that are exacerbated by tree biology. Some trees simply grow faster than a given trimming cycle and the longer the trimming cycle, the more pervasive this issue becomes. Longer cycles that call for heavy pruning also lead to hormonal imbalances between a tree's canopy and its root system. To correct this imbalance, the tree aggressively re-grows new sprouts to quickly replace its lost canopy. In this regard, heavier pruning results in a faster rate of tree regrowth than normal, making it even more difficult to consistently maintain longer trimming cycles. Finally, "just-in-time trimming" is primarily a reactive strategy that ultimately leads to challenges associated with securing qualified tree-trimming crews, as this ad hoc approach involves hiring crews on an as-needed basis rather than on a consistent schedule. After evaluating these alternative approaches, Idaho Power concluded that the goal of maintaining a consistent three-year trimming cycle is the most cost-effective and sustainable strategy to keep vegetation away from the power lines in a proactive manner.

Moving forward with a three-year cycle and performing the additional activities detailed above will involve a sizeable increase in incremental O&M expenditure. An alternative to enhancing Idaho Power's vegetation management program is to convert overhead distribution circuits to underground. While undergrounding is used in certain circumstances, undergrounding has generally not been determined to be a cost-effective expense relative to enhanced vegetation management. That said, the company continues to evaluate and implement underground solutions, as appropriate, as part of its WMP hardening efforts detailed below.

Although vegetation management is a sizeable increased wildfire mitigation expense, performing this work is expected to have notable co-benefits, including reduced vegetation-caused outages in Red and Yellow Risk Zones. Idaho Power plans to monitor performance and outage metrics to confirm the success of the enhanced program.

Decreasing vegetation outages was considered one of the most important, cost-effective measures Idaho Power could take to reduce the likelihood of an ignition event and protect utility infrastructure. Shifting vegetation management practices was deemed a prudent course of action based on the number of potential outages or ignition sources that may be eliminated. It is also the approach that has been adopted by many of Idaho Power's peer utilities.

Additionally, the company will participate in a regional fuel reduction program, in which Idaho Power will work in partnership with the Idaho Department of Lands, the National Forest Foundation, the U.S. Forest Service, and the U.S. Bureau of Land Management to remove hazard trees and other vegetation from utility rights-of-way. The partnership is designed to enhance forest resilience to wildfire, decrease hazardous fuel accumulations, increase powerline resiliency while minimizing the risk of ignitions, and improve forest conditions in the vicinity of Idaho Power infrastructure. This program is similar to what other western utilities have taken part in and is modeled after projects performed in Washington, California, Colorado, and Arizona. Participation in the effort is estimated to cost \$225,000 through 2025.

The company also plans to deploy satellite and aerial patrols of vegetation in the company's wildfire risk zones. The technology used in these satellite and aerial patrols will help identify encroachment and clearance issues in areas that are growing faster than expected and hazard

trees that have the potential of falling into powerlines. Data collected through this technology may reshape the company's vegetation management strategy and shift from a systemwide cycle to a more targeted approach that identifies and focuses on high-growth vegetation areas. The company will conduct limited vegetation-focused satellite and aerial patrols in 2023 before expanding to a larger area in 2024 and 2025, pending outcomes from the pilot program years. The company estimates spending \$750,000 on this technology through 2025.

Cost Estimate for Enhanced Vegetation Management (2023–2025)

The estimated system-wide expenditure for enhanced vegetation management is \$41.3 million from 2023 to 2025.

4.4.7. Communications and Information Technology Customer Notification Enhancements

Idaho Power's efforts to communicate with customers and the public about wildfire and mitigation are discussed in detail in Section 10 of this WMP.

Idaho Power considers communication a vital part of its wildfire mitigation efforts. Customer and public awareness and education are a vital part of ensuring that the communities that Idaho Power serves are protected and safe from the threat of wildfire. New communication expenses related to customer and community educational outreach include advertisements, printed media, social media, and public meetings. The purpose of these communications is to keep customers aware of mitigation and fire-related activities before, during, and after fire season. Additionally, the company is building out communication systems to be able to alert customers more quickly and easily about wildfire events and outages, including potential PSPS events.

Cost Estimate for Communication and Customer Notification Enhancements (2023–2025)

The estimated system-wide expenditure for communication expenses is \$513,000 and \$387,000 for customer notification system enhancements, totaling \$900,000 from 2023 to 2025.

4.4.8. Incremental Capital Investments

Idaho Power's wildfire mitigation efforts include capital investments in system hardening practices including approaches deployed after internal testing and analysis, many of which also provide co-benefits to the company.

Idaho Power's capital investments for wildfire mitigation are discussed in detail in Section 8.2 (T&D Asset Management Programs) of this WMP.

4.4.8.1. Circuit Hardening and Infrastructure Upgrades

Idaho Power estimates spending \$5.1 million annually through 2025 on circuit hardening and infrastructure upgrades across its system.

Idaho Power's WMP includes an overhead distribution hardening program for Red Risk Zones. The program includes systematic replacement of hardware, equipment, and materials to improve safety and reliability and reduce ignition risk. The first five years of the program are focused on circuits in Red Risk Zones, but it may be expanded to Yellow Risk Zones in the future. The company will review hardening outcome metrics annually to determine the benefit of the program and to determine whether to expand the program after 2025.

Prior to developing its WMP, Idaho Power successfully implemented many of the same hardening measures detailed below as part of the company's reliability program. Outage data and analytics showed that customer outages were reduced by approximately 38% in areas where hardening projects were carried out. With the success of reducing outages, some of these same activities to increase reliability were chosen to be part of the WMP to help reduce ignition potential in Red Risk Zones. Enhanced system hardening efforts include installation of fire safe fuses, Spark Prevention Units, and fiberglass crossarms.

All the hardening activities and equipment identified in this program were evaluated by patrolmen, troublemen, reliability engineers, and the company's Methods and Materials department to determine cost-effective solutions that balance overall costs with expected risk reduction.

As an alternative to conducting circuit hardening upgrades, the company considered converting overhead distribution circuits to underground. While underground conversions are used in certain circumstances, the cost is estimated to be 2–10 times higher than the cost of carrying out hardening work. In general, overhead hardening efforts provide the benefit of being able to impact a greater number of circuit miles and customers in a shorter time horizon with less investment than undergrounding. Idaho Power will continue to evaluate underground opportunities as part of overall system hardening efforts.

The following summarizes the incremental capital investments the company is making to harden its system and further reduce wildfire risk:

Wood Pole Replacement—The company will replace wood poles if field evaluations determine that significant deterioration or damage has occurred since the last inspection or treatment. Poles are inspected above the groundline to determine strength and climbability. Poles identified as “rejects” will be replaced. Furthermore, poles having wood stubs/structural reinforcements are changed out pursuant to current practices.

Fuse Replacements—Expulsion fuses located in Red Risk Zones will be changed out with energy-limiting and power fuses. Fuse applications include overhead transformers, line taps, risers, and capacitor banks. In 2018, Idaho Power began exploring different fusing technology to replace expulsion fuses with non-expulsion fuses. Three different fuse types were considered and subsequently piloted. The pilot was used to determine the performance of each fuse type, installation requirements, and coordination characteristics. Financial analysis included the cost of each fuse along with associated cutout and hardware and helped determine the most cost-effective option. This information was used to evaluate non-expulsion fuses. *Replacement of all expulsion fuses in Red Risk Zones is expected to take*

approximately three years at a cost of approximately \$1.9 million. Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing fuses in Oregon at this time.

Spark Prevention Units—Porcelain arresters used for overvoltage protection will be changed out with arresters utilizing Spark Prevention Units (SPU). The SPU acts to eliminate the potential of catastrophic failure during arrester operation. This work includes all distribution arresters located on primary distribution lines in Red Risk Zones. In 2019, Idaho Power piloted new arrester technology to determine performance characteristics, installation requirements, and potential benefits in reducing ignition risk. As part of the pilot, Idaho Power compared different manufacturers with similar technology and conducted performance analysis to determine the most cost-effective solution. *Replacement of the arresters is expected to take approximately three years to complete and will cost approximately \$1.7 million. Because this work will be conducted in Red Risk Zones, the company does not anticipate replacing arrestors in Oregon at this time.*

Fiberglass Crossarms—Idaho Power began piloting fiberglass crossarms in 2018 to determine potential cross-functional benefits associated with fiberglass. The pilot focused on cost, ease of installation, strength, supply availability, and reduced potential for tracking of electrical current. Tracking is known as the flow of current over an insulator, which can generate heat. The company compared different crossarm types and manufacturers and determined that fiberglass was most cost effective when considering up-front capital and installation costs. The pilot program, along with benchmarking of peer utilities, helped determine that fiberglass crossarms provided a number benefits relative to improved safety and reliability. Therefore, Idaho Power’s hardening program includes the installation of both tangent and dead-end fiberglass crossarms in Red Risk Zones. However, Idaho Power does not intend to replace all wood crossarms with fiberglass immediately. As part of the fielding phase, company distribution designers will assess wood crossarms and initially change those showing signs of defects or damage. Identified crossarms utilizing wood pins will also be replaced with fiberglass. This approach will spread the cost out over time and help reduce the upfront cost of the program.

Small Conductor—In the early stages of developing the WMP, Idaho Power considered the possible risk associated with small conductor and the potential for breakage. As a result of this exercise, the company’s WMP hardening program includes the replacement of overhead distribution conductor that meets certain criteria which includes approximately 60 miles in Red Risk Zones. Conductor losses were analyzed and showed that replacing the conductor will result in an approximately 50% reduction of line losses, resulting in co-benefits for the company and customers in terms of greater reliability and line loss improvements.

Porcelain Switches—Idaho Power’s Outage Management System and feedback from field personnel revealed potential benefits of switches made of material other than porcelain. Therefore, porcelain switches installed in Red Risk Zones will be changed out with cutouts featuring Ethylene Propylene Diene Monomer Rubber (EPDM). Idaho Power’s Methods and Materials Department trialed different cutout switches made up of different material, including silicone and polymer, to determine the most cost-effective solution. The results of

the trial highlighted the potential for avian issues with silicone (i.e., ravens tended to eat the silicone), and the cost of EPDM versus polymer was nearly equivalent. The financial analysis determined that EPDM would preserve the integrity of the insulator body, prevent outages, and provide an estimated savings of \$10,798 per year over silicone.

Avian Protection—Idaho Power employs several different protection measures to protect wildlife on existing structures including but not limited to covers, insulated conductor, diverters, perches, nesting platforms, and structural modifications. The company has an extensive history working with manufacturers of animal guards/covers and regularly seeks new solutions for avian issues to prevent mortalities, increase reliability, and eliminate other risks. The company's Avian Protection Plan (APP) was developed in the mid-2000s and many of the practices identified in the APP are used for wildfire mitigation in Red and Yellow Risk Zones. For example, new wildlife guards were recently developed and installed in conjunction with the installation of new power fuses and SPUs. Idaho Power consulted with different manufacturers to develop new products that would accomplish the dual goals of avian protection and wildfire mitigation. The best solution is determined on a case-by-case basis depending on the specific location, the type and extent of avian presence, and other relevant factors.

4.4.8.2. Overhead to Underground Conversions

Another aspect of Idaho Power's system hardening program is the select conversion of overhead to underground distribution lines in Red Risk Zones. In 2022, the company will convert 1.5 miles of overhead distribution lines to underground lines. In 2023 and beyond, the company will work to build a strategic undergrounding program to weigh the cost-benefit of undergrounding versus other circuit hardening measures. While underground distribution lines offer benefits associated with being less exposed to the elements and external forces, conversion may not be possible, advisable, or economical in certain situations. The company will continue to evaluate the feasibility of underground conversions as well as the relative value and cost effectiveness as part of the WMP.

4.4.8.3. Transmission Steel Poles

In 2021 and as part of its WMP, Idaho Power revised its transmission construction standards to utilize steel poles and structures for new line construction built to 138 kV and above in elevated wildfire risk zones. This change is intended to minimize the potential for wildfire damage, improve transmission line resiliency, and increase reliability for customers. Wood poles continue to be accepted and used in the industry, and the company will still utilize wood poles in many transmission system applications in consideration of the availability of steel poles, the specific engineering, right-of-way, permitting, and scheduling requirements for each project.

In addition, wood poles will continue to be the standard construction practice for transmission line voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements. As discussed above, Idaho Power will wrap wood poles located in Red and Yellow Risk Zones with fire-proof mesh.

5. SITUATIONAL AWARENESS

5.1. Overview

Visibility and readily available access to current and forecasted meteorological conditions and fuel conditions is a key aspect of Idaho Power's wildfire mitigation strategy. Meteorological and fuel conditions can vary significantly across Idaho Power's service area. Idaho Power leverages its internal atmospheric science department's modeling/forecasting capabilities, its existing field weather stations, and publicly available weather/fuel data to develop projections of current and future wildfire potential across Idaho Power's service area. This wildfire potential information is then available to operations personnel to factor into their operational decision-making.

5.2. Fire Potential Index

Idaho Power has developed an FPI tool based upon original work completed by San Diego Gas and Electric, the National Forest Service, and the National Interagency Fire Center and modified for Idaho Power's Idaho and Oregon service area. This tool is designed to support operational decision-making to reduce fire threats and risks. This tool converts environmental, statistical, and scientific data into an easily understood forecast of the short-term fire threat which could exist for different geographical areas in the Idaho Power service area. The FPI is issued for a seven-day period to provide for planning of upcoming events by Idaho Power personnel.

The FPI reflects key variables, such as the state of native vegetation across the service area ("green-up"), fuels (ratio of dead fuel moisture component to live fuel moisture component), and weather (sustained wind speed and dew point depression). Each of these variables is assigned a numeric value and those individual numeric values are summed to generate a Fire Potential value from zero to sixteen, each of which expresses the degree of fire threat expected for each of the 7 days included in the forecast. The FPI scores are grouped into the following index levels:

- **Green:** FPI score of 1 through 11 indicates low potential for a large fire to develop and spread as there is normal vegetation and fuel moisture content as well as weak winds and high relative humidity.
- **Yellow:** FPI score of 12 through 14 indicates an elevated potential for a large fire to develop and spread as there are lower than normal vegetation and fuel moisture content as well as moderate winds and lower than normal relative humidity.
- **Red:** FPI score of 15 through 16 indicates a higher potential for a large fire to develop and spread as there are well below normal vegetation and fuel moisture content as well as strong winds and low relative humidity.

Fire Potential Index (FPI) Category			
	Normal	Elevated	High
FPI Range	1 to 11	12 to 14	15 - 16

The state of native grasses and shrubs, or **Green-Up Component**, of the FPI is determined using satellite data for locations throughout the Idaho Power areas of interest. This component is rated on a 0-to-5 scale ranging from very wet (or “lush”) to very dry (or “cured”). The scale is tied to the Normalized Difference Vegetations Index (NDVI), which ranges from 0 to 1, as follows:

Green-Up Component						
NDVI	Very Wet/Lush: 1.00 to 0.65	0.64 to 0.60	0.59 to 0.55	0.54 to 0.50	0.49 to 0.40	Very Dry/Cured 0.39 to 0.00
Score	0	1	2	3	4	5

The **Fuels Component (FC)** of the FPI measures the overall state of potential fuels which could support a wildfire. Values are assigned based on the overall state of available fuels (dead or live) for a fire using the following equation:

$$FC = FD / LFM$$

Where FC represents Fuels Component in the scale below, FD represents 10-hour Dead Fuel Moisture (using a 1-to-3 scale), and LFM represents Live Fuel Moisture (percentage). This data will be collected from satellite sources and regional databases supported by state and federal agencies.

The product of this equation represents the fuels component that is reflected in the FPI as follows:

Very Wet					Very Dry
0	1	2	3	4	5

The **weather component** of the FPI represents a combination of sustained wind speeds and dew-point depression as determined using the following scale. Regional adjustment to criteria limits for the upper wind speeds may occur after further discussion with subject matter experts from each of the regional operations. This data will be sourced from the weather, research and forecasting (WRF) products produced by Idaho Power using its High-Performance Computing (HPC) system. In addition to the HPC system produced WRF data, several national level

meteorological products will be used. These products will include regional weather observations used to validate model information.

Dewpoint Depression/Wind	≤5 mph	6 to 11 mph	12 to 18 mph	19 to 25 mph	26 to 32 mph	≥33 mph
≥50°F	4	4	4	5	5	6
40°F to 49°F	3	3	4	4	5	5
30°F to 39°F	3	3	3	4	4	5
20°F to 29°F	3	3	3	3	3	4
10°F to 19°F	2	2	2	2	2	3
<10°F	0	1	1	1	1	2

5.3. FPI Annual Process Review

The FPI process will be reviewed annually after completion of the fire season and, with consultation of interested parties (e.g., Load Serving Operator, Line Crews, and others), will be updated to enhance Idaho Power’s wildfire preparedness.

6. MITIGATION—FIELD PERSONNEL PRACTICES

6.1. Overview

A component of Idaho Power’s wildfire mitigation strategy is to prevent the accidental ignition and spread of wildfires due to employee work activities. Idaho Power developed the *Wildland Fire Preparedness and Prevention Plan* (Appendix A) to provide guidance to Idaho Power employees and contractors to help prevent the accidental ignition and spread of wildfires due to company work activities in locations and under conditions where wildfire risk is heightened. All Idaho Power crews and certain field personnel performing work on or near Idaho Power’s facilities are expected to operate in accordance with the Plan and continue to conduct themselves in a fire-safe manner.

6.2. Wildland Fire Preparedness and Prevention Plan

The *Wildland Fire Preparedness and Prevention Plan* informs Idaho Power personnel and its line construction contractors about the following factors:

- Annual fire season tools and equipment to be available when on the job site
- Daily situational awareness regarding locations of heightened potential for fire risk and weather conditions in those areas
- Expected wildfire ignition prevention actions while working and reporting instructions in the event of fire ignition
- Training and compliance requirements

7. MITIGATION—OPERATIONS

7.1. Overview

A component of Idaho Power's wildfire mitigation strategy is to continue safe and reliable operation of its T&D lines while also reducing wildfire risk. These operational practices primarily center around the following:

- Temporary operating procedures for transmission lines during the fire season¹⁷
- An operational strategy for T&D lines during time periods of elevated wildfire risk during the fire season
- A PSPS strategy for Idaho Power's service area and transmission corridors

7.2. Operational Protection Strategy

Operational protection strategies were developed to reduce the probability of ignition during fault events on Idaho Power's transmission and distribution system. Analysis was performed by Reliability Engineers to assess the available fault energy under different protection schemes and configurations and the effect each would have on customers in terms of increased and extended outages. Idaho Power analyzed the following configurations for automatic reclosing devices:

- Reclose off
- Limited energy reclose
- Limited energy lockout

The analysis performed included assessing Time Current Curves and fault energy of different circuits to gauge the overall reduction in energy between different protection configurations and coordination challenges. Figure 13 below summarizes the different protection configurations evaluated along with estimated benefits in terms of reduced fault energy and impacts to customers. At this time, reclose off appears to provide the best balance between reducing fire ignition risk and customer reliability impacts.

This analysis, along with consideration of historic outage events associated with reclose off, led to the determination that enhanced protection strategies were warranted only in RRZs due to their higher level of wildfire risk. Idaho Power plans to evaluate the effectiveness of protection strategies and will work to mature in this area. New advancements in relay protection used to decrease wildfire risk were evaluated in 2022. The company plans to further our understanding

¹⁷ The duration of the fire season will be reviewed and defined annually.

of their capabilities and integration into existing relay apparatus by testing new algorithms and schemes as part of the company’s wildfire technology roadmap from 2024 through 2028.

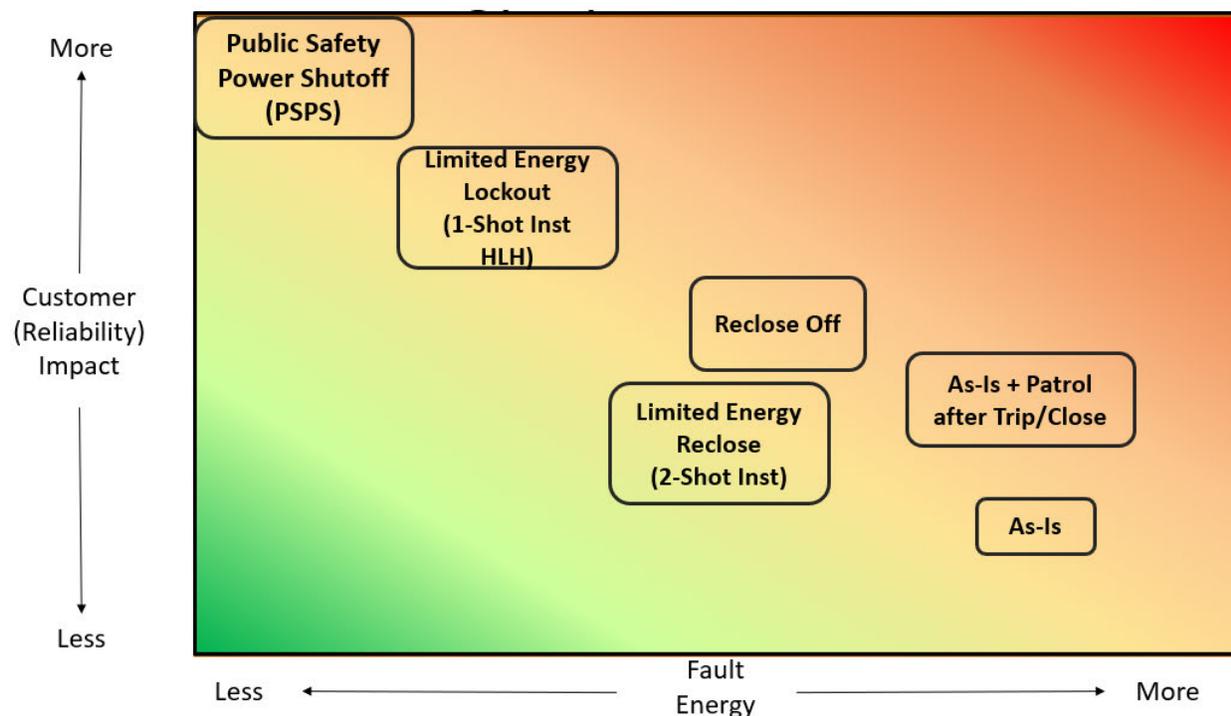


Figure 13
Comparison of reclosing strategies with respect to customer reliability and wildfire risk

7.3. Transmission Line Operational Strategy

7.3.1. Fire Season Temporary Operating Procedure for Transmission Lines

Each year, typically in May, leadership within Idaho Power’s Load Serving Operations (LSO) department updates and issues its Fire Season Temporary Operating Procedure. The purpose of this temporary operating procedure is to provide LSO employees with guidelines for operating transmission lines during the summer fire season. The procedure aims to reduce wildfire risk through practices relating to information collection, notification, and procedures for testing/closing in on locked-out transmission lines.

7.3.2. Red Risk Zone Transmission Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section 5 of this WMP. The FPI informs the transmission line operational strategy for those lines owned, operated, and located in RRZs. These lines will be operated in normal settings mode but with no

“testing”¹⁸ of a line that may have “locked out” during the time of a red FPI. Essentially, in the event of a fault on the specified transmission line(s) during a red FPI, the line will operate as normal and may “lock out,” at which time the line(s) will either need to be patrolled before “testing” or wait until the FPI level drops out of the red category prior to being reenergized.

7.4. Distribution Line Operational Strategy

7.4.1. Red Risk Zone Distribution Operational Strategy

During wildfire season, Idaho Power determines a daily FPI as described in Section 5 of this WMP. The FPI informs the distribution line operational strategy for those lines located in the wildfire RRZs. These lines will be operated in a non-reclosing¹⁹ state during the time of red FPI. Essentially, in the event of a fault on the specified distribution line(s) during the red FPI, the line(s) will be automatically de-energized with no reclosing attempts until either the line(s) has been patrolled or the FPI level drops out of the red category.

7.5. Public Safety Power Shutoff

7.5.1. PSPS Definition

PSPS, as used in this WMP, is defined as the proactive de-energization of electric transmission and/or distribution facilities during extreme weather events to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. The concept is as follows: if significant weather events can be predicted far enough in advance, the resulting proactive line de-energization before the forecasted weather conditions materialize could mitigate the risk of a wildfire. A PSPS event has significant customer impact and requires significant planning.

PSPS is not the practice of de-energizing lines in the following types of situations:

- Unplanned de-energization of lines required for emergencies and during outage restoration situations.
- Planned line or station work activities that require a planned outage (Idaho Power currently has a planned outage customer notification process in place for this).
- Reactive de-energization of electric transmission and/or distribution facilities, which may be either at Idaho Power’s determination or at the request of fire managers (e.g., BLM,

¹⁸ Transmission line “testing” refers to the human act of re-energizing a line without completing a physical field patrol or observation of a line.

¹⁹ Distribution line “non-reclosing” refers to the deactivation of automatic re-energization of a distribution line or use of a non-reclosing device such as a fuse.

U.S. Forest Service, or other fire-fighting managers) in response to existing/encroaching wildfire threatening to burn into such facilities.

- Automated de-energization of electric transmission and/or distribution facilities due to smoke/fire from an existing fire causing a fault on the line.

Idaho Power will continue its current de-energization practices in the above referenced, and comparable situations. Such outage situations are not defined as PSPS events in the context used here and, as a result, would not trigger PSPS protocols.

7.5.2. PSPS Plan

Idaho Power developed a PSPS Plan (see Appendix B) that operates in parallel with its wildfire mitigation strategy. Although the wind patterns in Idaho Power's service area are generally of a much lower sustained velocity and often less predictable (i.e., micro-bursts) than other utilities' service areas where PSPS has most frequently been utilized (i.e., California), the company's PSPS Plan generally follows industry best practices by considering other utilities' PSPS plans and incorporating input from Idaho Power's external consultant, discussed in 3.2 above, which developed the company's WMP risk maps.

8. MITIGATION—T&D PROGRAMS

8.1. Overview

Idaho Power’s wildfire mitigation strategy relies in part on its various asset management programs and vegetation management program to maintain safe and reliable operation of its T&D facilities in reducing wildfire risk.

8.2. T&D Asset Management Programs

In addition to maintaining a number of existing and newly implemented robust asset management programs intended to reduce wildfire risk, Idaho Power continues to research, monitor, and pilot emerging technologies and strategies to manage its T&D infrastructure.

Idaho Power’s key asset management programs supporting wildfire prevention and mitigation are summarized in the table below.

Table 7

Summarized T&D asset management programs (associated with the WMP)

Transmission

Transmission Asset Management Programs

- Aerial Visual Inspection Program
- Ground Visual Inspection Program
- Detailed Visual (High Resolution Photography) Inspection Program
- Wood Pole Inspection and Treatment Program
- Cathodic Protection and Inspection Program
- Thermal Imaging (Infra-Red) Inspections
- Wood Pole Wildfire Protection Program (enhanced)
- Steel Pole (Structures) (enhanced)

Distribution

Distribution Asset Management Programs

- Ground Detail Inspection Program (enhanced)
- Wood Pole Inspection and Treatment
- Wood Pole Fire Protection Program (enhanced)
- Line Equipment Inspection Program
- Thermal Imaging (Infra-Red) Inspections
- Overhead Primary Harden Program
 - Replace "small conductor" with new 4acsr or larger conductor (new)
 - Replace or repair damaged conductor
 - Re-tension loose conductors including "flying taps" and slack spans as required

- Replace wood-stubbed poles with new wood poles (enhanced)
- Replace white and yellow square tagged poles with new wood poles
- Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms
- Replace steel insulator brackets with new steel pins/fiberglass crossarms (new)
- Replace wedge deadends on primary taps with new polymer deadend strain insulators
- Replace aluminum deadend strain insulators with new polymer deadend strain insulators (new)
- Replace porcelain switches with new polymer switches
- Replace hot line clamps
 - Replace aluminum stirrups
 - Install avian cover
 - Relocate arresters
- Install bird/animal guarding
- Update capacitor banks
 - Replace swelling capacitors
 - Replace oil-filled switches with vacuum style
 - Replace porcelain switches with polymer switches
- Install disconnect switches on CSP transformers
 - Install avian cover
- Update down guys
 - Replace/Install down-guy insulators with fiberglass insulators
 - Tighten down guys
- Tighten hardware
- Correct 3rd party pole attachment clearances (report to Joint Use Department)

Idaho Power has a robust and proven inspection and correction strategy and schedule. Current practices will continue in YRZs. Risk quantification and modeling performed shows that RRZs have a higher level of risk from wildfires so, in addition to its current practices, Idaho Power believes it is prudent to add an annual inspection to minimize the likelihood of a wildfire ignition as well as targeted infrared inspections in select RRZs to identify any potential issues that may not be apparent on visual inspection. As part of the ISO 31000 risk management process, Idaho Power plans to evaluate the effectiveness of inspection and correction activities and schedules and further grow in this area as wildfire risk evolves. The following table summarizes inspection work performed and inspection frequency with respect to wildfire risk zones.

Table 8
Summary of asset inspections and schedules by state and zone

Asset Inspection Type	Inspection Interval				
	Idaho Non-Risk Zone	Oregon Non-Risk Zone	Idaho YRZ	Oregon YRZ	Idaho RRZ
Transmission Defect Inspections					
Visual	Annually	Annually	Annually	Annually	Annually
Detailed	10 Years	10 Years	10 Years	10 Years	10 Years
Groundline (Wood Pole Test and Treat)	10 Years	10 Years	10 Years	10 Years	10 Years
Wildfire Mitigation Patrol	None	None	None	None	Annually
Infrared Patrol	None	None	None	None	Annually
Distribution OH Defect Inspections					
Visual/Detailed	3 Years	2 Years	3 Years	2 Years	3 Years
Groundline (Wood Pole Test and Treat)	10 Years	10 Years	10 Years	10 Years	10 Years
Wildfire Mitigation Patrol	None	None	None	None	Annually
Infrared Inspections	None	None	None	None	Targeted

8.2.1. Transmission Asset Management Programs

Several of Idaho Power’s transmission management programs have been in place for decades and include condition-based aerial visual inspections, ground visual inspections, detailed visual (generally using high-resolution photography) inspections, transmission wood pole inspection and treatment, and cathodic protection. Additionally, Idaho Power has used various methods and materials to prevent wildfire from damaging wood structures and now intends to use a fire-resistant mesh wraps installed on structures located in the RRZ and YRZs.

8.2.1.1. Aerial Visual Inspection Program

Annually, Idaho Power uses helicopters to assist Idaho Power qualified personnel in the visual aerial inspection of transmission lines identified as WECC Path Lines. This method of line inspection is now used for transmission lines located in the RRZs. In addition, unmanned aerial vehicles with high-definition cameras are now used in certain situations to inspect facilities on these lines. These inspections allow personnel to look for potential line defects, which, if found, are noted and scheduled for repair.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1:** Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.
- **Priority 2:** Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews’ normal work schedules. Priority 2 defects not assigned a

corrective plan within 24 months will be reviewed by the T&D vegetation and maintenance engineering leader.

- **Priority 3:** Potential issues that may need correction but do not pose a threat to the system and should be monitored. A Priority 3 designation may also be used by Idaho Power personnel for tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.1.2. Ground Visual Inspection Program

Annually, Idaho Power qualified personnel (i.e., trained in transmission line inspection procedures and experienced in transmission line construction) complete ground visual inspections of all transmission lines. Ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, and/or on foot. These inspections identify potential line defects that are noted and scheduled for repair following the same process as described in 8.2.1.1.

8.2.1.3. Detailed Visual (High-resolution Photography) Inspection Program

In addition to the annual inspections and associated maintenance, Idaho Power also completes detailed visual inspections generally utilizing high resolution photography. This detailed inspection is typically completed using helicopters, unmanned aerial vehicles, and contracted professionals operating high-definition cameras and, if potential line defects are noted, they are scheduled for repair following the same process as described in 8.2.1.1. The detailed inspections are completed on a 10-year cycle in conjunction with the 10-year cycle of wood pole ground line inspection and treatment (see 8.2.1.4).

8.2.1.4. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay on a 10-year cycle. The poles are categorized according to the following:

- **Reported:** Any wood pole inspected and found to be installed within 10 years of the manufactured date or last inspection date.
- **Treated:** Any wood pole inspected and found to be installed 11 years or more prior to the inspection date and is determined to be in sound enough condition to warrant treatment.
- **Rejected:** Any wood pole determined to fit the following criteria:
 - Have less than 4 inches of shell at 48 inches above the ground line; and/or
 - Less than 2 inches of shell at 15 inches above the ground line; and/or
 - Less than 2 inches of shell at the ground line; or

- Is deteriorated and does not meet minimum strength criteria; or
- Fails a visual inspection.

Rejected poles are categorized as: reinforceable with steel, non-reinforceable and are to be replaced.

- **Visually Rejected:** Any wood pole that has been damaged (i.e., burned, split, broken, hit by a vehicle, damaged by animals, etc.) above the ground line to such an extent as to warrant rejection and that cannot be further tested to determine priority status.
- **Sounded, Bored, and Treated:** Any wood pole set in concrete, asphalt, or solid rock 11 years or more prior to the inspection date is internally treated. Internal treatment involves fumigating the good wood and flooding the voids with fumigant.

8.2.1.5. Cathodic Protection and Inspection Program

Cathodic protection systems are employed on select steel transmission towers. These systems use either an impressed current corrosion protection system (ICCP) or direct-buried sacrificial magnesium anodes. Included in Idaho Power's tower maintenance plan, every 10 years, structure-to-soil potential testing is performed on select towers with direct-buried anodes. For ICCP systems, rectifiers and ground-beds are tested to ensure they are functioning properly. Based on test results repairs and adjustments are completed. Each year all rectifiers are inspected, and direct current (DC) voltage and DC current readings noted.

8.2.1.6. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 8.2.2.1 of this WMP.

8.2.1.7. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of "mesh wraps" is utilized on transmission wood poles located in the RRZs and YRZs.

8.2.1.8. Transmission Steel Poles

Idaho Power will utilize steel poles or structures for new transmission line construction projects built to 138 kV standards and above in an attempt to minimize wildfire damage and improve transmission line resilience. Wood poles may be used on 138 kV structures for emergency and maintenance replacements based on the specific engineering, right-of-way, permitting, and scheduling requirements for each project. Wood construction is used for voltages below 138 kV unless a different material is needed to meet specific engineering or planning requirements.

8.2.2. Distribution Asset Management Programs

Idaho Power has several distribution asset management programs that are mature, have been implemented for decades, and will continue to be utilized in the RRZs. These programs include condition-based, detailed, and ground visual inspection; distribution wood pole inspection and treatment; and line equipment inspection.

Idaho Power also has an enhanced overhead distribution “hardening” program to implement in the RRZs. Examples of specific work include replacement of small conductors and associated hardware and replacement of wooden pins and associated wooden crossarms.

8.2.2.1. Ground Visual Inspection Program

Annually, qualified line patrol personnel (trained in distribution line inspection procedures and experienced in distribution line construction) complete visual wildfire mitigation inspections of the distribution lines located in the RRZs to identify Priority 1 defects and those that may cause an outage or possible ignition. The ground patrols are completed using four-wheel-drive vehicles, all-terrain vehicles, utility terrain vehicles, or on foot. These inspections identify potential line defects that are noted and scheduled for repair. Detailed distribution inspections are completed on a predetermined schedule and may be performed in conjunction with annual visual inspections.

All noted defects are prioritized as Priority 1, Priority 2, or Priority 3, based on the criteria listed below:

- **Priority 1:** Defects that, depending on the circumstances, require reporting and repair as soon as reasonably possible.
- **Priority 2:** Defects that, depending on the circumstances, generally require reporting and correction within 24 months of identification. The correction of these defects should be scheduled during crews’ normal work schedules. Priority 2 defects not assigned a corrective plan within 24 months will be reviewed by the T&D Vegetation and maintenance engineering leader.
- **Priority 3:** Potential issues that may need correction but do not pose a threat to the system and should be monitored; or tracking of certain line construction practices.

Corrective action plans for Priority 1 and 2 defects are determined by engineering personnel for each prioritized defect and are scheduled and repaired.

8.2.2.2. Wood Pole Inspection and Treatment Program

All wood poles are visually inspected, sounded, and bored for defects and decay. The procedure is noted in 8.2.1.4.

8.2.2.3. Line Equipment Inspection Program

Line equipment in wildfire risk zones, including capacitor banks, automatic reclosing devices, and regulators, are inspected annually prior to wildfire season by line operations technicians. The inspection includes a visual inspection and, when electronic controls are present, data is retrieved and analyzed for proper operation.

8.2.2.4. Thermal Imaging (Infra-red) Inspections

Idaho Power will complete annual inspections of lines and equipment using thermal imaging (infra-red) cameras. This inspection methodology, although not new to Idaho Power, is being expanded to specifically include the RRZs. Compromised electrical connections and overloaded equipment may be identified using thermal imagery. Identified risks will be prioritized and mitigated using the prioritization methodology noted in 8.2.2.1 of this WMP.

8.2.2.5. Overhead Primary Hardening Program

Overhead distribution infrastructure located in the RRZs will be analyzed and may be inspected and hardened depending upon proximity to fuels conducive to wildfires in the unlikely event of failure of the line infrastructure. It is expected to take multiple years to inspect and harden all applicable overhead distribution lines.

The Overhead Primary Hardening program is intended to upgrade or repair certain overhead distribution infrastructure. Criteria as outlined in Table 7 drives the program work. Notable criteria are further explained in the following sections of this WMP.

8.2.2.5.1. Conductor “Small” Replacement

Idaho Power is implementing replacement of small conductors in the RRZs. Small conductors are those in sizes less than that of 4ACSR conductor. Examples of small wires include 6Cu, 6-3SS, 8A, 8A CW, 9IR, etc. These small conductors will be replaced with standard larger conductors, primarily with 4ACSR conductor.

8.2.2.5.2. Wood Pin and Crossarm Replacement

Wooden crossarms installed with wooden pins will continue to be replaced with fiberglass crossarms and steel pins. This work will be coordinated and included in the overhead primary hardening program. And, whenever work is being completed on a structure that requires replacement of wooden crossarms, Idaho Power will, generally, install fiberglass crossarms.

8.2.2.5.3. Porcelain Switch Replacement

Porcelain switches located in the RRZs will continue to be replaced with polymer switches. Additionally, associated hot clamps and stirrups will be replaced. This work will be coordinated and included in the overhead primary hardening program.

8.2.2.5.4. Fuse Options

Idaho Power investigated reasonable alternatives to replace certain expulsion fuses and expulsion arrestors. A pilot program was initiated in 2020 to replace several expulsion fuses with

non-expulsion fuses in the vicinity of the Boise foothills. This pilot program was successful and Idaho Power implemented a subsequent program to replace expulsion fuses with non-expulsion fuses in RRZs as a part of its distribution overhead primary wildfire hardening program.

8.2.2.5.5. Wood Pole Wildfire Protection Program

Idaho Power has utilized numerous technologies to minimize the damage to wood poles that have been exposed to wildfires. The current technology of “mesh wraps” is utilized on certain distribution wood poles located in the RRZs.

8.3. T&D Vegetation Management

Idaho Power’s T&D vegetation management program (VMP) addresses public safety and electric reliability and helps to safeguard T&D lines from trees and other vegetation that may cause an outage or damage to facilities. Specifically, the lines are inspected periodically, and trees and vegetation are cleared away from the line while certain trees are removed entirely. In addition, the VMP addresses the clearing of vegetation near the base of certain poles and line structures. The responsibilities of the VMP include the planning, scheduling, and quality control of VMP associated work. The VMP is active year-round and complies with applicable NESC, federal, and state requirements. Additional vegetation monitoring tools are in various stages of development, and Idaho Power will evaluate such tools for potential future implementation.

Idaho Power’s key components of its VMP, relative to the WMP, are summarized in the table below.

Table 9
VMP summary

Vegetation Management
<p>Transmission</p> <ul style="list-style-type: none"> Pre-Fire Season Inspection and Mitigation Line Clearing Cycle Goal: 3-year cycle for valley areas & 6-year cycle for mountain areas Tree Removals - Hazard Trees Targeted Pole Clearing 100% Quality Assurance/Quality Control Auditing in RRZs and YRZs <p>Distribution</p> <ul style="list-style-type: none"> Pre-Fire Season Inspection and Mitigation Line Clearing Cycle Goal: 3-year cycle in all areas with mid-cycle pruning occurring in 2nd year in RRZs and YRZs* Tree Removals - Cycle Busters/Hazard Trees Targeted Pole Clearing 100% Quality Assurance/Quality Control Auditing in RRZs and YRZs

*Distribution line clearing cycles vary by utility. Idaho Power has set a goal of achieving a 3-year cycle of distribution line clearing.

Vegetation contact with energized powerlines is a cause of outages and potential source of ignition for wildfires. Idaho Power’s transition to a sustainable three-year pruning cycle will help reduce wildfire risk across the company’s service area. In non-wildfire risk zones, distribution feeders and valley-located transmission lines will be patrolled and pruned on a three-year cycle. A six-year cycle will continue to be employed for transmission lines in mountain locations. Specific to each tree pruned, directional pruning methods will be employed where cuts will meet ANSI A300 standard and adequate clearance will be obtained that should accommodate regrowth without violating the prescribed minimum clearance throughout the cycle.

Reliability data has shown that vegetation contact is one of the most likely sources of faults and possible ignition on the system. As a result, Idaho Power employs the same enhanced vegetation management practices in both YRZs and RRZs despite the different levels of wildfire risk. These practices include mid-cycle patrols and pruning in the second year of the cycle to address “cycle buster” trees and annual “hotspot” patrols to address any new hazard trees or unexpected vegetative growth that poses an immediate threat of contact with energized facilities. In addition, the company strives to complete audits for all pruning work performed in YRZs and RRZs, regardless of reason for the pruning. The audits confirm that pruning cuts meet the specification and proper clearance was obtained. The following table summarizes vegetation management activities with respect to wildfire risk zones.

Table 10
Summary of vegetation management activities and schedules

Vegetation Management Inspections and Activity Schedule	Inspection Interval				
	Idaho Non- Risk Zone	Oregon Non- Risk Zone	Idaho YRZ	Oregon YRZ	Idaho RRZ
Transmission					
Hazard Tree Patrol	Annually	Annually	Annually	Annually	Annually
Cycle Patrol/Pruning—Valley Locations	3 Years	3 Years	3 Years	3 Years	3 Years
Cycle Patrol/Pruning—Mountain Locations	6 Years	6 Years	6 Years	6 Years	6 Years
Wildfire Mitigation Patrol/Pruning	None	None	None	None	Annually
Cycle Buster Patrol/Pruning	18 Months	18 Months	18 Months	18 Months	18 Months
Distribution					
Wildfire Mitigation Patrol/Pruning	None	None	Annually	Annually	Annually
Cycle Patrol/Pruning	3 Years	3 Years	3 Years	3 Years	3 Years
Mid-Cycle Patrol/Pruning	None	None	2 Years after Cycle Prune	2 Years after Cycle Prune	2 Years after Cycle Prune
Cycle Buster Patrol/Pruning	None	18 Months	None	18 Months	None
Quality Assurance (Transmission and Distribution)					
Post-Pruning Audit Inspections	Sampling	Sampling	100%	100%	100%

8.3.1. Definitions

Applicable Transmission Lines—Each overhead transmission line operated within the WMP RRZ at 46 kilovolts (kV) or higher.

Cycle Buster—Trees that grow at a rapid rate, requiring a more frequent trimming schedule than the normal trim cycle.

Hazard Tree—Any vegetation issue that poses a threat of causing a line outage but has either a low or medium risk of failure in the next month. Hazard trees will be further defined as posing either a medium hazard or low hazard.

High-Priority Tree—Any vegetation condition likely to cause a line outage with a high risk of failure in the next few days or weeks. High-priority trees could also be vegetation that is in good condition but has grown so close to the lines that it could be brought into contact with the line through a combination of conductor sag and/or wind-induced movement in the conductor or the vegetation.

Line Clearing Cycles—T&D clearing of lines defined on a periodic basis.

8.3.2. Transmission Vegetation Management

Maintaining a zone near transmission lines that is free of vegetation has long been a priority for Idaho Power. The clearance zone is voltage-level dependent and defined by federal and state regulations.

8.3.2.1. Transmission Vegetation Inspections

Utility arborists annually conduct aerial and/or ground patrols on each applicable transmission line to identify and mitigate vegetation hazards. In addition, transmission patrol personnel inspect all applicable transmission lines once a year to identify any transmission defects and vegetation hazards. During these inspections, the patrol personnel will identify hazardous vegetation, within or adjacent to the Right of Way (ROW), that could fall in or onto the transmission lines or associated facilities. The patrol personnel will evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented. Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the grid operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.2.2. Transmission Line Clearing Cycles

Transmission lines will be cleared on long-term cycles based on 3 years for urban and rural valley areas and 6 years for mountain areas. However, shorter clearing cycles may occur if conditions dictate out-of-cycle trimming. In most cases, vegetation is cleared primarily through

manual cutting of targeted trees and tall shrubs. However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

8.3.2.3. Transmission Line Clearing Quality Control and Assurance

In non-wildfire risk zones, audits are performed on a random sample of pruning worksites. These audits are performed through a combination of the contracted arborists that planned the work and Idaho Power's utility arborists. Due to the elevated risk of wildfire in YRZs and RRZs, audits will be performed on pruning work performed in YRZs and RRZs regardless of the reason for the patrols and pruning. The audits will be performed by a combination of contracted arborists and Idaho Power's utility arborists to check whether pruning cuts meet specification and proper clearance was achieved.

8.3.3. Distribution Vegetation Management

Idaho Power is actively working to clear distribution lines throughout Idaho Power's service area on a three-year cycle.²⁰ Additionally, in the RRZs and YRZs, Idaho Power completes annual vegetation line inspections and mid-cycle clearing of the lines in the second year, is increasing the number of trees removed, and is completing 100% quality control reviews of contractor line clearing work by certified arborists.

8.3.3.1. Distribution Line Clearing Cycles

Idaho Power is actively working to clear distribution lines on a three-year cycle. In RRZs and YRZs, Idaho Power's goal is to perform mid-cycle pruning in the second year to remove faster growing vegetation to ensure the lines are clear of vegetation for the full pruning cycle. In addition, Idaho Power clears lines based upon "special request" in the situations that fast growing, unexpected growth occurs and is reported by any employee or customer.

8.3.3.2. Distribution Vegetation Inspections

In addition to regular cycle pruning activities, utility arborists are annually conducting ground patrols to identify potential vegetation hazards of each distribution line identified in the RRZs and YRZs. In addition, distribution patrol personnel also inspect the lines in the RRZs annually. During these inspections, patrol personnel identify infrastructure defects and hazardous vegetation, within or adjacent to the ROWs, that could fall in or onto the distribution lines or associated facilities. The patrol personnel then evaluate the hazardous vegetation as to the level of threat posed by categorizing the vegetation as a *high priority*, *medium hazard*, or *low hazard*. Any hazardous vegetation found is reported to the utility arborist and documented. Any hazardous vegetation categorized as a *high priority* and that presents a risk to cause an outage at any moment shall also be reported without any intentional time delay to the Grid

²⁰ Idaho Power will test a three-year cycle for a period of 4 or 5 years to verify that such a cycle can be maintained and that the expected benefits are realized.

Operator. The utility arborist will conduct a follow-up inspection if potential hazard trees or grow-ins are identified. The utility arborist prioritizes and schedules any remedial action for all reported vegetation issues.

8.3.3.3. Distribution Line Clearing Procedures

In most cases, vegetation is cleared as scheduled work and includes, but is not limited to, the removal of dead branches overhanging power lines, weak branch attachments, damaged root base or dead or dying trees leaning toward Idaho Power facilities. Vegetation clearing methods include crews using chain saws or specialized pruning machines. Trees are cleared using a pruning procedure called directional or natural pruning, a method recommended by the International Society of Arboriculture, and the ANSI A300 standards.

However, when appropriate and in compliance and permission with federal and state requirements, tree-growth regulators and spot herbicide treatments are applied as effective techniques for reducing re-growth of sprouting deciduous shrubs and trees and extending maintenance cycles.

Through its vegetation management program, Idaho Power has a target to maintain clearance distance between vegetation and conductors as follows:

- Five feet for conductors energized at 600 through 50,000 volts.
- Clearances may be reduced to three feet if the vegetation is not considered to be readily climbable because the lowest branch is greater than eight feet above ground level.
- New tree growth that is no larger than ½ inch in diameter may intrude into this minimum clearance area provided it does not come closer than six inches to the conductor. This new growth is identified during line patrols and removed.
- For conductors energized below 600 volts, vegetation is pruned to prevent the vegetation from causing unreasonable strain on electric conductors.

8.3.3.4. Distribution Line Clearing Quality Control and Assurance

Similar to the transmission section, in non-wildfire risk zones, audits are performed on a random sample of pruning worksites. These audits are performed through a combination of the contracted arborists that planned the work and Idaho Power's utility arborists. Due to the elevated risk of wildfire in YRZs and RRZs, audits will be performed on pruning work performed in YRZs and RRZs regardless of the reason for the patrols and pruning.

8.3.4. Pole Clearing of Vegetation

Idaho Power has historically cleared vegetation from the base of certain transmission wood poles and a limited number of distribution wood poles in Idaho. These vegetation clearing practices have been deemed an effective method of minimizing wildfire damage to existing wood poles. Where acceptable and permissible, Idaho Power removes or clears vegetation in a 20-foot radius

surrounding the wood poles and applies a 10-year weed-control ground sterilant (SpraKil SK-26 Granular). Idaho Power submitted an SF-299 application with the Oregon BLM Vale District Office to prepare an Environmental Assessment to use the same ground sterilant on transmission and distribution facilities in Oregon. BLM staff estimate issuing herbicide permits in mid-2024.

9. WILDFIRE RESPONSE

9.1. Overview

Idaho Power responds to wildfires involving or impacting its facilities and/or resulting in a system outage; depending on the specific circumstances, Idaho Power may also respond to wildfires with the potential to result in an outage. Idaho Power's actions include without limitation:

- Taking appropriate steps, where safe to do so, to protect Idaho Power-owned facilities from fire damage;
- Restoring electrical service following an outages; and,
- Communicating with and informing customers.

These actions are taken on a 24-hour basis.

9.2. Response to Active Wildfires

Idaho Power field crews are trained to respond to active wildfires to monitor the situation regarding Idaho Power's facilities. Although they carry certain fire suppression equipment for use on very small fires in limited situations, Idaho Power's crews are not professionally trained firefighters and are instructed not to place themselves in a hazardous position when responding to wildfires. When responding to an active wildfire, Idaho Power personnel immediately report to, and take appropriate direction from, the Incident Commander (IC) or other fire response entity official with jurisdiction over the incident.

9.3. Emergency Line Patrols

At certain times, unplanned de-energization of lines requires qualified line personnel to conduct "emergency" patrols (inspections) of the de-energized lines. These patrols identify outage causes, damaged facilities, ingress/egress routes, and restoration requirements (number of crews, crew sizes, and necessary materials).

9.4. Restoration of Electrical Service

Idaho Power personnel restore electrical service when it is safe to do so following a wildfire. Trained field crews report to the site where damage has occurred with equipment and new materials and develop a plan to remove and rebuild damaged facilities. Depending on the situation, contracted field crews—such as line crews and vegetation management crews—are also deployed to assist in restoration efforts. Restoration work may take hours or, in some rare cases, days to complete. Depending on the extent of damage, customers may need to

perform repairs on their facilities and pass inspections by local agencies prior to having full electric service restored.

Due to the unique construction, need for specialized equipment, and—in many cases—remote location of many of Idaho Power’s transmission lines, Idaho Power developed a *Transmission Emergency Response Plan*. This plan includes restoration processes related to all transmission voltage classes from 46 through 500 kV. The plan outlines the basic approach and certain details about notification, materials, damage assessment, coordination, and preparedness.

9.4.1. Mutual Assistance

Idaho Power is a member of the Western Region Mutual Assistance Agreement (WRMAA), of which the majority of western United States electric utilities are also members. Member utilities provide emergency repair and restoration assistance to other member utilities requesting assistance when dealing with damaged electric facilities following a significant wildfire or weather event. In the event of a catastrophic wildfire that causes widespread damage to Idaho Power’s system, Idaho Power may request restoration assistance via the WRMAA as a last resort option after utilizing available internal personnel and contracted entities.

9.5. Public Outreach and Communications

In 2022, Idaho Power developed and began following an *Outage Communication Playbook* (Playbook) to guide PSPS and load shed protocols. The Playbook ensures consistent and reliable communication to internal and external stakeholders. External communication includes targeted customers, Public Safety Partners, and operators of critical facilities. The Playbook guides activities and identifies key roles and responsibilities of internal Idaho Power employees. Supplemental information and resources are also included to ensure effective and consistent communication is made prior to, during, and after an event.

10. COMMUNICATING ABOUT WILDFIRE

10.1. Objective

Idaho Power communicates information about this WMP, including PSPS, and wildfire issues in general, to employees, customers, government officials, the public and other stakeholders. Topics of these communications vary due to timing and audience. For example, all customers can benefit from outage preparedness tips and information about how we are hardening the grid. We discuss PSPS plans in greater detail with Public Safety Partners and operators of critical facilities, as well as customers who live in PSPS zones.

The following core messages are the foundation for all wildfire-related communications:

- How customers can prepare for wildfire-related outages, including where to find outage and PSPS information and how to sign up for alerts and update contact information
- Ways customers can reduce wildfire risk
- Idaho Power's work to protect the grid from wildfire and reduce wildfire risk

10.2. Community Outreach

10.2.1. Community Engagement

Idaho Power presents and distributes information on its WMP to a wide variety of stakeholders including the BLM, U.S. Forest Service, and county and city officials.

Idaho Power engages with various Public Safety Partners, including local governments, emergency managers, and Idaho and Oregon's ESF-12 and social service and welfare agencies (e.g., Oregon's Department of Human Services). These engagements focus on wildfire awareness, prevention, and outage preparedness. For example, the company worked with the Boise City Fire Department to develop updates to the Boise City Fire Code related to Wildland-Urban interface areas.

Idaho Power meets with all Public Safety Partners at least once a year and more frequently as needed. In counties with active local emergency planning committees, Idaho Power is an engaged member. The company uses a variety of methods to communicate with Public Safety Partners, including personal contact via phone, email, and text. We meet with identified Public Safety Partners annually and document their communication preferences in our outreach database. During an event, this information will be used to contact each partner.

Idaho Power conducted over 20 WMP and PSPS plan presentations in 2022. At each one, stakeholders were asked to provide feedback to inform future versions of the WMP.

Notable presentations included:

- Local emergency management planning committee meetings across our service area
- Public meetings in communities with PSPS zones and in all Oregon counties we serve
- Idaho Emergency Preparedness Conference
- Idaho Public Health Planning Conference
- Snake River Fire Chiefs annual meeting held in Oregon
- Idaho VOAD (Volunteer Organizations Active in Disasters) Annual Conference
- Seven public meetings in Ontario, Huntington, and Halfway at the end of fire season to gain feedback from customers and stakeholders to help inform future plans. Similar meetings will be held in Idaho counties prior to the 2023 fire season.

Idaho Power has also conducted functional exercises with Public Safety Partners before wildfire season. These exercises mimic fire emergencies, including PSPS events, to improve all parties' wildfire preparedness. For example, in June 2022, Idaho Power conducted a PSPS mock event in our Idaho service area. Several Public Safety Partners were included in the event to test our communication and coordination protocols. The event was held over a three-day period and assumed PSPS events across several wildfire risk zones. Following the event, participants were asked to provide feedback, which has been incorporated into our plan. Feedback received included:

- Public Health Districts were added as Public Safety Partner contacts. Previously, the Idaho Department of Health and Welfare had planned to communicate to the Public Health Districts in case of a PSPS event. Through the event, we identified that this created a delay in communication to the Public Health Districts.
- Back-up contacts for the Idaho Public Utility Commission were identified in case our primary ESF-12 contact is unavailable.
- The Idaho Office of Emergency Management requested they receive a list of critical facilities that could be impacted by the PSPS event. We added this step to our protocols for Idaho and Oregon.

In addition, Idaho Power participated in two mock events, one conducted by Malheur County and the second with the Idaho Office of Emergency Management's Cascade Rising event. Each event mimicked large power outages. While these were not PSPS-specific, we were able to

test and discuss our outage communication protocols. Through those events, two opportunities were identified:

- The Red Cross was added as a Public Safety Partner in Malheur County based on their role in coordinating and supporting CRCs.
- The emPower program was identified as a tool to help notify customers on DMEs if a PSPS event is predicted. Idaho Power is working with the Idaho Department of Health and Welfare, the Independent Living Network, and the Idaho Office of Emergency Management to expand this program to all Idaho counties.

2022 Public Safety Partner Feedback Summary

County emergency managers, the Idaho Office of Emergency Management, the Oregon Office of Emergency Management, and the Idaho Department of Health and Welfare reviewed Idaho Power's WMP plan, PSPS protocols, community outreach strategy and materials, critical facilities, and CRC strategies. Feedback received has been incorporated into our programs. Improvements based on this feedback include:

- Updates to identified critical facilities
- Changes to outreach materials to include county specific information as requested
 - Example: Sign-up information was included for counties with active emergency alert systems
- Revised GIS tools that will be provided to Public Safety Partners if a PSPS event is forecasted

10.2.2. Community Resource Centers

Each county in Idaho Power's service area has unique needs during outage events and requires a customized, flexible approach. During annual meetings with county emergency managers, Idaho Power developed county-specific strategies in preparation for potential large-scale, extended outages. These strategies include working with emergency managers to identify CRC locations to be used, as needed, in a PSPS event. The company formulated strategies for Oregon counties in 2022 and will further explore county strategies for Idaho in 2023. If a PSPS event is forecasted, Idaho Power will strive to work directly with local Public Safety Partners to identify and meet the needs of the local community. Services provided in collaboration with emergency managers could include:

- Stand-up of CRC
- CRC location(s) and logistics included in community outreach/outage notifications

- CRC resources
 - Food, water, and other basic needs
 - Charging stations
 - Auxiliary service coordination such as medical services, housing assistance, family reunification, etc.

10.3. Customer Communications

Safety is one of Idaho Power's core values. It guides our communication strategy for wildfire-related communication to our customers. Communication methods and timing vary based on the audience we are trying to reach and the goal of the communication.

Communication generally falls into two categories: 1) broad outreach to all customers, and 2) targeted outreach to customers in PSPS zones. The company uses a variety of outreach methods to reach a broad customer base with messages about wildfire safety, summer outage preparedness, and grid hardening efforts.

Outreach to customers in PSPS zones was more targeted and frequent. Idaho Power repeatedly urged these customers to update or confirm accurate contact information.

— Outreach Samples

WILDFIRE SEASON 2022




PUBLIC MEETING

Join Idaho Power for a town hall meeting on our **Wildfire Mitigation and Public Safety Power Shutoff (PSPS)** plans. Learn about:

- What to expect.
- How Idaho Power is protecting the grid from wildfire.
- What we're doing to deliver power safely and reliably.
- How to prepare and stay informed during outage.

When is a PSPS used?
A PSPS is when a company like Idaho Power proactively turns off power in a certain area where wildfire risk is especially high due to extreme weather conditions. It is a last-resort effort to protect our customers, communities, employees and equipment from wildfire.

The decision to call a PSPS is based on forecasts and on-the-ground observations of many factors, including:







Idaho Power has identified this area in the Crouch-Garden Valley area where a PSPS is most likely.




Town Hall Meeting
Time: 5 p.m.
Date: June 30, 2022
Place: Crouch Town Hall

For an interactive map of all Idaho Power PSPS zones, visit idahopower.com/PSPS.



BE WILDFIRE READY

Every summer, wildfires threaten our forests, farms, homes and businesses. They can also cause power outages. In extreme weather conditions, these outages could last hours or even days, especially if a public safety power shutoff (PSPS) is necessary.

Here are some tips for staying safe in a wildfire-related outage:

- Update** your contact information at idahopower.com/contactupdate.
- Prepare** for medical needs like refrigerated medicine or electrically powered medical equipment. This could mean finding a place to go during an outage or using a back-up generator.
- Make a plan** for feeding and watering pets and livestock in case power to your well pump goes out.

Visit idahopower.com/wildfire for more tips on wildfire safety, such as how to build a summer outage kit, and to learn what Idaho Power is doing to protect the grid.



GUARDING THE GRID



AYUDANOS A PREVENIR INCENDIOS.

Siempre extingue tu fogata para la seguridad de todos.



Figure 14
Outreach samples for the 2022 wildfire season

10.3.1. Key Communication Methods

Idaho Power communicates with customers and the public before and throughout wildfire season to inform them of steps the company is taking to reduce wildfire risk and ways they can help prevent wildfires and prepare for outages. Various communication mediums used to accomplish this include:

- **Connections** (This monthly newsletter is an effective way to give customers more in-depth information about the work Idaho Power does, but it is not an effective way to communicate urgent information.)



Figure 15
May 2022 edition of *Connections*

- Videos on topics like vegetation management and PSPS

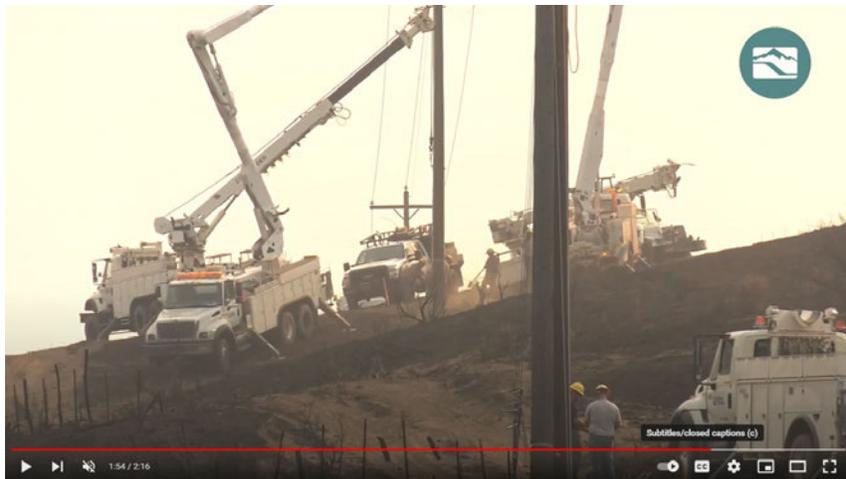


Figure 16

[Idaho Power developed an educational video on how we protect wooden poles from wildfire](#)

- Emails, texts, and phone calls telling customers how to prepare for wildfires, encouraging them to update their contact information, and providing information about grid hardening efforts
 - The company used a new communication tool to notify all customers in PSPS zones by text message, phone call, or email. We mailed letters to customers we couldn't reach with this tool. Every year, the company will work to obtain accurate contact information for all customers in PSPS zones.
- News media (news releases, appearances on broadcast TV and radio shows, interviews, etc.)
- Social media (posts on Facebook, Instagram, and Twitter are an efficient way to reach large numbers of customers and the public in a timely manner). Social media continues to be a critical tool for engaging with customers and communicating wildfire safety. The company's social media campaign for wildfire season focused on three main themes:
 - Wildfire prevention: What Idaho Power is doing and what customers can do to reduce wildfire risk
 - Outage preparation: How customers, especially those who live or have businesses in high-risk areas, should prepare for wildfire-related outages
 - Grid maintenance: How Idaho Power protects the grid, keeping energy safe, reliable and affordable, even during wildfire season.



Figure 17
Sample image of social media post

Social media posts are focused on various aspects of each theme, such as putting out campfires as shown in Figure 18 below; creating defensible spaces around homes and businesses; building a summer outage kit as shown in Figure 17, above; and updating contact information. Posts also include information on installing SPUs on the power distribution system and wrapping wood poles with fire-resistant mesh.



Figure 18
Sample image of social media post

- Postcards and flyers
- Paid advertising (radio, digital, and print advertisements)

- Idaho Power’s website (wildfire safety information, such as videos, safety tips, and the latest version of the WMP) can be found at <https://www.idahopower.com/outages-safety/wildfire-safety/>.

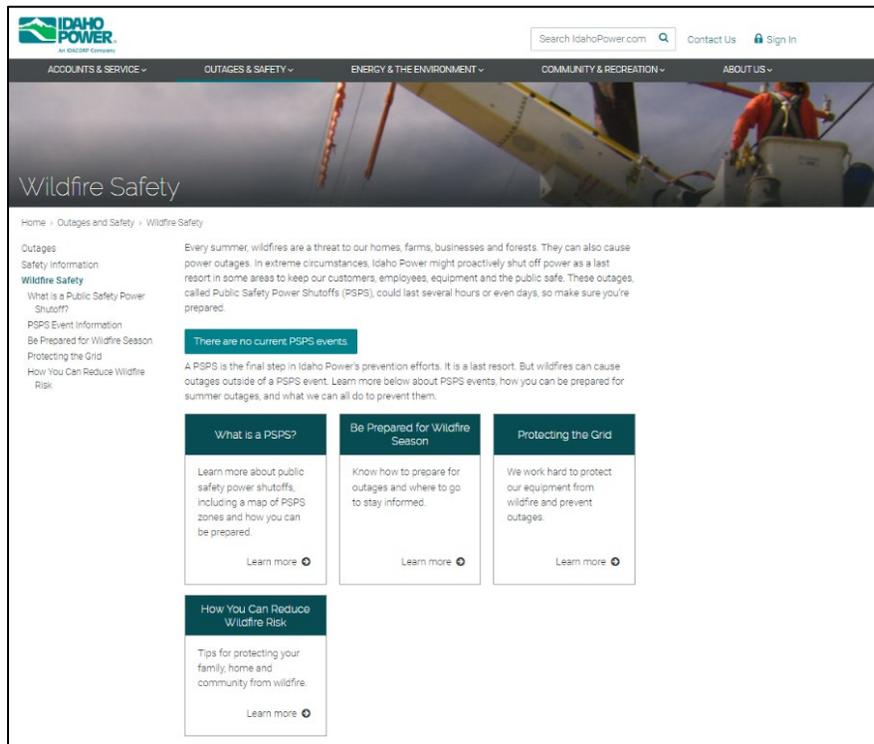


Figure 19
Idaho Power’s Wildfire Safety landing webpage

- As shown in Figure 19, on this webpage, the company introduces wildfire and its relationship to delivering power, information on PSPS, and the following links:
 - What is a PSPS?: Explanation of PSPS events, including a map customers can use to determine if their homes or businesses are inside a PSPS zone
 - Be Prepared for Wildfire Season: Preparation tips like building an outage kit and making a plan for feeding livestock, etc.
 - Protecting the Grid: Idaho Power measures to enhance grid resiliency and reduce wildfire risk; an interactive map showing red and yellow risk zones and a link to the WMP
 - How You Can Reduce Wildfire Risk: Tips for preventing wildfires when camping, using fireworks, hauling trailers, etc.
 - PSPS Event Information: Real-time information on active PSPS events, estimated shutoff time, outage duration, and customers impacted

- Public engagement with the company holding at least one public meeting per year in both Oregon and Idaho, offering a virtual meeting with additional access and functionality options. Feedback opportunities are also provided during and after the meetings.



Figure 20
Wildfire mitigation meeting PowerPoint cover slide

10.3.2. Timing of Outreach

The timing of the outreach generally occurs before and during wildfire season. In 2022, Idaho Power originally planned to begin preseason wildfire outreach in early- to mid-April. Due to an unusually wet and cold spring (Boise had accumulating snow on the valley floor on May 9) and a desire to maximize impact, the company delayed release of social media posts, ads, and other communications until the weather changed such that wildfire was more prominently on people's minds. The tone of early communications was meant to encourage customers to think about wildfire season, how they could prepare for it, their role in preventing wildfires, and steps Idaho Power is taking to keep the grid safe and reduce wildfire risk. When the potential for wildfire increased, communications shifted in tone. Messaging put more emphasis on asking customers, especially those in PSPS zones, to update their contact information and prepare for wildfire.

10.3.3. Communication Metrics

Idaho Power uses metrics and monitoring of communication activities to evaluate the effectiveness of our outreach efforts. Idaho Power published a [Wildfire Safety](#) landing webpage

in April 2022 with information on wildfire safety, PSPS, and interactive maps. In the roughly six weeks that followed, before general outreach efforts began, the page saw fewer than 200 hits. However, a campaign of radio, print, and online ads began in earnest in late June and traffic immediately jumped, with 1,443 hits the first week of the campaign as shown in the following graph. Traffic stayed high for about a month before dropping off again.

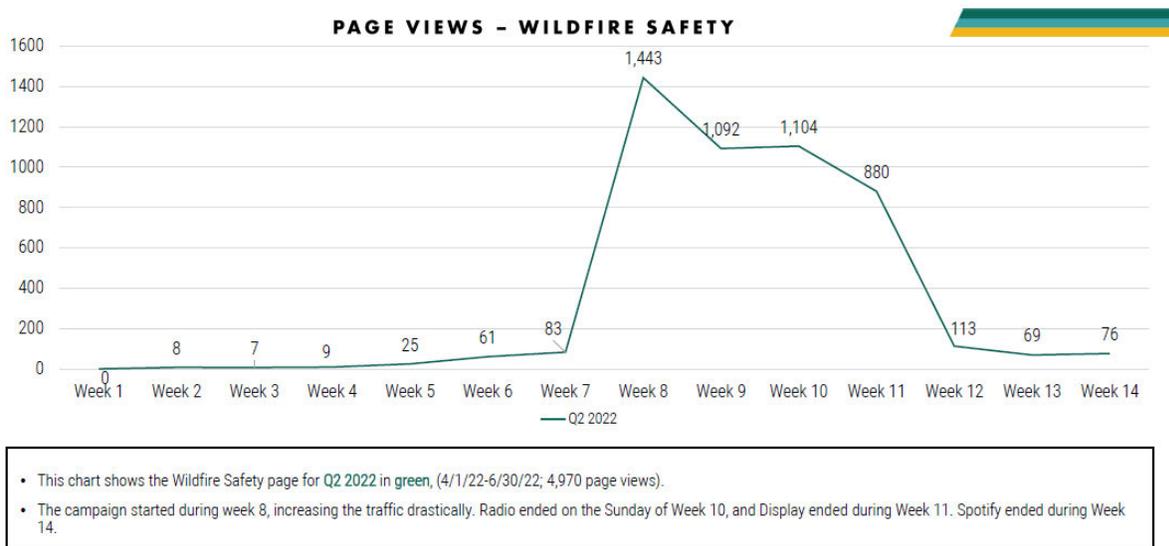


Figure 21
Wildfire safety webpage views

The following is a summary of metrics from Idaho Power’s 2022 paid communication campaign.

- **Radio**—Idaho Power’s wildfire-safety radio ad campaign ran from May 16 to July 31 in the Idaho Falls, Twin Falls, and Boise markets. The Boise market includes eastern Oregon, reaching as far west as Baker City. The campaign included a total of 4,327 paid and public safety announcement (PSA) match spots; 967 of which were in Spanish and played on Spanish language stations.
- **Programmatic Display Ads**—Idaho Power’s digital display ads appeared on regional websites from May 16 to July 31. These ads resulted in a total of 3,496 clicks in Idaho and Oregon to our wildfire landing webpage, with almost 3.7 million impressions. Almost three-quarters (74.21%) of these impressions occurred via mobile devices.
- **2021 Versus 2022**—Idaho Power’s 2021 wildfire-safety campaign was comparable to what we deployed in previous years, with the company relying mainly on displays on the Idaho Power website. The 2022 campaign was a much more robust, intricately planned and carefully executed effort. It involved a larger outreach goal and more ads on radio and Spotify that ultimately led to 1.24 million more impressions than the 2021 wildfire-safety campaign.

2022 WMP Communication Summary

Idaho Power used traditional and social media in 2022 to inform customers about the company's WMP, efforts to protect the grid from wildfire, how customers could reduce wildfire risk, how to prepare for wildfire-related outages, and PSPS. Outlets included:

- Newspapers—Print ads and news coverage
- Radio—Paid ads in English and Spanish and news coverage
- TV news coverage
- Printed flyers
- Social media
- Idaho Power website
- Digital display ads
- Postcards—Used to inform customers of the PSPS program and invitations for public meetings
- Spotify—Paid ads
- News Releases—Includes news releases with other Oregon utilities
- Customer email
- Customer newsletters
- Text Messages—Customers in PSPS zones
- Phone Calls—Customers in PSPS zones
- Letters—Customers in PSPS zones

The following updates to the website were made to include new pages focused on wildfire safety in 2022:

- Searchable map of PSPS zones by customer address
- Summer outage preparation
- How Idaho Power protects the grid including mitigation efforts
- How customers can help prevent wildfires
- An active PSPS event page that provides details of active PSPS areas and outage duration information

Additionally:

- Postcards were sent to all customers in PSPS zones to inform them of program details
- Printed 2,600 outage preparedness flyers (English and Spanish) and gave to the Idaho Commission on Aging for delivery with Meals on Wheels
- Wildfire themed customer newsletter (*Connections*) was sent to all customers in May
- Wildfire themed customer email sent to all customers with email addresses on file (approx. 350,000) in May
- Implemented a “pop-up” in the customer My Account web page encouraging customers to update contact information
- Post fire-season postcards were mailed to all Oregon customers in November for invitation to public meetings

10.4. Idaho Power Internal Communications—Employees

Idaho Power communicates with its employees in a variety of ways:

- *News Scans* for all employees



Page 1 • May 2, 2022

NewsScans

Dave Spillett and Pule Alo Receive President's Awards for Safety

President and CEO Lisa Grow recently presented the President's Award for Safety to two deserving employees in Pocatello — Meter Specialist Pule Alo and Regional Customer Relations Manager Dave Spillett. Here are their stories.

In early February, Pule arrived at a customer's home in American Falls as part of an account call. As he walked up to the door, he thought he heard crying. Listening, he heard a faint voice calling out for help. He went inside and found the customer lying on the floor at the top of the stairs. The woman had fallen, seriously injured her hip and had been lying there for five days.

After reassuring her he would help, Pule went outside, found cell service and called 911. He returned to the customer, covered her with a blanket to keep her warm and gave her water to drink. He even helped gather some of her belongings she wanted to take with her to the hospital.

Reflecting on the event, Pule said, "I am thankful for the training that we have at Idaho Power and that I was able to help her. I assessed the situation, secured the area and called 911."

You made a difference." Lisa told Pule

This past winter, regional employees identified several safety issues at an apartment building that posed hazards to a tenant. The building owner had converted a meter-utility room into an apartment that was now occupied by a single mother and her young child. Our employees immediately contacted the landlord to resolve the unsafe situation, which

The PSPS Plan is Here. What is it?

For the first time in company history, we've developed a Public Safety Power Shutoff (PSPS) plan.

A PSPS is when a company like Idaho Power proactively turns off power to certain areas where wildfire risk is high due to extreme weather conditions. The outage is an effort to protect our customers, communities, employees and equipment from wildfire in windy, dry conditions.

A PSPS is different from a load shed, which is a proactive outage used to protect the grid if customers' need for power is too high due to growth, extreme weather or other factors. It's also different from outages we've used occasionally *after* a wildfire starts to protect firefighters and other crews near our lines.

Figure 22

May 2, 2022, edition of *News Scans*

- Emails
- Leader communications
- GIS-based visual communication of risk zones and affected overhead lines
- Online training for employees influenced by the WMP
- In-person, hands-on, training for certain field employees

11. PERFORMANCE MONITORING AND METRICS

11.1. Wildfire Mitigation Plan Compliance

The Chief Operating Officer (COO) is the designated oversight officer for the Idaho Power WMP. The Vice President of Planning, Engineering and Construction (VP) is responsible for compliance monitoring, necessary training, and annual review of this WMP.

11.2. Internal Audit

Idaho Power's internal audit department, Audit Services, will periodically conduct an independent and objective evaluation of the WMP to assess compliance with policies and procedures and evaluate achievement of the Plan's objectives. Idaho Power's Compliance department will also periodically review Idaho Power's compliance with federal reliability standards regarding vegetation management practices.

11.3. Annual Review

Idaho Power will conduct an annual review of its WMP and incorporate necessary updates prior to wildfire season.

11.4. Wildfire Risk Map

The Wildfire Risk Map was established in 2020 by an external consultant. As noted in Section 2 of this report, the 2020 analysis was based, in part, on population census data from 2010. Idaho Power plans to reconduct risk modeling in 2023 to include 2020 Census data and explore other areas of consequence as described in Section 3.2.1. Idaho Power intends to review our risk modeling approach on an annual basis and perform modeling updates biennially.

11.5. Situational Awareness

Idaho Power will share its FPI regularly and broadly with Idaho Power personnel and contractors during wildfire season to ensure condition-specific operating requirements are met.

11.6. Wildfire Mitigation—Field Personnel Practices

Idaho Power crews and certain personnel are required to follow the *Field Personnel Practices* when working on lines in the RRZs and YRZs during a red FPI. Specific requirements are found in Idaho Power's *Field Personnel Practices* which is consulted by such crews working in these areas.

11.7. Wildfire Mitigation—Operations

Each year in preparation for the fire season, Idaho Power reviews and establishes:

- Temporary operating procedures for transmission lines during the fire season
- An operational strategy for distribution lines during time periods of elevated wildfire risk during the fire season
- Use of PSPS as a tool of last resort to prevent Idaho Power T&D facilities from becoming a wildfire ignition source or contributing to the spread of wildfires

11.8. Wildfire Mitigation—T&D Programs

This section lists metrics used to evaluate Idaho Power’s asset management and vegetation management programs. The metrics are based on progress made towards completing mitigation activities, such as quantities of inspected units. Work is identified and prioritized each year and approved by executive management. Idaho Power’s goal is to complete 100% of the work plan each year; however, emergencies or other unplanned events can occur and disrupt the annual work plan. All work is completed in accordance with safety and applicable requirements and industry standards.

Table 11
T&D programs metrics

Transmission	
Transmission Asset Management Programs	Description
Aerial Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Ground Visual Inspection Program	Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.
Detailed Visual (High Resolution Photography) Inspection Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Cathodic Protection and Inspection Program	Perform 10-year structure-to-soil potential testing on select towers with direct-buried anodes. Perform 10-year rectifier and ground-bed testing on ICCP systems. Annually inspect and record DC voltage and current readings of rectifiers. Complete repairs and adjustments.
Wood Pole Wildfire Protection Program	Inspect and install wraps on selected poles.
Distribution	
Distribution Asset Management Programs	Description
Wood Pole Inspection and Treatment Program	Perform 10-year cycle patrols and document identified defects according to priority. Complete repairs according to priority definition.
Line Equipment Inspection Program	Complete annual inspections and data analysis and mitigate defects

<p>Ground Detailed Inspection Program</p> <p>Thermography (Infra-Red) Inspections</p> <p>Distribution Infrastructure Hardening Program Replace "small conductor" with new 4acsr or larger conductor</p> <p>Replace or repair damaged conductor</p> <p>Re-tension loose conductors including "flying taps" and slack spans as required</p> <p>Replace wood-stubbed poles with new wood poles</p> <p>Replace white and yellow square tagged poles with new wood poles</p> <p>Replace wood pins/wood crossarm with new steel pins/fiberglass crossarms</p> <p>Replace steel insulator brackets with new steel pins/fiberglass crossarms</p> <p>Replace wedge deadends on primary taps with new polymer deadend strain insulators</p> <p>Replace aluminum deadend strain insulators with new polymer deadend strain insulators</p> <p>Replace porcelain switches with new polymer switches</p> <ul style="list-style-type: none"> Replace hot line clamps Replace aluminum stirrups Install avian cover Relocate arresters <p>Install bird/animal guarding</p> <p>Update capacitor banks</p> <ul style="list-style-type: none"> Replace swelling capacitors Replace oil-filled switches with vacuum style Replace porcelain switches with polymer switches <p>Replace certain expulsion arrestors</p> <p>Install disconnect switches on CSP transformers</p> <ul style="list-style-type: none"> Install avian cover <p>Update down guys</p> <ul style="list-style-type: none"> Replace/Install down-guy insulators with fiberglass insulators Tighten down guys <p>Tighten hardware</p> <p>Correct 3rd party pole attachment violations (report to Joint Use Department)</p> <p>Replace certain expulsion fuses</p>	<p>Perform annual patrols and document identified defects according to priority. Complete repairs according to priority definition.</p> <p>Complete inspections of targeted lines and equipment using thermal imaging (infra-red) cameras.</p> <p>Complete annual work plan</p>
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Vegetation Management

Transmission

<p>Pre-Fire Season Inspection and Mitigation</p> <p>Line Clearing Cycles: Strive to maintain 3-year cycle for valley areas & 6-year cycle for mountain areas</p> <p>Tree Removals - Hazard Trees</p> <p>Targeted Pole Clearing</p> <p>100% QA/QC Audits in RRZs and YRZs</p>	<p>Perform annual pre-fire season inspections no later than June 15 of each year and mitigate noted "hot spots"</p> <p>Complete annual cycle pruning work plan</p> <p>Remove targeted hazard trees</p> <p>Complete annually targeted structures</p> <p>Complete annually QA/QC audits</p>
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Description

Distribution

<p>Pre-Fire Season Inspection and Mitigation</p> <p>Line Clearing Cycle: Strive to maintain 3-year cycle</p> <p>Mid-Cycle Pruning in RRZs and YRZs</p>	<p>Perform annual pre-fire season inspections no later than June 15 of each year in RRZs and YRZs and mitigate noted "hot spots"</p> <p>Complete annual cycle pruning work plan</p> <p>Complete annual mid-cycle pruning work plan in RRZs and YRZs</p>
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Description

Tree Removals - Cycle Busters/Hazard Trees	Complete annual cycle pruning work plan
Targeted Pole Clearing	Complete annually targeted structures
100% QA/QC Audits in RRZs and YRZs	Complete annually QA/QC audits

11.9. Long-term Metrics

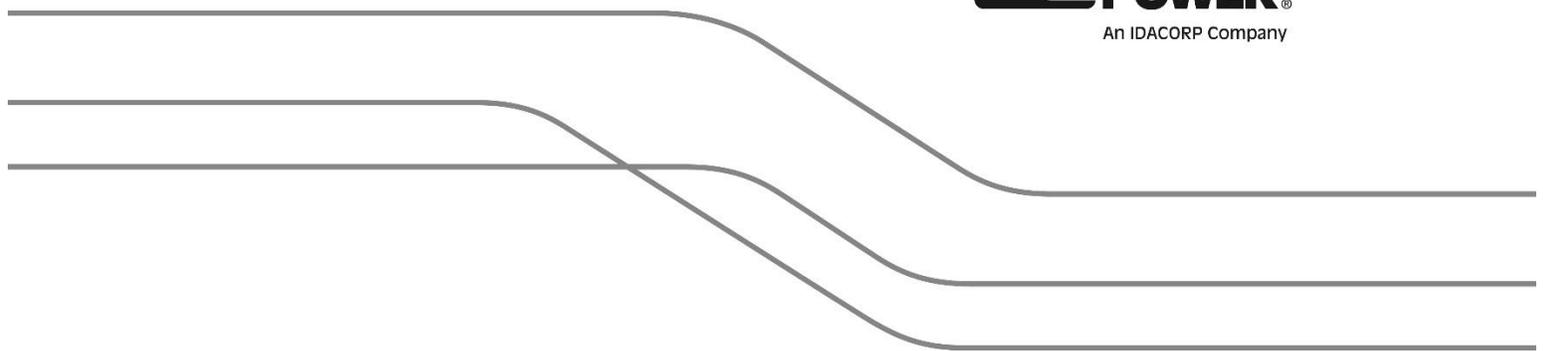
In 2022, Idaho Power identified new metrics to measure the performance of the WMP and its effectiveness over time. Vegetation management and grid hardening work is expected to reduce outages and improve reliability in wildfire risk zones. A new approach in gauging the effectiveness of the WMP includes tracking reliability data and specific outage counts based on causes or failures that are considered potential drivers of ignition. The following outage causes were established as baseline potential drivers of ignition and will be monitored for each wildfire risk zone:

- Tree/Vegetation Contact
- Equipment Failure
- Loose Hardware
- Corrosion
- Animal Contact

Historical data was analyzed in 2022 in both RRZ and YRZ to establish baseline metrics that will be used to measure performance over time. Potential drivers of ignition in wildfire risk zones through October have decreased by 8% compared to the previous four-year average. This improvement occurred despite being in early stages of wildfire hardening and enhanced vegetation management activities. The use of outage data to gauge overall WMP performance is expected to be a long-term metric and it takes several years to develop trendlines and averages to draw definitive conclusions and a causal relationship to wildfire mitigation activities. In 2023, the company plans to continue to develop long-term benchmarks based on outage counts and cause codes and will refine our approach by expanding the use of data analytics.

Appendix A

The Wildland Fire Preparedness and Prevention Plan.



Wildland Fire Preparedness and Prevention Plan

TABLE OF CONTENTS

1. Plan Overview
 - A. Intent of Plan
 - B. Scope Plan
2. Situational Overview and Applicability
 - A. Wildfire Season
 - B. Wildfire Risk Zones
 - C. Fire Potential Index
 - D. Decision Making for Field Work Activities
3. Preparedness—Tools and Equipment
 - A. Required Personal Protective Equipment
 - B. Required Tools and Equipment
 - C. Land Management Agency Restrictions and Waivers
4. Prevention—Practices of Field Personnel
 - A. General Employee Practices
 - B. Practices Relating to Vehicles and Combustion Engine Power Tools
5. Reporting
 - A. Fire Ignition
 - B. Fire Reporting
6. Training
7. Roles and Responsibilities
8. Audit

1. Plan Overview

A. Intent of Plan

The purpose of this Wildland Fire Preparedness and Prevention Plan (Plan) is to provide guidance to Idaho Power Company (IPC) employees to help prevent the accidental ignition and spread of wildland fires (wildfires) due to employee work activities in locations and under conditions where wildfire risk is heightened. It is expected that all IPC employees be aware of the provisions of this Plan, operate in accordance with the Plan and conduct themselves in a fire-safe manner.

B. Scope of Plan

The scope of this Plan includes tools, equipment, and field behaviors IPC employees incorporate when working in locations and under conditions where wildfire ignition is heightened.

Operations of Transmission and Distribution (T&D) lines facilities, vegetation management, and T&D lines programs that mitigate wildfire risks are not included in this Plan; they are referenced in the separate Wildfire Mitigation Plan.

2. Situational Overview and Applicability

A. Wildfire Season

The provisions of this Plan shall be applicable during wildfire season. Within IPC's service area, wildfire season is defined as the closed fire season of May 10 through October 20 of each year, as established by Idaho State Law, Title 38-115.

Should any local, state, or federal government land management agency (i.e., the BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order that extends wildfire season beyond that specified above, then compliance with that agency's order shall govern.

Many variables—such as drought conditions, weather, and fuel moisture—can cause the wildfire season to begin and/or end earlier or later. In summary, flexibility, judgment, attention to current and forecasted field conditions, and attention to governmental agency issued wildfire orders are necessary such that operational practices can be adjusted accordingly.

B. Wildfire Risk Zones

IPC's Wildfire Mitigation Plan includes a Wildfire Risk Map of IPC's service area. This Wildfire Risk Map may be accessed at the Idaho Power SharePoint site. All lands in the vicinity of IPC facilities are mapped as Red Zone, Yellow Zone or areas of minimal wildfire risk (i.e., not within a Red or Yellow Zone). Red and Yellow Zones are designated as wildfire risk zones (WRZ). The provisions of this Plan shall apply to work activities taking place during wildfire season in these WRZs.

Should any local, state, or federal government land management agency (i.e., BLM, U.S. Forest Service, Oregon Department of Forestry, Idaho Department of Lands, etc.) issue any wildfire related order, then compliance with that agency's order shall govern if their order is more restrictive than that set forth in this Plan.

C. Fire Potential Index

Idaho Power's Atmospheric Science department has developed an FPI rating system that forecasts wildfire potential across IPC's service area. The FPI considers many current and forecasted elements such as meteorological (winds-surface and aloft, temperatures, relative humidity, precipitation, etc.) and fuel state (both live and dead). The FPI is designed and calibrated for IPC's service area; specifically, those areas in proximity to IPC transmission, distribution, and generation facilities.

The FPI consists of a numerical score ranging from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). The FPI scores are grouped into the following 3 index levels:

- **Green:** FPI score of 1 through 11
- **Yellow:** FPI score of 12 through 14
- **Red:** FPI score of 15 through 16

During wildfire season, Idaho Power will determine a daily FPI as described in Section 5 of the WMP. This weather forecast and FPI dashboard is contained within IPC geographic information system (GIS) viewers available to all IPC employees.

D. Decision Making for Field Work Activities

Employees working in the field shall be cognizant of current and forecasted weather and field conditions. Awareness of these conditions, and exercising appropriate judgment, is essential when considering whether to undertake work activities when combinations of high temperatures, low humidity, dry fuels, and/or wind are present or forecasted to be present.

The following process steps shall apply to employees and crews contemplating field work during wildfire season:

Planned or Scheduled Work Activities:

1. Fire Potential Indices:
 - a) Employees working in the field—NOT working on transmission or primary distribution lines should:

- i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed, through the FPI dashboard.
 - ii. Once the FPI level for the work zone is identified, proceed with work but consider utilizing Prevention—Practices of Field Personnel (see Section 6 of this Plan).
- b) Employees working in the field—working on transmission or primary distribution lines should:
- i. Be aware of the current and forecasted weather and the FPI level for the area in which the work will be performed.
 - ii. Once the FPI level for the work zone is identified, proceed as follows for each FPI level:
 1. **Green FPI in All Zones:** Proceed with the work.
Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this Plan)
 2. **Yellow FPI in All Zones:** Proceed with the work.
Consider utilizing Prevention—Practices of Field Personnel (see section 4 of this plan)
 3. **Red FPI**
 - a) **In Normal Zone:** Proceed with the work.
Consider utilizing Prevention—Practices of Field Personnel (see Section 6 of this plan)
 - b) **In Medium Zone:** Proceed with the work. However, it is a requirement to follow the Prevention—Practices of Field Personnel (see Section 6 of this plan)
 - c) **In High Zone: STOP.** No planned work activities shall take place unless approved by operations level manager. Work consideration will be restoration of electric service or work deemed critical to providing safe, reliable electric service. If work is approved to proceed it is a requirement to follow the Prevention—Practices of Field Personnel (see Section 6 of this plan).

Fire Potential Index (FPI)	High	15 to 16 (Red)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel REQUIRED	STOP/NO WORK
	Elevated	12 to 14 (Yellow)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
	Normal	1 to 11 (Green)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)	Proceed with work Utilize Prevention/ Practices of Field Personnel (Optional)
			None	Yellow (Tier 2)	Red (Tier 3)

2. Land Management Agency Restrictions: Follow the requirements and restrictions of any wildfire restrictions related order that is issued by local, state, or federal land management agencies.
 - a) Immediately upon receiving knowledge of an order, The Environmental Services department will notify, via email, operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies.

Emergency Response and Outage Restoration Work Activities:

Follow the same steps as identified above for planned work activities. However, it is recognized that the nature of emergency response and outage restoration situations will often require exceptions to the above. In these situations, leadership should be consulted, and appropriate judgment should be used given the nature of the emergency or outage at hand.

3. Preparedness—Tools and Equipment

A. Required Personal Protective Equipment

Standard IPC Personal Protective Equipment (PPE) shall be worn in accordance with the IPC Safety Standard.

When entering a designated fire area being managed by the BLM or the U.S. Forest Service, additional PPE requirements may be in force by those agencies. These typically include:

- Hardhat with chinstrap
- Long sleeve flame-resistant (FR) shirt and FR pants
- Leather gloves
- Exterior leather work boots, 8” high, lace-type with Vibram type soles
- Fire shelter

B. Required Tools and Equipment

Employees NOT working on transmission or distribution lines: Standard tools and equipment in accordance with the IPC Safety Standard and Fleet Services.

Employees working on transmission or distribution lines: IPC and the State of Idaho BLM entered into a March 2019 Master Agreement that governs various IPC and BLM interactions, including wildfire prevention related provisions. In addition to State of Idaho BLM lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ in Idaho, Nevada, Montana, and Oregon. These requirements include:

- During the wildfire season (May 10–October 20) or during any other wildfire season ordered by a local, state, or federal jurisdiction, IPC, including those working on IPC’s behalf, will equip at least 1 on-site vehicle with firefighting equipment, including, but not limited to:
 - a) Fire suppression hand tools (i.e. shovels, rakes, Pulaski’s, etc.),
 - b) a 16-20-pound fire extinguisher,
 - c) a supply of water, sufficient for initial attack, with a mechanism to effectively spray the water (i.e. backpack pumps, water sprayer, etc.). This requirement to carry water is dependent on the vehicle type and weight restrictions. For example, a mini-excavator would not be required to carry water since there is no safe way to do so, or a loaded bucket truck may not be required to carry water because of weight limitations.
- At a minimum, equip each truck that will be driven in the WRZs during wildfire season with at least:
 - a) One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
 - b) One axe or Pulaski with a 26-inch handle or longer
 - c) A combination of shovels, axes, or Pulaskis available to each person on the crew

- d) One fire extinguisher rated no less than 2A:10BV (5 pounds)
- e) 30-200 gallons of water in a fire pumper and 5-gallon back packs

IPC personnel will be trained to use the above tools and equipment to aid in extinguishing a fire ignition before it gets out of control and take action that a prudent person would take to control the fire ignition while still accounting for their own personal safety.

C. Land Management Agency Restrictions and Waivers

The Environmental Services department will notify operations leadership within Power Supply, Customer Operations and Business Development, and T&D Engineering and Construction of any wildfire related requirements and restrictions orders that are issued by local, state, or federal land management agencies. Typical orders issued each fire season include:

- BLM. During BLM's Stage II Fire Restrictions, IPC's Environmental Services department will obtain an appropriate waiver. Field personnel shall take appropriate precautions when conducting work activities that involve an internal combustion engine, involve generating a flame, involve driving over or parking on dry grass, involve the possibility of dropping a line to the ground, or involve explosives. Precautions include a Fire Prevention Watch Person who will remain in the area for 1 hour following the cessation of that activity. Also, IPC personnel will not smoke unless within an enclosed vehicle, building, or designated recreation site or while stopped in an area at least 3 feet in diameter that is barren or cleared of all flammable materials. All smoking materials will be removed from work sites. No smoking materials are to be discarded.
- State of Oregon Department of Forestry (ODF). Prior to each summer fire season, the ODF issues a "Fire Season Requirements" document that specifies required tools, equipment, and work practices. In addition to State of Oregon lands, IPC has elected to apply these requirements to all work activities taking place on all WRZ, BLM lands, and Forest Service lands within the State of Oregon. Go to <https://www.oregon.gov/ODF/Fire/Pages/Restrictions.aspx> for ODF's Fire Season Requirements order.
- Other sites for reference that contain fire restriction orders include:
 - Oregon— Blue Mountain Interagency Fire Center at <http://bmidc.org/index.shtml>
 - Nevada—Fire Information at <https://www.nevadafireinfo.org/restrictions-and-closures>
 - Montana—<https://firerestrictions.us/mt/>

4. Prevention—Practices of Field Personnel

A. General Employee Practices

The below listing includes, but is not limited to, practices and behaviors employees shall incorporate depending on the FPI and level of WRZs during fire season.

1. Daily tailboards must include discussion around fire mitigation planning. Discussion topics include, but are not limited to:
 - a. Items 2 through 7 below
 - b. Water suppression
 - c. Hand tools
 - d. Welding blankets
 - e. Mowing high brush areas (weed wacker)
 - f. Watering down the worksite before setting up equipment

2. Weather conditions and terrain to be worked shall be considered and evaluated. Items to be considered include, but are not limited to:
 - a. Identify the FPI for the area being worked (see Section 3.2.2)
 - b. Monitor weather forecasts and wind and humidity conditions
 - c. Identify surroundings. i.e., wildland-urban interface, BLM lands, Forest Service lands, proximity to any homes and structures, etc.
 - d. Identify local fire departments and locations
 - e. Evaluate the terrain you are working in (steep or flat)
 - f. Consider whether the work will occur during the day or at night

3. Work procedures and tools that have potential to cause a spark or flash shall be considered and evaluated. Items to be considered include, but are not limited to:
 - a. Performing energized work
 - b. Grinding or welding
 - c. Trees contacting electrical conductors
 - d. Hot saws
 - e. Chainsaws
 - f. Weed wackers
 - g. Sawzalls

4. Monitoring the worksite throughout the project.

It is imperative that all crews and equipment working in the WRZs areas are continuously monitoring and thoroughly inspecting the worksite throughout the project. This includes prior to leaving the work area for the night or before moving on to the next structure.

5. Employee cooking stoves.

When working in remote locations, often employees bring food that needs to be cooked. Open flames should not be allowed. Cook stoves may be permitted by leadership but special precautions must be followed to use:

 - a. The stove or grill must be in good repair and of sturdy construction
 - b. Stoves must be kept clean, grease build up is not allowed
 - c. Fueling of the stove must follow the fueling procedures when liquid fuels are used
 - d. Cooking must be in areas free of combustible materials

6. Smoking on the job site.

Carelessly discarded smoking materials can result in wildfire ignition. The following practices shall be followed:

- a. Do not discard any tobacco products from a moving vehicle.
 - b. Smoking while standing in or walking through forests or other outdoor areas when IPC's FPI rating is above a Green level is prohibited.
 - c. All employees must smoke **only in designated areas** and smoking materials must be disposed of in half filled water bottles or coffee containers half filled with sand. Smoking materials shall not be discarded on any site.
7. Post job site inspection.
- Final inspection or post-checking the work site for any ignition hazards that may remain is essential to the proper completion of the work and true mitigation of the hazards. Post-checking the work will help ensure the hazards were mitigated and provide a final chance to see if any new hazards or hot spots exist before leaving the work site.

B. Behaviors Relating to Vehicles and Combustion Engine Power Tools

It is important to consider work procedures, equipment conditions, employee actions, potential causes, and other sources that could lead to fire ignition. Some work practices may be performed on roadways that have little to no risk of fire ignition. Leadership should consider scheduling off-road equipment use during times of green fire risk. Employees should also consider alternative tools, work methods or enhanced suppression tools to reduce the risk or spread of fire.

1. Additional heat may bring vegetative materials to an easier point of ignition. This includes, but is not limited to, the following vehicles:
 - a. Pickups, crew cabs, line-beds, buckets trucks (large and small), backhoes, excavators and rope trucks, and any other motorized equipment.
2. Vehicle Procedures:
 - a. Inspect all engine exhaust, spark arresters and electrical systems of vehicles used off road, daily for debris, holes or exposed hot components and to ensure that heat shields and protective components are in place.
 - b. Conduct inspections of the vehicle undercarriage before entering or exiting the project area to clear vegetation that may have accumulated near the vehicle's exhaust system.
 - c. Vehicles shall be parked overnight in areas free from flammable vegetation at a minimum distance of 10 feet.
 - d. Vehicles and equipment will not be stationary or in use in areas where grass, weeds or other flammable vegetation will be in contact with the exhaust system.
 - e. If there is no other workable option for the location that doesn't include weeds, grass or other flammable vegetation, the vegetation and debris will need to be removed.

- f. Consider using a fire-resistant material such as a welding blanket to cover flammable material to act as a heat shield; fire blankets may be a suitable option to avoid removal of vegetation.
3. Hot brakes on vehicles and equipment:
 - a. Park vehicles in areas free of combustible materials.
 - b. Hot brake emergency parking, during times of yellow or red FPI shall be cleared of combustible materials for a distance of at least 10 feet from the heat source.
 4. Fueling procedures:
 - a. Tools or equipment should NOT be fueled while running.
 - b. Cool down period must be given to allow equipment time to no longer be considered a fire risk.
 - c. Allow for a ten-foot radius from all ignition sources.
 - d. Any combustible debris should be cleared from the immediate area.
 - e. Never smoke while fueling.
 - f. Designate fueling areas for all gas-powered tools.
 5. Combustion engine power tools:

Poorly maintained or missing spark arrester screens may allow sparks to escape and cause ignition of vegetation. Ensure proper spark arrester screens are in place for the following tools:

 - a. Generators
 - b. Pony motors
 - c. Pumps
 - d. Chain saws
 - e. Hot saws
 - f. Weed eaters
 - g. Brush hog

Inspect spark arresters daily; clean or replace when clogged, damaged or missing or remove from service until repaired.

5. Reporting

A. Fire Ignition

All fire ignitions shall be immediately reported to regional or system dispatch. Dispatch will notify local fire authorities. All work shall immediately stop and necessary steps taken to extinguish the fire with available tools, water, and equipment. If the fire gets too large to safely contain or extinguish, ensure all employees are accounted for and get to a safe location.

B. Fire Reporting

When reporting a fire ignition to regional or system dispatch provide the following information:

1. Your name
2. Location-reference points including an address, road or street name, cross streets, mountain range, GPS coordinates, as applicable
3. Fire information
4. Size and behavior of the fire
5. Weather conditions

6. Training

Each employee who performs work in wildland fire designated zones shall be trained on the content of this document and be required to complete annual refresher courses through the Workday system. Employees are required to complete fire extinguisher and fire shelter training annually as part of the lineman safety compliance. Documentation of all training shall be retained in Workday.

7. Roles and Responsibilities

Employee	<ol style="list-style-type: none"> 1. Be familiar with the requirements specified in this Plan and operate in accordance with this Plan. 2. Be aware of daily weather forecast and FPI level. 3. Be aware of whether field work will be performed in a WMZ.
Crew Foreman and Front-Line Leaders	<ol style="list-style-type: none"> 1. Establish expectations to direct report employees they are to be familiar with, and follow, Plan requirements. 2. Ensure the crew or team conducts field operations in accordance with this Plan. 3. Be aware of daily weather forecast and FPI level (by viewing the FPI dashboard or by calling into dispatch or a leader): <ol style="list-style-type: none"> a) Ensure employees are aware of the FPI level. b) Ensure work practices comply with this Wildland Fire Preparedness and Prevention Plan when the FPI is "Red" and the WMZ is Yellow. c) Ensure no work takes place when FPI is "Red" and the WMZ is Red. Any exceptions to be discussed with manager. 4. Ensure annual training of employees is completed prior to wildfire season. 5. Ensure required tools and equipment are in place prior to wildfire season.
Manager (Regional Operations Manager, Area Manager, T&D Construction Manager)	<ol style="list-style-type: none"> 1. Establish expectations to Crew Foremen and Front-Line Leaders they are to operate in accordance with Plan requirements. 2. Support Crew Foremen and Front-Line Leaders in scheduling training and making required tools and equipment available. 3. View daily weather forecast and FPI dashboard: <ol style="list-style-type: none"> a) Authorize any exceptions to working when FPI is "Red" and the WRZ is Red. b) Ensure specified audits are timely completed.
Meteorology Department	<ol style="list-style-type: none"> 1. Provide daily weather forecast and update the FPI dashboard contained within the IPC Enviro Viewer.
Environmental Services Department	<ol style="list-style-type: none"> 1. Monitor local, state, and federal land management agencies for any wildfire restriction orders that are issued. 2. Communicate content of any orders issues to Power Supply, COBD, and PEC operations leadership.
Operations Procurement Department	<ol style="list-style-type: none"> 1. Ensure contractors have a copy of this Plan and that contractual requirements are in place to ensure adherence to the Plan.
Vice-President of Planning, Engineering and Construction (VP of PEC)	<ol style="list-style-type: none"> 1. Ensure annual review/update of this Plan is conducted following the completion of each wildfire season.

8. Audit

Prior to the start of wildfire season (May 10), all vehicles associated with work on transmission and distribution lines will be audited by leadership to ensure that those working in WRZs are properly equipped with firefighting equipment. The following checklist must be completed, dated, and signed by a member of leadership (front-line supervisor or above) and kept with the crew or individual until fire season has ended (Oct 20). A copy of each audit checklist shall be sent to the respective manager and senior manager.

Wildland Fire Preparedness Audit Checklist:

Inspector: _____

Signature: _____

Date: _____

Crew: _____

Crew:

At least 1 vehicle will be equipped with the following:

- Fire suppression hand tools (shovels, Pulaski, axes, etc.) for each member of the crew
- A 16–20-pound fire extinguisher (2-10-pound fire extinguishers)
- A supply of water, sufficient for initial attack, with an effective spraying mechanism (i.e., backpack pumps, water sprayer, etc.)
- 30–75-gallon mechanical fire pumper

Individual Truck:

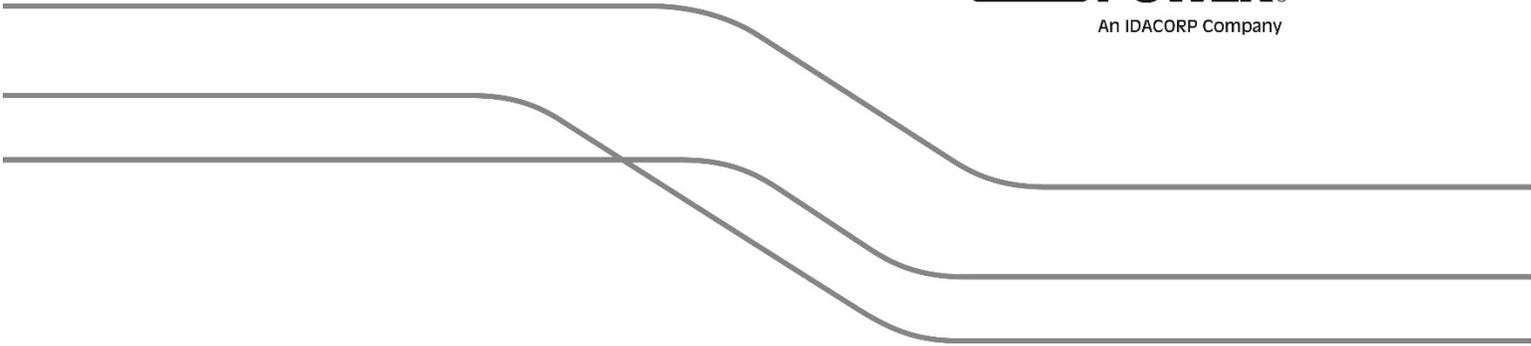
- One round, pointed shovel at least 8-inches wide, with a handle at least 26 inches long
- One axe or Pulaski with a 26-inch handle or longer
- A combination of shovels, axes, or Pulaskis to each person on the crew
- One fire extinguisher rated no less than 2A:10BV (5 pounds)
- 30-200 gallons of water in a fire pumper and 5-gallon back packs

Personal protective equipment (PPE) IPC and BLM standards: Each employee will be required to have the following PPE:

- Hard hat with a chin strap
- Safety glasses
- Hearing protection
- Long sleeve FR shirt FR pants
- Leather gloves
- Exterior leather work boots 8" high lace type with Vibram type soles
- Fire shelter

Appendix B

The Public Safety Power Shutoff (PSPS) Plan.



Idaho Power Company's Wildfire Public Safety Power Shutoff Plan

December 2021

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TABLE OF CONTENTS

Table of Contents	i
List of Tables	iv
List of Figures	iv
1. Introduction.....	1
2. List of Acronyms	2
3. Definitions.....	3
4. Public Safety Power Shutoff Overview	4
5. Scope.....	4
6. Key Tenets	4
7. Wildfire Zones	5
8. PSPS Implementation Considerations	5
8.1. Fire Potential Index.....	5
8.2. National Weather Service Red Flag Warning.....	6
8.3. NWS Fire Weather Forecasts.....	6
8.4. Publicly Available Weather Models	7
8.5. Idaho Power Weather Model	7
8.6. Storm Prediction Center Fire Weather Outlooks	7
8.7. Current Weather Observations.....	7
8.8. National Significant Wildland Fire Potential Forecast Outlook	8
8.9. Great Basin Coordination Center Morning Briefing	8
8.10. GBCC Current and Predicted ERC and F100.....	8
8.11. Agency Input.....	8
8.12. De-Energization Windspeed Considerations	8
8.13. Engineering Assessment	9
8.14. Alternative Protective Measures	9
8.15. Real-time Field Observations	9

8.16. Other9

9. Responsibilities.....9

9.1. Load Serving Operations9

9.2. Atmospheric Science10

9.3. TDER Senior Manager10

9.4. Customer Operations and T&D Construction.....11

9.5. Supply Chain/Stores.....11

9.6. Fleet/Equipment Resource Pool.....12

9.7. Supply Chain Contracting.....12

9.8. Substation Operations12

9.9. Corporate Communications12

9.10. Distribution Engineering and Reliability.....13

9.11. Safety14

9.12. Vegetation Management14

9.13. Geographic Information Systems14

9.14. Customer Service.....14

9.15. Communication Systems (Stations).....15

9.16. Customer Operations Support.....15

9.17. Legal15

9.18. Regulatory.....15

10. PSPS Operations16

10.1. General.....16

10.2. PSPS Preparedness.....17

10.2.1. Idaho Power Programs17

10.2.2. Coordination with Government Entities18

10.2.3. Community Preparedness18

10.2.4. Information Sharing18

10.2.5. Notifications and Emergency Alerts.....18

10.2.6. Training and Exercises.....	18
10.3. Proactive Communications	19
10.4. Wildfire Season Operations	20
10.4.1. Situational Awareness Activities	20
10.4.2. GIS Wildfire Information	20
10.4.3. Key Grid Interdependent Utilities and Agencies	20
10.5. Phase 1	21
10.5.1. PSPS Assessment Team Activation.....	21
10.5.2. Community Notifications.....	21
10.6. Phase 2	21
10.6.1. Activate Event Coordinator	22
10.6.2. Conduct Operational Risk Analysis.....	22
10.6.3. Request to Delay a PSPS Event.....	22
10.6.4. PSPS Event Strategy	22
10.6.5. Field Observations and Response Teams	22
10.6.6. Customer and Community Notifications	22
10.7. Phase 3	23
10.7.1. Customer and Community Notification.....	23
10.8. Phase 4	23
10.8.1. System Inspections.....	23
10.8.2. Repair and Recovery.....	23
10.8.3. Incident Management Support.....	24
10.8.4. Communicate PSPS Event Conclusion.....	24
10.8.5. Re-energization.....	24
10.9. Post-incident Review	24
11. Financial Administration	25
12. Reporting.....	25
13. After-Action Report.....	25

14. Training.....25
15. Exercises25

LIST OF TABLES

Table 1

Incident phase decision triggers.....16

LIST OF FIGURES

Figure 1

PSPS Preparedness Cycle17

Figure 2

PSPS Event Communication Timeline19

1. INTRODUCTION

Wildfires in the Pacific west have increased in their intensity in recent years. In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution facilities, Idaho Power implemented a Wildfire Mitigation Plan in 2021, focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies to prevent the accidental ignition of wildfires. As part of its operational mitigation practices, Idaho Power has developed this Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. This Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed annually and updated as necessary prior to the start of the next wildfire season.

This Plan identifies PSPS implementation considerations and responsibilities for different Idaho Power departments before, during and after PSPS events. Table 2 describes the different phases Idaho Power will use during PSPS events and Figure 7 depicts the communication audiences and timeline Idaho Power will ideally follow during an event. Finally, this Plan describes activities Idaho Power will undertake to prepare and improve the Plan over time, including interactions with local emergency agencies, and briefly describes the financial administration of the Plan.

2. LIST OF ACRONYMS

AAR—After Action Review

BLM—Bureau of Land Management

COO—Chief Operations Officer

ECMWF—European Centre for Medium-Range Forecasts

EMT—Emergency Management Team

ERC—Energy Release Component

F100—100-Hour Fuel Moisture

FPI—Wildfire Mitigation Plan Fire Potential Index

FWW—Fire Weather Watch

GBCC—Great Basin Coordination Center

GIS—Geographic Information System

IPUC—Idaho Public Utility Commission

IRWIN—Integrated Reporting of Wildland-Fire Information

LSO—Load Serving Operations

NIFC—National Interagency Fire Center

NOAA—National Oceanic and Atmospheric Administration

NWS—National Weather Service

OPUC—Oregon Public Utility Commission

PEC—Planning, Engineering and Construction

PSPS—Public Safety Power Shutoff

RFW—National Weather Service issued Red Flag Warning

SGM—Smart Grid Meter

SME—Subject Matter Expert

T&D—Transmission & Distribution

TDER—Transmission & Distribution Engineering and Reliability

UKMET—United Kingdom Meteorological Office

WMP—Wildfire Mitigation Plan

WRF—Weather Research and Forecasting

3. DEFINITIONS

- (1) **Critical Facilities**—Refers to the facilities identified by Idaho Power that, because of their function or importance, have the potential to threaten life safety or disrupt essential socioeconomic activities if their services are interrupted.
- (2) **ESF-12**—Refers to Emergency Support Function-12 and is the Idaho Power Company liaison from the State Office of Emergency Management for energy utilities issues during an emergency for both Idaho and Oregon.¹
- (3) **Exercise**—Refers to planned activities and assessments that ensure continuity of operations, provide and direct resources and capabilities and gather lessons-learned to develop core capabilities needed to respond to incidents.
- (4) **Community**—Refers to a group of people that share goals, values and institutions.²
- (5) **Local Emergency Manager**—Refers to a jurisdiction’s role that oversees the day-to-day emergency management programs and activities.³
- (6) **Public Safety Partners**—As defined by Idaho Power refers to ESF-12, Local Emergency Management and Idaho’s and Oregon’s Department of Human Services (or equivalent).
- (7) **Public Safety Power Shutoff or PSPS**—A proactive de-energization of a portion of an Electric Utility’s electrical network, based on the forecasting of and measurement of extreme wildfire weather conditions.

¹ Federal Emergency Management Institute (FEMA) National Response Framework (NRF) Emergency Support Functions (ESF) [National Response Framework | FEMA.gov](https://www.fema.gov/national-response-framework).

² FEMA definition under “Communities” (pg. 26) [National Response Framework \(fema.gov\)](https://www.fema.gov/national-response-framework).

³ FEMA definition under “Local Government” (pg. 29) [National Response Framework \(fema.gov\)](https://www.fema.gov/national-response-framework).

4. PUBLIC SAFETY POWER SHUTOFF OVERVIEW

In recent years, the western United States (U.S.) has experienced an increase in the intensity of wildland fires (wildfires). A variety of factors have contributed in varying degrees to this trend, including climate change, increased human encroachment in wildland areas, historical land management practices and changes in wildland and forest health. Recent events in western states have increased awareness of electric utilities' role in wildfire prevention and mitigation.

In an effort to keep Idaho Power's customers and the communities it serves safe and continue improving the resiliency of Idaho Power's transmission and distribution (T&D) facilities, Idaho Power implemented a Wildfire Mitigation Plan (WMP) in 2021 focused on situational awareness, field personnel safety practices and operational wildfire mitigation strategies. As part of its operational mitigation practices, Idaho Power developed this Wildfire Public Safety Power Shutoff Plan (PSPS Plan or Plan) to proactively de-energize electrical facilities in identified areas of extreme wildfire risk to reduce the potential of those electrical facilities becoming a wildfire ignition source or contributing to the spread of wildfires. Based on the inherently disruptive nature of power outages, Public Safety Power Shutoff (PSPS) events must be carefully evaluated under this Plan to balance wildfire risk with potential PSPS impacts on Idaho Power customers and the communities it serves.

The unpredictable nature of wildfire and weather patterns create significant challenges with forecasting PSPS events. Real-time evaluations and decision-making are therefore critical in making PSPS determinations and, depending on the associated wildfire risk, those determinations may result in proactive de-energization in areas not originally anticipated.

5. SCOPE

This PSPS Plan identifies the relevant considerations, process flow and implementation protocol before, during and after a PSPS event. The Plan will be active during wildfire season and reviewed and updated annually as necessary prior to the start of the next wildfire season. Wildfire season (also known as "closed season") is defined by Idaho Code § 38-115 as extending from May 10 through October 20 each year, or as otherwise extended by the Director of the Idaho Bureau of Land Management (BLM). Oregon's wildfire season generally aligns with Idaho's wildfire season and is designated by the State Forester each year pursuant to Oregon Revised Statute 477.505.

6. KEY TENETS

- Advancing the safety of Idaho Power employees, customers and the general public
- Collaborating with key external stakeholders (agencies, counties, local governments, public safety partners, first responders)

- Minimizing both potential wildfire risk and power outage impacts on communities and customers
- Maintaining reliable electric service

7. WILDFIRE ZONES

Idaho Power's WMP identifies areas of heightened wildfire risk within its service territory reflected by the following risk zones:

- Tier 2 Yellow Risk Zones are deemed increased risk areas.
- Tier 3 Red Risk Zones are deemed higher risk areas.

In its WMP, Idaho Power identifies operational practices specific to these zones of heightened wildfire risk for purposes of (1) reducing potential wildfire risk associated with Idaho Power's T&D facilities and field operations, and (2) improving the resiliency of the Idaho Power's T&D system impacted by wildfire. This PSPS Plan sets forth Idaho Power's PSPS evaluation criteria and processes, including operational and communication protocol, for implementing a PSPS.

8. PSPS IMPLEMENTATION CONSIDERATIONS

Idaho Power will initiate a PSPS if the company determines a combination of critical conditions indicate the T&D system at certain locations is at an extreme risk of being an ignition source and wildfire conditions are severe enough for the rapid growth and spread of wildfire. Idaho Power will evaluate as a whole (not relying on one single factor but a combination of all factors), without limitation, the criteria set forth in 9.1–9.17 below.

8.1. Fire Potential Index

In addition to the Risk Zone designations in its WMP, Idaho Power developed a Fire Potential Index (FPI) to forecast wildfire potential across Idaho Power's service area. The FPI converts data on weather; prevalence of fuel (shrubs, trees, grasses); and topography into a numerical FPI score to forecast the short-term wildfire threat in geographical areas throughout Idaho Power's service area. FPI scores range from 1 (very green, wet fuels with low to no wind and high humidity) to 16 (very brown and dry, both live and dead dry fuels with low humidity and high temperatures). FPI scores are grouped into the following 3 index levels:

- 1) Green—lower fire potential: FPI score of 1 through 11
- 2) Yellow—elevated fire potential: FPI score of 12 through 14
- 3) Red—highest fire potential: FPI score of 15 and 16

The FPI supports operational decision-making to reduce potential wildfire risk. During wildfire season, Idaho Power will determine a daily FPI as described in Section 5.2 of the WMP. The FPI

forecast is broken into four 6-hour time periods throughout each seven-day forecast. FPI information is provided via email, certain Geographic Information System (GIS) viewers and an FPI dashboard accessible to both Idaho Power employees and contractors from Idaho Power's website. The WMP details operational mitigation efforts in Red Risk Zones when the FPI score in that Red Risk Zone is also Red, including stopping planned work and changing distribution protection operations. A Red FPI score will be a consideration in Idaho Power's determination of whether to initiate a PSPS.

8.2. National Weather Service Red Flag Warning

A Red Flag Warning (RFW) is a forecast warning issued by the National Weather Service (NWS) to inform the public, firefighters and land management agencies that conditions are ideal for wildland fire combustion and rapid spread. RFWs are often preceded by a Fire Weather Watch (FWW), which indicates weather conditions that could occur in the next 12–72 hours. The NWS has developed different zones across the nation for providing weather alerts (such as RFWs) to more discrete areas. These zones are shown on this NWS webpage: [Fire Weather](#). RFWs for Idaho Power's service territory include Idaho Zones (IDZ) 401, 402, 403, 413, 420 and 422; and Oregon Zones (OR) 636, 637, 642, 634, 644, 645 and 646; and are monitored and are factored into Idaho Power's determination of whether to initiate a PSPS. Boise and Pocatello NWS offices will not issue RFWs if fuels are moist and fire risk is low. The following thresholds are used by most NWS offices:

- Daytime:
 - Relative humidity of 25% or less
 - Sustained winds greater than or equal to 10 miles per hour (mph) with gusts greater than or equal to 20 mph over a four-hour time period
- Nighttime:
 - Relative humidity of 35% or less
 - Sustained winds greater than or equal to 15 mph with gusts greater than or equal to 25 mph over a three-hour time period
- Lightning:
 - The NWS rarely issues RFWs for lightning in the western United States. For this to occur, the Lightning Activity Level—a measure of lightning potential specifically as it relates to wildfire risk—needs to be at 3 or higher.

8.3. NWS Fire Weather Forecasts

The NWS provides detailed forecasts for the different weather zones with an emphasis on fire weather indicators (wind speed, relative humidity, lightning potential). A discussion

summarizing the weather patterns and highlighting fire threats is included in their [extended forecast](#).

8.4. Publicly Available Weather Models

Idaho Power's Atmospheric Science department uses the following weather models to predict weather timing, duration and intensity:

- [Pivotal Weather Link \(pivotalweather.com/model.php\)](http://pivotalweather.com/model.php): Provides numerical weather data, including a NWS blend of models, European Centre for Medium-Range Weather Forecasts (ECMWF), United Kingdom Meteorological Office weather service information and GOES-16 satellite information.
- [Graphical Weather Link \(graphical.weather.gov/sectors/conusFireWeek.php\)](http://graphical.weather.gov/sectors/conusFireWeek.php): A NWS website providing weather, water and climate data, forecasts and warnings for the United States for the protection of life and property. The Fire Weather page provides a daily and weekly view of multiple weather and environmental conditions influencing wildfire activity.

8.5. Idaho Power Weather Model

Idaho Power maintains its own Weather Research and Forecasting (WRF) model using high-resolution data from Idaho Power's weather stations across its service area. This model, along with publicly available weather models, helps develop weather forecasts that include timing, duration and intensity of weather systems. An Idaho regional WRF low-resolution map view is available to the public at atmo.boisestate.edu/view/.

8.6. Storm Prediction Center Fire Weather Outlooks

The Storm Prediction Center's [Fire Weather Outlook](#) provides a current, one-day-ahead and three- to eight-day forecast for wildfires over the contiguous United States. This forecast takes into account pre-existing fuel conditions combined with predicted weather conditions that result in a significant risk of wildfire ignition or spread.

8.7. Current Weather Observations

Identifying real-time wildfire weather and associated risks requires predicting conditions that could trigger a PSPS based on observing current weather conditions. Resources available for observing current weather conditions include direct, real-time data from Idaho Power's network of weather stations, available real-time wind speed information from Idaho Power's network of Smart Grid Meters (SGM), as well as [Windy: Wind Map and Weather Forecast](#) and the National Weather Service National Oceanic and Atmospheric Administration's (NOAA) [Weather and Hazards Viewer](#).

8.8. National Significant Wildland Fire Potential Forecast Outlook

[The National Significant Wildland Fire Potential Forecast Outlook](#) provides wildland fire expectations for the current month, the following month and a seasonal look at the two months beyond that. The main objective of this tool is to provide information to fire management decisionmakers for proactive wildland fire management, reducing firefighting costs and improving firefighting efficiency.

8.9. Great Basin Coordination Center Morning Briefing

The Great Basin Coordination Center ([GBCC](#)) is the focal point for coordinating the mobilization of resources for wildland fire and other incidents throughout the Great Basin Geographic Area, which encompasses Utah, Nevada, Idaho south of the Salmon River, the western Wyoming mountains and the Arizona Strip. The GBCC hosts a morning briefing (around 10 a.m. most mornings) that provides situational awareness for Idaho Power's service area.

8.10. GBCC Current and Predicted ERC and F100

The GBCC as described above also provides [day-ahead](#) Energy Release Component (ERC), 100-Hour Fuel Moisture (F100) and other fuels conditions information that helps Idaho Power understand wildfire potential in the service area.

8.11. Agency Input

Idaho Power works with Boise NWS Fire Forecasters through daily briefings and NIFC Predictive Service Forecasters on an as-needed basis, generally regarding data clarification, to streamline the transfer of data, information and communications about wildland fire critical to Idaho Power's service area.

Idaho Power works with other agencies, including the U.S. BLM and U.S. Forest Service, as wildland fires approach and impact Idaho Power T&D facilities.

8.12. De-Energization Windspeed Considerations

Idaho Power's service area covers 24,000 square miles across southern Idaho and eastern Oregon. The environmental factors across this area vary drastically from high desert landscape to mountainous terrain. Weather and environmental conditions also vary greatly within this area. Regional vegetation becomes "conditioned" to withstand different environmental conditions, which also influences de-energization thresholds. Idaho Power developed windspeed considerations, which it will continue to refine with additional data and weather technology based on historic wind conditions compared to system outage information.

8.13. Engineering Assessment

Idaho Power follows robust transmission and distribution maintenance and inspection practices. When a potential PSPS event is identified, Idaho Power's T&D Maintenance and Engineering department will evaluate potential impacts to current or planned maintenance activities.

8.14. Alternative Protective Measures

Considering the significant potential impact of a PSPS to customers, Idaho Power will thoroughly evaluate other potential alternatives for reducing wildfire risk prior to implementing a PSPS.

8.15. Real-time Field Observations

Idaho Power uses SGMs for various purposes on its the distribution systems, including communication (where available) to provide near real-time information and to detect wind speed with anemometers. This information is displayed on a GIS viewer and used to inform Idaho Power's evaluation and decision-making during storm events.

Idaho Power may also deploy field personnel to evaluate if a PSPS event should be initiated.

8.16. Other

Idaho Power plans to evaluate expanding existing capabilities to enhance weather forecasting and add new capabilities to detect fires.

9. RESPONSIBILITIES

Developing and implementing PSPS protocol involves various groups throughout the company. Below is a non-exhaustive list of responsibilities by department, representatives of which will work together to promote organized, consistent and safe implementation of PSPS events.

9.1. Load Serving Operations

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure System and Regional Dispatch employees are appropriately trained to perform relevant responsibilities under this PSPS Plan, and that such employees receive timely information regarding wildfire risk and weather conditions for purposes of performing those responsibilities in the event of a PSPS
- Assist with PSPS evaluation and decision-making

- Safely restore service to PSPS areas when notified by Customer Operations it is safe to re-energize
- Provide required notifications to public safety partners to enhance public safety
- Participate in After-Action Reviews (AAR) (further discussed in Section 13 below) and ensure modifications to PSPS protocol are implemented as necessary

9.2. Atmospheric Science

- Monitor daily, weekly and long-term weather forecasts
- Monitor fuels conditions and trends
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Communicate with external agencies for increased situational and conditional awareness. Increase communications as conditions require
- Communicate internally to Idaho Power's Transmission & Distribution Engineering and Reliability (TDER) senior manager when extreme conditions indicate a PSPS event is likely
- Support PSPS activities such as planning, training and exercises
- Assist in PSPS information-gathering, evaluation and decision-making
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.3. TDER Senior Manager

- Oversee wildfire mitigation program and support cross-departmental collaboration
- Monitor daily, weekly and long-term weather and wildfire forecasts
- Monitor Fire Weather Watches, Red Flag Warnings and High Wind Watches and Warnings
- Develop and lead training modules for PSPS implementation
- Activate the PSPS Assessment Team if a PSPS is likely
- Communicate with Oregon and Idaho ESF-12

- Ensure PSPS activities such as operations planning, training and exercises occur annually
- Ensure a coordinated and cohesive external and internal communication and notification plan is in place and reviewed annually
- Coordinate with Atmospheric Science to continue evaluating enhancements to situational awareness capabilities
- Participate in AARs and provide input on, and monitor as necessary, modifications to PSPS protocol

9.4. Customer Operations and T&D Construction

- Develop and implement safe and reliable power shutoff protocols and procedures
- Ensure field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Assist in PSPS information-gathering, evaluation and decision-making
- Ensure crews and equipment are available to support PSPS events
- Perform field observations, line patrols and other PSPS tasks as necessary
- Perform required repairs to safely re-energize the system after a PSPS event
- Request/obtain air patrol contractors for line inspections as required
- Participate, with assistance from Corporate Communications, in Idaho Power's general external education campaign
- Develop, with assistance from Corporate Communications, a cohesive notification framework with public safety partners while consistently evaluating ways to increase communication and outreach effectiveness
- Engage with public safety partners and critical facilities before, during and after a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.5. Supply Chain/Stores

- Ensure preparedness for wildfire season with materials readily available for restoration purposes

- Work with Customer Operations and T&D Construction in response to a PSPS event, which could include pre-event activities such as staging materials and supplies
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.6. Fleet/Equipment Resource Pool

- Ensure employees are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Ensure readiness of employees and resource pool equipment for a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.7. Supply Chain Contracting

- Ensure contract resources are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Work with Customer Operations to provide contracting resources as required
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.8. Substation Operations

- Monitor substations and perform actions to support PSPS operations
- Coordinate activities with Dispatch and Customer Operations
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.9. Corporate Communications

Corporate Communications will develop and execute PSPS communications to Idaho Power customers and employees and support other business units in their communication efforts with regulators, critical facility operators, public safety partners and other stakeholders.

Corporate Communications will:

- In coordination with Customer Operations and Regulatory Affairs, work with public safety partners, critical facilities, regulators and other stakeholders to develop a comprehensive, coordinated and cohesive customer notification framework.
- With input from public safety partners, develop and implement a wildfire education and awareness campaign focused on wildfire prevention and mitigation, PSPS awareness and outage preparedness for customers.
- In the event of a PSPS:
 - To the extent possible and in coordination with Customer Service and IT, notify customers before, during and after a PSPS event with the following information:
 - Expected timing and duration of the PSPS event
 - 24-hour contact information and website resources
 - Provide up-to-date information on a dedicated Idaho Power PSPS webpage prominently linked on the Idaho Power homepage.
 - Distribute information via media and social media channels.
- Participate in AARs and modify communication practices as necessary.

9.10. Distribution Engineering and Reliability

- Support Dispatch and Customer Operations in developing de-energization and re-energization plans for PSPS events
- Monitor and verify the protection system operated correctly after any device operations caused by events on the circuit as appropriate
- Evaluate and enact protective device setting changes as required.
- Support rapid repairs of damaged infrastructure as needed.
- Support Load Serving Operations in planning improvements to PSPS operational capabilities
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.11. Safety

- Ensure the safety professionals are appropriately trained to perform all relevant responsibilities under this PSPS Plan
- Provide PSPS training for field personnel
- Assist in AARs after a PSPS event (or potential event in which the PSPS Team is activated)

9.12. Vegetation Management

- Following de-energization, and when it is safe to do so, Customer Operations will report impacts to infrastructure and assets from vegetation, as appropriate. Vegetation Management will then work toward removing vegetation debris necessary for re-energization.
- Ensure contractors and field personnel are appropriately trained to perform all relevant responsibilities under this PSPS Plan.
- Use reasonable efforts to ensure contract resources are available and prepared for PSPS events.
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary.

9.13. Geographic Information Systems

- Work with Customer Operations and Corporate Communications to develop PSPS boundary information for PSPS GIS maps required for the PSPS website
- Before wildfire season and during preliminary notifications of a potential PSPS event, provide relevant GIS data within the confines of applicable law to public safety partners

9.14. Customer Service

- Respond to customer calls and respond to questions with information provided by Corporate Communications
- Ensure customer service representatives are trained to manage customer interactions during a PSPS event

9.15. Communication Systems (Stations)

- Provide monitoring and on-call presence for the following:
 - Radio communications and infrastructure
 - Network infrastructure and connectivity
 - SCADA communications
- Ensure readiness to deploy mobile 2-way radio trailer during a PSPS event
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary

9.16. Customer Operations Support

- May lead AARs to ensure modifications to PSPS protocol are implemented as necessary

9.17. Legal

- Provide legal guidance in evaluating a potential PSPS event
- May direct AARs after a PSPS event (or potential event in which the PSPS Team is activated)
- May be involved in reviewing communications to customers, public safety partners and critical facilities

9.18. Regulatory

- May provide regulatory guidance in evaluating a potential PSPS event
- May be involved in reviewing communications to customers, public safety partners and critical facilities
- Assist in/direct regulatory reporting/filing activities

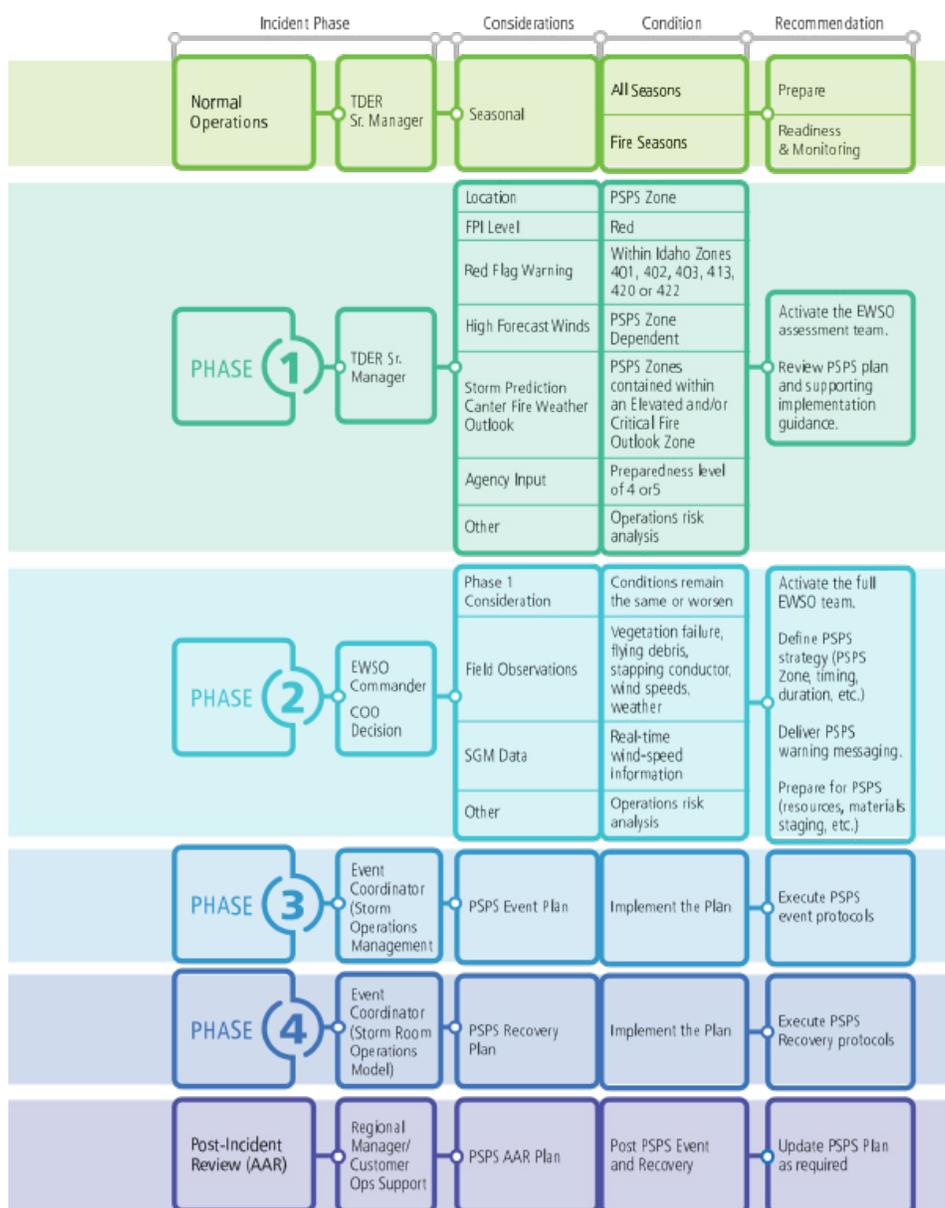
10. PSPS OPERATIONS

10.1. General

Section 11 details the phases, and protocol within each phase, of a PSPS event. Additional procedures are found in plans linked below and the attached Appendices as referenced herein.

Table 2 below summarizes the PSPS phases.

Table 1
Incident phase decision triggers



10.2. PSPS Preparedness

PSPS preparedness is a cyclical effort involving Idaho Power, public safety partners, state and local governments, communities and customers. Idaho Power's main objectives of preparedness are: 1) performing wildfire prevention and mitigation activities; and 2) engaging with external public safety partners, critical facilities and communities to develop relationships and provide education to safely and effectively implement this plan. The TDER senior manager coordinates and facilitates activities of multiple Idaho Power business units for wildfire prevention and mitigation activities while Customer Operations and Corporate Communications facilitates public outreach and coordination efforts with external stakeholders.



Figure 1
PSPS Preparedness Cycle

Idaho Power's goal is to take a community approach to wildfire preparedness by educating and encouraging individual preparedness and relying on existing protocols and procedures currently available through local governments and emergency response professionals.

10.2.1. Idaho Power Programs

Idaho Power's [WMP](#) facilitates PSPS preparedness through vegetation management protocol specific to wildfire season, distribution and transmission hardening efforts, situational awareness coinciding with wildfire operational protocol, training programs, communications strategies and coordinated planning with both internal and external stakeholders. This PSPS Plan and emergency response protocol correspond with Idaho Power's WMP preparedness measures in an effort to further reduce wildfire risk consistent with industry best practices and regulatory requirements.

10.2.2. Coordination with Government Entities

Coordination with local government and emergency response entities is critical to Idaho Power's reliance on existing protocols and procedures developed by these external stakeholders.

Customer Operations engages in these coordination efforts through ongoing communications and additional activities as required by this Plan. Activities include, without limitation:

- Being a trusted energy advisor to mayors, city managers, county leaders, elected officials and other stakeholders
- Educating and encouraging individual preparedness
- Educating stakeholders about Idaho Power wildfire preparedness and mitigation efforts, PSPS planning and capabilities
- Enhancing relationships with external stakeholders for improving interoperability and wildfire coordination
- Enhancing relationships with community services partnerships

10.2.3. Community Preparedness

Engage with public sector agencies and communities where PSPS events are likely to leverage existing emergency response plans and resources to increase the effectiveness of PSPS communications.

10.2.4. Information Sharing

Coordinate with public safety partners in advance of a PSPS event to prepare information needed by these partners and establish communication protocols for critical decision-making before and during a PSPS event, including restoration activities.

10.2.5. Notifications and Emergency Alerts

Collaborate with agencies in advance of PSPS events to allow for use of existing notification methods to communicate effectively during PSPS events.

10.2.6. Training and Exercises

Coordinate and participate in tabletop exercises with public safety partners to enhance knowledge of each other's emergency operations for smooth interactions during PSPS events.

10.3. Proactive Communications

Although the size of Idaho Power’s service area, geographic and environmental diversity, and unpredictable nature of Idaho and Oregon weather make it challenging, Idaho Power is committed to providing as much advance notice as reasonably possible in preparation for a PSPS event. Table 3 provides Idaho Power’s optimal communication timeline for PSPS events, circumstances permitting.

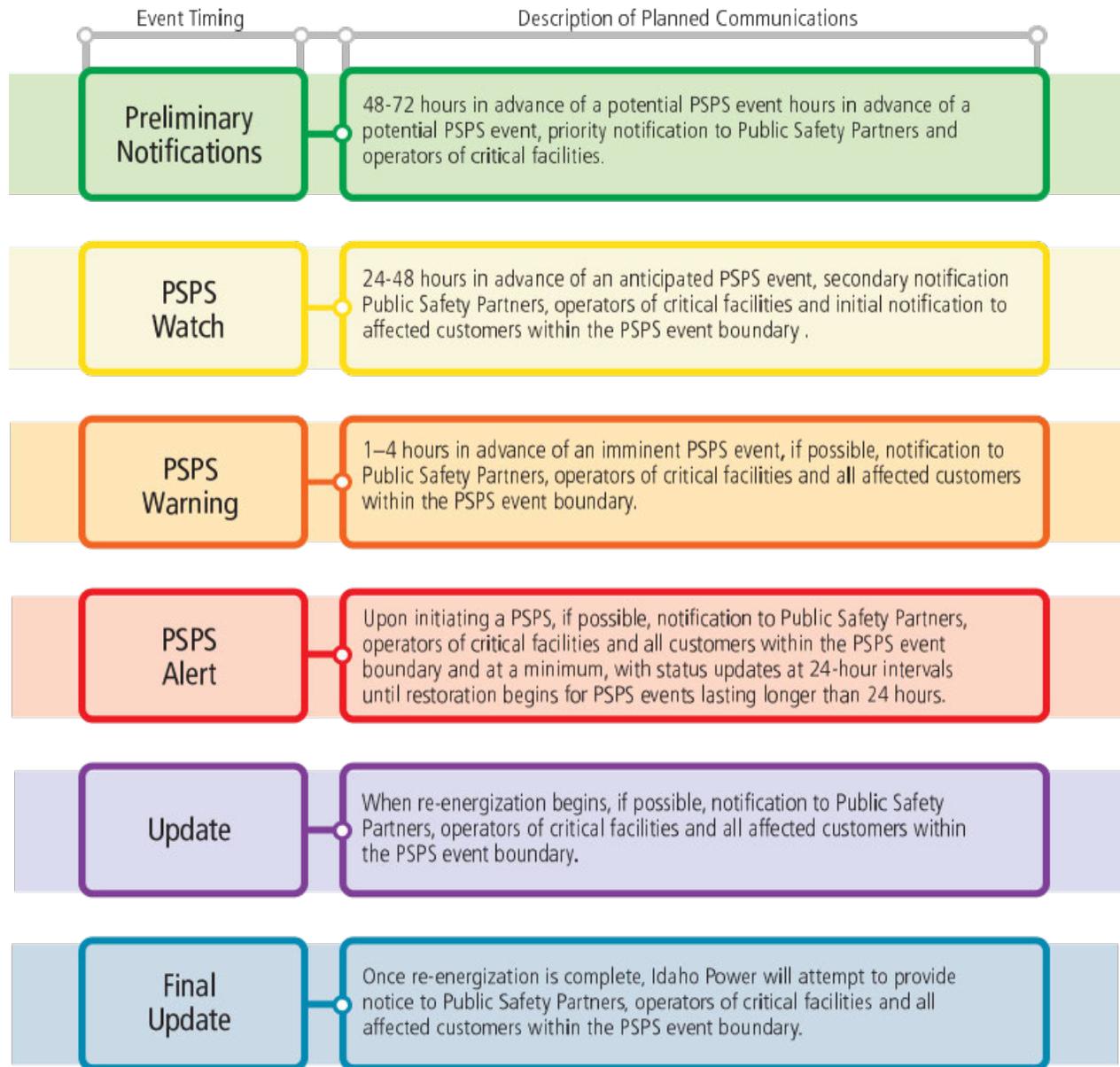


Figure 2
PSPS Event Communication Timeline

10.4. Wildfire Season Operations

As described here and in Idaho Power’s WMP, normal operations during wildfire season differs from normal operations during the rest of the year based on heightened requirements specifically targeted at predicting and reducing wildfire risk.

10.4.1. Situational Awareness Activities

During wildfire season, Idaho Power closely monitors fire conditions and weather patterns. Idaho Power’s Atmospheric Science team prepares a monthly “Seasonal Wildfire Outlook” report beginning in April and continuing through wildfire season containing information on regional drought conditions obtained from the National Drought Monitor, weather and climate outlook, seasonal precipitation and temperature outlooks from NOAA and the NWS, and a regional wildfire outlook.

During wildfire season, the Atmospheric Scientists will determine a daily FPI as described in Section 5.2 of the WMP describing shorter-term weather and fire conditions specific to WMP risk zones across Idaho Power’s service territory and in identified risk zones where transmission facilities extend beyond service territory boundaries.

10.4.2. GIS Wildfire Information

Idaho Power’s GIS team pulls regional wildfire information from a feature layer sourced by the GIS mapping software company ESRI, which pulls the data from the Integrated Reporting of Wildland-Fire Information (IRWIN) and the National Interagency Fire Center (NIFC). This information is added to multiple GIS viewers utilized by Idaho Power employees. These viewers also overlay current wildfire information to geospatially show physical relationships to transmission and distribution lines which provides valuable situational awareness in understanding wildfire activity near Idaho Power’s T&D systems. This information is updated near real-time.

10.4.3. Key Grid Interdependent Utilities and Agencies

Idaho Power exchanges dispatch information with key grid interdependent utilities and energy providers to expedite communication and coordination during wildfire events. These contacts include Avista, Bonneville Power Administration, Northwestern Energy, NVEnergy, Oregon Trail Electric Cooperative, PacifiCorp, Raft River Electric, Seattle City Light and U.S. Bureau of Reclamation. Idaho Power also exchanges dispatch information with NIFC, BLM Fire Dispatch and various National Forest Service District Offices—including Idaho Power dispatch receiving BLM and US Forest Service incident command information during wildfire events—to improve communication and coordinate fire-related activities.

10.5. Phase 1

The decision to implement a PSPS event will be based on the best available data for weather and other fire-related conditions as detailed above in Section 8—PSPS Implementation Considerations. Multiple events may require simultaneous management such as other storm-related outages or other PSPS events.

10.5.1. PSPS Assessment Team Activation

Idaho Power will transition from normal wildfire season operations to Phase 1 of a PSPS event at the direction of the TDER senior manager. During Phase 1, Idaho Power will activate the PSPS Assessment Team, which includes the TDER senior manager, a regional senior manager of the area potentially impacted, Load Serving Operations (LSO) senior manager, a documentation subject matter expert (SME), and representatives from the Atmospheric Science team and Corporate Communications. The PSPS Assessment Team will hold conference calls as needed to discuss current and forecasted weather conditions and other critical information regarding a potential PSPS event. The TDER senior manager will facilitate PSPS Assessment Team meetings and conference calls and the PSPS Assessment Team will be responsible for determining whether to recommend maintain Phase 1, escalate to Phase 2, or de-escalate to normal operations. The PSPS Assessment Team will decide if Idaho Power will issue a preliminary notification of a potential PSPS event to public safety partners, critical facilities operators and ESF-12 as described in Table 3 above. During Phase 1, the PSPS Assessment Team will review the PSPS Plan and supporting documents. An operational risk assessment will be performed as well to determine current operational factors (existing outages, facilities under construction, personnel availability, etc.), risks and vulnerabilities. Ultimate determination will be made whether to escalate to Phase 2 by the TDER senior manager. Within one hour of Phase 2 notification, the full PSPS team will be placed on stand-by and team member availability will be determined. The full PSPS team is the PSPS Assessment Team plus the VP of Planning, Engineering and Construction, the Customer Operations VP and VP of Power Supply or their assigns.

10.5.2. Community Notifications

Depending on the situation and timing, public safety partners and critical facility operators may be notified during this phase. These notifications may include emails, text messages and/or phone calls as described in Idaho Power internal processes and procedures.

10.6. Phase 2

Phase 2 actions are determined by additional situational awareness activities, timing of forecasted weather events and risk tolerance. Upon transitioning to Phase 2, Idaho Power will provide external notifications as called out in Table 3 above with specific roles and responsibilities as described in internal process and procedure documents.

10.6.1. Activate Event Coordinator

Idaho Power will assign an Event Coordinator as outlined in Wildfire Mitigation and PSPS Plan. The event coordinator's main role is to coordinate activities across the region associated with PSPS implementation and restoration.

10.6.2. Conduct Operational Risk Analysis

The PSPS Assessment Team will present its operational risk analysis recommendation to the VP of PEC, VP of Customer Operations and the COO who will then evaluate the PSPS Assessment Team's recommendation, and the COO will make the final determination of whether to proceed to Phase 3 implementation of a PSPS event.

10.6.3. Request to Delay a PSPS Event

There may be requests to delay proactive de-energization from the public safety partners. This may occur for several reasons, with the most anticipated being loss of power for pumping water to fight wildfires. Delay requests should be routed through dispatch and sent to the PSPS Team for evaluation. The PSPS Team will provide the COO a recommendation on whether to approve the proactive de-energization delay and the COO will make the final decision. As soon as practicable after receiving the request, Idaho Power will notify the ESF-12 liaison of the delay request and basis of such request, as well as the final determination and the underlying justification.

10.6.4. PSPS Event Strategy

Regional operations personnel developed action plans and switching orders as part of their preparedness activities. These plans and switching orders will be reviewed and refined as necessary based on the current and forecasted conditions and will include situation-specific tactics and detailed instructions.

10.6.5. Field Observations and Response Teams

Regional Operations will coordinate field personnel to be mobilized and dispatched to strategic locations, including areas with limited weather and system condition visibility, to perform field observations for on-the-ground, real-time information critical to inform decisions on proactive de-energization. Field observations include—without limitation—conditional assessments of system impacts from wind and vegetation, flying debris and slapping conductors.

10.6.6. Customer and Community Notifications

Depending upon the timing and situation, Idaho Power may use various forms of communication (including media outreach) to provide information and updates to public safety partners, critical facility operators, and customers, particularly those impacted by the PSPS event. Information and updates will include the reason for the potential de-energization, where to find

real-time updates on outage status and other relevant safety and resources. Internal processes and procedures will be followed to ensure accurate, up-to-date communication is provided.

10.7. Phase 3

Upon the COO making a determination to proactively de-energize, the LSO representative of the PSPS Team will inform System and Regional Dispatch Operations and request coordination of the estimated time to begin the PSPS. The regional manager, or their assigned representative of the region in which the PSPS will take place, will coordinate with the event coordinator to pre-position field personnel where manual de-energization is required and to stand by for orders to de-energize. System and Regional Dispatch Operations will implement the PSPS according to their established processes. Stations and communications system operations personnel will be prepared to support PSPS activities as needed. Idaho Power will take the following community-centered actions as soon as safely possible. Regional teams will follow internal processes and procedures to safely and effectively implement a PSPS event.

10.7.1. Customer and Community Notification

Relying on internal processes and procedures, Idaho Power will use various forms of communication (including media outreach) to provide information and updates to customers and other stakeholders, particularly those impacted by the PSPS event. Information and updates will include the reason for the de-energization, where to find real-time updates on outage status and other relevant safety and resource information regarding the PSPS. Specific protocols may be included in individual work group plans.

10.8. Phase 4

10.8.1. System Inspections

When it is safe to do so, Idaho Power will begin line patrolling activities to inspect T&D circuits and other potentially impacted Idaho Power facilities. Patrol personnel will report system conditions back to System and Regional Dispatch Operations for coordination with field crews. Patrols will be performed as required to ensure conditions and equipment are safe to re-energize.

10.8.2. Repair and Recovery

Line crews will repair T&D facilities as coordinated with System and Regional Dispatch Operations, replacing damaged equipment and performing other actions to support safe re-energization of the T&D system.

10.8.3. Incident Management Support

Support throughout the PSPS event will continue as described in Idaho Power's Wildfire Mitigation and PSPS Operational Plan. The PSPS Team will continue to monitor fire and weather conditions. Logistics and mutual assistance requirements will be determined and acted upon per existing plans and processes. If timely re-energization is not possible based on the magnitude of the event, the EMT will be notified for additional support.

10.8.4. Communicate PSPS Event Conclusion

Idaho Power will use various forms of communication (including media outreach) to inform customers and other stakeholders, particularly those impacted by the PSPS event, when repairs are complete and it is safe to re-energize the system. This may occur in stages as different feeders or feeder sections are repaired and safe to re-energize. This will be viewable on the outage map on Idaho Power's website during the event. Idaho Power will also leverage existing public agency outreach and notification systems as done at other points in the PSPS process.

10.8.5. Re-energization

Once re-energization activities are completed and service is restored, crews and support staff will demobilize and return to normal fire season operations as described in internal process and procedure documents.

10.9. Post-incident Review

During the PSPS phases the documentation SME will collect and maintain in the Regional Dispatch Operations logs incident information required for reporting purposes.

Following conclusion of a PSPS event, the Regional Manager or their assigned representative will conduct informal, high-level debriefs to identify potential modifications to PSPS protocol based on lessons learned during the event. The regional manager or assigned representative will consolidate the feedback and provide to the documentation SME.

Also following the PSPS event, the TDER senior manager will conduct an AAR with the PSPS Team to identify potential modifications to PSPS protocol based on lessons learned during the event. The TDER senior manager will consolidate the feedback and provide to the documentation SME.

After wildfire season, the Customer Operations support leader may conduct an AAR focusing on operational processes, communications, customer support as well as emergency response and restoration. Idaho Power may also request feedback from external stakeholders on coordination efforts, communications and outreach effectiveness for integration into the AAR report.

11. FINANCIAL ADMINISTRATION

Idaho Power will track expenses related to PSPS events for OPUC and IPUC reporting and potential recovery. Expense should be tracked for the entire PSPS event (Phase 1 through conclusion of the Post-Incident Review and filing the PSPS event report with the OPUC) to include, without limitation, time reporting, equipment and supplies used to set up customer resource centers and provided to customers (e.g., water, ice, etc.)

12. REPORTING

Employees are required to manage information regarding PSPS events pursuant to Idaho Power's Information Retention Policy and underlying standards. Idaho Power will submit reports to the IPUC and OPUC as required.

13. AFTER-ACTION REPORT

An AAR is a structured review or de-brief process used to evaluate the effectiveness of the Plan and potential areas for improvement. This process may be performed after a PSPS event and may be confidential at the direction of Legal to improve the PSPS processes and procedures.

14. TRAINING

Idaho Power will strive to provide annual training, prior to or shortly after the beginning of wildfire season, to relevant employees on their respective roles in performing this PSPS Plan.

15. EXERCISES

Idaho Power will exercise this PSPS Plan at least annually using various scenarios and testing all or any portion(s) of the Plan which may include:

- Testing text and/or phone alerts with a test group of public safety partners
- Testing tactical operational plans such as reporting field observations or positioning employees at manually operated disconnects to test timing for de-energization and field inspections of T&D assets
- Discussing and/or practicing roles and responsibilities of both strategic and tactical operations, including decision-making handoffs and hypothetical scenarios
- Discussing and/or developing re-energization plans
- Testing capacity limits on incoming and outgoing communications systems

Appendix C

Oregon Wildfire Requirements and Recommendations.

Oregon Requirements and Recommendations

This appendix provides additional information specific to wildfire-related requirements, as well as wildfire-related recommendations, in Oregon.

Oregon Administrative Rule (OAR) Requirements

Below is a mapping of wildfire mitigation plan rules to sections within Idaho Power’s WMP.

Wildfire Protection Plan Filing Requirements—OAR 860-300-0020

Oregon Requirement—OAR 860-300-0020	Corresponding Location in WMP
<p><i>(1) Wildfire Protection Plans and Updates must, at a minimum, contain the following requirements as set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021 and as supplemented below:</i></p> <p><i>(a) Identified areas that are subject to a heightened risk of wildfire, including determinations for such conclusions, and are:</i></p>	<p>See Section 3: Quantifying Wildland Fire Risk</p> <p>See Idaho Power website for details of wildfire risk zones outside of service territory</p>
<p><i>(A) Within the service territory of the Public Utility, and</i></p> <p><i>(B) Outside the service territory of the Public Utility but within the Public Utility’s right-of-way for generation and transmission assets.</i></p>	<p>See Section 3.2.2: Wildfire Risk Areas</p> <p>See Figure 3: Boardman to Hemingway (B2H) Proposed Route Risk Zones</p>
<p><i>(b) Identified means of mitigating wildfire risk that reflects a reasonable balancing of mitigation costs with the resulting reduction of wildfire risk.</i></p>	<p>See Section 4: Costs and Benefits of Wildfire Mitigation</p>
<p><i>(c) Identified preventative actions and programs that the Public Utility will carry out to minimize the risk of utility facilities causing wildfire.</i></p>	<p>See Section 5: Situational Awareness; Section 6: Mitigation—Field Personnel Practices; Section 7: Mitigation—Operations; Section 8: Mitigation—T&D Programs; and Section 8.3: T&D Vegetation Management</p>
<p><i>(d) Discussion of outreach efforts to regional, state, and local entities, including municipalities regarding a protocol for the de-energization of power lines and adjusting power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.</i></p>	<p>See Section 10.2 Community Outreach and Section 10.2.1: Community Engagement</p> <p>See Appendix B: Idaho Power’s Public Safety Power Shutoff Plan, Section 10.2.1: Coordination with Government Entities and Section 10.2.2: Community Preparedness</p>
<p><i>(e) Identified protocol for the de-energization of power lines and adjusting of power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.</i></p>	<p>See Section 7.4: Public Safety Power Shutoff and Appendix B: Idaho Power’s Public Safety Power Shutoff Plan</p>
<p><i>(f) Identification of the community outreach and public awareness efforts that the Public Utility will use before, during and after a wildfire season.</i></p>	<p>See Section 10: Communicating About Wildfire</p>

Oregon Requirement—OAR 860-300-0020	Corresponding Location in WMP
<i>(g) Description of procedures, standards, and time frames that the Public Utility will use to inspect utility infrastructure in areas the Public Utility identified as heightened risk of wildfire.</i>	For Transmission, see Section 8.2.1: Transmission Asset Management Programs (with information on aerial, ground, detailed visual, pole, and other protection programs) For Distribution, see Section 8.2.2: Distribution Asset Management Programs (with information on visual, pole, and line equipment inspection programs)
<i>(h) Description of the procedures, standards, and time frames that the Public Utility will use to carry out vegetation management in in areas the Public Utility identified as heightened risk of wildfire.</i>	See Section 8.3.2: Transmission Vegetation Management and Section 8.3.3: Distribution Vegetation Management
<i>(i) Identification of the development, implementation, and administrative costs for the plan, which includes discussion of risk-based cost and benefit analysis, including consideration of technologies that offer co-benefits to the utility's system.</i>	See Section 4: Costs and Benefits of Wildfire Mitigation, specifically Section 4.3: Wildfire Mitigation Cost Summary and Section 4.4: Mitigation Activities
<i>(j) Description of participation in national and international forums, including workshops identified in Section 2, chapter 592, Oregon Laws 2021, as well as research and analysis the Public Utility has undertaken to maintain expertise in leading edge technologies and operational practices, as well as how such technologies and operational practices have been used develop implement cost effective wildfire mitigation solutions.</i>	See Section 2: Government, Industry, and Peer Utility Engagement

Risk Analysis—OAR 860-300-0030

Oregon Requirement—OAR 860-300-0030	Corresponding Location in WMP
<i>(1) The Public Utility must include in its Wildfire Mitigation Plan risk analysis that describes wildfire risk within the Public Utility's service territory and outside the service territory of the Public Utility but within the Public Utility's right of way for generation and transmission assets. The risk analysis must include, at a minimum:</i>	See Section 3: Quantifying Wildland Fire Risk
<i>(a) Defined categories of overall wildfire risk and an adequate discussion of how the Public Utility categorizes wildfire risk. Categories of risk must include, at a minimum:</i>	See Section 3.2.2: Wildfire Risk Areas and risk zone map on Idaho Power's website for detailed map of wildfire risk zones
<i>(A) Baseline wildfire risk, which include elements of wildfire risk that are expected to remain fixed for multiple years. Examples include topography, vegetation, utility equipment in place, and climate;</i>	See Section 3.2 for discussion of fixed risk elements
<i>(B) Seasonal wildfire risk, which include elements of wildfire risk that are expected to remain fixed for multiple months but may be dynamic throughout the year or from year to year; Examples include cumulative precipitation, seasonal weather conditions, current drought status, and fuel moisture content;</i>	See Section 3.2.1 for discussion of variable risk elements that change throughout the year
<i>(C) Risks to residential areas served by the Public Utility; and</i>	See Section 3.2.1 paragraph 4 addresses the consideration of residential areas in risk analysis

Oregon Requirement—OAR 860-300-0030	Corresponding Location in WMP
<p><i>(D) Risks to substation or powerline owned by the Public Utility.</i></p>	<p>See Section 3.2.1 paragraph 4 addresses overhead power lines. Note: Idaho Power does not model wildfire progression or spread within substations due to zero vegetation within the fenced area.</p> <p>Also see Section 3.2.2.1 for discussion of risk modeling of proposed Boardman to Hemingway transmission line</p>
<p><i>(b) a narrative description of how the Public Utility determines areas of heightened risk of wildfire using the most updated data it has available from reputable sources.</i></p>	<p>See Section 3.2.2: Wildfire Risk Modeling Process and the 2023 Risk Modeling Update</p>
<p><i>(c) a narrative description of all data sources the Public Utility uses to model topographical and meteorological components of its wildfire risk as well as any wildfire risk related to the Public Utility's equipment.</i></p>	<p>See Section 11.4: Wildfire Risk Map</p>
<p><i>(A) The Public Utility must make clear the frequency with which each source of data is updated; and</i></p> <p><i>(B) The Public Utility must make clear how it plans to keep its data sources as up to date as is practicable.</i></p>	<p>See Section 11.4: Wildfire Risk Map</p>
<p><i>(d) The Public Utility's risk analysis must include a narrative description of how the Public Utility's wildfire risk models are used to make decisions concerning the following items:</i></p> <p><i>(A) Public Safety Power Shutoffs</i></p> <p><i>(B) Vegetation Management;</i></p> <p><i>(C) System Hardening;</i></p> <p><i>(D) Investment decisions; and</i></p> <p><i>(E) Operational decisions.</i></p>	<p>A) See Section 7.5.2: PSPS Plan</p> <p>B) See Section 8.3: T&D Vegetation Management</p> <p>C) See Executive Summary on Infrastructure Hardening; Section 8.2.2: Distribution Asset Management Programs; Section 11.9: Long-Term Metrics</p> <p>D) Risk analysis informs Red and Yellow Risk Zones mitigation activities. See Section 4: Costs and Benefits of Wildfire Mitigation and Section 4.4 Mitigation Activities</p> <p>E) See Section 7.2: Operational Protection Strategy and Appendix A: Wildland Fire Preparedness and Prevention Plan</p>
<p><i>(e) For updated Wildfire Mitigation Plans, the Public Utility must include a narrative description of any changes to its baseline wildfire risk that were made relative to the previous plan submitted by the utility, including the Public Utility's response to changes in baseline wildfire risk, seasonal wildfire risk, and Near-term Wildfire Risk.</i></p>	<p>For the 2023 WMP, Idaho Power did not make changes to baseline wildfire risk, but will evaluate and discuss changes in the 2024 WMP.</p>

Oregon Requirement—OAR 860-300-0030	Corresponding Location in WMP
<p><i>(2) To the extent practicable, the Public Utility must confer with other state agencies when evaluating the risk analysis included in the Public Utility's Wildfire Mitigation Plan.</i></p>	<p>See Executive Summary section on Lessons Learned: Community Feedback</p>

Wildfire Mitigation Plan Engagement Strategies—OAR 860-300-0040

Oregon Requirement—OAR 860-300-0040	Corresponding Location in WMP
<p><i>(1) The Public Utility must include in its Wildfire Mitigation Plan a Wildfire Mitigation Plan Engagement Strategy. The Wildfire Mitigation Plan Engagement Strategy will describe the utility's efforts to engage and collaborate with Public Safety partners and Local Communities impacted by the Wildfire Mitigation Plan in the preparation of the Wildfire Mitigation Plan and identification of related investments and activities. The Engagement Strategy must include, at a minimum:</i></p> <p><i>(a) Accessible forums for engagement and collaboration with Public Safety Partners, Local Communities, and customers in advance of filing the Wildfire Mitigation Plan. The Public Utility should provide, at minimum:</i></p> <p><i>(A) One public information and input session hosted in each county or group of adjacent counties within reasonable geographic proximity and streamed virtually with access and functional needs considerations; and</i></p> <p><i>(B) One opportunity for engagement strategy participants to submit follow-up comments to the public information and input session.</i></p>	<p>See Section 10: Communicating About Wildfire</p> <p>See Section 10.2: Community Outreach and Section 10.2.1: Community Engagement</p> <p>See Section 10.2.1: Community Engagement and Section 10.3.1: Key Communication Methods</p>
<p><i>(b) A description of how the Public Utility designed the Wildfire Mitigation Plan Engagement Strategy to be inclusive and accessible, including consideration of multiple languages and outreach to access and functional needs populations as identified with local Public Safety Partners.</i></p>	<p>See Section 10.2.1: Community Engagement and Section 10.3.1: Key Communication Methods</p>
<p><i>(2) The Public Utility must include a plan for conducting community outreach and public awareness efforts in its Wildfire Mitigation Plan. It must be developed in coordination with Public Safety Partners and informed by local needs and best practices to educate and inform communities inclusively about wildfire risk and preparation activities.</i></p>	<p>See Section 10.2.1: Community Engagement and Section 10.3.1: Key Communication Methods</p>
<p><i>(a) The community outreach and public awareness efforts will include plans to disseminate informational materials and/or conduct trainings that cover:</i></p> <p><i>(A) Description of PSPS including why one would need to be executed, considerations determining why one is required, and what to expect before, during, and after a PSPS;</i></p> <p><i>(B) A description of the Public Utility's wildfire mitigation strategy;</i></p> <p><i>(C) Information on emergency kits/plans/checklists;</i></p> <p><i>(D) Public Utility contact and website information.</i></p>	<p>For (A) – (D), see Section 10.2.1: Community Engagement; Section 10.3: Customer Communications; and Section 10.3.1: Key Communication Methods</p>

Oregon Requirement—OAR 860-300-0040	Corresponding Location in WMP
<p><i>(d) Discussion of outreach efforts to regional, state, and local entities, including municipalities regarding a protocol for the de-energization of power lines and adjusting power system operations to mitigate wildfires, promote the safety of the public and first responders and preserve health and communication infrastructure.</i></p> <p><i>(b) In formulating community outreach and public awareness efforts, the Wildfire Mitigation Plan will also include descriptions of:</i></p> <p><i>(A) Media platforms and other communication tools that will be used to disseminate information to the public;</i></p> <p><i>(B) Frequency of outreach to inform the public;</i></p> <p><i>(C) Equity considerations in publication and accessibility, including, but not limited to:</i></p> <p><i>(i) Multiple languages prevalent to the area;</i></p> <p><i>(ii) Multiple media platforms to ensure access to all members of a Local Community.</i></p>	<p>See Section 10.2.1: Community Engagement</p> <p>For (A)-(C): See Section 10.2.1: Community Engagement; Section 10.3: Customer Communications, and Section 10.3.1: Key Communication Methods</p>
<p><i>(3) The Public Utility must include in its Wildfire Mitigation Plan a description of metrics used to track and report on whether its community outreach and public awareness efforts are effectively and equitably reaching Local Communities across the Public Utility's service area.</i></p>	<p>See Section 10.3.3: Communication Metrics</p>
<p><i>(4) The Public Utility must include a Public Safety Partner Coordination Strategy in its Wildfire Mitigation Plan. The Coordination Strategy will describe how the Public Utility will coordinate with Public Safety Partners before, during, and after the fire season and should be additive to minimum requirements specified in relevant Public Safety Power Shut Off requirements described in OAR 860-300-0050. The Coordination Strategy should include, at a minimum:</i></p> <p><i>(a) Meeting frequency and location determined in collaboration with Public Safety Partners;</i></p> <p><i>(b) Tabletop Exercise plan that includes topics and opportunities to participate;</i></p> <p><i>(c) After action reporting plan for lessons learned in alignment with Public Safety Partner after action reporting timeline and processes.</i></p>	<p>See Section 10.2.1: Community Engagement</p>

OPUC Order Nos. 22-133 and 22-312

This appendix also addresses recommendations received from Oregon Public Utility Commission (OPUC) Staff in Docket No. UM 2209 and approved by the OPUC Order Nos. 22-133 and 22-312. The italicized text below reflects OPUC Staff's specific recommendations for the company.

Recommendations Pertaining to OPUC Order No. 22-312Category: Cost Allocation

- 1) *Provide detailed cost allocation assumptions of the transmission and distribution patrol, maintenance, and repair program, separated by transmission and distribution, as well as any associated maintenance and repair program including justification and reasoning for the cost allocation between Idaho and Oregon.*
- 2) *Provide details explaining the proposed cost allocation between Idaho and Oregon associated with wildfire mitigation program capital investments.*

Idaho Power removed the cost allocation information contained in an earlier version of the WMP, as the WMP is intended as an evolving document and not one related to prudence of specific investments.

To address Staff's interest in this subject, the company will file a wildfire mitigation-related cost deferral application with the OPUC in December 2022 so it may be reviewed in concert with the 2023 WMP.

Category: Risk Framework

- 3) *Provide detailed explanation of the strategy pertaining to its risk analysis framework.*

See Executive Summary of WMP. Idaho Power carried out a review of risk management processes and will consider the ISO 31000-2018 framework and process in the 2023 WMP.

Recommendations Pertaining to OPUC Order No. 22-133

The following summarizes OPUC Staff's recommendations for the company to include in its 2023 WMP.

Risk Modeling—OAR 860-300-0020 (1)(a)(A) & (B):

- 1) *Provide details regarding the mileage of overhead facilities that lie within its designated YRZs and RRZs.*

See Section 3.2.2. for details of overhead line mileage in designated wildfire risk zones.

- 2) *Idaho Power provide details of the analysis completed for establishing the risk tiers and the threshold values utilized for classifying the YRZs and RRZs.*

See Section 3.2.2. Tier levels were established based on quantitative results of modeling and numerous workshops held with our consultant and individuals having local knowledge of topography, fuels, fire history, and overhead facilities in their area. Tier levels were generated algorithmically as a starting point in the analysis and refined through workshops. Idaho Power did not base tier levels solely on risk scores.

- 3) *Idaho Power provide information regarding an analysis of the risk from specific utility asset types.*

See Section 3.2.1. The company used equal probability of ignition occurring on overhead transmission and distribution facilities in quantifying wildfire risk. As we mature our risk modeling methodology, the company plans to include reliability data to improve risk models.

- 4) *Idaho Power provide details of the process and timing that will be followed to evaluate the established heightened wildfire risk zones, and what data inputs and portions of the analysis will be reviewed annually.*

See sections 3.2.1. and 11.4. Idaho Power is planning to update its risk modeling in 2023.

- 5) *Idaho Power address the concerns raised by STOP B2H Coalition as thoroughly as possible.*

Idaho Power met with Stop B2H Coalition representative Jim Kreider on November 11, 2022, to provide an overview of the risk analysis performed for the Boardman to Hemingway (B2H) route. A presentation was delivered that highlighted Idaho Power's approach to quantifying wildfire risk and provided details of analysis performed along the B2H route that exceeded analysis performed in other locations within the service area. Risk analysis conducted along the B2H route includes quantifying wildfire risk similarly to other overhead facilities as described in Section 3. In addition, the following was also performed:

- Analysis of surface fuels within 1 mile of the B2H route to determine the potential of crown fire
- Determination of the influence of topographical slope on resistance to control and spread rate within 1 mile of the B2H route
- A review of temperature, precipitation, and relative humidity of the project site
- A review of the wildland urban interface and estimation of land use area within 1 and 10 miles of the project site
- A review of historic ignitions and the perimeter of historic fires within 50 miles of the project site going back 50 years

Transmission design engineers at Idaho Power also reviewed the design of lattice and H-frame structures proposed for B2H construction. A review was performed to identify the design characteristics that lead to decreased potential of ignition. This information was shared with Mr. Kreider and the overall fire potential for the area surrounding Morgan Lake. Mr. Kreider provided good feedback and recommended that Idaho Power meet with the new fire chief for the La Grande Rural Fire District and Baker County to compare risk maps and methodology. Idaho Power agreed and will have more engagement with Mr. Kreider and agencies in 2023. Additionally, the company plans to include the B2H route when reconducting risk modeling in 2023.

WMP Effectiveness—OAR 860-300-0020 (1)(b):

- 6) *Include a description of how it will measure the overall effectiveness of its wildfire mitigation activities, as well as information on wildfires in the service territory for the prior year.*

See the Executive Summary and Section 11.9. Metrics include tracking and monitoring mitigation programs to identify gaps and areas requiring corrective action. Long-term metrics were incorporated in 2022 to track potential drivers of ignition with respect to outage counts.

Plan Objectives—OAR 860-300-0020 (1)

- 7) *Idaho Power include details on whether the objectives of key preventative actions outlined in previous year's WMP have been met.*

See the Executive Summary.

- 8) *Idaho Power describe, to what degree, the preventable measures outlined in previous year's WMP have reduced the risk of the utility's infrastructure from causing ignitions.*

See Section 11.9. Idaho Power believes that mitigation activities have reduced wildfire risk but we need more time in concluding the magnitude of risk reduction. Idaho Power expects that reliability data and outage analytics will provide greater confidence of risk reduction with time.

- 9) *Idaho Power describe any adjustments made to its wildfire prevention programs that were included in previous year's WMP.*

See the Executive Summary. Adjustments were made to pre-season wildfire patrols due to snow levels. Also, Idaho Power did not meet all vegetation management production goals set for the year and had to adjust quality assurance and control audits from 100% in wildfire risk zones to a random sample approach.

Outreach Efforts—OAR 860-300-0020 (1)(d)

- 10) *Idaho Power include more detailed information about how it used learnings from the previous year to improve its 2023 Plan. The company should consider Public Safety Partner input through After Action Reports (from exercises and events), surveys or other feedback mechanisms, and company lessons learned.*

See the Executive Summary and Section 10.2.1.

- 11) *Idaho Power include clarification about CRCs in its 2023 WMP Update, to include:*

See sections 10.2.1. and 10.2.2.

- 12) *Idaho Power incorporate the following in its 2023 WMP:*

- *Map showing areas of its service territory at higher risk for PSPS events.*

See PSPS program in Appendix B.

- *List of Public Safety Partners the company engages with related to WMP.*

Idaho Power maintains routine contact with county emergency managers and state-level Public Safety Partners for both Oregon and Idaho. Specific contacts can be provided upon request.

- *Frequency of communication with Public Safety Partners.*

See sections 10.2.1. and 10.2.2.4.

- *Methods of communication with Public Safety Partners.*

See Section 10.2.1.

- *Feedback received from Public Safety Partners, and description of how the information influences the WMP.*

See Section 10.2.1.

Lessons Learned—OAR 860-300-0020 (1)(e)

13) Idaho Power include previous year's lessons learned regarding de-energization of power lines to include findings from after action reports, including survey results from exercises and actual events (when available), in its 2023 WMP.

See the Executive Summary. While Idaho Power did not call a PSPS event in 2022, there were several lessons learned from functional exercises and one near PSPS event that was subsequently canceled due to precipitation.

14) Idaho Power include more information about the analysis completed to make their programmatic decisions of modifying system operations. The information should clarify why the company describes plans for RRZs not YRZs, and differences in system operations between transmission lines and distribution circuits.

See Section 7.2.

Communication and Outreach—OAR 860-300-0020 (1)(f)

15) Idaho Power incorporate the following its 2023 WMP:

- *Examples of messaging;*
- *Selection process for methods of outreach;*
- *Determination of target audience;*

- *Metric and criteria used to evaluate effectiveness of outreach;*
- *Outcome of previous year's outreach evaluation;*
- *Description of company personnel and external resources responsible for outreach efforts;*
- *Description of timing of the outreach, including before, during, and after wildfire season;*
- *Description of Wildfire Mitigation Information/Resources maintained by the company on its website; and*
- *Description of Social Media Campaign developed and implemented by the company to inform customers about potential wildfire impacts (i.e., potential loss of power, preparedness, safety and awareness, etc.).*

See Section 10.2.

16) Idaho Power conduct wildfire training and exercises and include a discussion about community outreach and public awareness efforts prior to the upcoming fire season to clarify these activities, and to solicit input from participating Stakeholders.

See the Executive Summary and Section 10.2.

Asset Inspections—OAR 860-300-0020 (1)(g)

17) Idaho Power clearly identify inspection and correction procedures and protocols for non-wildfire risk zones, inspection and correction procedures and protocols for RRZs, and inspection and correction procedures and protocols for YRZs, along with the impacted line miles and structure counts for transmission and distribution assets in Oregon.

See Section 3.2.2. for line miles in wildfire risk zones and Section 8.2. for details of programs taking place in those zones.

18) Idaho Power include logic and details of analysis completed for their inspection and correction programming decisions in YRZs (and if any future RRZs) in Oregon.

See Section 8.2.

Vegetation Management—OAR 860-300-0020 (1)(h)

19) Idaho Power clearly identify vegetation management practices and protocols for non-wildfire risk zones, vegetation management practices and protocols for RRZs, and vegetation management practices and protocols for YRZs, along with the impacted line miles and structure counts for transmission and distribution assets in Oregon.

See Section 8.3.

20) Idaho Power provide logic and details of analysis completed for their programming decisions in YRZs (and if any future RRZs) in Oregon regarding vegetation management practices and protocols.

See sections 4.4.6. and 8.3.

21) Idaho Power provide more information regarding their quality control/quality assurance program and audits for vegetation management work completed in the RRZs, YRZs, including measures employed and resource types.

See sections 8.3.2. and 8.3.3.4.

22) Idaho Power provide analysis of any historical events pertaining to its power lines, specific equipment type, vegetation, and wildfires that informed the program's design and monitoring approach.

See Section 3.2.2.

Expert Forums—OAR 860-300-0020 (1)(i)

23) Idaho Power discuss the impact of participation in expert forums (see OAR 860-300-0020(1)U)) on identification of solutions most likely to provide the benefits anticipated. This should include:

- Cited research, reports, and studies used in any analysis, unless the source is confidential.*
- How the factors unique to the company's facilities and service territory were used when considering the applicability of specific options to its systems.*

See Section 2.3. In addition to participation in wildfire mitigation forums, Idaho Power spent significant time in 2022 developing a six-year roadmap to integrate new technology into the WMP. This consisted of researching products and meeting with 30 different companies throughout the year. We worked with the Electric Power Research Institute on gaining feedback of the performance and mitigation benefit of different technologies. Covered conductor was a key area of focus and helped develop a pilot plan. Additionally, the company has invested in the Westly Group, a fund that invests in startups focused on the digitalization and sustainability of energy, mobility, buildings, and industrial technology. One of our focus areas with the Westly Group in 2022 was reviewing new wildfire technologies.

The following were references used during the year to form changes in the 2023 WMP.

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Group Participation and Learnings—OAR 860-300-0020 (1)0)

24) Idaho Power include more specifics on what it has learned by participating in these groups. Staff would like assurance the company is leveraging the learnings from other utilities and experts to facilitate implementation of solutions with the highest benefit cost ratio.

See Section 2.3.

25) Idaho Power include its contribution to these forums including any research projects it is supporting or participating in.

See Section 2.3.

Idaho Power/1311
Witness: Christopher W. Lautenberger

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

Docket PCN 5

In the Matter of

IDAHO POWER COMPANY'S
PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE
AND NECESSITY

EFSC Contested Case, Deposition of Craig Kretschmer

February 21, 2023

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BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
OREGON DEPARTMENT OF ENERGY

IN THE MATTER OF:)
)
THE APPLICATION FOR SITE) OAH CASE NO.
CERTIFICATE FOR THE BOARDMAN) 2019-ABC-02833
TO HEMINGWAY TRANSMISSION LINE.)

DEPOSITION OF CRAIG KRETSCHMER

Taken in Behalf of the Petitioners

May 13, 2021

La Grande, Oregon

KATIE BRADFORD, CSR 90-0148
Court Reporter
katokatie@aol.com
(503) 267-5112

Proceedings recorded by digital audio recording;
transcript provided by Certified Shorthand Reporter.

1 BE IT REMEMBERED THAT, pursuant to the
2 Oregon Rules of Civil Procedure, the deposition of
3 CRAIG KRETSCHMER was taken in behalf of the
4 Petitioners and recorded on Thursday, the 13th day of
5 May, 2021, commencing at the hour of 1:00 p.m., at
6 location 1112 1/2 Adams Avenue, La Grande, Oregon.

7 * * *

8
9 APPEARANCES

10 Charles H. Gillis, Attorney at Law,
11 Appearing on behalf of ODOE by Zoom;

12 Patrick G. Rowe, Assistant Attorney General,
13 Appearing on behalf Oregon Department of Energy.

14 Jocelyn Pease, Attorney at Law,
15 Appearing on behalf of _____ by Zoom.

16 ALSO PRESENT

17 Barbara Teresa Peden, Notary Public;
18 Matt Cooper and Stacy Webster, Pro Se
19 Petitioners; Lisa Rackner, Idaho Power;
20 David Standish, Idaho Power; Kellen
21 Tardaewether; Sara Esterson.

22 * * *

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Index

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

EXAMINATION INDEX

WITNESS

Page No.

Craig Kretschmer

Examination by Mr. Cooper.....	4
Examination by Ms. Webster.....	22
Examination by Ms. Pease.....	34
Examination by Mr. Rowe.....	39
Examination by Mr. Cooper.....	46
Examination by Ms. Webster.....	49

* * *

OBJECTIONS

Listed in Keyword Index under "object" and "objection."

* * *

EXHIBIT INDEX

(None)

* * *

1 (Thursday, May 13, 2021, 1:00 p.m.)

2 CRAIG KRETSCHMER

3 Was thereupon called for a deposition on behalf of the
4 Petitioners; and, having been first duly sworn by a
5 Notary Public, was examined and testified as follows:

6 MS. PEDEN: Go ahead and
7 (indiscernible). And (indiscernible) just in the
8 toolbox right here. Thank you.

9 MR. GILLIS: All right. And we'll begin
10 with Mr. Cooper.

11 (Loud audio feedback. Whispered
12 discussion.)

13 MR. COOPER: Okay. Thank you. My
14 name's Matt Cooper. I'll be leading off with
15 questions today. And following my questions,
16 Stacy Webster will be asking Chief Kretschmer some
17 questions of her own.

18 EXAMINATION

19 BY MR. COOPER:

20 Q Chief, thanks for coming today. And would
21 you please start off by stating your name and
22 spelling it for us.

23 A Craig Kretschmer, C-r-a-i-g. Kretschmer,
24 K-r-e-t-s-c-h-m-e-r.

25 Q Thank you. Could you please state your

1 place of employment and a brief job title
2 description.

3 A Fire Chief of La Grande Rural Fire
4 Protection District.

5 Q Can you describe your duties briefly.

6 A I run a fire department that protects all
7 of La Grande Rural Fire Protection District
8 (indiscernible) area around La Grande and out into
9 the valley. I'm also the Union rural fire chief and
10 currently the fire (indiscernible) chief of Union
11 County.

12 Q Okay. Thank you. Have you ever been
13 convicted --

14 MS. PEASE: And --

15 BY MR. COOPER:

16 Q -- of fraud or perjury?

17 A No.

18 MS. PEASE: I'm having a hard time
19 understanding the chief's responses.

20 UNIDENTIFIED SPEAKER: (Indiscernible)
21 questions.

22 UNIDENTIFIED ATTORNEY: Somebody's --

23 UNIDENTIFIED ATTORNEY: One moment. Go
24 ahead, Kellen.

25 MS. PEASE: This is Jocelyn Pease. I

1 just wanted to interrupt briefly because I'm -- I'm
2 not getting good audio on the chief.

3 UNIDENTIFIED ATTORNEY: On the chief?
4 Okay.

5 MS. PEDEN: Yeah. And it's just -- it's
6 -- it's pretty quiet and a little bit muffled.

7 UNIDENTIFIED ATTORNEY: Okay.

8 MR. GILLIS: Okay. Thanks. We'll --
9 we'll --

10 UNIDENTIFIED ATTORNEY: Thank you.

11 (Whispered discussion off the record.)

12 BY MR. COOPER:

13 Q Okay. Moving along, first, I'd just like
14 to ask you some questions about your jurisdiction.
15 Are you the designated -- is your department the
16 designated fire response unit for the following
17 areas: Morgan Lake?

18 A Morgan Lake, no.

19 Q No. What about the Ladd Marsh area?

20 A Portions of Ladd Marsh, yes. Not all of
21 Ladd Marsh.

22 Q What about the Foothill Road area?

23 A I believe all of Foothill Road is in
24 La Grande Rural District.

25 Q And, finally, the Ladd Canyon area?

1 A Area's pretty broad. We kind of come
2 across there at the base of the canyon. So anything
3 up the canyon would be all Oregon Department of
4 Forestry.

5 Q Okay. So you're the designated response
6 unit for portions of Ladd Marsh and portions of the
7 Ladd Canyon area?

8 A A very small portion of Ladd Canyon.

9 Q Uh-huh.

10 A Ladd Marsh, a majority of it is ours.

11 Q Uh-huh.

12 A As you get up onto the hill on the west
13 side towards Glass Hill, we go up a little ways and
14 then it's -- well, anything west of Foothill Road is
15 dual protected with us and Oregon Department of
16 Forestry. So we -- we go up there a little ways, but
17 not very far.

18 Q I see. So the other jurisdictions or the
19 other agencies in charge of response to Morgan Lake,
20 of the -- say, the Morgan Lake area, who would be
21 the --

22 A Okay. Well --

23 Q -- (indiscernible)?

24 A Define Morgan Lake area, if you would.

25 Q Right. Okay. Let's start with the park,

1 itself.

2 A The park, itself, is dual protected with
3 Oregon Department of Forestry. And it is owned by
4 La Grande Fire or the City of La Grande, so La Grande
5 Fire and Oregon Department of Forestry fire
6 (indiscernible).

7 Q I see. And with Ladd Marsh, would that be
8 -- that would be shared with the Oregon Department of
9 Forestry or --

10 A Correct. The small portion that we have on
11 the west side of Foothill Road is dual protected with
12 Oregon Department of Forestry. Now, as you get to
13 the east side of Ladd Marsh -- and I don't know all
14 the little jigs and jogs in there, but I believe it's
15 Union Rural Fire Protection that has -- I believe
16 it's -- Peach Lane's the boundary there. So anything
17 east of that would be Union Rural.

18 Q Mm-hmm.

19 A Ladd Marsh is pretty big, so, yeah.

20 Q Okay. Thanks. I'm going to ask you some
21 -- for some estimates of the amount of time for -- to
22 travel in a -- in an engine. And forgive me, I don't
23 know all the names for the different kinds of trucks.

24 A Sure.

25 Q I know there's (indiscernible), there's

1 pumpers. There's all kinds of stuff. But let's just
2 say a fire engine for the lay person.

3 So in a fire engine, what would you
4 estimate would be the amount of time required to
5 travel from the fire station in Island City to the
6 base of Morgan Lake Road or the -- where it goes to
7 gravel?

8 A Sure. As you said, there's multiple
9 different types of engines.

10 Q Uh-huh.

11 A So a brush engine, I would anticipate six
12 to eight minutes probably from our station. Type I
13 engine, which is a big-structure engine, oh, eight to
14 ten minutes, perhaps. Maybe not that much, but it's
15 pretty tough to time that safely when you're just
16 trying to come up with an estimate.

17 Q Right. That's all I'm --

18 A Yes.

19 Q -- interested in, is -- yeah. Professional
20 estimate.

21 Okay. What about when you leave the
22 pavement and you're going up actually Morgan Lake
23 Road, which is about two-and-a-half miles of, I
24 think, 17-percent grade, to -- let's say to the park.
25 How long do you think it would take to travel in

1 those -- in the brush engine or Type I engine?

2 A A brush engine -- I don't even anticipate
3 taking a Type I engine, per -- per se, 'cause that's
4 a -- that's a structure engine.

5 Q Okay.

6 A I would say approximately six to eight
7 minutes to get to the top.

8 Q Okay. All right. Great.

9 Okay. If you can envision a typical summer
10 day at Morgan Lake and you've got, you know, campers
11 up there, boaters, birders, hikers, people fishing.
12 What kinds of traffic obstacles might you anticipate
13 encountering if you're trying to get up that road in
14 a fire?

15 A In an emergency vehicle?

16 Q Yeah, in an emergency vehicle.

17 A Well, I would anticipate people follow the
18 law and pull over for us 'cause we will be going
19 Code 3 with lights and sirens.

20 Q Yeah.

21 A So as far as anything above and beyond
22 that, that would be speculation. I mean, I -- I do
23 anticipate people pulling over for us and giving us
24 the right of way.

25 Q Since you mention the pulling over -- and I

1 would hope they would. Knowing that Morgan Lake is
2 -- well, I guess it's technically two lanes, but it's
3 a very narrow road and there are limited areas to
4 fully pull over. Do you -- do you anticipate that
5 people would be able to actually get off the roads
6 and clear -- to clear a --

7 A I would --

8 Q -- path?

9 A -- anticipate so. Now, certainly, there's
10 some areas on that road that are, you know, a little
11 dangerous to pull over on, I would say. But we would
12 also work with them. We're not going to run them off
13 the road either, so --

14 Q Of course.

15 A -- you know, our folks are trained to drive
16 defensively. So if we see that there's not a safe
17 place to pull over, we will certainly, you know, get
18 off to the side or, you know, scooch over a little
19 bit. Now, a brush truck is just an -- essentially, a
20 550 pickup, so, you know, we're not talking, you
21 know, great, big, wide loads. So --

22 MS. PEASE: I -- just one second again.
23 We're still having a hard time understanding the
24 chief. If -- I'm not sure if there's anything that
25 can be done to fix the mic situation, but we're only

1 getting about half of what the chief is saying.

2 MS. KREIDER: And you can hear Matt?

3 Okay. Can you hear Matt Cooper okay?

4 MS. PEASE: I -- I guess, actually, I'm
5 -- Matt's questions, I can hear most of it, but not
6 all of it. And if there's anything that can be done
7 to -- to fix that --

8 MS. KREIDER: Hold on.

9 UNIDENTIFIED ATTORNEY: -- that would be
10 helpful for us.

11 MS. KREIDER: Okay. One moment.

12 (Whispered discussion, off the record.)

13 THE WITNESS: Is there anything you'd
14 like me to repeat that you didn't hear or would like
15 to hear?

16 MS. PEASE: One piece that I didn't hear
17 very well was about the jurisdiction as it relates to
18 Morgan Lake Park and the Morgan Lake area. That --
19 that part cut -- was sort of in and out for me.

20 THE WITNESS: Okay. So Morgan Lake and
21 Morgan Lake Park, the surrounding areas around it are
22 owned by the City of La Grande. Therefore, La Grande
23 Fire is the -- is one of the primary agencies. Now,
24 it's dual protected with the Oregon Department of
25 Forestry.

1 And so how that usually works is, you
2 know, on the wildland side, they're going to take the
3 lead on that. So, you know, if it's a trailer fire
4 up there, that'll be, like, you know, if somebody's
5 camping there type thing or a vehicle fire, that'll
6 be more on the -- the La Grande Fire side.

7 MS. PEASE: Thank you.

8 BY MR. COOPER:

9 Q Moving on. Have you ever heard of the term
10 "eyes on the fire"? Does, like -- does this -- does
11 this mean something to you professionally?

12 A I've used the term eyes on the fire. I
13 don't know -- necessarily know that it has a -- a --
14 you know, an exact definition. To me, it just means,
15 did somebody see the fire? What's the fire doing?

16 You know, obviously, somebody called it in,
17 so they're giving dispatch some information, so I
18 would like to know that information when I talk to
19 them type thing, so --

20 Q So you would say that it could be anybody's
21 eyes?

22 A Sure. I just, you know, when -- when I --
23 like I said, I don't -- don't necessarily know
24 there's a definition --

25 Q Okay.

1 A -- of it. But, in my opinion, you know, if
2 I say, "Hey, do you" -- you know, if I'm talking to,
3 you know, Mitch Williams of the Oregon Department of
4 Forestry on the phone, it's like, "Do you have eyes
5 on the fire? Can you see it? What's it doing?"

6 So --

7 Q Okay. I'd like to ask you some questions
8 about staffing.

9 A Sure.

10 Q This is probably all online, but how many
11 staff happens to be on duty at your agency at -- at
12 all times? And can -- can you talk about the
13 staffing as far as who's on duty, what portion of the
14 crew is volunteer and --

15 A Sure. The first part of your statement was
16 false. There is not two full-time people on at all
17 times. We have -- I am the only full-time employee,
18 but that does not mean I am there at the station
19 24/7. The other part-time employee -- or employee
20 that we technically employ is a secretary.

21 And then our volunteers get a small
22 stipend, you know, based on, you know, participation.
23 So we have -- there's kind of an ebb and flow in the
24 volunteer world, but anywhere from 20 to 25
25 volunteers at any given time. And so we are

1 primarily a volunteer department. So the -- the two
2 people there full time is incorrect.

3 Q Okay. Thank you. What is the average time
4 you say it would take to mobilize a crew before
5 leaving the fire station?

6 A Can you define -- all right. So wildland
7 fires can be a little different 'cause you only need,
8 you know, two people on a brush truck compared to a
9 structure engine you want four or five.

10 So when you're waiting for that many more,
11 I would say -- and, again, it's very dependent on
12 time of year, time of day, winter, summer. You know,
13 so I would say five to seven minutes probably, you
14 know, in -- kind of in the summer during the day.

15 Q So a call comes in, there'll be a -- a lag
16 of, say, five to seven minutes before you can
17 actually be on the road, en route?

18 A Probably for an engine. Now, if I'm at the
19 station or on duty -- I mean, I even go from my
20 house, you know, off. I'm always on call, but --

21 Q Right.

22 A -- so I could be out the door within
23 30 seconds or a minute. But as far as a brush truck
24 -- I'm assuming that's what you're implying for a
25 wildland fire -- probably five to seven minutes, I

1 would say. And, again, it's -- it totally depends on
2 multiple, multiple factors.

3 Q Following up with that, would you say
4 there's fluctuations, say, during the year, during
5 the season?

6 A Absolutely.

7 Q Okay. How -- can you describe those?

8 A Well, we put summer help on in the summer,
9 so there's a chance that myself and our summer help
10 can jump on a brush truck and go out the door right
11 away. It's kind of going to depend on the type of
12 call that's coming in and what we're, you know,
13 receiving from dispatch.

14 It's going to -- you know, when that call
15 goes through 9-1-1, it's going to be a -- a -- if
16 it's a working fire, it's going to be a box alarm.
17 So, at any given time, a box alarm is kind of our
18 mutual aid agreements. So we have automatic aid with
19 City of La Grande.

20 So anything in the Morgan Lake area or out
21 that way, I mean, they're fully staffed. There's a
22 really good chance they're going to have an engineer
23 before us.

24 In the summer, you know, like I say, if --
25 if I'm -- you know, if it's during the week and I'm

1 there, we could have a brush truck out within a
2 couple minutes probably.

3 It's just one of those -- just depends on
4 who's around and who's working and who's not.
5 Weekends, we could get, you know, probably quite a
6 few more people there quicker 'cause, you know,
7 leaving from jobs and stuff like that.

8 Q All right.

9 A So --

10 Q Can you speak to your previous training in
11 terms of fighting wildfires versus structural fires
12 or transmission line-caused fires?

13 A Versus?

14 Q Yeah.

15 A Can you -- yes, we are --

16 Q Well --

17 A -- trained in all of those.

18 Q Trained in all of those. What specialized
19 equipment, if any, do you have to fight wildfires
20 caused by transmission lines?

21 A We have -- well, any one of our apparatus
22 could technically fight a wildland fire depending on
23 where it was at. We do have currently two types of
24 brush trucks. One being built should be done within
25 the next month, so that'll give us three.

1 We have a tactical tender. It carries
2 2,000 gallons of water. It's six-wheel drive,
3 essentially. It's a -- it's a -- a military vehicle,
4 essentially. And then we have a 3,000-gallon water
5 tender. It's not necessarily made to go off road too
6 much, but it can sure deliver a lot of water.

7 And then, you know, command rigs to get
8 around. One of our Type 6s is a -- an old military
9 Hummer, Humvee. So it can go places that I don't
10 necessarily like to see it go sometimes, but it --
11 it can -- it can get out off the road.

12 Q Are you aware of any transmission
13 line-caused fires that your crew has responded to in
14 the past?

15 A Sure. To me, a transmission line is any
16 line that carries electricity, correct? So this most
17 recent windstorm, what, a couple months ago, we
18 certainly had one there.

19 We go on actually quite a few power line
20 incidents a year whether it's a transformer on fire
21 or, you know, it's blown a tree over onto the
22 transmission line, so we go on a fair amount.

23 Q Okay. Let's talk about procedures that you
24 might be aware of for notifying a utility, say Idaho
25 Power in this case, to deenergize a line so that you

1 can safely extinguish a fire.

2 A So that's going to go through our dispatch
3 center. Any -- any time that we're dealing with a
4 power company, gas company, they're the ones making
5 the contact to line them up to get things shut down.

6 Q So the -- the call would have to come from
7 Idaho Power to say that we have a fire here and --

8 A No, our dispatch center.

9 Q Okay.

10 A So 9-1-1, when people call it in --

11 Q Yeah.

12 A -- and I say, "Can you notify the power
13 company?" And they'll be able to call those or we
14 could go through Oregon Emergency Management, that
15 type of thing.

16 Q Can you estimate how long it would take to
17 deenergize a line from the time that the power
18 company was called by dispatch or OEM to the time
19 crews could safely (indiscernible) fire?

20 A I cannot speak to the amount of time.
21 That's totally company line dependent, where it's at,
22 why there was a fire, you know, that type of thing.
23 Now, just because there's a fire started by a
24 transmission line doesn't mean you can't actively
25 engage the fire.

1 You just don't want to actively engage it
2 while it's impeding an actual hot line. So that
3 doesn't mean you can't, you know, take care of the
4 surrounding area so it can't progress. You just
5 don't want to be, you know, under that particular
6 line.

7 So -- so it's not like we show up and we
8 just don't do anything for hours waiting for it to
9 shut down. You know, it's --

10 Q Right.

11 A We contain the area.

12 Q Right. That makes sense. Thank you. I
13 have just one more question for you, then we can move
14 to Ms. Webster. Given that Morgan -- (indiscernible)
15 evacuation -- emergency evacuation area.

16 A Sure.

17 Q Given that Morgan Lake Road is a -- a dead
18 end or it's the only -- it's the only road in or out
19 of -- of the park, what plans are in place, if any,
20 to evacuate residents, campers or other visitors in
21 the park or -- or from the residences?

22 In other words, you're trying to get up
23 there at the fire and, meanwhile, people are trying
24 to get out, maybe seeing a big fire --

25 A Sure.

1 Q -- (indiscernible).

2 A Again, that's very difficult to pinpoint
3 without saying the fire is right here in this
4 specific spot and what the fire's doing, you know,
5 which way is the wind blowing.

6 Now, to your point, if it starts up at
7 Morgan Lake and it's at the lake itself, it's fairly
8 easy to get people to come down that direction 'cause
9 the fire's at the top of the hill.

10 Now, if it starts at the very bottom, it's
11 going to be a different story. So, yes, there is
12 evacuation plans in place in this County, but there
13 is not a specific plan that says, at Morgan Lake,
14 based on the fire being 2 -- 200 yards from it type
15 thing.

16 So -- so, yes. It is a dead-end road
17 depending on where the fire is, but there is other
18 ways out if there's fire lower down, you know, out
19 through Glass Hill, some of that kind of thing. Now,
20 not everybody's vehicle can go that way.

21 Q Sure.

22 A But, again, it's -- I mean, there are so
23 many variables to that kind of -- of situation
24 'cause, as the emergency manager of this County gets
25 a lot, "Hey, what's our evacuation route?" Well,

1 that kind of depends on the situation.

2 So, yes, there is plans in place. The
3 Sheriff's Department will be working with the
4 emergency manager, working with fire departments,
5 working with the lead agency on -- pretty much any
6 fire up there is going to be Oregon Department of
7 Forestry.

8 So, you know, everybody will be working
9 together at that point, but it'll -- it'll usually be
10 on the Sheriff's Department to initiate the
11 evacuation.

12 MR. COOPER: Okay. Thank you, sir.

13 THE WITNESS: Yep.

14 MR. COOPER: I'm going to turn it over
15 to Ms. Webster if she wants to (indiscernible).

16 MS. WEBSTER: Thank you, Chief, for
17 coming in today.

18 Can everyone hear me?

19 Okay. I might remind you you're still
20 under oath.

21 EXAMINATION

22 BY MS. WEBSTER:

23 Q So my first question, I'd like to do a
24 followup on one of Matt's inquiries about extra
25 traffic on Morgan Lake Road during the summer.

1 MS. PEASE: Excuse me. Can -- can I --
2 I'd like to raise an objection to the question. The
3 question lacks foundation and is vague and ambiguous.
4 Thank you.

5 MR. GILLIS: So noted. Thank you.
6 You can go ahead and answer the
7 question, Chief.

8 THE WITNESS: I do not know which route
9 specifically that is. I don't have a map of the
10 Mill Creek route, but I get a gist of what you're
11 saying between Deal Canyon and Morgan Lake Road.

12 That would probably be -- again, like
13 everything else, it depends on where the fire is,
14 what it's doing, the weather, all that kind of thing,
15 is there air support already en route from Oregon
16 Department of Forestry, stuff like that. Our main
17 route up there is going to be up Morgan Lake Road and
18 probably come back across on Marvin Drive.

19 BY MS. WEBSTER:

20 Q Would the route possibly be dependent on
21 traffic patterns that you might encounter at a
22 specific time of day or a specific day of the week?

23 A Patterns in the City of La Grande?

24 MS. PEASE: Again, I -- I -- if -- a --
25 an objection here. Lack of foundation. Vague

1 and ambiguous.

2 MR. GILLIS: Objection is noted. Thank
3 you.

4 You can answer, Chief.

5 THE WITNESS: No. We would simply use
6 the same route. The route that we would take would
7 be down Island Avenue under the underpass so we would
8 not risk hitting a train. That's the most direct
9 route no matter where we're headed.

10 BY MS. WEBSTER:

11 Q Let's see. What would be the realistic
12 estimate for the amount of time required to travel
13 from La Grande Rural Fire Department in Island City
14 to the base of Morgan Lake Road?

15 A I believe I already answered that. Six to
16 eight minutes.

17 Q How about the -- a realistic estimate for
18 the additional amount of time that it would take to
19 travel to the base -- from the base of Morgan Lake
20 Road to Marvin Drive?

21 A To Marvin Drive? Probably four minutes,
22 three to four minutes.

23 Q And what would be the realistic estimate
24 for -- of additional time that it would take to
25 travel from the base of Morgan Lake Road to the

1 pasture land and timberland located at the north end
2 of Marvin Drive, specifically between Morgan Lake
3 Road and Deal Canyon Road?

4 A Well --

5 MS. PEASE: Objection.

6 THE WITNESS: -- the whole road is --

7 MS. PEASE: Vague and ambiguous.

8 THE WITNESS: The whole road is between
9 Morgan Lake and Deal Canyon, so it wouldn't be the
10 north end of the road. I would say -- did you say
11 from the base of Morgan Lake Road?

12 BY MS. WEBSTER:

13 Q Yes.

14 A Eight to ten minutes.

15 Q The proposed Mill Creek transmission route,
16 specifically the land between Morgan Lake Road and
17 Deal Canyon Road as well as the Ladd Canyon area, is
18 largely pasture land and timber with mostly
19 undeveloped roads and/or livestock trails.

20 Given that, does your Department have fire
21 vehicles that have the capability to navigate such
22 rough terrain?

23 A We do. I think that's --

24 MS. PEASE: Objection. Lacks
25 foundation.

1 MR. GILLIS: Thank you.

2 THE WITNESS: We do. I think I
3 mentioned before we have -- our vehicles that we
4 have.

5 BY MS. WEBSTER:

6 Q Could -- could you expand on what the
7 specific vehicles would be and their capabilities?
8 You mentioned a brush truck.

9 A We have three different brush trucks.
10 They're essentially -- two of them are F-550 Ford
11 pickups. They can go -- yeah -- about anywhere other
12 than on steep terrain, big, rocky terrain. Our
13 Humvee can go even on quite steep terrain.

14 Again, it's going to be total fire
15 dependent on, you know, where we need to get to. You
16 know, so I -- I would say, especially some of that
17 area now -- I -- I'm not going to speak for Ladd
18 Canyon 'cause that's -- that's, for the most part,
19 out of our jurisdiction, the canyon, itself, 'cause
20 it's -- it's out there.

21 And the truth is most of this stuff --
22 again, I don't have a map of this transmission line
23 or exactly what protected properties that La Grande
24 Rural has. But a majority of a lot of that is kind
25 of up in the flat that -- that we're protecting. So

1 I would say we could get to a good majority of that.

2 Q What would be a realistic estimate for the
3 amount of time required to travel from La Grande
4 Rural Fire Department in Island City to the
5 transmission line site near Ladd Marsh?

6 A Which --

7 MS. PEASE: Objection. Vague and
8 ambiguous.

9 MR. GILLIS: Thank you.

10 THE WITNESS: Which transmission lines?
11 I -- the one that's there already or a proposed one?

12 BY MS. WEBSTER:

13 Q The proposed one.

14 A Again, I don't have a map of exactly where
15 that comes through. I would venture to say it's
16 going to be right on the very edge, the west side,
17 which we protect a small portion of that. So I'm not
18 even sure the transmission line goes through ours.
19 But to get to the edge of ours would be seven to
20 nine minutes probably.

21 Q Okay. And same question for the proposed
22 transmission line site near Foothill Road.

23 MS. PEASE: Objection. Vague and
24 ambiguous.

25 MR. GILLIS: Go ahead.

1 THE WITNESS: I would say -- that would
2 be the same site as the Ladd Marsh one, correct?

3 BY MS. WEBSTER:

4 Q Yes.

5 A Seven to nine minutes.

6 Q Okay.

7 A It's the exact same thing.

8 Q Has your Department responded to wildfires
9 that have involved coordinating firefighting efforts
10 with North Powder Fire Department?

11 A Yes.

12 Q How often has that occurred and how
13 recently?

14 A I don't believe we have coordinated with
15 them yet this year. The last time was probably on a
16 structure fire in our district on Foothill Road. I
17 think it was in November.

18 Q Has your Department responded to wildfires
19 that have involved coordinating firefighting efforts
20 with the Bureau of Land Management?

21 A No.

22 Q Has your Department responded to wildfires
23 that have involved coordinating firefighter efforts
24 with Oregon Department of Forestry?

25 A Yes, often.

1 Q And how -- how often has it -- you said,
2 "often." How recently?

3 A I would say the most recent was within the
4 last month.

5 Q Has your Department responded to wild -- to
6 wildfires that have involved coordinating
7 firefighting efforts with the United States Forest
8 Service?

9 A Yes.

10 Q And, again, how often has that occurred and
11 how recently?

12 A That is not very often and I don't
13 remember. I believe they may have been on a fire we
14 were on last summer, but I would have to check the
15 records. They are not as much of a player on the --
16 the rural local level.

17 Q Referring to the previous questions
18 regarding your interactions with other fire
19 departments, how have those interactions
20 been coordinated?

21 A You mean as far as radio communications?
22 Well, if it's, like I say, a structure fire in the
23 county and Oregon Department of Forestry is not
24 involved, then we stick on the local rural channels,
25 the command frequencies, the tap channels that are --

1 that are in this county.

2 Now, if we get into -- and that would be,
3 like, with the North Powder or any of the other rural
4 areas. Oregon Department of Forestry sometimes comes
5 and mutual aid -- 'cause we have mutual aid
6 agreements with them -- they'll come, you know, out
7 of -- you know, like, down into the valley and help
8 us out with a brush fire or grass fire. They usually
9 switch over to our command frequency and our tactical
10 frequencies.

11 Now, as we get into the wildland urban
12 interface, which is mostly what we're talking about,
13 it seems, here and up into the Morgan Lake area,
14 again, Oregon Department of Forestry would be the
15 lead agency 'cause we have -- again, most of this
16 seems to be on their -- their property.

17 There might be some that comes through some
18 of our protected stuff. I don't have maps. I don't
19 have any specifics on any of that. But what we do --
20 and it's set up and we have, you know, kind of
21 agreements on how this will work is we're going to
22 switch to, essentially, right now, Forest Service
23 Emily, which is the local dispatch center out of the
24 Blue Mountain Interagency Dispatch Center.

25 And then they will work everything through

1 the wildland ODF side. So if it's an urban interface
2 fire, we're -- we're going mutual aid with ODF or to
3 ODF, we switch to their frequencies.

4 Q Have you or has your Department ever worked
5 with the Pacific Northwest Wildfire Coordinating
6 Group?

7 A I have not specifically. Now, when we go
8 out on conflagrations or we go out and send an engine
9 out even to, you know, California and stuff like
10 that, they're the ones that kind of coordinate the
11 big team responses and stuff like that. So I would
12 say kind of indirectly, yes, I specifically have not
13 dealt with them.

14 Q Are you aware of any private fire response
15 companies in Union County?

16 A I -- I supposed you would have to define
17 "private response." Now, there's contract engines
18 that go out. You know, they have a Forest Service
19 contract and they get called to go out, but I am not
20 aware of any that protect, like, a residence like you
21 see in California and stuff like that.

22 I'm not aware of those, but there's several
23 -- I don't -- I have no idea how many -- private,
24 like, Type -- Type 6 brush trucks, brush engines
25 around.

1 Q Have you worked with any of those?

2 A Not specifically through La Grande Rural
3 Fire. But if we're on a fire, like, with Oregon
4 Department of Forestry as mutual aid or sometimes
5 we'll contract back with them if it's going to be a
6 long-term fire, then, yes, there's -- there's
7 agencies that they contract with.

8 Q And did you feel like those interactions
9 were efficient, successful?

10 A Yes.

11 Q Are you familiar with spark arrestors?

12 A I am not.

13 Q Have you read anything that -- studied
14 anything about how effective they might be to
15 reducing fire risk?

16 A No.

17 Q Would you have any explanation as to why
18 spark arrestors would not be required on trucks at a
19 transmission site?

20 A No.

21 Q Is your understanding of spark arrestors --
22 is it your understanding that spark arrestors and
23 mufflers would serve the same function?

24 A That is not my understanding. I would
25 assume that spark arrestors arrest sparks so that

1 it's not throwing sparks and a muffler muffles sound.

2 MS. WEBSTER: Thank you.

3 MR. GILLIS: Well, Chief, do you need to
4 take a break? Are you comfortable?

5 THE WITNESS: I'm good.

6 MR. GILLIS: All right. So next we're
7 going to move on to questions and answers between
8 Idaho Power and the chief.

9 MS. PEASE: Thank you.

10 EXAMINATION

11 BY MS. PEASE:

12 Q I have just a few follow-up questions and
13 I apologize. Some of that may be repetitive of what
14 you might have already been asked. There's a couple
15 areas where I couldn't hear your response very well
16 and where --

17 A Right.

18 Q -- I may be asking for you to clarify.

19 A Okay.

20 Q So I wanted to start by following up the
21 question that you were asked about deenergizing a
22 transmission line and how long that may take. I --
23 and I don't think I -- I got your answer on that one.
24 Did -- did you have an estimate for how long that
25 might take after you notify the power company?

1 A I do not, mainly because it depends on the
2 type of, you know, fire, the type of agency you're
3 dealing with. Are you dealing with a -- you know,
4 'cause transmission line's a pretty broad -- you
5 know, we have local companies that could be at work
6 that day that it could be five minutes.

7 I have never dealt with a fire that I
8 personally have had to shut down major transmission
9 lines through our area, so I do not have a good
10 estimate on that.

11 Q Okay. Okay. And so in your experience
12 where maybe it takes five minutes, I mean, would that
13 potentially be for a utility that doesn't have a
14 remote shut-off capability if -- if you're talking
15 about a local company?

16 A You're -- can you repeat that? I'm sorry.
17 You lost me.

18 Q Sure, sure, sure. You'd sort of thrown
19 out an estimate of maybe five minutes for a local
20 company and I wanted to ask if you're aware of
21 whether those local companies would have any sort of
22 remote-shut-off capabilities.

23 A Usually, what I'm referring to is, you
24 know, OTEC comes and shuts the power off to a house
25 we have on fire. OTEC -- sorry -- is our local

1 utility.

2 Q Sure. And --

3 A So I don't -- I don't believe -- I do not
4 know their capabilities on remote shutoffs. I
5 will -- I will --

6 Q Okay.

7 A Mostly what we do is they come out and
8 they'll shut down the portion of the line that we
9 need shut down physically on the scene.

10 Q And -- and for the record, OTEC, that's
11 Oregon Trail Electric Cooperative; is that right?

12 A Correct.

13 Q Okay. And then, again, following up
14 questions that you were asked about responding to
15 fires associated with power lines, I think -- was it
16 your testimony that you have responded to fires that
17 may have been caused by a -- by a power line?

18 A Yes. We have responded to fires caused by
19 power lines.

20 Q Okay. And then in your response, though,
21 you said that you weren't sure whether those were,
22 like, a high-voltage transmission line or a
23 distribution line; is that right?

24 A I do not know the different lines that we
25 have -- I mean, we've responded to multiple fires

1 over the years via transmission lines, whether it's a
2 feeder line or all your -- I don't know all the
3 different technical terms as far as --

4 Q Sure.

5 A -- you know, which ones are which. But,
6 yes, we have responded to fires of varying degrees
7 started by transmission lines.

8 Q Okay. But -- but I -- it sounds like then
9 you don't have a sense of whether they were a
10 high-voltage 500 kV line or a smaller
11 distribution line --

12 A I do not.

13 Q -- is that right?

14 A Correct.

15 Q Okay. I think -- let's -- if I could have
16 just one second to consult my notes, I think that may
17 be all the questions that I had for now.

18 Okay. One -- one other question. Are you
19 aware of whether the La Grande Rural Fire District
20 has responded to any fires associated with a
21 230-kilovolt line in the Ladd Marsh area?

22 A I am not aware of any fires we've responded
23 to in the Ladd Marsh area due to --

24 Q Okay.

25 A -- transmission lines.

1 MS. PEASE: Okay. And I guess while --
2 I think that is it for our questions.

3 One other item to note for the record is
4 that I -- at least some members of our team have been
5 following along with the Otter transcript as we've
6 been going and it appears that there may have been
7 some errors picked up in the Otter transcript.

8 We'll hope that those will get cleaned
9 up through the court reporter, but I think one
10 example was a question about the response time where
11 the -- Chief Kretschmer's response was six-to-eight
12 minutes and, instead, the Otter recording had
13 captured 60 minutes.

14 And so I had just wanted to note that
15 for the record and -- and ask that when the court
16 reporter goes to prepare a transcription, that there
17 also be careful attention to the audio as well.

18 MR. KREIDER: If I may, from the back
19 room on the Otter transcript --

20 MR. GILLIS: Is there any other --

21 MR. KREIDER: -- we will --

22 MR. GILLIS: -- representative from
23 Idaho Power who has some questions for the chief?

24 Hearing none, we'll move on to questions
25 between the Oregon Department of Energy and

1 Chief Kretschmer.

2 EXAMINATION

3 BY MR. ROWE:

4 Q Hi, Chief Kretschmer. My name is Patrick
5 Rowe. I'm an attorney with the Oregon Department of
6 Justice. I represent the Oregon Department of Energy
7 in the contested case regarding the Boardman to
8 Hemingway transmission line.

9 When did you first become the chief of the
10 La Grande Rural Fire Protection District?

11 A I believe I became the full-time chief in
12 January of 2019, I believe.

13 Q Did you work with the District before you
14 became the chief?

15 A I was the assistant chief, which is a
16 volunteer position, I believe, four to five years
17 before I became the full-time chief.

18 Q So you've been with the District roughly
19 since 2015; is that fair?

20 A Yeah, that's fair.

21 Q Okay. Who was the chief prior to you?

22 A Chief Larry Wooldridge.

23 Q Are you familiar with the location of the
24 proposed Boardman to Hemingway transmission line?

25 A I know the general vicinity. The last I

1 heard, there was two or three different routes.

2 I have not seen an updated map or any sort of, you
3 know, updated correspondence on which one's being
4 proposed or -- or been eliminated or anything like
5 that. So I know the general vicinity, but I do not
6 know particulars.

7 Q Is it your understanding that the proposed
8 routes for the transmission line would run through
9 the service territory of the La Grande Rural Fire
10 Protection District?

11 A From my understanding, there was one, I
12 believe -- and I -- I could be wrong 'cause I haven't
13 seen maps, but there's one, I believe, the first one
14 to the south. There was a chance it would not hit
15 any of our district.

16 Some of the other ones, I think, will come
17 through maybe a -- a handful of properties that we
18 now protect. I think it's probably good to note that
19 the Morgan Lake area has not been under our
20 protection and -- and not all properties are. I
21 think we have 22 properties up there now.

22 But until 2019, they were not part of our
23 district. So, you know, any correspondence you had
24 before that as pertaining to our Department, you
25 know, we didn't have those properties up there. So I

1 am not sure which lines -- which routes proposed go
2 through which properties.

3 Q Okay. You mentioned Former Chief
4 Wooldridge. Are you aware that as part of the
5 application for the transmission line, Idaho Power
6 submitted a summary of communications that a
7 consultant of theirs had with Chief Wooldridge about
8 the transmission line?

9 A I believe you were cut off there at the
10 end. Can you repeat the question?

11 Q You bet. You -- you mentioned
12 Chief Wooldridge, your predecessor. And my question
13 is: Did you know that as part of the application for
14 the transmission line, Idaho Power submitted -- had
15 contacted Chief Wooldridge and submitted a summary of
16 their communications with him?

17 A Yes. I -- I don't know the -- the
18 communications; but I know that that was part of
19 Chief Wooldridge's time here, yes.

20 Q And did you ever speak with Chief
21 Wooldridge about his communications with Idaho Power
22 about the project?

23 A No, I did not.

24 Q I'm going to try to show you a document
25 here. Can you see this on your screen? Can you --

1 or what are you seeing on your screen right now?

2 A You.

3 Q Just me.

4 A Just you.

5 Q Hang on. Give me one moment, please.

6 A It's going to be pretty small if it does
7 pop up.

8 Q Yeah. Now, are you seeing something?

9 A Yep, there it is.

10 Q Great. So I'll represent that this is the
11 document I was referencing that Idaho Power included
12 as part of their application for the transmission
13 line. And I'll note -- I'm going to scroll down.
14 I'll note on the record the Department has provided
15 this document, produced it as part of its record for
16 -- in this contested case.

17 This is part of Idaho Power's application
18 for site certificate, Exhibit U, Page U-1, C-11. I'm
19 just going to run through this. I have a -- a few
20 questions about this. In this document,
21 Chief Wooldridge -- and you'll see it's -- it's dated
22 January 16th, 2017.

23 And just to confirm, at that point in time,
24 you were with the District, but you were not the
25 chief, correct?

1 A Correct.

2 Q Okay. According to this document, the
3 consultant for Idaho Power spoke with
4 Chief Wooldridge. He informed them that at that
5 time, your district had 25 personnel, two paid and
6 the rest volunteers. I understand from your
7 testimony earlier that you -- are -- you're currently
8 the only paid person; is that right?

9 A We have a secretary that's part time and
10 then we will put on -- in the summer, we'll have
11 seasonal help in the summer, yes.

12 Q Okay.

13 A But that -- we do not have two people in
14 the station all the time.

15 Q You do not?

16 A We do not.

17 Q Okay. How many people do you have in the
18 station at all times now?

19 A We are not staffed 24/7.

20 Q Okay. Do you still have roughly
21 25 personnel?

22 A Yes. Maybe a couple fewer than that,
23 probably 22, 23 now. But we are putting on more,
24 so -- yeah, it fluctuates.

25 Q Do you still have two command vehicles?

1 A We do.

2 Q And you'll have to educate me a little bit.
3 What is a command vehicle?

4 A Just a pickup. Well, we have a Tahoe as
5 well, like, an SUV. My command rig is a pickup,
6 four-wheel drive Ford pickup.

7 Q Okay. Do you still have one medium-duty
8 rescue vehicle?

9 A We do.

10 Q And what is that?

11 A It's, essentially, our extrication, our
12 medical rescue, meaning, like, car wrecks. We have a
13 rope rescue team that carries our ropes. It has our
14 medical gear, stuff like that.

15 Q Do you still have three fire engines?

16 A We do not. We have replaced one of the old
17 engines with a tactical tender.

18 Q And what is a tactical tender?

19 A Oh, just -- it can go a lot more places, a
20 lot more off-road places. Tactical, it carries -- so
21 your traditional tender kind of carries just a lot of
22 water in probably a porta tank and you can drop it
23 and just have a water supply whereas a tactical
24 tender, you can be a little more proactive with it
25 and fight fire from the -- the rig, itself.

1 So it's -- it's kind of a designation that
2 you're supposed to carry, you know, like, a chainsaw
3 and stuff like that on it, so --

4 Q This document states that in 2017,
5 Chief Wooldridge said you had one tender. So the
6 tactical tender that you're describing now, is -- is
7 that in addition to the one tender that you had back
8 in 2017?

9 A Correct. We, essentially, replaced one of
10 the fire engines with a tender; so, now, we have two
11 Type 1 structure engines and two tenders.

12 Q According to this document, in 2017, you
13 had two brush rigs. Is that still accurate today?

14 A We have two brush rigs as of this time
15 today. In about a month, we have a brand-new one
16 that's supposed to be done being built, so we will
17 have three.

18 Q Okay. According to this document,
19 Chief Wooldridge informed Idaho Power that he did not
20 anticipate an impact to your Department resulting
21 from the transmission line. Do you agree with that
22 statement?

23 A I agree with that. You'll have to note,
24 though, that was in 2000 -- 2017 where it would only
25 cross a very small portion of our district. So --

1 but with that said, I do not anticipate major
2 problems.

3 Q Mr. Cooper and Ms. Webster asked you
4 questions about how long it would take for the --
5 your fire protection district to travel to certain
6 locations.

7 Would the amount of time it takes your fire
8 district to travel to the location of a fire be any
9 different if the fire started from a transmission
10 line versus another source, such as a campfire?

11 A The times would be the same.

12 MR. ROWE: That's all I have for now.
13 Thank you, Chief.

14 MR. GILLIS: Thank you, Mr. Rowe.

15 Anybody else from the Department of
16 Energy have any questions?

17 Hearing none, we'll go to the last and
18 final portion of our deposition today and that is any
19 questions in response that the pro se petitioners may
20 have. And I see Mr. Cooper has raised his hand.

21 EXAMINATION

22 BY MR. COOPER:

23 Q Earlier, Chief, you -- I asked you about
24 evacuation routes out of Morgan Lake --

25 A Mm-hmm.

1 Q -- Road here. And you mentioned that not
2 all vehicles could -- there are other routes out, but
3 not all vehicles could get out by those -- those
4 routes. Could you elaborate on what the other routes
5 are.

6 A Sure. And -- and if you're below Morgan
7 (indiscernible) -- okay. That's -- yeah, it is --

8 MS. PEASE: This is --

9 THE WITNESS: -- below Glass Hill Road.

10 MS. PEASE: -- (indiscernible).

11 UNIDENTIFIED SPEAKER: I cannot hear.

12 MS. PEASE: One -- one issue. That
13 was -- the -- I think there's some problems with the
14 connection. Mr. Cooper's question was pretty garbled
15 and so we couldn't understand the question on -- on
16 the Zoom.

17 BY MR. COOPER:

18 Q Okay. I'll repeat my question.

19 So earlier we were talking about evacuation
20 routes from the Morgan Lake Road area. The chief
21 talked about evacuating residents from -- if there
22 was a fire midway up Morgan Lake, that there were
23 other routes out for evacuation besides Morgan Lake
24 Road, itself.

25 So I just wanted to ask him what those

1 other routes are. Shall we say if there's a fire
2 near, like, Marvin Road in --

3 A You could.

4 Q -- (indiscernible) --

5 A But that wouldn't get you any more
6 different routes out. I was more specifically
7 talking about Glass Hill Road. There is a way out
8 going that way and coming out around Ladd Canyon.

9 Now, that is not -- although, if you're
10 local, you probably know that route. It is not a
11 passenger car route, per se, but it is a route in and
12 out of there if there is a fire lower down towards,
13 say, the City of La Grande on that.

14 Now, there is some back ways out off the
15 Marvin Road drive. I have never been through there.
16 I would assume some of the locals and folks with some
17 keys to gates probably know some different routes out
18 of there. But I would not say that it's common
19 knowledge to the average camper at Morgan Lake, those
20 other routes.

21 Q Mm-hmm. Would you say that Bushnell Lane
22 would be a way out from Glass Hill?

23 A Probably not, unless you had some bolt
24 cutters to get out 'cause the gates are locked. I
25 would -- talking about going out Glass Hill would be

1 out the road and come out on Ladd Canyon out along
2 that back side. There's no gates along there.

3 Q Approximately how many miles would that be?

4 A I would say eight or nine.

5 Q Okay.

6 A Again, I -- I would have to look at a map.
7 It's -- it's a little ways through there, but it is
8 a route.

9 Q Uh-huh. And you said that not all
10 passenger vehicles could travel that --

11 A At one point -- I haven't been through
12 there recently -- but at one point, it was pretty
13 rough road.

14 Q All right. So would you say it would take
15 a high-clearance SUV or a --

16 A Yeah.

17 Q -- camper?

18 A Probably an SUV.

19 MR. COOPER: I have no further
20 questions.

21 MR. GILLIS: Did Ms. Webster have
22 questions?

23 EXAMINATION

24 BY MS. WEBSTER:

25 Q My question is basically a point of

1 clarification from you.

2 You mentioned 22 properties along the
3 proposed transmission line and I wasn't clear if you
4 were saying that those 22 properties were in your
5 Department's response area. Is that what you were
6 saying?

7 A Negative. We have 22 new properties on the
8 Morgan Lake Road system from La Grande up, one on
9 Glass Hill. I am not sure the number on Marvin and
10 Wood Road, but from Morgan Lake up, we have -- I
11 believe it's 21 or 22 new properties that we've
12 annexed in since 2019.

13 Now, not every single one of those would be
14 on the transmission line route. It's just that I
15 don't know where -- which properties which route
16 would hit. And it -- there's a chance it would hit
17 none of them.

18 MS. WEBSTER: All right. Thank you.

19 THE WITNESS: Yep.

20 MR. GILLIS: Did Idaho Power have any
21 follow-up questions in response?

22 Hearing none, does Oregon Department of
23 Energy have any follow-up questions?

24 MR. ROWE: I don't believe we do. I
25 just -- I just posed that question to my colleague,

1 so can you just give me one moment?

2 I don't believe we have any other
3 questions. Thank you.

4 MR. GILLIS: Thank you, Mr. Rowe.

5 I believe that concludes today's
6 deposition. And we want to thank Chief Kretschmer so
7 very much. Thank you, everybody.

8 * * *

9 (Conclusion of Deposition.)

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Reporter's Certificate

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2 County of Clatsop)

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I, Katie Bradford, Certified Shorthand Reporter for Oregon, hereby certify that I transcribed a recorded deposition of **CRAIG KRETSCHMER**, taken on May 13, 2021, scheduled at 1:00 p.m.; that at said time and place set forth in the caption, the testimony of said witness was recorded on an MP3 recorder and transcribed in stenotype and reduced to computer-aided transcription under my direction; and that the foregoing transcript, *Pages 1 through 51*, both inclusive, constitutes a full, true and accurate record of the testimony given by said witness, and of all other oral proceedings had during the taking of said deposition and so reported by me in stenotype as aforesaid.

Witness my hand and CSR Seal at
Portland, Oregon, this 12th day of June, 2021.

Katie Bradford, CSR 90-0148
Court Reporter
(503) 267-5112