

Independent Evaluator Report on Wildfire  
Mitigation Plan Compliance  
Bureau Veritas North America, Inc.  
PacifiCorp dba Pacific Power



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**Bureau Veritas North America, Inc.  
C2 Group  
February 25, 2022**

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**Disclaimer**

This report has been compiled through the process of observation and the review of provided documents. The report is intended to serve only as a guide to assist with achieving compliance with regulatory requirements instituted by the Oregon Public Utility Commission (OPUC) for an independent evaluation of Investor-Owned Utility providers Wildfire Mitigation Practices. Bureau Veritas North America, Inc. (BVNA) is not the designer, implementer, or owner of the Wildfire Mitigation Plan (WMP) and is not responsible for its content, implementation, and/or any liabilities, obligations, or responsibilities arising therein.

The report reflects only those conditions and practices which could be ascertained through observation at the time of evaluation. This report is limited to those items specifically identified herein or as may be further required by OPUC at the time of the evaluation. The report does not represent those dangers, hazards, and/or exposures that do not in fact exist. BVNA shall only be responsible for the performance of the services identified or defined in our specific scope of services.

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## EXECUTIVE SUMMARY

### BACKGROUND

Under Senate Bill 762 (2021) and Oregon Administrative Rules (OAR) 860-300-0002 effective November 30, 2021, per Order No. 21-440, public utilities in the State of Oregon must adopt and operate in compliance with a risk-based Wildfire Mitigation Plan (WMP) that is filed with the Oregon Public Utility Commission (OPUC). The WMP will be evaluated by the OPUC and Bureau Veritas North America, Inc. (BVNA), who has been selected as an Independent Evaluator (IE) by the OPUC to serve as an Expert Witness to provide written testimony on the plan’s conformance to the State’s requirements.

### SCOPE

Pursuant to the OPUC’s Final IE Scope of Work (SOW) for the Utility Expert Witness, BVNA, in partnership with C2 Group, has reviewed Pacific Power’s 2022 Wildfire Mitigation Plan to verify compliance with the minimum requirements outlined in OAR 860-300-0002 as summarized in Table 1 below.

**Table 1: Wildfire Mitigation Plans and Updates**  
**Minimum Requirements as set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021**

**Senate Bill 762 (2021) and OAR 860-300**

OAR 860-300-0002	ID	Wildfire Mitigation Plan Requirements
(1)(a)(A) & (B)	1	Identified areas that are subject to a heightened risk of wildfire, including determinations for such conclusions, and are: (A) Within the service territory of the Public Utility, and (B) Outside the service territory of the Public Utility but within the Public Utility's right-of-way for generation and transmission assets.
(1)(b)	2	Identified means of mitigating wildfire risk that reflects a reasonable balancing of mitigation costs with the resulting reduction of wildfire risk.
(1)(c)	3	Identified preventative actions and programs that the Public Utility will carry out to minimize the risk of utility facilities causing wildfire.
(1)(d)	4	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.
(1)(e)	5	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.
(1)(f)	6	Identification of the community outreach and public awareness efforts that the Public Utility will use before, during and after a wildfire season.
(1)(g)	7	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.
(1)(h)	8	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.
(1)(i)	9	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.
(1)(j)	10	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.

Pacific Power provides electric service to more than 780,000 customers in 243 communities across Oregon, Washington, and northern California. The Oregon service territory is diverse and covers various areas of the state, including part of the Portland-metro area, west-central Oregon, southwest Oregon, and northeast Oregon. Pacific Power overhead electric assets in Oregon include:

- 3,053 line-miles of overhead transmission lines
- 14,040 line-miles of overhead distribution circuits.

Pacific Power has designated a portion of their Oregon service territory to be in Fire High Consequence Areas (FHCA), locations with a heightened risk of catastrophic wildfires, and started the implementation of wildfire mitigation measures for those areas as outlined in their WMP. Pacific Power overhead electric assets in Oregon in the FHCAs include:

- 413 line-miles of overhead transmission lines (14% of total)
- 2,267 line-miles of overhead distribution circuits (16% of total)

Pacific Power further designated a subset of the FHCA to areas with a heightened risk of catastrophic wildfires; these areas are referred to as Public Safety Power Shutoff Zones, or (PSPS) zones. These FHCA subset areas, deemed pockets of the most extreme fire risk, are subject to PSPS events. Pacific Power overhead electric assets in Oregon in the PSPS zones include:

- 1,336 line-miles of overhead distribution circuits (9% of total)
- 0 line-miles of overhead transmission circuits (0% of total)



**Figure 1:** Map of Pacific Power's Oregon Service Territory

In part, driven by climate change, the Western United States continues to experience an unprecedented number of catastrophic wildfires, many reaching higher and typically wetter elevations, and climate forecasts suggest this to be a continuing trend. These effects and trends affected much of Pacific Power's

service area and developed the 2022 Oregon WMP to outline and guide mitigation strategies to reduce the probability of utility-related wildfires. The plan's timeline, specific objectives, key deliverables, and estimated costs are covered within Pacific Power's WMP. The following includes a comprehensive review and assessment of Pacific Power's 2022 Oregon WMP by the OPUC's IE.

### Key Recommendations

The IE conducted a compliance review of Pacific Power's 2022 WMP by examining the information provided in the plan and comparing it to the plan requirements set forth in Senate Bill 762 and OAR 860-300. Additionally, the IE conducted interviews with Emergency Management officials to evaluate Pacific Power's outreach efforts regarding communication and operational protocols for the de-energization of power lines and adjusting power system operations to mitigate wildfires, along with the demonstration of community outreach efforts as it relates to Public Safety Power Shutoff (PSPS).

Assessments of the WMP sections were made following the Utility Expert Witness final SOW and further guided by BVNA's "Expectation of Demonstrated Compliance" matrix, which identifies detailed criteria for each plan required topic to guide the WMP evaluation.

The majority of the WMP sections appeared to be in compliance and adhere to requirements listed above in Table 1: Wildfire Mitigation Plans and Updates, Minimum Requirements as set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021. A summarization of the IE's key recommendations is demonstrated below:

- Details of the analysis completed to identify the PSPS Zones, as well as the industry approach taken, and resources involved in the map decision-making.
- Details of the analysis completed to identify the riskiest specific asset features, such as conductor type.
- The analysis of comparing measured risk reduction of plan activities to their costs, a cost-benefit analysis.
- A description of how the overall effectiveness of the plan activities will be measured, as well as information on wildfires in the service territory for the prior year.
- Details of how the objectives of key preventative actions have been met or not met, from the prior year of system operation.
- Pertinent information collected from after-action reports, including areas found for improvement, as well as results of annual surveys of Public Safety Partners.
- More information regarding procedures to re-energize lines after a PSPS event.
- Specific lessons learned regarding the execution of PSPSs.
- More information about the program of modifying system operations; wherein the service territory modifications are made, what conditions trigger the modifications, who makes the decision to modify operations, and the analysis used to determine such protocol.
- The anticipated timelines and estimated customer reach for the dynamic outreach activities include but are not limited to media campaigns, distribution of collateral to Community-Based Organizations and Public Safety Partners, and webinars or live wildfire safety and preparedness forums.
- Define activities that have been on going and those that are planned to move forward for communication with Public Safety Partners. Provide detail of the level of communication and demonstration of understanding of public impact from PSPS planned events, pre-planning, and coordination that occurs prior to a PSPS warning and activation of PSPS event.

- Reasoning or an explanation of the analysis used for choosing the shortened inspection frequencies.
- More information regarding the quality control/quality assurance program and audits for vegetation management work completed in the FHCAs; measures employed, frequency, and resource types.
- Analysis of historical events regarding Pacific Power's power lines, vegetation and wildfires that informed the vegetation management program's design.
- Provide details of the cost-benefit analysis completed to support decisions of program strategy and scale.
- Provide highlights of collaboration with industry channels, both information and knowledge shared from Pacific Power, and valuable information learned through the engagements.

The following paragraphs provide a comparative analysis of Pacific Power's WMP and the minimum requirements set forth in Section 3(2)(a)-(h), chapter 592, Oregon Laws 2021. This report considers all information demonstrated in Pacific Power's WMP, industry practices, depicted regulation and further contains IE recommendations for future WMPs.

## INDEPENDENT EVALUATOR REVIEW OF COMPLIANCE

Each report section hereafter contains an evaluation of the WMP requirements, organized by subject, as listed in the order in Table 1. Note, Pacific Power's WMP does not follow the order of items as demonstrated in Table 1.

Furthermore, the following terms are used in each table of compliance to illustrate the plans completeness. These definitions are provided for the reader to understand the level of demonstrated compliance found within the plan:

**Met:** The term acknowledges that the utility has adequately demonstrated information in the plan that meets the requirements of the identified rule.

**Substantially Met:** The term indicates that the utility has largely but not wholly met the requirements of the rule.

**Partially Met:** The term indicates that the utility has to some extent, or some degree has provided information within the plan that partially met or partially demonstrated the plan's compliance with the rule. More information, clarity, or detail is required to demonstrate the plan's compliance with the rule.

**Not Met:** The term indicates that the utility has not provided any information or detail that addresses the requirements of the rule or is grossly understated.

### Wildfire Mitigation Plan Adherence to Requirements

**Subject Area 1:** *Identified areas that are subject to a heightened risk of wildfire, including determinations for such conclusions both within and outside the service territory but within the utility right-of-way.*

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 1 of the plan, which covers wildfire area risk mapping in Pacific Power’s service territory and rights-of-way.

- Describe the approach, data inputs, analysis completed, quantitative risk asset tools and techniques, and industry standards utilized to identify areas subject to heightened risk of wildfire.
- Describe analysis to both evaluate risk from the environment and specific utility asset types (if considered).
- Describe process that will be followed to evaluate areas on an annual basis.

### Review of Initiatives

Pacific Power with the help of a wildland fire computer modeling consultant identified areas of elevated wildfire risk in their Oregon service territory and rights-of-way and refer to the areas as Fire High Consequence Areas (FHCA). The risk analysis focuses on the potential impact in terms of harm to people and damage to property and used various data sets, data sources and processes to complete the modeling. Individual blocks of geographic area, each a two-kilometer square cell, received a grid score corresponding to its relative wildfire risk. Pacific Power validated the final computer modeling, including reviewing historic fire perimeters and Pacific Power’s California mapping project for calibration and assignment of statewide grid cell scores.

The FHCA includes approximately 2,700 miles of overhead lines. Pacific Power further examined the FHCA to identify areas of “most extreme risk” called Public Safety Power Shutoff (PSPS) Zones. The PSPS Zones include 1,336 overhead distribution miles, no overhead transmission miles, and 21,105 customers. Typical fire weather patterns in the FHCA are reviewed along with wind patterns, vegetation, and population to define the PSPS Zones; however, no detail of the analysis depicting specific methodology and assumptions is provided in the WMP. Or a map that overlays the PSPS Zones with the FHCAs has been demonstrated in a nature that defines clear borders and impacts to critical infrastructure.

Pacific Power analyzed records of unplanned outages over seven years to measure the risk of utility assets. Outage types identified with possible correlation to ignition potential include equipment failure, operational and tree preventable. No information is provided regarding specific utility asset features (i.e., small copper conductor, wood cross arms) that were analyzed to have the highest risk. Pacific Power does state the recognition and understanding that advanced fire risk modeling methodologies exist and that they plan to evolve and assess their wildfire risk model.

### Demonstrated Compliance

Table 2 summarizes the findings of demonstrated compliance for Subject Area 1.



**Table 2: Subject Area 1 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Describe the approach, data inputs, analysis completed, quantitative risk asset tools and techniques, and industry standards utilized to identify areas subject to heightened risk of wildfire.	Substantially Met
2	Describe analysis to both evaluate risk from the environment and specific utility asset types.	Substantially Met
3	Describe process that will be followed to evaluate areas on an annual basis.	Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power include details of the analysis completed to identify the PSPS Zones, as well as the industry approach taken, and resources involved in the map decision-making. With the PSPS Zones designating where PSPSs may take place, and where budget is being spent hardening infrastructure, it is important to clarify the measures taken to identify the PSPS Zones.

The IE also recommends that for future WMPs Pacific Power include details of the analysis completed to identify the riskiest specific asset features, such as conductor type. With distribution hardening projects in the PSPS Zones projected to take eight years, it is important to understand how projects are being prioritized based on varying asset risk levels.

### ***Subject Area 2: Identify means of mitigating wildfire risk that reflects a reasonable balancing of mitigation cost with the resulting reduction of wildfire risk.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 2 of the plan, which covers wildfire risk mitigation and the balance of cost with wildfire risk reduction.

- Describe the main activities being utilized to reduce wildfire risk, how they reduce risk, and how the utility's planned chosen activities balance costs with effectiveness of reducing wildfire risk.
- Describe how the effectiveness of the activities will be measured or have been measured.

### Review of Initiatives

Throughout the WMP Pacific Power identifies multiple activities utilized to reduce fire risk, as well as how they reduce wildfire risk. Pacific Power also outlines core principles that guide their WMP investments. There is not a specific section of the report that describes an analysis completed that measures the risk reduction of specific activities and compares it to its cost to complete the activities.

The WMP does not provide a history of wildfires in Pacific Power’s service territory, and the subset of those wildfires that were identified as being caused by Pacific Power utility assets. A complete baseline description of recent wildfire history is not included to provide context and trends over time to assist in measuring the value of the risk reduction investments.

## Demonstrated Compliance

Table 3 summarizes the findings of demonstrated compliance for Subject Area 2.

**Table 3: Subject Area 2 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Describe the main activities being utilized to reduce wildfire risk, how they reduce risk, and how the utility's planned chosen activities balance costs with effectiveness of reducing wildfire risk.	Substantially Met
2	Describe how the effectiveness of the activities will be measured, or have been measured.	Substantially Met

## Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power include the analysis of comparing measured risk reduction of plan activities to their costs, a cost-benefit analysis.

The IE also recommends that for future WMPs Pacific Power include a description of how the overall effectiveness of the plan activities will be measured, as well as information on wildfires in the service territory for the prior year.

## **Subject Area 3: *Identify preventative actions and programs that the utility will carry out to minimize the risk of utility facilities causing a wildfire.***

The IE utilized the following “Expectation of Demonstrated Compliance” description to evaluate Subject Area 3 of the plan, which covers preventative actions and programs utilized to reduce the risk of utility infrastructure causing a wildfire.

- What falls out of the risk assessment as high-level risk, priorities and quantitative results from the preventative actions or programs.

## Review of Initiatives

Pacific Power outlines in the WMP key preventative actions: enhanced inspections and vegetation management, system hardening, situational and conditional awareness, system operations, field operations, and PSPS implementation. Each action is described in how it will be executed, and how it will minimize the risk of utility facilities causing a wildfire.

## Demonstrated Compliance

Table 4 summarizes the findings of demonstrated compliance for Subject Area 3.

**Table 4: Subject Area 3 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	What falls out of the risk assessment as high-level risk, priorities and quantitative results from the preventative actions or programs.	Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power include details of how the objectives of key preventative actions have been met or not met, from the prior year of system operation and further demonstrates to what degree the preventable measure has reduced the risk of the utility’s infrastructure from the cause of fire.

**Subject Area 4: *Demonstration 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 wildfire, promote the safety of the public and first responders and preserve health and communication infrastructure.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 4 of the plan, which covers outreach to regional, state, and local entities regarding protocols for de-energizing power lines and adjusting power system operations.

- Provide geographical boundary of impacted areas of the service territory that may be affected by a PSPS event or modified power system operations.
- Provide list of specific regional, state, and local entities, including municipalities, who have been reached out to, when are they reached out to, who will be reached out to, and the results of the outreach. Provide detail of topics covered, and input from agencies that have impacted utility wildfire risk reduction planned activities.

### Review of Initiatives

Pacific Power participates in Public Safety Partner meetings and workshops throughout the year, including County Emergency Management partner meetings, and pre and post fire season collaboration meetings with local, state, and federal fire officials. They also plan to complete 4-6 workshops with local Public Safety Partners in FHCAs and continue to facilitate a tabletop exercise within two of the PSPS zones. Detail is not provided of input from agencies received to date on Pacific Power’s WMP.

In addition, Pacific Power indicates that along with workshops, it indicates specifically participation in monthly, quarterly, annual County EM partner meetings. It is further stated that products of these meetings or workshops result in After Action Reports, Comprehensive Improvement Plans and Annual Surveys.

### Demonstrated Compliance

Table 5 summarizes the findings of demonstrated compliance for Subject Area 4.

**Table 5: Subject Area 4 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Provide geographical boundary of impacted areas of the service territory that may be affected by a PSPS event or modified power system operations.	Met
2	Provide list of specific regional, state, and local entities, including municipalities, who have been reached out to, when are they reached out to, who will be reached out to, and the results of the outreach. Provide detail of topics covered, and input from agencies that have impacted utility wildfire risk reduction planned activities.	Substantially Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power include pertinent information collected from After Action Reports, including areas found for improvement, as well as results of annual surveys provided by Public Safety Partners and how the input affected power system operations, communication, and preplanning.

For the 2022 WMP, an overview of input from Public Safety Partners on the plan that influenced the final details of the WMP would have been helpful to evaluate the effectiveness of Public Safety Partner coordination outreach to date. Due to commentary from Emergency Managers (EM) and staff interviews, the WMP should clearly demonstrate the method and intent of communication and coordination of necessary information in all Pacific Power territories with their area EM’s or Public Safety Partners. Further demonstration as to Pacific Power staff assignments responsible for coordination with Public Safety Partners in all territories illustrating consistent application of communication protocols, collaboration, and messaging of information is needed.

### ***Subject Area 5: 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.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 5 of the plan, which covers protocols for de-energizing power lines and adjusting power system operations.

- Overview of steps completed by the utility leading up to a PSPS and closing a PSPS event.
- Detailed descriptions of each step of the process, including: information used, and analysis completed to make decisions for the steps, utility staff involved in the steps and the utility decision-maker(s), interaction with entities outside of the utility that impact decisions, communication protocols (internal and external), the typical duration of each step.
- Description of adjusted power system operations to mitigate wildfire, and description of operations in non-wildfire threat conditions. Include details of information used, analysis

completed before adjusting operations, utility staff involved with adjusting operations, reasoning/logic to specific operational choices.

- Describe vulnerabilities to stakeholders such as emergency responders and public safety officials when de-energizing of the system occurs and what is necessary to communicate when a re-energization occurs due to an emergent situation and how they are defined.

### Review of Initiatives

Pacific Power has a series of defined steps and decision points documented to follow for deciding when to initiate a Public Safety Power Shutoff (PSPS), including individuals and departments who are involved with the steps and decisions. Standard notification timelines have also been established for de-energization warnings and re-energization estimated completion. Little detail is provided regarding the steps to re-energize after an event.

Pacific Power is modifying some of its existing system operations for transmission lines and distribution circuits to mitigate wildfire risk. Modifications include more frequently disabling distribution reclosers and employing modified relay settings and patrolling prior to line testing. Additionally Pacific Power is installing Communicating Fault Current Indicators (CFCIs) to better remotely pinpoint fault locations. It is unclear where in Pacific Power’s service territory and when the modifications are being deployed.

### Demonstrated Compliance

Table 6 summarizes the findings of demonstrated compliance for Subject Area 5.

**Table 6: Subject Area 5 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Overview of steps completed by the utility leading up to a PSPS and closing a PSPS event.	Met
2	Detailed descriptions of each step of the process, including: information used and analysis completed to make decisions for the steps, utility staff involved in the steps and the utility decision-maker(s), interaction with entities outside of the utility that impact decisions, communication protocols (internal and external), typical duration of each step.	Met
3	Description of adjusted power system operations to mitigate wildfire, and description of operations in non-wildfire threat conditions. Include details of: information used, and analysis completed before adjusting operations, utility staff involved with adjusting operations, reasoning/logic to specific operational choices.	Substantially Met
4	Describe vulnerabilities to stakeholders such as emergency responders and public safety officials when	Met

	<p>de-energizing of the system occurs and what is necessary to communicate when a re-energization occurs due to an emergent situation and how they are defined.</p>	
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### Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power include more information regarding procedures to re-energize lines after a PSPS event. It is also recommended that specific lessons learned or findings from after action reports be included in future WMPs regarding the execution of PSPSs.

The IE recommends that for future WMPs Pacific Power include more information about their program of modifying system operations; where in the service territory modifications are made, what conditions trigger the modifications, who makes the decision to modify operations, and the analysis used to determine such protocol. Without specific information included in the WMP, it is difficult to measure successes and procedure adjustments in future WMPs.

### **Subject Area 6: *Identification of the community outreach and public awareness efforts that the Public Utility will use before, during, and after a wildfire season.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 6 of the plan, which covers community outreach and public awareness efforts before, during, and after wildfire season.

- Comprehensive list of completed community outreach and public awareness effort types and planned (new or repeat type of engagement and outreach) effort types in 2022.
- Detailed description of each activity: content and messaging of outreach and communication, why it was chosen, its expected audience, its expected impact, measures to ensure communication techniques are successful in reaching the target audience, who from the utility supports the effort, outside organizations who support the effort, and when it is planned (before, during and after wildfire season).

### Review of Initiatives

Pacific Power has included a multi-platform media approach to their education and awareness strategy, including traditional platforms such as print radio and planning to integrate social media platforms. Pacific Power also intends to include a variety of print and digital collateral including, but not limited to, fact sheets, brochures, infographics, and safety checklists as resources available through their website and distributed to Community-Based organizations and Public Safety Partners. Bill messages are also planned for the 2022 season in English and Spanish versions. To support wildfire safety, preparedness, or PSPS-related phone inquiries from customers, Pacific Power employs Spanish-speaking customer care professionals and contracts a service that translates communications in real-time over the phone in a variety of languages and dialects. Pacific Power also includes plans for robust content on wildfire mitigation programs, wildfire safety, and various resources and tools available to customers.

### Demonstrated Compliance

Table 7 summarizes the findings of demonstrated compliance for Subject Area 6. All expectations of demonstrated compliance are met, except for one area being partially met; detailed descriptions of each activity: content and messaging of outreach and communication, why it was chosen, its expected

audience, its expected impact, measures to ensure communication techniques are successful in reaching the target audience, who from the utility supports the effort, outside organizations who support the effort, and when it is planned (before, during and after wildfire season). What conditions drive the activation of Community Resource Centers, and how are the placement of the Community Resource Centers determined.

Pacific Power outlines the high-level methods of outreach; however, they do not provide details of messaging content, the expected target audience for various methods of outreach, expected impact of outreach, details, numbers, or reach of Community-Based Organization or Public Safety Partners to capture distribution range or footprint, or timeframes of outreach activities for a cohesive understanding of (before, during and after wildfire season) efforts for maximum impact.

**Table 7: Subject Area 6 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Comprehensive list of completed community outreach and public awareness effort types and planned (new or repeat type of engagement and outreach) effort types in 2022.	Met
2	Detailed descriptions of each activity: content and messaging of outreach and communication, why it was chosen, its expected audience, its expected impact, measures to ensure communication techniques are successful in reaching the target audience, who from the utility supports the effort, outside organizations who support the effort, and when it is planned (before, during and after wildfire season).	Substantially Met

**Recommendations for Future WMPs**

The IE recommends that for future WMPs, Pacific Power include the anticipated timelines and estimated customer reach for the dynamic outreach activities, including but not limited to media campaigns, distribution of collateral to Community-Based Organizations and Public Safety Partners, and webinars or live wildfire safety and preparedness forums. With a diverse customer base, it is critical to assess the effectiveness and traction of the various outreach methods, especially for high-risk areas, to help identify if outreach efforts require a tailored approach based on demographic, region, or wildfire risk level.

**Subject Area 7: 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.**

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 7 of the plan, which covers utility infrastructure inspections and corrections in the areas Pacific Power identified as high wildfire risk.

- Description of inspection activities in non-high wildfire risk areas, separated by distribution and transmission (inspection types, frequencies, correction protocols).
- Description of procedures and standards utilized to guide inspection activities in wildfire risk areas.
- Description of inspection activities in wildfire risk areas, detailed by miles and structures of impacted distribution and transmission assets, inspection types and methods, frequency, infraction categorization, infraction protocol.
- Explanation of logic/reasoning in selected inspection practices in wildfire risk areas.

## Review of Initiatives

Pacific Power is supplementing its existing overhead electric asset inspections and corrections program in the FHCA's. Additional primary elements are 1. Creating a fire threat classification for specific Condition Codes, 2. Increasing inspection frequencies in the FHCA's, and 3. Reducing correction timeframes for fire threat conditions.

Pacific Power is also performing enhanced inspections annually utilizing infrared technology that is gathered using a helicopter flying over lines. Transmission lines operating at 69 kV and higher are included in the enhanced inspection program, and corrections of condition codes follow the same timeline as conditions found in FHCA's via other inspection methods.

The table below is included in Pacific Power's WMP and summarizes the frequency of non-FHCA inspections and FHCA inspection frequencies.

*Table 5: Planned Inspection Frequency in the FHCA*

Inspection Type	Non-FHCA Frequency (years)	FHCA Inspection Frequency (years)
<b>OH Distribution and Local Transmission (Less than 200 kV)</b>		
Visual	2	1
Detailed	10	5
Pole Test & Treat	10	10
<b>OH Main Grid (More than 200kV) – No Change</b>		
Visual	1	1
Detailed	2	2
Pole Test & Treat	10	10

For asset conditions identified by Pacific Power as having characteristics associated with a higher risk of wildfire potential, the timeline for correction is shortened from the typical 24- month timeframe and is summarized in the table below included in Pacific Power's WMP.

*Table 6: Planned Correction Timeframes for Fire Threat Conditions in the FHCA*

Condition	FHCA Correction Timeframes <sup>7</sup>
A – imminent	Immediate
A – fire risk and in the FHCA	90 days
B – fire risk and in the FHCA	12 months



### Demonstrated Compliance

Table 8 summarizes the findings of demonstrated compliance for Subject Area 7. All expectations of demonstrated compliance are met, except for one area being partially met: the explanation and reasoning in selected inspection practices in wildfire risk areas.

Pacific Power outlines the logic for shortening the correction timeframe for fire threat conditions, however, they do not provide reasoning, or an explanation of the analysis used for choosing the shortened inspection frequencies.

**Table 8: Subject Area 7 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Description of inspection activities in non-high wildfire risk areas, separated by distribution and transmission (inspection types, frequencies, correction protocols).	Met
2	Description of procedures and standards utilized to guide inspection activities in wildfire risk areas.	Met
3	Description of inspection activities in wildfire risk areas, detailed by miles and structures of impacted distribution and transmission assets, inspection types and methods, frequency, infraction categorization, infraction protocol.	Met
4	Explanation of logic/reasoning in selected inspection practices in wildfire risk areas.	Partially Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs, Pacific Power provide reasoning, or an explanation of the analysis used for choosing the shortened inspection frequencies. For example, for overhead distribution and transmission less than 200 kV, the detailed inspection frequency is shortened from 10 to 5 years in FHCAs. No summary of the analysis is provided that supports the inspection frequency, such as the type and volume of fire threat conditions found in FHCAs historically or fire threat conditions in the FHCAs that have caused wildfires in the past. It is unclear what information drove the decisions of the FHCA inspection frequencies chosen. Supportive information demonstrating how historical efforts have confirmed the success of modified procedural or operational changes is lacking.

**Subject Area 8: *Description of the procedures, standards, and time frames that the Public Utility will use to carry out vegetation management in areas the Public Utility identified as heightened risk of wildfire.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 8 of the plan, which covers vegetation management procedures, standards and timeframes in the areas Pacific Power identified as high wildfire risk.

- Description of vegetation management activities in non-high wildfire risk areas (trimming and clearing protocol and frequency, inspection frequency, QA/QC program, separated by transmission and distribution).
- Description of vegetation management activities in wildfire risk areas, detailed by miles and structures of impacted distribution and transmission assets, trimming, and clearing protocol and frequency, inspections, QA/QC program (separated clearly between distribution and transmission activities).
- Explanation of logic/reasoning in selected vegetation management practices in wildfire risk areas.
- Description of the process for reviewing practices and methods to ensure effectiveness with plan procedures.

### Review of Initiatives

Pacific Power is supplementing its existing vegetation management program in the FHCAs. Additional elements are 1. Completing annual vegetation inspections for all lines or portions of lines in the FHCA, 2. Increasing minimum post-work clearances to 12 feet of pruning for distribution circuits in the FHCA, and 3. Completing pole clearing at the ground, a ten-foot radius cylinder up to eight feet vertically, for poles with equipment in the FHCA.

### Demonstrated Compliance

Table 9 summarizes the findings of demonstrated compliance for Subject Area 8.

**Table 9: Subject Area 8 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Description of vegetation management activities in non-high wildfire risk areas (trimming and clearing protocol and frequency, inspection frequency, QA/QC program, separated by transmission and distribution).	Met
2	Description of vegetation management activities in wildfire risk areas, detailed by miles and structures of impacted distribution and transmission assets, trimming, and clearing protocol and frequency, inspections, QA/QC program (separated clearly between distribution and transmission activities).	Substantially Met
3	Explanation of logic/reasoning in selected vegetation management practices in wildfire risk areas.	Substantially Met

4	Description of the process for reviewing practices and methods to ensure effectiveness with plan procedures.	Met
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### Recommendations for Future WMPs

The IE recommends that for future WMPs, Pacific Power provide more information regarding their quality control/quality assurance program and audits for vegetation management work completed in the FHCAs; measures employed, frequency, and resource types. It is also recommended that any analysis of historical events pertaining to Pacific Power’s power lines, specific equipment type, vegetation, and wildfires be provided that informed the program’s design and its success factors.

### ***Subject Area 9: Identification of the development, implementation, and administrative costs for the plan, which includes a discussion of risk-based cost and benefit analysis, including consideration of technologies that offer co-benefits to the utility's system.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 9 of the plan, which covers the cost to develop, implement and administer the WMP, risk-based cost and benefit analysis, and consideration of technologies that offer co-benefits.

- Summary of plan activities that are incremental costs to "baseline" utility operations.
- Two detailed tables, one for capital costs and one for expense (O&M) costs, with annual costs for each plan activity, and a forecast of costs for the activities described in the plan that are anticipated to go beyond 2022.
- Summary discussion of decision-making process on planned expenditures, based on risk-based cost and benefit analysis, and co-benefits to the utility's system.

### Review of Initiatives

Pacific Power identifies thirteen program categories in their WMP that require an increase in investment over multiple years. The program categories are listed in one of two tables, one for planned incremental capital expenditures, and one for planned incremental expense expenditures, each with costs forecasted from 2022 to 2026 (five-year forecast).

The guiding principle for Pacific Power’s investment strategy is that the frequency of ignition events related to electric facilities can be reduced by engineering more resilient systems that experience fewer fault events. Although Pacific Power states that programs consider the costs and benefits of their approaches, no detail is provided of the cost-benefit analysis completed.

Co-benefits of the WMP are listed, such improving public safety, work safety and reliability.

### Demonstrated Compliance

Table 10 summarizes the findings of demonstrated compliance for Subject Area 9.

**Table 10: Subject Area 9 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Summary of plan activities that are incremental costs to "baseline" utility operations.	Met
2	Two detailed tables, one for capital costs and one for expense (O&M) costs, with annual costs for each plan activity, and a forecast of costs for the activities described in the plan that are anticipated to go beyond 2022.	Met
3	Summary discussion of decision making process on planned expenditures, based on risk-based cost and benefit analysis, and co-benefits to the utility's system.	Substantially Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs, Pacific Power provide details of the cost-benefit analysis completed to support decisions of program strategy and scale. The programs are consistent with emerging industry best practices; however, there is little information provided of any cost-benefit assessments made to make budgeting decisions and if any initial budgets were modified based on cost-benefit analysis completed.

**Subject Area 10: *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.***

The IE utilized the following “Expectation of Demonstrated Compliance” descriptions to evaluate Subject Area 10 of the plan, which covers participation in workshops and forums, research and analysis to maintain expertise in leading edge technologies and operational practices, and the application of the technologies and practices.

- Comprehensive list of national and international forums and state workshops attended by utility staff, and nature of participation in the forums and workshops (who attended from the utility, who presented from the utility).
- Research and analysis the utility is doing or has completed regarding leading edge technology and operational practices.
- Results of research and analysis of technology and operational practices that have been implemented into cost-effective wildfire mitigation solutions.

### Review of Initiatives

Pacific Power is an active member and participates in regional, national, and international industry collaboration channels around wildfire risk mitigation for utilities. Collaboration channels are listed in the

WMP, however little detail is provided on specific outcomes of the engagements, and information shared by Pacific Power in the forums.

Details of research and development is provided for partnerships with the Oregon Department of Forestry and Texas A&M University.

### Demonstrated Compliance

Table 11 summarizes the findings of demonstrated compliance for Subject Area 10.

**Table 11: Subject Area 10 Summary of Demonstrated Compliance**

Description No.	Expectation of Demonstrated Compliance	Demonstrated Compliance
1	Comprehensive list of national and international forums and state workshops attended by utility staff, and nature of participation in the forums and workshops (who attended from the utility, who presented from the utility).	Substantially Met
2	Research and analysis the utility is doing or has completed regarding leading edge technology and operational practices.	Met
3	Results of research and analysis of technology and operational practices that have been implemented into cost-effective wildfire mitigation solutions.	Met

### Recommendations for Future WMPs

The IE recommends that for future WMPs Pacific Power provide highlights of collaboration with industry channels, both information and knowledge shared from Pacific Power, and valuable information learned through the engagements.

## APPENDIX