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July 24, 2020

Via Electronic Filing

Public Utility Commission of Oregon Attn: Filing Center 201 High St. SE, Suite 100 Salem OR 97301

Re: In the Matter of PACIFICORP, dba PACIFIC POWER

Request for a General Rate Revision.

Docket No. UE 374

Dear Filing Center:

Please find enclosed the redacted Rebuttal Testimony and Exhibits of Lance D. Kaufman (AWEC/500-504) and Michael P. Gorman (AWEC/600-603) on behalf of the Alliance of Western Energy Consumers ("AWEC") in the above-referenced docket.

Please note that AWEC's rebuttal testimony contains both Protected Information and Highly Protected Information that is being handled in accordance with Order Nos. 20-040 and 20-131. The confidential version of AWEC's filing has been encrypted with 7-zip software and is being transmitted electronically to the Commission, consistent with Order No. 20-088.

Thank you for your assistance. If you have any questions, please do not hesitate to call.

Sincerely,

<u>/s/ Jesse O. Gorsuch</u> Jesse O. Gorsuch

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the **Alliance of Western Energy Consumers' Confidential and Highly Confidential Rebuttal Testimony and Exhibits** upon the parties shown below by sharing copies by electronic mail, consistent with Order No. 20-088.

Dated this 24th day of July, 2020.

Sincerely,

/s/ Jesse O. Gorsuch
Jesse O. Gorsuch

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BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

	UE 3/2
In the Matter of)
PACIFICORP, dba PACIFIC POWER)
Request for a General Rate Revision.)
)

REBUTTAL TESTIMONY OF LANCE D. KAUFMAN ON BEHALF OF ALLIANCE OF WESTERN ENERGY CONSUMERS

(REDACTED VERSION)

July 24, 2020

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EXHIBIT LIST

CONFIDENTIAL AWEC/501 – PACIFICORP RESPONSES TO DATA REQUESTS

AWEC/502 – EXCERPT OF AWEC OPENING TESTIMONY IN UM 1662

CONFIDENTIAL AWEC/503 - REVISED AWEC ADJUSTMENTS TO KIEWIT DECOMMISSIONING REPORT

AWEC/504 – AWEC SUMMARY OF PACIFICORP RESPONSE TO AWEC DR 100

1		I. INTRODUCTION AND SUMMARY
2	Q.	PLEASE STATE YOUR NAME AND OCCUPATION.
3	A.	My name is Lance Kaufman. I am the principal economist of Aegis Insight. My
4		qualifications are included in Exhibit AWEC/301. I am testifying on behalf of the
5		Alliance of Western Energy Consumers ("AWEC").
6 7 8	Q.	ARE YOU THE SAME LANCE KAUFMAN WHO FILED OPENING TESTIMONY AND REBUTTAL/CROSS ANSWERING TESTIMONY ON DECOMMISSIONING COSTS FOR AWEC?
9	A.	Yes.
10	Q.	WHAT IS THE PURPOSE OF YOUR TESTIMONY?
11	A.	I respond to PacifiCorp, dba Pacific Power's ("PacifiCorp" or "Company") Reply
12		Testimony as well as the Opening Testimony of Oregon Public Utility Commission
13		("Commission") Staff and the Oregon Citizens' Utility Board ("CUB").
14 15	Q.	HAVE THERE BEEN ANY DEVELOPMENTS SINCE PACIFICORP FILED REPLY TESTIMONY?
16	A.	Yes. The parties to this docket have reached a settlement in principle on all rate spread
17		and rate design issues. Accordingly, my testimony does not address these issues.
18	Q.	PLEASE SUMMARIZE YOUR TESTIMONY.
19	A.	I make the following recommendations in my testimony:
20		1. Find the cost of PacifiCorp's Jim Bridger Units 3 and 4 SCR and Hunter Unit 1
21		Baghouse and SCR investments not prudent. Exclude the associated costs from
22		rates.
23		2. Use the decommissioning and remediation costs originally filed in UM 1968. If
24		the Commission relies on the Kiewit decommissioning study, include AWEC's
25		proposed adjustments, as modified in this Rebuttal Testimony.

1		3. Reject PacifiCorp's proposal to offset the unrecovered investment in Cholla Unit
2		4 with Tax Cuts and Jobs Act ("TCJA") benefits; additionally, exclude certain
3		costs associated with Cholla from rates, as initially recommended by Bradley G.
4		Mullins and modified in this Rebuttal Testimony.
5		4. Exclude certain costs associated with the Deer Creek Mine closure, as initially
6		recommended by Mr. Mullins and modified in this Rebuttal Testimony.
7		5. Reject PacifiCorp's Annual Power Cost Adjustment ("APCA") proposal.
8		6. Condition the prudence of the Energy Vision 2020 Projects and transmission on
9		the cost and benefit commitments identified in Mr. Mullins' testimony.
10		7. Reject PacifiCorp's wildfire mitigation cost recovery mechanism; alternatively,
11		condition cost recovery under any approved mechanism on an earnings test.
12		8. Modify the TAM guidelines to require PacifiCorp to provide most workpapers
13		concurrently with its initial annual filing.
14		9. Consider CUB's recommendation for a non-bypassable charge on direct access
15		to recover coal plant decommissioning costs in UM 2024.
16	Q.	ARE YOU ADDOPTING PREVIOUSLY FILED TESTIMONY IN THIS CASE?
17	A.	Yes. I am adopting the Opening Testimony of Bradley Mullins.
18 19	Q.	HOW HAVE YOUR RECOMMENDATIONS CHANGED RELATIVE TO OPENING TESTIMONY?
20	A.	I have reviewed PacifiCorp's rebuttal testimony related to the issues that I raised or
21		adopted from Mr. Mullins. I also reviewed related testimony from Staff, Citizens' Utility
22		Board ("CUB"), and Sierra Club. As a result of this review, I withdraw some
23		recommendations where the concerns raised in Opening Testimony have been resolved. I
24		also modify or provide alternate recommendations for issues where PacifiCorp's reply

testimony adequately addresses the issue. I withdraw Mr. Mullins' wind repowering removed equipment amortization adjustment. I also withdraw Mr. Mullins' Deer Creek ratebase adjustment. I modify the recommended treatment of liquidated damages and other future costs not appropriately considered unrecovered investment to allow PacifiCorp to defer these costs. Finally, I withdraw certain concerns related to PacifiCorp's proposed changes to the Transition Adjustment Mechanism ("TAM") guidelines.

Q. DO YOU HAVE ANY GENERAL COMMENTS IN RESPONSE TO PACIFICORP'S REPLY TESTIMONY?

PacifiCorp's testimony contains bald assertions that appear to be attempts to discredit my testimony. For example, PacifiCorp incorrectly argues that my testimony is inconsistent with past testimony or comments. PacifiCorp asserts that I misrepresent important facts, which I do not. PacifiCorp states that my analysis is seemingly random and concludes that the Commission should disregard AWEC's analysis entirely.

PacifiCorp complains about details of my adjustments that were not fully explained, and does not understand why I made modeling choices, but PacifiCorp did not submit a single discovery request or attempt informal communication regarding any of my testimony or analysis. In place of my analysis, PacifiCorp proposes that the Commission rely on vague assertions of "certainty", offers numerous counter claims with no supporting analysis or data, and recommends the Commission rely on analysis which PacifiCorp admits is incorrect.

A.

¹/ PAC/2300 Link/32, 37, and 38.

^{2/} PAC/2300 Link/38

 $[\]frac{3}{2}$ Id. at 49:13-17.

See, for example, AWEC/501 at 21-22 (PacifiCorp response to AWEC DR 138 and 139).

AWEC/501 at 29 (PacifiCorp response to AWEC DR 145).

Q. IS YOUR TESTIMONY IN THIS CASE CONSISTENT WITH YOUR PAST TESTIMONY AND ANALYSIS?

Yes. PacifiCorp argues that my testimony is inconsistent with my testimony in Docket No. UE 307⁶ and Staff comments from the 2013 IRP. However, I did not sponsor or approve Staff comments in the 2013 IRP. In UE 307 I testified that PacifiCorp was imprudently investing in Bridger Coal Company rather than burning Powder River Basin coal at the Bridger Plant. My analysis in that docket looked at coal costs over a 20-year period. PacifiCorp claims this is inconsistent with my current testimony which argues that PacifiCorp should have included an analysis of pollution control investments with plant lives consistent with Oregon depreciable lives.

My testimony remains consistent because I am not arguing that PacifiCorp should have performed all 2013 IRP analysis with a 2025 Jim Bridger retirement date. I present that analysis as an important scenario which PacifiCorp failed to analyze. My testimony and analysis in UE 307 could certainly have included IRP-type sensitivity analyses. However, the testimony that PacifiCorp was concerned with was net power cost testimony, which is generally acknowledged to have a narrower scope and should not be expected to replicate IRP-type analysis.

Q. WAS PACIFICORP ACCURATE IN CLAIMING THAT YOUR TESTIMONY MISREPRESENTED IMPORTANT FACTS?

A. No. PacifiCorp asserts that I misrepresent important facts regarding the 2013 IRP. In

Opening Testimony I note that the IRP coal analysis Table V3.9 reflected results from the

Wyoming and Utah CPCN process. PacifiCorp asserts that this is a misrepresentation.

A.

^{6/} PAC/2300, Link/32

⁷/ PAC/2300, Link/37

^{8/} PAC/2300, Link/38:12-18.

1 However, the paragraph immediately preceding this table in the 2013 IRP states "Table 2 V3.9 shows the PVRR(d) results among the nine different scenarios analyzed in support 3 of the Jim Bridger Unit 3 and Unit 4 CPCN analysis." If the table in fact represented new 4 analysis and not reproductions of the CPCN analysis, it was the 2013 IRP that was 5 misrepresenting facts, not my testimony in this Docket. 6 DO YOU HAVE MORE DIRECT RESPONSES TO PACIFICORP'S CONCERNS Q. 7 WITH YOUR TESTIMONY AND ANALYSIS? 8 A. Yes, I address PacifiCorp's specific concerns with my testimony by issue below. This 9 section is presented as a general response to PacifiCorp's inaccurate attack on my 10 credibility. 11 II. POLUTION CONTROL INVESTMENTS 12 Q. PLEASE SUMMARIZE THIS ISSUE. 13 In Opening Testimony, I argue that PacifiCorp's Jim Bridger and Hunter pollution A. 14 control investments were imprudent. I identified multiple failures in PacifiCorp's 15 approach to analyzing the investments and I showed that, given information available at 16 the time, PacifiCorp should have known that the investments would be uneconomic. In 17 this section I respond to PacifiCorp's specific concerns with my analysis and I 18 demonstrate that PacifiCorp did not dispute my specific numbers or results. 19 In responding to my testimony PacifiCorp raised long-term fuel supply issues 20 associated with Jim Bridger. Jim Bridger's long-term fuel supply challenges are another 21 component of Jim Bridger costs that PacifiCorp failed to account for in the SCR 22 investment decision. I supplement my Opening Testimony arguments by presenting

additional evidence regarding the long-term fuel supply for Jim Bridger and alternative

compliance scenarios.

23

2 3	Q.	WHAT ISSUES DID YOU ANALYZE IN YOUR OPENING TESTIMONY IN RELATION TO THE JIM BRIDGER SCRS AND HUNTER BAGHOUSE AND LOW NOX BURNERS?
4	A.	My Opening Testimony raised the following concerns regarding the pollution control
5		investments:
6		a) Oregon social and political landscape.
7		b) Risk related to coal costs.
8		c) Risk related to market sales.
9		d) Potential economies associated with alternative compliance.
10		e) Potential value of water rights.
11 12	Q.	WHAT WAS PACIFICORP'S RESPONSE TO YOUR ANALYSIS OF THE OREGON POLITICAL LANDSCAPE?
13	A.	I argued that in 2013 Oregon's political landscape pointed to future challenges for coal
14		generation. I stated that PacifiCorp should have included analysis of the SCRs under
15		PacifiCorp's depreciable life. PacifiCorp's response was to misinterpret and discredit my
16		testimony. PacifiCorp offers no alternative analysis demonstrating that SCRs would be
17		economic under a 2025 retirement date for the "with SCR" scenario for Jim Bridger ^{9/} or a
18		2029 retirement date for the "with baghouse" scenario for Hunter. 10/ PacifiCorp does not
19		and cannot dispute that these retirement dates would have made the investments
20		uneconomic.

Instead PacifiCorp appears to misinterpret my testimony by providing analysis of a 2025 depreciable life but a 2037 retirement date. PAC/2300, Link/31 AWEC 501 at 21 (PacifiCorp Response to AWEC DR 138).

<u>10</u>/

1 WHAT IS THE BASIS FOR PACIFICORP ASSUMING A 2037 RETIREMENT Q. 2 DATE FOR JIM BRIDGER? 3 PacifiCorp appears to have no basis for this. In response to AWEC discovery, PacifiCorp A. 4 indicates the basis was the Company's depreciation study. 11/ I participated in the 5 Company's most recent depreciation docket. The Company's depreciation consultant relies on PacifiCorp-provided retirement dates for Jim Bridger. PacifiCorp provides 6 7 retirement dates to the consultant that are consistent with its IRP. This results in a circular 8 rationale that ignores the fact that, prior to the 2013 IRP, Oregon had set Jim Bridger's 9 depreciable life at 2025. To the extent that the basis for the retirement date is simply to 10 align with the depreciable life, the Oregon depreciable life is as reasonable or a more 11 reasonable end of life date than the non-Oregon depreciable life. 12 HOW DOES PACIFICORP RESPOND TO YOUR ASSERTION THAT COAL Q. 13 COSTS ARE UNCERTAIN AND THAT PACIFICORP SHOULD HAVE 14 MODELED COAL RISK? 15 PacifiCorp argues that coal costs have little variance but goes on to admit that the A. 16 observed variance in coal costs is due to variations in annual consumption at Jim Bridger. 12/ 17 IS PACIFICORP CORRECT THAT BCC COAL COST HAS LITTLE 18 0. 19 VARIENCE? 20 No. PacifiCorp asserts without providing evidence that coal costs have historically had A. 21 lower variance than natural gas, and that this provides a basis for not testing sensitivity of 22 the SCR investments to elevated coal costs. PacifiCorp provides no analysis of historic

data to support this assertion. I asked PacifiCorp to provide BCC actual and forecasted

coal costs for ten years prior to the 2013 IRP, and PacifiCorp declined to provide data

23

AWEC/501at 18 (PacifiCorp Response to AWEC DR 134).

PAC/2600, Ralston/16: 19-17:13.

prior to $2011.\frac{13}{}$ The price per ton went from \$34 in $2010\frac{14}{}$ to \$94 in 2016. Even if the 1 2 market price for coal is more stable than natural gas (which has not been established) 3 there has been a clear and striking divergence of BCC coal from market coal costs. 4 PacifiCorp also admits that the cost of BCC coal is sensitive to volumes, and therefore 5 the level of dispatch of Jim Bridger. 15/ SHOULD PACIFICORP HAVE KNOWN THAT COAL COSTS WOULD BE 6 Q. 7 HIGHER THAN EXPECTED? 8 A. Yes. Three potential scenarios for Jim Bridger span the range of reasonable outcomes for 9 Jim Bridger fuel needs: low coal consumption, base case or medium coal consumption, and high coal consumption. All three scenarios result in higher costs than assumed by 10 11 PacifiCorp. 12 The base and high coal consumption scenario results in a depletion of Bridger 13 Coal Company coal reserves, and a transition to market supply for coal. PacifiCorp's 14 2013 Business Plan showed BCC coal reserve depletion in 2024. Left notes in UE 307 that PacifiCorp's 2013 expectation for the cost of transitioning to market coal included a 15 investment to enhance railroad unloading facilities, ¹⁷ and that this 16 17 investment was not modeled in the 2013 IRP's SCR scenario analysis. 18/1 This means both

2013.

18

19

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the base expectation and the high coal consumption scenario should have had higher coal

costs than used in the 2013 IRP and that this information was available to PacifiCorp in

AWEC/501 at 16-17 (PacifiCorp Response to AWEC DR 133 Confidential Attachment).

Docket UE 207, Staff/200, Dougherty/12.

^{15/} PAC/2600, Ralston/16.

Docket UE 307, Staff/200, Kaufman/68 lines 12 and 13.

¹⁷ AWEC/501 at 19, 37-38 (Response to AWEC DR 135, Docket UE 307 Staff/400, Kaufman/19).

Docket UE 307 Staff/200, Kaufman/68 lines 12 and 13; AWEC/501 at 35-36 (OPUC DR 1 from UE 307).

The low coal consumption scenario drives BCC coal costs higher due to the fixed operating costs of BCC. According to PacifiCorp, this is the reason actual coal costs were substantially higher than forecasted coal costs. PacifiCorp should have been aware in 2013 that BCC coal costs were sensitive to volume, and that a low coal use scenario would result in increased coal costs. This means all three reasonable scenarios for BCC coal costs indicate higher coal costs than used in the 2013 IRP and that this information was available to PacifiCorp in 2013.

O. HOW DID PACIFICORP MODEL BCC COAL COSTS IN THE 2013 IRP?

9 A. PacifiCorp used a single coal cost input for all scenarios and sensitivities. PacifiCorp's BCC cost forecast appears static and was not sensitive to Jim Bridger dispatch volumes.

The forecast used a price per MMBTU that was, on average, than

PacifiCorp's 2013 Business Plan coal forecast which was generated at the same time. 20

13 Figure 1 Confidential BCC Coal Cost Forecasts

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Q. HOW DID PACIFICORP RESPOND TO YOUR CONCERN REGARDING MARKET PRICES?

A. PacifiCorp observed that market prices were tied to gas price scenarios. As a result, gas scenarios correspond to market price scenarios. This alleviates some of my concern regarding market prices. However, I continue to have some concern regarding regulated utilities making investments that rely predominantly on off system sales for economic value.

AWEC/501 at 27-28 (PacifiCorp Response to AWEC DR 144, Confidential Attachment).

²⁰/ AWEC/501 at 16-17 (PacifiCorp Response to AWEC DR 133 Confidential Attachment).

1 HOW DID PACIFICORP RESPOND TO YOUR CONCERN REGARDING Q. 2 ALTERNATE COMPLIANCE? 3 PacifiCorp alleges that alternate compliance options were not available.²¹/₂ However, A. 4 PacifiCorp failed to document negotiations for alternate compliance options, and 5 PacifiCorp cannot point to a single piece of communication requesting the alternate 6 compliance options proposed by me or other intervenors. 22/ HAVE ANY ADDITIONAL ALTERNATE COMPLIANCE OPTIONS BECOME 7 Q. 8 APPARENT TO YOU SINCE YOU DRAFTED YOUR OPENING TESTIMONY? Yes. PacifiCorp is currently pursuing regional haze compliance options for Jim Bridger 1 9 A. 10 and 2 through reduced dispatch, rather than through SCR installation. PacifiCorp admits 11 to not exploring this as a potential compliance option for Units 3 and $4.\frac{23}{4}$ 12 Q. IS PACIFICORP'S ARGUMENT THAT COMPLIANCE OPTIONS ARE NOT AVAILABLE PURSUASIVE EVIDENCE OF PRUDENCE? 13 14 A. No, PacifiCorp did not demonstrate that it prudently negotiated on customers' behalf to 15 avoid costly pollution control investments. PacifiCorp's failure to collaborate with 16 regulators to identify mutually beneficial alternative compliance should not be accepted 17 as a basis for not modeling alternative compliance options. In fact, PacifiCorp should 18 have performed economic analysis of compliance options throughout the regional haze 19 planning process.

^{21/} PAC/2300 Link/15

AWEC/501 at 15 (PacifiCorp Response to AWEC Data Request 132).

AWEC/501 at 14 (PacifiCorp Response to AWEC Data Request 130).

1 2	Q.	HOW DID PACIFICORP RESPOND TO YOUR CONCERN REGARDING WATER RIGHTS?
3	A.	PacifiCorp disagreed with my forecasted value but provided no alternative forecast.
4		Instead, PacifiCorp continued to assert that the value of water rights should not be part of
5		the SCR investment decision.
6 7	Q.	IS PACIFICORP'S ARGUMENT THAT WATER RIGHTS SHOULD NOT BE VALUED CREDIBLE?
8	A.	No. PacifiCorp admits that Jim Bridger water rights have value. 24/ PacifiCorp's position
9		is that forecasts are speculative, and therefore forecasts should be zero. If the same
10		rationale were applied to market prices and capital costs, all portfolios would have the
11		identical PVRR, \$0. The reality is that just because something is difficult to forecast does
12		not mean that a clearly incorrect forecast should be used.
13 14 15	Q.	PLEASE SUMMARIZE THE ADDITIONAL EVIDENCE YOU PROVIDE IN THIS TESTIMONY REGARDING THE PRUDENCE OF JIM BRIDGER AND HUNTER SCRS.
16	A.	For the Jim Bridger SCR investments, I show that in 2013 PacifiCorp expected to invest
17		in railroad facilities for Jim Bridger, but these costs were not modeled when
18		making the SCR investment decision.
19		I also introduce an additional alternate compliance option that PacifiCorp is
20		actively pursuing for Jim Bridger 1 and 2 involving reduced dispatch, but continued coal
21		generation without SCR installation. PacifiCorp failed to explore this option for Jim
22		Bridger 3 and 4 or Hunter Unit 1.

AWEC/501 at 29 (PacifiCorp Response to AWEC Data Request 145).

1 2	Q.	PLEASE SUMMARIZE AND RESPOND TO STAFF'S PROPOSAL REGARDING JIM BRIDGER SCRS.
3	A.	Staff proposes a management disallowance of 10 percent of the cost of the SCR for Jim
4		Bridger 3 and 4, or \$.25/ Staff notes that it is difficult to quantify the impact to
5		customers associated with PacifiCorp's actions.
6	Q.	DO YOU AGREE WITH STAFF'S PROPOSAL?
7	A.	No, Staff's proposed adjustment is not sufficient. PacifiCorp's own analysis shows that
8		low gas scenarios result in PVRR(d) losses of million under the low gas
9		scenarios. These numbers don't account for any of the myriad of concerns raised by
10		AWEC and other parties. While I agree that the exact dollar impact to customers is
11		difficult to quantify, it is likely more than the proposed Staff adjustment.
12	Q.	WHAT IS YOUR RECOMMENDATION FOR THIS ISSUE?
13	A.	I continue to support my initial recommendation of full disallowance of the SCR
14		investments at Jim Bridger 3 and 4 and the baghouse and low NOx burners at Hunter 1.
15		III. AMI ROLLOUT
16	Q.	PLEASE SUMMARIZE THIS ISSUE.
17	A.	When PacifiCorp implemented its AMI rollout, PacifiCorp retired approximately \$60
18		million in metering assets. $\frac{26}{}$ This represented 85 percent of all assets in the Oregon
19		Meter account 370.27 In my Opening Testimony I argue that the rollout resulted in
20		dollars in PacifiCorp's ratebase that are appropriately considered dollars associated with
21		the retired meters. I further argued that PacifiCorp should not receive a return on these
22		dollars, consistent with longstanding legal precedent.

<u>25</u>/

<u>26</u>/

Staff/700, Soldavini/50:7.

AWEC/501 at 2-5 (PacifiCorp Response to AWEC DR 28).

Docket No. UM Exhibit PAC/202 Spanos/74 shows the December 31, 2017 meter account at \$70.5 million. <u>27</u>/

1	Q.	PLEASE SUMMARIZE PACIFICORP'S RESPONSE TO THIS ISSUE.
2	A.	PacifiCorp argues that all plant removed as part of the AMI rollout was fully depreciated,
3		that group depreciation practice allows PacifiCorp to consider all removed assets to be
4		fully depreciated, and therefore none of the dollars remaining in ratebase should be
5		attributed to the retired meters. $\frac{28}{}$
6 7	Q.	WHAT IS THE FUNDAMENTAL QUESTION THAT THE COMMISSION NEEDS TO ADDRESS FOR THIS ISSUE?
8	A.	Dollars associated with the retired meters clearly remain in PacifiCorp's proposed
9		ratebase. The fundamental question that the Commission must address is whether it is
10		legal to include a full rate of return on these dollars in customer rates.
11 12	Q.	HOW CAN DOLLARS ASSOCIATED WITH RETIRED METERS CLEARLY REMAIN IN THE PROPOSED RATEBASE?
13	A.	Consider that as part of the AMI rollout, PacifiCorp replaced meters that were in service
14		less than a year. 29/ PacifiCorp clearly did not fully depreciate these meters, yet when
15		PacifiCorp retired these meters, they reduced both plant in service and accumulated
16		depreciation by equal amounts. This means the original cost of the meter remains in
17		ratebase. The retirement of the AMI meters resulted in a statewide replacement of meters.
18		The table below illustrates how the full-scale retirement of meters is treated under group
19		depreciation. All meters are removed from service, yet ratebase remains unchanged. ³⁰
20		Clearly dollars remain in rates that are associated with plant that is not used and useful.

<u>28</u>/ PAC/3100 McCoy/39

AWEC/501 at 2-5 (PacifiCorp Response to AWEC DR 28, Attachment 1 (Opening Testimony Exhibit did <u>29</u>/ not include DR)

<u>30</u>/ This table is for illustration purposes only and does not reflect actual accounting transactions.

1 Table 1

	Original Cost	Accumulated Depreciation	Ratebase
Pre-rollout Meters	\$70 million	\$50 million	\$20 million
Retire Most Meters	(\$70 million)	(\$70 million)	
Post-retirement	\$0	(\$20 million)	\$20 million

2 Q. HAS THE COMMISSION PREVIOUSLY EXCLUDED DOLLARS ASSOCIATED WITH RETIRED PLANT FROM RECEIVING A FULL RETURN?

4 A. Yes, in addition to the legal precedent involving the Trojan Nuclear Plant, discussed in
5 my Opening Testimony, 31/2 the Commission approved recovery of PacifiCorp's remaining
6 investment in the Deer Creek Mine with a lower return once it was removed from service.
7 The Commission found that its authorized return "reasonably reflects the time value of
8 money, and does not represent a return on the undepreciated investment." 32/

Q. DOES PACIFICORP OFFER ANY DISTINCTION BETWEEN THE AMI ROLLOUT AND GENERATION PLANT?

12 A. PacifiCorp provides no explanation for why the retired meters should be treated
12 differently than other retired plant. PacifiCorp's argument in this case hinges on standard
13 practices in group depreciation. However, PacifiCorp admits that generation plant and
14 distribution plant are depreciated according to group depreciation practices. PacifiCorp's
15 argument in this case clearly does not apply to generation plant. There is no basis to treat
16 meters differently than generation with respect to the used and useful requirement for
17 ratebase.

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^{31/} AWEC/300, Kaufman/48:4-9.

Docket No. UM 1712, Order No. 15-161 at 8 (May 27, 2015).

Q. WHAT DIFFERENTIATES THE RETIREMENTS ASSOCIATED WITH THE AMI ROLLOUT FROM NORMAL RETIREMENTS?

A.

Normal retirements involve small incremental retirements within a property group. I agree with PacifiCorp that under normal retirement circumstances involving small incremental retirements PacifiCorp's proposed treatment is appropriate. This is because the small incremental retirements are consistent with group depreciation models, which contemplate small incremental retirements across an extended period of time.

However, the retirements associated with the AMI rollout resulted in early retirements of nearly every retirement unit within the Oregon meter account. PacifiCorp admits that this is the first time PacifiCorp has made a state-wide replacement of assets in a single depreciation group in Oregon. However, PacifiCorp has recently performed an early retirement of wind generation assets, as discussed in AWEC/100 Mullins/10. These retirements involved the early retirements of wind generation assets as part of PacifiCorp's wind repowering project. This situation is very similar to the AMI rollout, where PacifiCorp retired a large group of assets early for economic reasons.

There is an important difference in PacifiCorp's accounting for the wind repowering project and the AMI rollout. With the wind repowering project, PacifiCorp recorded depreciation expense equal to the undepreciated value of the retired wind assets. The additional depreciation expense recorded for the wind retirements reduced PacifiCorp's ratebase by an amount equal to the undepreciated value of the retired asset, and therefore satisfied ORS 757.355. With the AMI rollout, PacifiCorp made no such adjustment and PacifiCorp's proposed rates are in violation of ORS 757.355.

AWEC/501 at 30 (PacifiCorp Response to AWEC DR 147).

AWEC/501 at 32-33 (PacifiCorp Response to AWEC Data Request 151).

1	Q.	WHAT IS TOOK RECOMMENDATION FOR THIS ISSUE:
2	A.	I continue to support the recommendation from my Opening Testimony. I recommend a
3		reduction of PacifiCorp's ratebase of \$16,126,628. I recommend a regulatory asset of
4		equal size be established and recovery of the regulatory asset over a 10-year period with
5		an interest rate equivalent to the current 10-year treasury bond yield, plus 100 basis
6		points. PacifiCorp's depreciation expense should be recalculated to reflect the reduced
7		ratebase.
8		IV. CHOLLA UNIT 4
9	Q.	PLEASE SUMMARIZE AWEC'S CHOLLIA RELATED ADJUSTMENTS.
10	A.	In opening testimony Mr. Mullins proposed four Cholla-related adjustments:
11		1. Unrecovered Investment Interest Rate
12		2. Cholla Liquidated Damage and CWIP
13		3. Cholla EDFIT
14		4. Cholla Property tax
15 16	Q.	HOW DOES PACIFICOPR'S RESPONSE TESTIMONY ADDRESS THE UNRECOVERED INVESTMENT INTEREST RATE?
17	A.	PacifiCorp does not directly respond to AWEC's testimony regarding the unrecovered
18		investment interest rate. However, PacifiCorp appears to propose an alternative treatment
19		of offsetting unrecovered investment against the Tax Cuts and Jobs Act ("TCJA")
20		benefit, eliminating the need to apply interest to either. As I note later, I disagree with
21		PacifiCorp's offset proposal because it fails to match costs with benefits. I maintain my
22		recommendation to apply a reduced interest rate to the unrecovered plant balance during
23		its amortization period.

1 Q. PLEASE SUMMARIZE THE LIQUIDATED DAMAGES ISSUE.

2 A. PacifiCorp has decided to close the Cholla plant early. As part of this closure PacifiCorp 3 expects to experience unrecovered investment and incur liquidated damages associated 4 with its coal supply agreements. In opening testimony PacifiCorp proposed that the 5 unrecovered investment and liquated damages be fixed as part of this rate case and placed into a regulatory asset.³⁵/ AWEC argued against this treatment for Cholla CWIP and 6 7 liquidated damages, recommending that CWIP and liquidated damages be removed, and 8 that liquidated damages be recovered through the a future power cost filing. 36/ In Rebuttal 9 Testimony, PacifiCorp modified its requested treatment of these costs, recommending 10 that they be offset against the benefits of the TCJA.³⁷/ PacifiCorp also argued that 11 liquidated damages should not be considered a power cost, but that if they are considered 12 a power cost, the cost should flow through the TAM mechanism.

Q. WHAT IS YOUR RESPONSE TO PACIFICORP'S PROPOSAL TO OFFSET
 THE CHOLLA UNRECOVERED INVESTMENT WITH BENEFITS FROM THE
 TAX CUT AND JOBS ACT?

- 16 A. I do not believe this is appropriate treatment. PacifiCorp includes forecasted costs that

 17 will be incurred over several years in the future in the unrecovered investment amount. 38/

 18 Under PacifiCorp's proposal future costs are netted against past benefits. This raises

 19 several problems.
- 1. The TCJA benefits should be returned to customers as soon as possible, while the
 unrecovered investment should be recovered from customers through 2025 to match the
 timing of the costs of early retirement with the benefits of early retirement.

^{35/} PAC/1300 McCoy/33

^{36/} AWEC/100 Mullins/5

^{37/} PAC/2000 Wilding/9

AWEC/501 at 31 (PacifiCorp Response to AWEC Data Request 149).

1 2. The Commission will lose the opportunity to review the actual costs and make a prudence 2 determination on them. 3 3. If actual costs are below forecasted costs there is no clear method to true up the 4 differences. 5 4. PacifiCorp makes no adjustment for rate of return, effectively allowing PacifiCorp free 6 use of the TCJA benefit between the present and the date that PacifiCorp actually incurs 7 the costs. PLEASE EXPLAIN WHAT FUTURE COSTS PACIFICORP PROPOSES TO FIX 8 Q. IN THIS RATE CASE. PacifiCorp's proposal includes \$19.6 million in liquidated damages, which AWEC 10 A. 11 addressed in Opening Testimony, and \$35 million in decommissioning cost. PacifiCorp states that the decommissioning cost will not be incurred until the end of 2025. 12 HOW DOES THE COMMMISSION LOSE THE OPPORTUNITY TO REVIEW 13 Q. ACTUAL COSTS AND MAKE PRUDENCE DETERMINATIONS? 14 15 The Commission does not have all information necessary to make a prudence A. 16 determination on these costs because the Company has not yet incurred them. However, 17 under the Company's proposal there is a risk that the Company will argue retroactive 18 ratemaking prevents parties from contesting the prudence of these costs after the costs are 19 known. IS THERE AN EXPECTATION THAT CUSTOMERS WILL PAY FOR ACTUAL 20 0. **DECOMMISSIONING COSTS FOR CHOLLA?** 21 22 Yes, my understanding is that, because Cholla is a common closure among all of A. 23 PacifiCorp's states, all states will pay their allocated share of actual, prudently incurred 24 decommissioning costs. 39/ The Company's proposal does not clearly spell out how actual

²⁰²⁰ Protocol §§ 4.1.3.1, 4.3.1.4.

1		costs will be trued up when some decommissioning costs have been embedded in the
2		unrecovered investment TCJA offset.
3 4	Q.	DOES THE COMPANY'S PROPOSAL FAIRLY ACCOUNT FOR THE TIME VALUE OF MONEY?
5	A.	No. Under PacifiCorp's proposal, PacifiCorp will receive free access to capital because
6		the TCJA benefits will cease to accumulate a return between the time that PacifiCorp
7		records the transaction benefit write-down and when PacifiCorp incurs the expenses.
8 9	Q.	WHAT ALTERNATIVE WOULD REMEDY YOUR CONCERNS RELATED TO THESE ISSUES?
10	A.	These costs should be recovered in a manner that allows parties to review the costs as
11		they are incurred. PacifiCorp's effort to group all these costs together makes it difficult
12		for parties to review the costs and ensure they are properly accounted for. I recommend
13		that rather than offset future costs, PacifiCorp file to defer these costs. This will allow
14		parties to carefully review the costs once they are known and measurable. Unrecovered
15		investment, which is a known cost, should be amortized through to 2025 and the TCJA
16		benefits should be returned to customers in 2021.
17 18 19	Q.	AWEC PREVIOUSLY RECOMMENDED THAT LIQUIDATED DAMAGES BE INCLUDED IN A POWER COST ADJUSTMENT. DO YOU CONTINUE TO SUPPORT THAT RECOMMENDATION?
20	A.	Either a deferral of liquidated damages or inclusion in a power cost adjustment
21		mechanism would be acceptable to AWEC.

1	Q.	PLEASE SUMMARIZE THE EDTTI ISSUE.
2	A.	Mr. Mullins showed in opening testimony that a portion of EDFIT will be freed up with
3		the closure of Cholla 4.40/ PacifiCorp agrees.41/ I support Mr. Mullins' recommended
4		offset.
5	Q.	PLEASE SUMMARIZE THE CHOLLA PROPERTY TAX ISSUE.
6	A.	In Opening Testimony, AWEC proposed excluding Cholla property tax. 42/ Mr. Mullins
7		argued that because Cholla 4 has been removed from rates, property tax associated with
8		Cholla 4 should also be removed from rates. PacifiCorp responded that PacifiCorp will
9		continue to pay property tax on Cholla after the closure. 43/
10 11 12	Q.	DID PACIFICORP'S REPLY TESTIMONY PROVIDE ANY ARGUMENT FOR WHY EXPENSE ASSOCIATED WITH PROPERTY THAT IS NOT USED AND USEFULL SHOULD BE INCLUDED IN RATES?
13	A.	No. PacifiCorp only argues that property tax will continue to be assessed and, therefore
14		customers should pay this expense. 44/
15 16	Q.	WHAT IS THE BASIC QUESTION THAT THE COMMISSION HAS TO DECIDE REGARDING THIS ISSUE?
17	A.	The Commission must decide whether the property tax for Cholla violates ORS 757.355
18		If Cholla is not used and useful, can PacifiCorp charge customers for Cholla property
19		tax?
20 21	Q.	DO CUSTOMERS RECEIVE ANY BENEFIT FROM PROPERTY TAX ASSOCIATED WITH CHOLLA ONCE IT IS REMOVED FROM SERVICE?
22	A.	I am not aware of any benefit, and PacifiCorp has not identified any benefit.

<u>40</u>/ AWEC/100, Mullins/6

<u>41</u>/ PAC/3100, McCoy/35 and 36.

<u>42</u>/

<u>43</u>/

AWEC/100, Mullins/6. PAC/3100, McCoy/52. PAC/3100, McCoy/52. <u>44</u>/

2 3 4 5	Ų.	NOT PROVIDE THE AMOUNT OF PROPERTY TAX ASSOCIATED WITH CHOLLA 4 AND REQUESTED THAT PACIFICORP IDENTIFY THIS AMOUNT IN ITS REPLY TESTIMONY. DID PACIFICORP RESPOND TO THIS REQUEST?
6	A.	No; however, PacifiCorp does state that that the "state of Arizona will continue to assess
7		the value of this facility in which the Company will continue to incur property tax
8		expense." 45/ Accordingly, the amount of property tax associated with Cholla 4 should be
9		readily identifiable.
10	Q.	WHAT IS YOUR RECOMMENDATION FOR THE COMMISSION?
11	A.	I adopt Mr. Mullins' original recommendation that Cholla property tax be excluded from
12		rates. Alternatively, if the Commission finds that these costs are legally allowable in
13		rates, I recommend that they be included with decommissioning costs and trued up at the
14		end of the decommissioning process. This will ensure customers do not pay more for
15		property taxes than is assessed, recognizing that PacifiCorp has not identified the amount
16		of property taxes applicable to Cholla 4 and that PacifiCorp admits that property tax will
17		decline as Cholla is decommissioned. 46/
18		V. DEER CREEK MINE
19 20	Q.	WHAT ISSUES DID AWEC RAISE IN OPENING TESTIMONY RELATED TO THIS ISSUE?
21	A.	Mr. Mullins raised three issues:
22		1. Ratebase
23		2. Coal Lease Abandonment Royalties, and
24		3. Closure Costs

<u>45</u>/

PAC/3100, McCoy/52:22-23. AWEC/501 at 34 (PacifiCorp Response to AWEC Data Request 152). <u>46</u>/

PacifiCorp's reply testimony resolves Mr. Mullins' issue regarding ratebase; however, I continue to maintain the royalties and closure cost issues.

In Opening Testimony AWEC noted that the Deer Creek closure costs were substantially

3 O. PLEASE SUMMARIZE THE CLOSURE COST ISSUE.

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higher than expected and recommended including only the forecasted closure costs.

Expected closure costs were \$20 million, while actual closure costs were \$45 million. 47/

AWEC also recommended excluding future royalty payments. PacifiCorp responds that even with closure costs 225 percent higher than forecast, the closure of Deer Creek was economic. However, PacifiCorp failed to adequately justify the cost overrun. PacifiCorp had not met its burden of showing that the cost overruns were prudent.

Q. WHAT WAS PACIFICORP'S EXPLANATION FOR COST OVERRUNS?

12 A. PacifiCorp states that "the increase is primarily due to the inability to gain approval of the
13 bulkhead engineering designs and time required to permit and construct the alternate de14 watering pipeline to the Huntington plant." PacifiCorp does not explain why
15 PacifiCorp failed to gain approval, nor does PacifiCorp attempt to justify this failure as a
16 reasonable result of prudent management. PacifiCorp relies instead on an observation that
17 even with the poorly managed costs, the closure of the mine was more economic than
18 continued operation of the mine.

^{47/} AWEC/102, Mullins/16

^{48/} PAC/3100, McCoy/42

2	Ų.	EXTENDED CLOSURE PERIOD.
3	A.	Nearly all the costs between 2016, the original closure date, and 2018, the actual closure
4		date, were labor costs or payments to the PacifiCorp subsidiary East Mountain Energy. 49/
5		Costs included PacifiCorp management fees, incentive payments, bonuses, and awards.
6 7 8 9	Q.	GIVEN THAT COST OVERRUNS WERE THE RESULT OF FAULTY PLANS, AND THAT THEY INCLUDE PRIMARILY PAYMENTS TO SUBSIDIARIES, INCENTIVES, AND BONUSES, IS THE OVERAL COST-BENEFIT OF THE CLOSURE RELEVANT?
10	A.	No. The Commission should focus on why there were cost overruns and whether the
11		additional costs are appropriately included in rates.
12	Q.	WHAT IS YOUR RECOMMENDATION FOR THIS ISSUE?
13	A.	I adopt Mr. Mullins' recommendation that PacifiCorp's recovery for closure costs be
14		capped at the amount assumed in UM 1712.
15 16	Q.	PLEASE SUMMARIZE THE COAL LEASE ABANDONMENT ROYALTY ISSUE.
17	A.	In Opening Testimony, Mr. Mullins recommended excluding future royalty costs from
18		rates. PacifiCorp can defer these costs if PacifiCorp incurs them. PacifiCorp appears to
19		agree that royalty costs are uncertain and testifies that it "does not have a specific time
20		line of when actual royalty obligations will be settled." 50/ I adopt Mr. Mullins'
21		recommendation to exclude these costs from rates at this time.

 $[\]frac{49}{}$ AWEC/504.

PAC/3100, McCoy/45:17-18.

2 PLEASE SUMMARIZE AWEC'S RECOMMENDATION IN ITS OPENING Q. 3 TESTIMONY ON PACIFICORP'S ANNUAL POWER COST ADJUSTMENT. 4 A. AWEC opposed PacifiCorp's Annual Power Cost Adjustment ("APCA"), which would 5 allow dollar-for-dollar recovery of PacifiCorp's net power costs ("NPC"). AWEC argued 6 that this mechanism was contrary to Commission policy that provides for a sharing of 7 risk in NPC variances between customers and shareholders through the existing Power 8 Cost Adjustment Mechanism ("PCAM"). AWEC also showed that the APCA is nothing 9 more than PacifiCorp's attempt to relitigate issues the Commission has rejected multiple 10 times before. 51/ Commission Staff and the Oregon Citizens' Utility Board similarly 11 oppose the APCA. $\frac{52}{}$ 12 HOW DOES PACIFICORP RESPOND TO AWEC'S AND OTHER PARTIES' Q. 13 ARGUMENTS AGAINST THE APCA? 14 PacifiCorp's primary argument seems to be that circumstances have changed since it A. 15 previously requested modifications to the PCAM, and that now is the right time for the 16 Commission to revisit its principles underlying the existing PCAM structure. 17 Specifically, PacifiCorp claims that variable renewable generation is difficult to forecast 18 accurately, and the increased penetration of this generation, driven both by economics 19 and state/regional policies, will exacerbate NPC forecast errors. 53/ 20 IS PACIFICORP'S POSITION SUPPORTED BY THE EVIDENCE? 0. 21 No. It is certainly true that the amount of variable generation in PacifiCorp's portfolio, A. 22 and in the West generally, has increased and will continue to increase in the future. It is

VI. ANNUAL POWER COST ADJUSTMENT

^{51/} AWEC/100, Mullins/27:1-37:17.

^{52/} Staff/1300, Gibbens/9:1-41:18; CUB/100, Jenks/30:3-45:3.

^{53/} PAC/2000, Wilding/56:18-57:13; PAC/3000, Graves/14:9-15:4.

not true, however, that this shift has made it more difficult for PacifiCorp to forecast its NPC overall or exacerbated the Company's under-recovery of NPC. In fact, the opposite has occurred.

PacifiCorp provides its forecasted and actual NPC for the previous twelve years in Table 6 on page 55 of Mr. Wilding's testimony. That data shows that, for the six years between 2008 and 2013, deviations between forecasted and actual NPC averaged \$27,249,869. For the six-year period between 2014 and 2019, by contrast, deviations between forecasted and actual NPC averaged \$19,023,974. In fact, using the data from Table 7 on page 65 of Mr. Wilding's testimony, one can see that PacifiCorp's forecasts over the 2014-2019 period improved even without incorporating the effects of the day ahead/real time ("DART") adjustment – the average deviation was \$24,329,420, still \$3 million less on average than the deviations the Company experienced between 2008 and 2013. This improvement occurred even as PacifiCorp was "add[ing] 4,789 MW of new renewable resources." 54/ It is also in spite of the fact that: (1) PacifiCorp's NPC was approximately \$45 million higher on average over the latter six-year period than the earlier six-year period (thus allowing for the potential for greater deviations from the forecast); and (2) a portion of the latter six years of data also includes EIM transactions and production tax credits, which the earlier six-year period did not (thus also creating the potential for greater deviations from forecast). In other words, PacifiCorp's own data contradicts its primary argument that increased renewable penetration will lead to greater NPC forecast errors.

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^{54/} PAC/2000, Wilding/59:15.

1 Q. HOW DOES AWEC'S PROPOSAL FOR EV 2020 PERFORMANCE REQURIENTS AFFECT VARIABILITY OF POWER COSTS?

A. In Opening Testimony Mr. Mullins recommended performance guarantees for the EV
 2020 projects. This recommendation should offset PacifiCorp's concerns related to

5 renewable generation variability.

6 Q. IS PACIFICORP'S POSITION CONTRADICTED BY ANY OTHER DATA?

7 A. Yes. PacifiCorp's testimony glosses over important historical context for the 8 development of the current PCAM.^{55/} Both PacifiCorp's and Portland General Electric 9 Company's ("PGE") existing PCAMs have their origin in Commission Order 05-1261, in 10 which the Commission rejected a stipulation to create a PCAM for PGE's hydro generation. 56/ In its decision, the Commission noted the significant annual variability of 11 12 hydro generation. 57/ Such variability warranted "a mechanism to adjust PGE's rates for 13 variations in hydro-related costs ... if it is reasonably designed."58/ The Commission 14 then identified four criteria for a properly designed PCAM: "(1) Limited to Unusual 15 Events; (2) No Adjustments if Overall Earnings are Reasonable; (3) Revenue Neutrality; and (4) Long-Term Operation."59/ Staff's Opening Testimony discusses these criteria in 16 detail. 60/ Later in UE 180, the Commission used these criteria to develop a PCAM for 17 PGE that applied to its total power costs, $\frac{61}{}$ which is the same PCAM in existence today 18 19 for both PGE and PacifiCorp. The variability of hydro generation, however, was the 20 initial instigator for the development of these PCAMs.

^{55/} PAC/3000, Graves/5:1-19.

^{56/} Docket Nos. UE 165/UM 1187, Order No. 05-1261 (Dec. 21, 2005).

^{57/} Id. at 8.

 $[\]overline{\underline{Id.}}$ (emphasis added).

<u>59/</u> Id.

^{60/} Staff/1300, Gibbens/12:19-20:11.

^{61/} Docket Nos. UE 180/UE 181/UE 184, Order No. 07-015 at 26-27 (Jan. 12, 2007).

O. WHY IS THIS HISTORY RELEVANT TO PACIFICORP'S APCA?

2 A. Because intermittent renewable generation has been shown to be no more variable than 3 hydro generation. In UM 1662, AWEC's testimony showed that the year-to-year 4 variability of PacifiCorp's wind generation between 2008 and 2013 had a relative 5 standard deviation of approximately $11\%.\frac{62}{}$ Meanwhile, over that same period, the 6 relative standard deviation of the variability in PacifiCorp's hydro output was 14%. 63/ 7 Consequently, the variability of renewable resources is not a basis to deviate from a 8 PCAM structure that was created specifically to address similar variability in hydro. It is 9 a basis to maintain this structure.

Q. HOW DO YOU RESPOND TO PACIFICORP'S ARGUMENT THAT OTHER NORTHWEST UTILITIES THAT HAVE OVER-FORECAST THEIR NPC IN RECENT YEARS ARE DISINGUISHABLE FROM THE COMPANY?

PacifiCorp's position in its Opening Testimony was that the NPC forecasting challenges it faces are not due to constraints on its own modeling software but are caused by market dynamics that are inherently impossible to forecast and that tend to impose incremental costs on PacifiCorp, thus leading to systematic under-recovery of NPC.^{64/} AWEC argued in Opening Testimony that, if this were the case, one would expect all utilities to underforecast their power costs, as they all are subject to the same market dynamics. Both PGE and Avista in Washington, however, have over-forecast their power costs in recent years.^{65/}

PacifiCorp argues in response that these utilities are different because they have different generation portfolios. This is undoubtedly true, but that is not the argument

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64/ PAC/600, Graves/3:14-6:16.

^{62/} AWEC/502 at 3.

<u>63</u>/ Id

^{65/} AWEC/100, Mullins/35:14-36:9.

PacifiCorp has made to justify the APCA. Indeed, PacifiCorp's Reply Testimony contradicts itself in attempting to distinguish the Company from other utilities. On the one hand, Mr. Wilding argues that Avista is distinguishable from PacifiCorp due to the large amount of hydro generation in its portfolio, as compared to intermittent renewables, 667 while on the other hand, Mr. Graves claims that "the main problem that PacifiCorp faces is not the forecasting model itself. Rather, it is the inherent difficulty in forecasting one year in advance of the hourly demand and prices of purchases and sales, as well as the generation profile of renewable resources, *including hydropower*." The reality is that, if PacifiCorp is indeed facing a systematic under-forecast of NPC, the problem almost surely lies in its power cost model, GRID, not inescapable and unpredictable market forces to which all utilities are subject.

Q. AWEC AND STAFF ALSO ARGUED THAT NOW IS NOT THE RIGHT TIME
 TO IMPLEMENT THE APCA BECAUSE PACIFICORP INTENDS TO
 REPLPACE GRID WITH A NEW NPC FORECASTING MODEL. HOW DOES
 PACIFICORP RESPOND?

PacifiCorp claims that that the energy landscape is constantly changing, and therefore acceptance of this argument would mean that "there will always be a reason to stand in the way of updating [the PCAM]." There is a substantial difference, however, between the evolution of the generation mix or even changes to energy markets, which can be incorporated into and accommodated by power cost forecasting models (as PacifiCorp's assimilation of EIM benefits into its NPC forecasts demonstrates), and the creation of an entirely new power cost forecasting model. AWEC's position, which appears to be shared by Staff and CUB, is that to the extent PacifiCorp faces systematic NPC under-

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^{66/} PAC/2000, Wilding/72:7-73:3.

^{67/} PAC/3000, Graves/30:6-9 (emphasis added).

^{68/} PAC/2000, Wilding/68:10-11.

1 recovery, this is most likely due to the Company's modeling software, not market forces. 2 PacifiCorp's change to a new forecasting model offers the ideal opportunity to test which 3 theory is correct. Only after the Commission has this information should it consider 4 changes to the PCAM, particularly ones as drastic as PacifiCorp has proposed. 5 VII. **ENERGY VISION 2020** 6 0. PLEASE SUMMARIZE AWEC'S RECOMMENDATION IN ITS OPENING 7 **TESTIMONY ON THE ENERGY VISION 2020 PROJECTS.** 8 AWEC recommended that the prudence of PacifiCorp's decision to invest in the Energy A. 9 Vision 2020 ("EV 2020") projects be subject to the following conditions to better ensure 10 customer benefits are realized from an economic resource procurement: (1) a hard cap on 11 capital and O&M costs; (2) a hard cap on costs for the D.2 segment of the Energy 12 Gateway transmission project; (3) a guarantee of full PTC and energy benefits from the 13 EV 2020 projects; and (4) a minimum capacity factor for each resource at the level 14 modeled in the RFP bids. These conditions reflect both the Commission's 15 acknowledgment order of PacifiCorp's 2017 IRP and recommendations from the Oregon 16 Independent Evaluator ("IE") overseeing the RFP. 17 HOW DID PACIFICORP RESPOND IN REPLY TESTIMONY? O. 18 A. PacifiCorp generally opposes AWEC's conditions on the prudence of the EV 2020 19 projects. The Company argues that the EV 2020 projects were pursued not solely for

economic reasons, but to meet an energy and capacity need that would otherwise be filled

rel[ving] on the Oregon independent evaluator's report" and defends its RFP modeling. 70/

with front office transactions ("FOTs"). 69/ It also accuses AWEC of "selectively

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^{69/} PAC/2300, Link/53:11-57:3.

^{70/} Id. at 57:4-61:18.

PacifiCorp also minimizes the interconnection issues that effectively disqualified several low cost bids from the RFP. 71/

O. HOW DO YOU RESPOND TO PACIFICORP'S REPLY TESTIMONY?

Most of PacifiCorp's arguments are not particularly relevant to AWEC's recommendations. The Company's position that the EV 2020 projects meet an energy and capacity need elides what distinguishes these projects from a more traditional resource acquisition. PacifiCorp is simply saying that the EV 2020 projects are lower cost and lower risk resources than market transactions. That is the same thing as saying that PacifiCorp has acquired these resources for economic purposes – its analysis is based on forecasts of market prices, the ultimate accuracy of which will either justify or not justify its acquisition of the EV 2020 projects. PacifiCorp's own IRP justifies its decision to pursue these projects because they will provide "significant economic benefits for PacifiCorp's customers"

That is not the same thing as acquiring a resource to meet an identified capacity deficit.

Furthermore, AWEC's proposed conditions are nothing more than reiterations of findings and recommendations from both the Oregon IE and the Commission itself, findings and recommendations that were made to protect customers in recognition of the unusual procurement process and the economic nature of the procurement itself. PacifiCorp can argue all it wants that the EV 2020 resources represent a traditional resource procurement, but that is simply not how anyone has ever understood this procurement. Similarly, PacifiCorp can take issue with AWEC's proposed conditions,

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^{71/} Id. at 62:1-63:14.

Docket No. LC 67, PacifiCorp 2017 IRP, Executive Summary at 2.

AWEC/100, Mullins/14:6-22, 17:15-18:14.

but it is a fact that the IE recommended hard caps on capital and O&M costs both for the generation projects and the D.2 transmission segment, and an unconditional guarantee of full PTC benefits, and that the Commission itself stated a clear intention to insulate customers from "the risk of construction cost overruns, delays or other factors that impact PTC value, or project costs and expected capacity factors that are less favorable than the assumptions presented in the IRP." AWEC's recommendations do nothing more than ensure these commitments.

VIII. WILDFIRE MITIGATION COST RECOVERY

Q. PLEASE SUMMARIZE AWEC'S RECOMMENDATION IN ITS OPENING TESTIMONY ON PACIFICORP'S WILDFIRE MITIGATION COST RECOVERY MECHANISM.

AWEC recommended that the Commission reject the wildfire mitigation cost recovery mechanism. AWEC's recommendation was based on the following considerations: (1) wildfire mitigation investments are recoverable through the normal rate case process, and if PacifiCorp chooses not to file a rate case to recover these costs in a timely fashion, that is simply evidence that it is recovering its costs overall, including wildfire mitigation costs; (2) PacifiCorp does not need a special cost recovery mechanism to ensure it makes sufficient investments in wildfire mitigation because shareholders benefit from reduced risk of wildfires; and (3) because shareholders benefit from this reduced risk (as do customers), it is appropriate for shareholders to bear a portion of the costs, which can be accomplished through normal regulatory lag. ⁷⁵/

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^{74/} Docket No. LC 67, Order No. 18-138 at 8 (Apr. 27, 2018).

^{75/} AWEC/100, Mullins/20:10-26:20.

Q. PACIFICORP STATES THAT WILDFIRE MITIGATION COSTS "ARE
 SIGNIFICANT CAPITAL COSTS APPROPRIATE FOR A RATEMAKING
 MECHANISM SUPPORTED BY DEFERRED ACCOUNTING." HOW DO
 YOU RESPOND?

5 The Commission's policy on deferred accounting does not support deferrals based only A. 6 on the significance of the cost. An additional consideration is whether the cost "was 7 foreseeable as happening in the normal course of events, or not likely to have been capable of forecast." Here, PacifiCorp's wildfire mitigation costs are clearly "capable 8 9 of forecast" because the Company has provided just such a forecast through 2022. 78/ 10 Moreover, when costs are capable of forecast, the magnitude of the "harm" to the utility 11 must be "substantial" to warrant a deferral. In this case, the inability to defer capital costs 12 associated with wildfire mitigation does not result in these costs becoming entirely 13 unrecoverable, it only results in regulatory lag for as long as PacifiCorp chooses not to 14 file a rate case; thus, the "harm" to the Company is minimal. That is why the 15 Commission stated in Order 20-147 that "any request for deferral of a capital project will need to be analyzed closely." 79/ 16

Q. PACIFICORP ALSO ARGUES THAT ITS COST RECOVERY MECHANISM AS REVISED IN REPLY TESTIMONY RENDERS MOOT AWEC'S ARGUMENTS REGARDING EVALUATION OF THESE COSTS IN A GENERAL RATE CASE.^{80/} DO YOU AGREE?

A. No. PacifiCorp's revised mechanism would defer incremental vegetation and wildfire
mitigation costs annually. PacifiCorp would file on September 1 of each year, a prudence
review would follow, and costs determined to be prudently incurred would be included in

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^{76/} PAC/2000, Wilding/49:12-14.

Docket No. UM 1147, Order No. 05-1070 at 7 (Oct. 5, 2005).

PAC/1100, Lucas/6 (Table 1).

^{79/} Docket UM 1909, Order No. 20-147 at 13 (Apr. 30, 2020).

^{80/} PAC/2000, Wilding/49:19-50:6.

rates on March 1 of the following year (i.e., four months after the filing date). **Ellowing PacifiCorp's claim that this somehow renders moot AWEC's arguments that these costs should be reviewed in a general rate case is a straw man. AWEC's opposition to special recovery of wildfire mitigation costs is not based on whether parties and the Commission could conduct a prudence review outside of a rate case. It is based on the longstanding principle that the "end result" of a utility's rates is what matters — that the utility is earning a fair and reasonable return overall, regardless of which costs are deemed to be "in" or "out" of rates — which is reflected in the Commission's policy generally disfavoring single-issue ratemaking. **Ellowing PacifiCorp's analogy to the Renewable Adjustment Clause ("RAC") is also unpersuasive, as the RAC is a statutory mechanism. **Salvantation costs.**

No statute requires the type of cost recovery mechanism PacifiCorp seeks for wildfire mitigation costs.

PacifiCorp's argument also fails to account for the impact that PacifiCorp's annual depreciation and amortization expense of \$338 million greatly exceeds the annual capital spending plan for wildfire mitigation. 84/ In fact, PacifiCorp may experience ratebase reductions as PacifiCorp accumulates depreciation and amortization.

PacifiCorp's proposal has no mechanism to account for reductions in ratebase or other operating expenses.

 $\underline{\text{Id.}}$ at 47, table 5.

Federal Power Comm'n v. Hope Nat. Gas Co., 320 U.S. 591, 603 (1944); Docket No. UG 221, Order No. 12-437 at 26 (Nov. 16, 2012).

^{83/} ORS 469A.100.

Exhibit PAC/1301 McCoy/1, lines 22 and 23, and PAC/1100, Lucas/6, which shows \$50 million per year in Oregon allocated capital costs (Distribution plush 25 percent of transmission).

2 3	Q.	FOCUS ON THE BENEFITS TO SHAREHOLDERS FROM WILDFIRE MITIGATION INVESTMENTS. 85/ HOW DO YOU RESPOND?
4	A.	Again, the Company sets up a straw man in stating that the "hardening of the Company's
5		facilities does not solely benefit its shareholders."86/ AWEC did not argue that these
6		costs only benefit, and should only be borne by, shareholders. AWEC argued that these
7		costs do not only benefit, and should not only be borne by, customers. AWEC only
8		argued for some sharing, through regulatory lag, of the costs of these investments with
9		shareholders because shareholders indisputably benefit from these investments as well.
10 11	Q.	IS THERE EVIDENCE THAT SHAREHOLDERS BENEFIT FROM WILDFIRE MITIGATION INVESTMENTS?
12	A.	Yes, in Opening Testimony AWEC noted the Pacific Gas & Electric bankruptcy, driven
13		by the catastrophic wildfires in California. ^{87/} Additionally, specifically applicable to
14		PacifiCorp, the Company recently paid \$3.4 million to the U.S. Forest Service, and
15		to settle claims related to the
16		2018 Ramsey Canyon Fire in Oregon. ^{88/} Minimizing such costs in the future is clearly in
17		shareholders' interest and to their benefit.
18 19 20	Q.	PACIFICORP ALSO ARGUES THAT WILDFIRES ARE BECOMING MORE FREQUENT AND SEVERE, WHICH JUSTIFIES ITS COST RECOVERY MECHANISM. ⁸⁹ / HOW DO YOU RESPOND?
21	A.	The increased frequency and severity of wildfires does not change the analysis of who
22		benefits from wildfire mitigation investments. Both shareholders and customers benefit
23		from these investments, and therefore both groups should assume some portion of cost

PAC/2000, Wilding/51:1-16.

 $[\]underline{\text{Id.}}$ at 51:11-12.

^{87/} AWEC/100, Mullins/26:3-7.

^{88/} AWEC/501 at 7-13 (AWEC DR 124; DR 125 attachments).

^{89/} PAC/2900, Lucas/5:3-24.

1		responsibility. Again, under AWEC's proposal, shareholders would only bear such costs
2		to the extent they were either determined to be imprudently incurred (as with any cost), or
3		to the extent PacifiCorp chooses not to file a rate case and take regulatory lag.
4 5	Q.	DOES AWEC HAVE AN ALTERNATIVE RECOMMENDATION ON PACIFICORP'S WILDFIRE MITIGATION COST RECOVERY MECHANISM?
6	A.	If the Commission disagrees with AWEC that these costs should be recovered through
7		the normal rate case process and believes some type of special recovery mechanism
8		should apply to these costs, then AWEC recommends that the Commission only allow for
9		recovery of these costs subject to an earnings test. Given the shareholder benefits from
10		reducing the risk for wildfires, the Commission should at a minimum ensure that
11		recovery of these costs does not tilt the Company's overall return beyond what the
12		Commission determines to be a fair and reasonable return.
13	Q.	WHAT EARNINGS TEST DOES AWEC RECOMMEND?
14	A.	AWEC recommends that recovery only be allowed up to the point that PacifiCorp's
15		earned equity return is 100 basis points below its authorized return. This is fair because
16		regulation only ensures the Company the opportunity to earn its authorized return, not a
17		guarantee. Earnings within 100 basis points of the authorized ROE are within the range
18		of reasonableness.
19		IX. COAL DECOMMISSIONING COSTS
20	Q.	PLEASE SUMMARIZE THIS ISSUE.
21	A.	Over a year into PacifiCorp's Depreciation docket, UM 1968, PacifiCorp filed revised
22		decommissioning reports that substantially increased decommissioning costs ("Kiewit
23		Report). I reviewed the Kiewit Report and found little to no factual basis supporting the
24		analysis. The Commission's independent evaluator offered a similar finding and noted

that the estimates were abnormally high. I recommended that the originally filed
depreciation costs be used in rates. I also offered, as an alternative, line item adjustments
to the Kiewit Report.

PacifiCorp's reply testimony did not provide any additional documentation or
support for the Kiewit Report. PacifiCorp's reply failed to respond to many of the issues

support for the Kiewit Report. PacifiCorp's reply failed to respond to many of the issues that I raised with the report. I maintain my Opening Testimony recommendations.

Q. DID PACIFICORP PROVIDE AN EXPLANATION FOR WHY THE KIEWIT REPORT IS NOT TRANSPARENT?

9 A. Yes. In reply testimony, PacifiCorp states Kiewit is "unwilling to share its proprietary information because of competitive concerns." PacifiCorp should be familiar with Commission expectations regarding transparency and could have set clear transparency expectations through its contracting process for the decommissioning report. AWEC directly asked PacifiCorp why they did not include such a provision in the RFP or contract for the IE and PacifiCorp declined to respond. 91/

Q. HOW DOES PACIFICORP RESPOND TO YOUR CONCERNS REGARDING THE STUDY?

A. PacifiCorp responds generically, stating "AWEC's various recommendations are not specific and are unsupported." This statement is more applicable to the Kiewit Report and PacifiCorp's reply testimony than it is to AWEC. PacifiCorp should bear the burden of demonstrating that the decommissioning study is supported.

PacifiCorp only provides specific response to some of AWEC's proposed adjustments, and these responses are unsupported. For example, PacifiCorp argues that reducing coal pile excavation from 10 feet to 5 feet does not necessarily reduce the

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PAC/2400, Van Engelenhoven/13

^{91/} AWEC/501 at 23 (Response to AWEC Data Request 140).

associated line item cost by half. 92/ However, PacifiCorp offers no alternative method or calculation. 93/ PacifiCorp also provides no explanation for why AWEC's proposed adjustment is not a reasonable approximation of the cost of excavating to five feet or whether PacifiCorp thinks the cost is more or less than half of the ten foot depth.

PacifiCorp dismisses my adjustment to materials and supplies, ⁹⁴ but goes on to acknowledge that materials and supplies can be repurposed to other facilities. ⁹⁵

I noted three line-items for hazardous material and removed all of one line, and 25 percent of a second line. PacifiCorp makes no attempt to justify inclusion of any of the three line-items, instead alleging that I remove all hazardous material costs. PacifiCorp is simply incorrect here. My recommended D&R costs include million in hazardous material and other ARO costs.

PacifiCorp argues my testimony is inconsistent because I note PacifiCorp may repurpose sites, while simultaneously recognizing cites may need remediation costs.

PacifiCorp admits to planning to repurpose some sites. However, I agree that for sites that are not repurposed PacifiCorp may be obligated to perform some remediation. I continue to be concerned that there is no support for the assumption that all sites are fully remediated and no support for the cost of full remediation. I modify the associated adjustment in my opening testimony to reduce the reclamation costs by 50 percent rather than 100 percent to reflect continued uncertainty regarding site repurposing and

PAC/2400, Van Engelenhoven/14

AWEC/501 at 22 (Response to AWEC Data Request 139).

PAC/2400, Van Engelenhoven/14

AWEC/501 at 24 (Response to AWEC Data Request 141).

AWEC/501 at 6, 26 (Response to AWEC Data Request 61 and 143).

1 ambiguity about how remediation costs were calculated. The figure below summarizes

this adjustment and Exhibit AWEC/503 contains my revised calculations.

Figure 2: Opening and Reply Kiewit Adjustment

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	Total Cost (excl.	
	Other Items)	\$/kW
Kiewit Total		
Opening Adj Kiewit Total	\$262,604,193	46.53
Reply Adj Kiewit Total	\$325,592,765	57.70
Filed Total	\$258,615,977	45.83

PacifiCorp alleges that my adjustments are not consistent across facilities. 6 However, when asked to clarify, PacifiCorp did not identify a single example of an

AWEC D&R adjustment that differed across facilities. 97/ AWEC's adjustments do have

some variation across facilities, but only to the extent that the Kiewit Report cost items

varied across facilities and an adjustment to such cost items did not apply to all facilities.

PacifiCorp argues that because water rights cannot be sold or transferred, the associated pumping assets must be removed. However,



ARE THERE MAJOR AWEC D&R ADJUSTMENTS THAT PACIFICORP Q. **FAILED TO ADDRESS?**

A. Yes. PacifiCorp has no response to my adjustments to owner costs, demolition expense,

ARO estimate bias, general liabilities and mine closure costs.

^{97/} AWEC/501 at 25 (Response to AWEC Data Request 142).

AWEC/501 at 1 (Response to AWEC Data Request 8, Highly Confidential conference call).

Q. IS AWEC'S RECOMMENDATION TO REJECT THE KIEWIT
DECOMMISSIONING ESTIMATES FOR LACK OF EVIDENTIARY SUPPORT
INCONSISTENT WITH THE 2020 PROTOCOL, AS PACIFICORP ARGUES?

A. No. PacifiCorp alleges that, because AWEC signed the 2020 Protocol, which calls for an independent estimate of coal plant decommissioning costs that will be used as the basis for *interjurisdictional* allocation of such costs among the states the Company serves, that AWEC necessarily agreed to support inclusion of these estimated costs in Oregon rates. AWEC will respond more fully to the Company's argument in briefing, but I note that PacifiCorp's position appears to be directly contradicted by the plain language of the 2020 Protocol. Section 4.3.1.3 states:

No Party will be bound by the Decommissioning Cost estimates in the Decommissioning Studies undertaking pursuant to Paragraphs 4.3.1.1 and 4.3.1.2 and final determination of each State's just and reasonable Decommissioning Costs allocation for each coal-fueled Interim Period Resource will remain exclusively with each Commission and will be determined in the depreciation dockets in which the Decommissioning Costs are included.

My understanding of this provision is that it does not commit the Commission or any party to support any particular decommissioning cost estimate in state proceedings, and that establishment of a just and reasonable level of decommissioning costs to include in Oregon rates is within the Commission's discretion, subject to the standard evidentiary requirements of a contested case. My testimony position that the Kiewit estimates should not be relied upon to establish Oregon's decommissioning costs responsibility is based on this interpretation, which is shared by Commission Staff. 100/

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^{99/} PAC/2400, Van Engelenhoven/10:13-13:10.

WHAT ARE CUB'S AND STAFF'S POSITIONS ON THE KIEWIT 1 Q. 2 **DECOMMISSIONING STUDY?**

3 Both Staff and CUB are largely aligned with AWEC and the IE. They both express A. 4 frustration at the lack of supporting data from the Kiewit Report. CUB testifies that 5 "[u]nder the current circumstances, the Kiewit Report cannot be used as the basis of cost recovery for decommissioning" and recommends as an alternative "that decommissioning 6 7 cost recovery should continue to be based on the numbers from the PacifiCorp depreciation study." Similarly, Staff testifies that "it is not prudent to rely on the 8 9 unverified basis of a study, rather than ensure the underlying analysis has been reviewed and found to be sound." Consequently, Staff also recommends that decommissioning 10 costs be based on the levels identified in PacifiCorp's depreciation study. 103/ AWEC 11 12 agrees with Staff and CUB on these points. Staff also, however, offers an alternative 13 recommendation to "[a]llow PacifiCorp to make a filing subsequent to the rate-effective 14 date in this proceeding to determine whether the decommissioning costs set in UE 374 should be adjusted." CUB also identifies the potential for additional process on 15 16 decommissioning costs: "further proceedings in this docket or an entirely new 17 investigation might be required." 105/ 0. WHAT IS AWEC'S POSITION ON STAFF'S AND CUB'S ALTERNATIVE RECOMMENDATIONS FOR MORE PROCESS ON DECOMMISSIONING

18 19 20 COSTS?

21 AWEC is not opposed to these recommendations per se. However, both Staff's and A. 22 CUB's alternative recommendations require substantially more development. Under

^{101/} CUB/300, Jenks/7:20-23.

^{102/} Staff/1700, Storm/30:2-4.

^{103/} Staff/1700, Storm/37:4-6.

^{104/} Id. at 37:7-9.

^{105/} CUB/300, Jenks/8:7-8.

Staff's proposal, AWEC is unclear what filing PacifiCorp would make that would provide the Commission with additional evidence to determine a just and reasonable level of decommissioning costs. Similarly, the Commission should not open a new investigation unless it knows it will have additional evidence not available in this proceeding that will help inform a reasonable level of decommissioning costs.

This reveals a structural problem. Conceivably, evidence in a subsequent investigation could come in the form of an updated decommissioning study that is supported by workpapers and other necessary evidence. However, it is difficult to see how PacifiCorp could support such a study to the extent the decommissioning costs differ from the Kiewit Report. This is because, for better or worse, the amount of decommissioning costs identified in the Kiewit Report is the amount allocated to all of the states under the 2020 Protocol. 106/ The Oregon Commission maintains exclusive authority to identify whether the amount allocated to Oregon under the 2020 Protocol is just and reasonable to include in Oregon rates, but whatever decision the Commission makes on this issue will not change the fact that the Kiewit decommissioning estimates are the 2020 Protocol decommissioning costs. This means that if the Commission holds additional process to examine decommissioning costs, PacifiCorp cannot simply propose a different decommissioning cost estimate, whether supported by a new study or not. That will put the Company in a position of advocating for a different level of decommissioning costs as just and reasonable than it has advocated for in all of its other

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²⁰²⁰ Protocol §§ 4.3.1.1, 4.3.1.4 ("For coal-fueled Interim Period Resources that do not have a common operating life across all States, each Exiting State shall be allocated ... that State's share of estimated Decommissioning Costs based on the Decommissioning Studies described in Sections 4.3.1.1 and 4.3.1.2").

states. As AWEC understands the 2020 Protocol, PacifiCorp has little choice but to continue to advocate for the Kiewit-determined decommissioning costs.

A.

Consequently, while potentially unsatisfying, it appears that there are only three options available to the Commission: select the Kiewit estimates; select the estimates from PacifiCorp's depreciation study; or select an estimate between the two for which there is evidentiary support. My testimony proposes adjustments to the Kiewit estimates that provide evidentiary support for a "compromise" option that the Commission could adopt in this proceeding. If an alternative estimate between the Kiewit Report and PacifiCorp's depreciation study can be further refined with additional evidence and data, then there may be value to holding additional process, but it should be known prior to creating such process that this evidence is available. Otherwise, the record on this issue appears to be as complete as it can be, and the Commission should make a decision in this docket, giving due consideration to PacifiCorp's burden of proof.

X. TAM GUIDELINES

Q. DOES AWEC CONTINUE TO RECOMMEND CHANGES TO THE EXISTING TAM GUIDELINES?

Yes. In Opening Testimony, AWEC opposed several changes PacifiCorp has proposed to the existing TAM guidelines, and recommended a change of its own to require PacifiCorp to provide all workpapers supporting its opening testimony in the TAM concurrently with its initial filing. In Reply Testimony, PacifiCorp responded to AWEC's concerns with the Company's proposed changes. AWEC appreciates these responses, particularly the Company's clarification that it does not intend to pursue rate design changes in the TAM. AWEC accepts PacifiCorp's position on these issues in its Reply Testimony, but continues to believe that PacifiCorp should be required to provide

all workpapers concurrently with its initial filing. Under the existing TAM guidelines,

PacifiCorp provides a set of workpapers 5 days following its initial testimony and another

set 15 days following its initial testimony.

4 Q. WHY DOES PACIFICORP OPPOSE PROVIDING ALL WORKPAPERS CONCURRENTLY WITH ITS INITIAL FILING?

PacifiCorp states that this requirement would be overly burdensome. 107/ It notes the number of workpapers it provided in the 5-day and 15-day submissions, but it does not explain why these workpapers would not already be developed concurrently with the initial filing. After all, these workpapers are intended to support that filing. The only workpapers PacifiCorp identifies that may need to be provided subsequent to the initial filing are "four NPC sample calculations for schedule 294 ... [which] depend on the completion of the baseline NPC in the concurrent filing." 108/ AWEC can accept a later delivery date for these workpapers, but the TAM guidelines list substantially more than this for delivery 15 days from the initial filing, most of which should have already been developed to support the initial filing. 109/

The reality is that, while PacifiCorp identifies the burden of producing the TAM workpapers, the late delivery of these workpapers substantially burdens intervenors.

PacifiCorp typically files the TAM on April 1. Using UE 356, PacifiCorp's 2020 TAM, as an example, Staff and intervenor testimony was due on June 10, 2019. Allowing the Company an additional 15 days to file a substantial portion of its workpapers compresses an already expedited process, which must conclude with a Commission order by early November. With a 14-day turnaround for data requests, intervenors realistically have

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^{107/} PAC/2000, Wilding/81:17-18.

 $[\]frac{108}{}$ Id. at 82:3-5.

^{109/} Order No. 09-274, Appen. A at 17.

sufficient time for two rounds of discovery on these workpapers and less than two months to analyze and draft testimony on what are often complex issues. Consequently, while concurrent production of the 15-day workpapers with the initial filing may impose additional burden on PacifiCorp, that incremental burden is outweighed by the public interest considerations of providing Staff and intervenors more time to review these workpapers and provide the Commission with well-developed adjustments.

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XI. ALLOCATION OF DECOMMISSIONING COSTS TO DIRECT ACCESS

- Q. CUB'S OPENING TESTIMONY RECOMMENDS THAT PACIFICORP'S COAL PLANT DECOMMISSIONING COSTS SHOULD BE NON-BYPASSABLE FOR DIRECT ACCESS CUSTOMERS. WHAT IS AWEC'S POSITION ON THIS RECOMMENDATION?
- 12 AWEC does not oppose CUB's recommendation in principle, but believes this proposal Α. 13 needs further development in Docket UM 2024. AWEC does not agree, for instance, that 14 customers who have already fully transitioned to direct access should now be subject to 15 additional decommissioning costs. These customers paid what the Commission has 16 determined to be a just and reasonable transition charge, which included 17 decommissioning costs that were included in depreciation rates – that were also deemed 18 to be just and reasonable – when they transitioned to direct access. It would be unfair to 19 these customers to retroactively modify the costs they are subject to because they may be 20 higher now than they were several years ago. Moreover, a major factor in the increase in 21 decommissioning costs is PacifiCorp's decision to accelerate closure of several coal 22 plants (thus requiring these costs to be recovered over a shorter period). This decision is 23 being made because it has been found to be a least-cost, least-risk plan to replace these 24 coal assets with lower cost renewable resources. Customers who have already 25 transitioned to direct access will receive none of the benefits of these lower cost

- replacement resources, so it would be unfair to charge them costs related to this resource
- 2 strategy.
- 3 Q. DOES THIS CONCLUDE YOUR TESTIMONY?
- 4 A. Yes.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

	UE 374
In the Matter of)
PACIFICORP, dba PACIFIC POWER,)
Request for a General Rate Revision.)
)

EXHIBIT AWEC/501 PACIFICORP RESPONSES TO DATA REQUESTS (REDACTED VERSION)

AWEC Data Request 008

Please provide the following information related to water use for each PacifiCorp coal plant:

- (a) Water right certificate.
- (b) Permitted volume and uses.
- (c) Monthly volume of water use by month and year from January 2010 to present.
- (d) Options available to PacifiCorp for selling, leasing or otherwise monetizing the water rights associated with plants after closure.
- (e) All communications with third parties from 2010 to present regarding potential sale, lease or other monetization of the water rights associated with plants after closure.

Response to AWEC Data Request 008

PacifiCorp objects to this request on the grounds that it is overly broad, unduly burdensome and that it seeks information that is not relevant to, and not reasonably calculated to lead to the discovery of information relevant to, this docket. Without waiving the foregoing objections, the company responds as follows:

Any communications regarding potential sale, lease, or other monetization of water rights associated with each PacifiCorp coal plant is highly confidential and proprietary. Disclosure of PacifiCorp's assessments of economic value and opportunities, actual or potential, involving its water rights could provide economic advantage to PacifiCorp's competitors or counterparties.

AWEC Data Request 0028

Please refer to PAC/1100 Lucas/23 to 29. Please provide the following information related to PacifiCorp's Oregon AMI project:

- (a) Rate base additions, by year and FERC account.
- (b) Rate base deductions, by FERC account.
- (c) Retirements associated with the installation of AMI meters by retirement year and vintage.
- (d) The number of Schedule 48 customers that received new meters under the Oregon AMI project.
- (e) List of all software, websites, and other IT projects associated with the Oregon AMI project and the cost of each item.
- (f) The annual revenue requirement of the Oregon AMI project.
- (g) The amount of the Oregon AMI project that is included in Schedule 48 revenue requirement.

Response to AWEC Data Request 0028

- (a) Please refer to Attachment OPUC 183-2 included with the Company's response to OPUC Data Request 183.
- (b) The projected December 2020 depreciation reserve balance for the Oregon advanced metering infrastructure (AMI) project by function and factor is in the table below. This balance has been calculated using the actual electric plant in service balances and the depreciation reserve balances as of March 2020 along with the composite depreciation rates that were included in the rate case.

Function	Factor	Total Company Amount	
Distribution	OR	(6,188,896)	
General	OR	(372,156)	
General	so	(3,845,439)	
Intangible	CN	(7,560,067)	
Intangible	SO	(710,156)	
	Total	(18,676,714)	

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

- (c) Meter retirements are not tracked by work order and therefore those directly associated with the installation of AMI meters are not identifiable. The five-year average of retirements in Oregon meters asset class 37056 prior to 2017 was \$1,322,000 per year. Based on the January 2017 through March 2020 increase over this prior average, retirements associated with the installation of AMI meters are estimated to be \$54.8 million. Please refer to Attachment AWEC 0028-1 for all Oregon meter retirements in asset class 37056 from January 2017 through March 2020 by retirement year and vintage.
- (d) Zero.
- (e) Please refer to the information provided below:
 - i. Software:

Software	\$(million)
AMI Head-End	\$1.8
IEE MDM	\$1.0
MuleSoft	\$0.1
ODS	\$0.9
00	\$0.4
Security Monitoring Tools	\$0.1
TIBCO	\$1.1
Total	\$5.3

- ii. Enhanced existing website \$0.8 million.
- iii. Other information technology (IT) projects associated with Oregon AMI: California AMI Capital \$10.6 million / OMAG \$0.2 million (situs assigned to California)
- (f) Please refer to Attachment AWEC 0028-2 for annual revenue requirement of AMI projects in Oregon.
- (g) Please refer to Attachment AWEC 0028-2 for annual revenue requirement of AMI projects in Oregon included in the Schedule 48 annual revenue requirement.

Orogon ma	otor rotiromonto in o	aget along 270EG	from Jonuany 20	17 through March	2020 by
•	eter retirements in a year and vintage	SSET CIASS 37056	from January 20	17 through March	2020 by
i etti ettietit	year and vintage				
	Retirement Year				
Vintage	2017	2018	2019	Jan-Mar 2020	Grand Total
1958	(1,130.69)	(638.94)	-	-	(1,769.0
1959	(1,288.46)	(1,767.29)	(6,460.75)	-	(9,516.
1960	(2,261.99)	(4,201.09)	(20,491.14)	-	(26,954.
1961	(8,344.79)	(6,761.78)	(22,850.62)	-	(37,957.
1962	(11,746.58)	(26,306.47)	(50,654.49)	(5,430.90)	(94,138.
1963	(8,004.40)	(17,418.42)	(67,054.82)	-	(92,477.
1964	(7,611.53)	(37,785.79)	(74,832.99)	(1,751.46)	(121,981.
1965	(13,067.98)	(31,563.99)	(63,158.95)	-	(107,790.
1966	(8,414.54)	(35,343.03)	(41,373.55)	(27.28)	(85,158.
1967	(6,225.62)	(37,520.48)	(41,761.30)	-	(85,507.
1968	(6,569.26)	(62,595.52)	(51,583.99)	-	(120,748.
1969	(1,939.49)	(50,780.32)	(58,754.14)	(29.56)	(111,503.
1970	(1,409.41)	(68,950.76)	(72,345.07)	(27.15)	(142,732.
1971	(3,496.20)	(116,309.55)	(138,918.37)	(661.29)	(259,385.
1972	(2,947.46)	(115,917.63)	(52,288.07)	(335.35)	(171,488.
1973	(2,487.76)	(154,426.17)	(146,891.55)	(1,147.57)	(304,953.
1974	(10,779.81)	(157,696.83)	(133,902.64)	(5,541.99)	(307,921.
1975	(9,816.04)	(191,082.36)	(132,086.98)	(1,073.62)	(334,059.
1976	(20,774.22)	(305,963.70)	(194,245.28)	(3,786.80)	(524,770.
1977	(11,719.22)	(395,767.42)	(305,998.38)	(2,861.35)	(716,346.
1978	(18,028.56)	(423,903.67)	(313,182.34)	(1,571.20)	(756,685.
1979	(8,241.39)	(370,427.26)	(266,206.87)	-	(644,875.
1980	(16,329.27)	(415,936.99)	(247,797.18)	(283.51)	(680,346.
1981	(9,794.64)	(352,680.08)	(244,739.43)	(81.69)	(607,295.
1982	(10,398.08)	(276,874.54)	(174,436.05)	(204.25)	(461,912.
1983	(9,022.87)	(235,304.12)	(223,317.09)	-	(467,644.
1984	(11,504.85)	(316,261.23)	(250,989.40)	(118.56)	(578,874.
1985	(20,340.17)	(290,746.23)	(323,548.06)	-	(634,634.
1986	(23,195.87)	(557,079.84)	(363,536.38)	-	(943,812.
1987	(19,124.01)	(678,636.40)	(401,561.44)	(630.71)	(1,099,952.
1988	(19,269.30)	(711,281.64)	(351,710.72)	-	(1,082,261.
1989	(19,521.25)	(700,790.36)	(476,500.70)	(88.27)	(1,196,900.
1990	(21,070.82)	(682,867.13)	(697,929.12)	(556.34)	(1,402,423.
1991	(27,450.76)	(938,931.18)	(905,981.84)	(225.36)	(1,872,589.
1992	(24,950.12)	(756,077.12)	(666,184.45)	(7,261.72)	(1,454,473.
1993	(16,794.71)	(727,160.14)	(486,884.14)	(4,065.09)	(1,234,904.
1994	(38,244.71)	(830,664.90)	(533,775.97)	(1,441.48)	(1,404,127.
1995	(102,436.72)	(1,127,927.55)	(1,140,726.82)	(649.89)	(2,371,740.
1996	(22,302.09)	(579,039.55)	(246,102.78)	(836.70)	(848,281.
1997	(47,290.04)	(1,577,464.80)	(1,639,047.85)	(12,585.96)	(3,276,388.
1998	(42,061.35)	(1,301,373.64)	(726,463.06)	(1,803.72)	(2,071,701.
1999	(25,135.70)	(300,902.66)	(93,318.77)	-	(419,357.
2000	(42,072.25)	(767,119.74)	(342,088.44)	(1,233.06)	(1,152,513.
2001	(53,392.73)	(225,451.14)	(385,086.51)	(254.89)	(664,185.

OR - UE 374 Attachment AWEC 0028-1

V VEC 0028							
Oregon meter retirements in asset class 37056 from January 2017 through March 2020 by							
retirement year and vintage							
	Retirement Year						
Vintage	2017	2018	2019	Jan-Mar 2020	Grand Total		
2002	(50,341.20)	(705,400.90)	(945,430.26)	(1,355.75)	(1,702,528.11)		
2003	(59,962.73)	(926,827.79)	(373,121.93)	-	(1,359,912.45)		
2004	(77,831.31)	(1,174,408.42)	(561,641.48)	(1,563.06)	(1,815,444.27)		
2005	(147,547.93)	(1,220,558.08)	(880,415.74)	-	(2,248,521.75)		
2006	(102,998.67)	(1,207,561.54)	(901,807.38)	-	(2,212,367.59)		
2007	(195,569.79)	(988,147.66)	(594,796.02)	-	(1,778,513.47)		
2008	(108,090.38)	(1,078,093.29)	(880,955.96)	-	(2,067,139.63)		
2009	(164,026.19)	(676,882.20)	(412,952.57)	-	(1,253,860.96)		
2010	(156,747.64)	(600,194.71)	(378,945.84)	-	(1,135,888.19)		
2011	(149,859.29)	(559,396.92)	(526,338.20)	(163.12)	(1,235,757.53)		
2012	(113,508.73)	(682,667.29)	(478,264.92)	(193.49)	(1,274,634.43)		
2013	(97,840.87)	(917,634.09)	(521,954.55)	-	(1,537,429.51)		
2014	(74,746.60)	(1,107,727.50)	(674,981.53)	(842.27)	(1,858,297.90)		
2015	(89,224.51)	(1,570,510.50)	(950,376.69)	(8,795.68)	(2,618,907.38)		
2016	(74,389.93)	(744,136.47)	(452,272.72)	-	(1,270,799.12)		
2017	(143.33)	(659,668.05)	(820,017.77)	(3,163.51)	(1,482,992.66)		
2018	-	-	(943,729.86)	(240,960.59)	(1,184,690.45)		
2019	-	-	(30,551.96)	-	(30,551.96)		
2020	-	-	-	(107.08)	(107.08)		
Grand Total	(2,450,836.81)	(31,783,514.86)	(24,505,323.87)	(313,711.27)	(59,053,386.81)		

AWEC Data Request 0061

Has PAC considered using any of the following sites for replacement generation or repowering? If yes, for each site explain why PAC considered replacement generation, identify the types of potential replacement generation, and indicate whether replacement generation requires reclaiming the site to greenfield status with topsoil and vegetation.

- (a) Hunter
- (b) Huntington
- (c) Dave Johnson
- (d) Jim Bridger
- (e) Naughton
- (f) Wyodak
- (g) Hayden
- (h) Colstrip

Response to AWEC Data Request 0061

PacifiCorp has reviewed the potential for construction of new power generation on some PacifiCorp owned properties including at least one coal-fueled generating facility. Opportunities to repurpose generating facilities will be considered as part of preparing for the actual demolition of each individual generating facility. Opportunities to use or repurpose PacifiCorp owned properties are considered as PacifiCorp prepares for development of new generating resources. Repurposing of partner operated generating facilities will be determined by the operating partner, PacifiCorp and the other owners.

The nature and extent of actual site reclamation will depend on whether the site is repurposed and the nature of the repurposing. Consistent with the Design Basis, provided in the Company's response to AWEC Data Request 0057, specifically Confidential Attachment AWEC 0057, the study did not include bringing the sites to a greenfield condition as removal of some portion of foundations, underground piping and underground utilities were not included in the study. Generating facilities probably will not be brought to a greenfield condition when sites are actually demolished due to the high cost and limited benefit.

AWEC Data Request 0124

Please admit that the Company has agreed to pay \$3.4 million to settle claims by the United States Department of Justice related to the 2018 Ramsey Canyon Fire. If the Response is anything other than an unqualified admission, please detail the facts supporting this Response.

Response to AWEC Data Request 0124

Confirmed.

AWEC Data Request 0125

Please provide all documents related to any claims for damages or other liability made by the United States Department of Justice, the United States Bureau of Land Management or other United States Federal agency, the State of Oregon, and/or any county or local government or agency of the State of Oregon against the Company related to the 2018 Ramsey Canyon Fire.

Response to AWEC Data Request 0125

Please refer to Attachment AWEC 0125.

SETTLEMENT AGREEMENT

This Settlement Agreement ("Agreement") is entered into between the United States of America, acting through the United States Department of Justice and on behalf of the United States Department of Agriculture, Forest Service ("Forest Service"), and the United States Department of the Interior, Bureau of Land Management ("BLM") (collectively the "United States"), and PacifiCorp through their authorized representatives.

RECITALS

- A. Defendant PacifiCorp is an Oregon Corporation with its principal place of business in Portland, Oregon. PacifiCorp, including its subsidiaries, is an electric utility which provides electricity to several states, including Oregon. PacifiCorp has a utility right-of-way on BLM land on which PacifiCorp owns and operates the Dixonville-to-Meridian 500kV transmission line in Douglas County and Jackson County, Oregon (the "Line").
- B. The United States represents and enters into this agreement on behalf of itself, Forest Service, BLM, and each of its agencies that incurred damages related to a fire that ignited on August 22, 2018 in Jackson County about 12 miles northwest of Eagle Point, Oregon known as the Ramsey Canyon Fire (the "Fire"). Fire investigators determined that the Fire ignited near the base of PacifiCorp Structure 3/51 on the Line (the "Structure"). The Fire burned approximately 1,888 acres of federal, state, and private land, including 930 acres of BLM-managed land. The Fire caused the United States to incur suppression costs and to suffer resource damages in the total amount of \$4,825,345.31.
- C. The United States contends that the Fire was caused by the failure of a connector on the Structure and that it has certain civil claims arising from the Fire, including that PacifiCorp failed to properly install, inspect, and maintain the Structure, which resulted in the Fire. This conduct is referred to below as the Covered Conduct.
 - D. PacifiCorp denies the United States' allegations in Paragraph C.
- E. This Agreement is neither an admission of liability by PacifiCorp nor a concession by the United States that its claims are not well founded.

To avoid the delay, uncertainty, inconvenience, and expense of protracted litigation of the above claims, and in consideration of the mutual promises and obligations of this Agreement, the Parties agree and covenant as follows:

TERMS AND CONDITIONS

1. PacifiCorp shall pay to the United States \$3,400,000 (the "Settlement Amount"), of which \$3,400,000 is restitution, by electronic funds transfer, pursuant to written instructions to

be provided, to the Office of the United States Attorney for the District of Oregon no later than ten calendar days after the Effective Date of this Agreement.

- 2. Subject to the exceptions in Paragraph 3 (concerning excluded claims) below, and conditioned upon PacifiCorp's full payment of the Settlement Amount, the United States releases PacifiCorp together with its current and former parent corporations; direct and indirect subsidiaries; brother or sister corporations; divisions; current or former corporate owners; and the corporate successors and assigns of any of them from any civil or administrative monetary claim the United States has for the Covered Conduct under all statutory or common law authority, including all expenses, costs, and attorneys' fees, and from damages of every kind, nature, or basis, known as well as unknown, anticipated or unanticipated, now existing or hereinafter arising, based upon any theory of recovery, arising out of, related to, or in any way caused by the Covered Conduct.
- 3. Notwithstanding the release given in paragraph 2 of this Agreement, or any other term of this Agreement, the following claims of the United States are specifically reserved and are not released:
 - a. Any liability arising under Title 26, U.S. Code (Internal Revenue Code);
 - b. Any criminal liability;
 - c. Except as explicitly stated in this Agreement, any administrative liability, including the suspension and debarment rights of any federal agency;
 - d. Any liability to the United States (or its agencies) for any conduct other than the Covered Conduct;
 - e. Any liability based upon obligations created by this Agreement; and
 - f. Any liability of individuals.
- 4. PacifiCorp fully and finally releases the United States, its agencies, officers, agents, employees, and servants, from any claims (including attorney's fees, costs, and expenses of every kind and however denominated) that PacifiCorp has asserted, could have asserted, or may assert in the future against the United States, its agencies, officers, agents, employees, and servants, related to the Covered Conduct and the United States' investigation and prosecution thereof.
- 5. This Agreement is intended to be for the benefit of the United States and PacifiCorp only.
- 6. Each Party shall bear its own legal and other costs incurred in connection with this matter, including the preparation and performance of this Agreement.
- 7. Each Party and signatory to this Agreement represents that it freely and voluntarily enters in to this Agreement without any degree of duress or compulsion.

- 8. This Agreement is governed by the laws of the United States. The exclusive jurisdiction and venue for any dispute relating to this Agreement is the United States District Court for the District of Oregon. For purposes of construing this Agreement, this Agreement shall be deemed to have been drafted by all Parties to this Agreement and shall not, therefore, be construed against any Party for that reason in any subsequent dispute.
- 9. This Agreement constitutes the complete agreement between the Parties. This Agreement may not be amended except by written consent of the Parties.
- 10. The undersigned counsel represent and warrant that they are fully authorized to execute this Agreement on behalf of the persons and entities indicated below.
- 11. This Agreement may be executed in counterparts, each of which constitutes an original and all of which constitute one and the same Agreement.
- 12. This Agreement is binding on PacifiCorp's successors, transferees, heirs, and assigns.
- 13. All parties consent to the United States' disclosure of this Agreement, and information about this Agreement, to the public.
- 14. This Agreement is effective on the date of signature of the last signatory to the Agreement ("Effective Date of this Agreement"). Images of ink signatures (such as a photocopy, fax, or scanned image) shall constitute acceptable, binding signatures for purposes of this Agreement.

THE UNITED STATES OF AMERICA

DATED: 10/9/20

BY:

Carla G. McClurg

Assistant United States Attorney

District of Oregon

PACIFICORP

DATED: 06/09/2020

BY:

BY:

Ryan Flynn

Chief Legal Officer, PacifiCorp

DATED: 06/09/2020

Bret Reich

Counsel for PacifiCorp

MUTUAL RELEASE IN FULL OF ALL CLAIMS

(Ramsey Canyon Fire)

For the consideration of this Mutual Release in Full of All Claims ("Mutual Release") and the payment of THREE MILLION DOLLARS (\$3,000,000.00) by PacifiCorp to the Oregon Department of Forestry ("Forestry"), Forestry does hereby release, acquit and forever discharge PacifiCorp, together with its successors, employees, attorneys, investigators and subcontractors of and from any and all claims, demands, actions or causes of action of every nature whatsoever arising out of the fire known as the Ramsey Canyon Fire and the resulting fire suppression efforts, that occurred on or about August 22, 2018, in Jackson County, Oregon (the "Fire"). PacifiCorp does not admit liability for the Fire and it expressly denies liability, of and from any and all claims, demands, actions or causes of action of every nature whatsoever arising out of the Fire.

Forestry does not release any claims that it may have under the Oregon Forest Practices Act (ORS 527.610 *et seq.*). This Mutual Release only applies to claims belonging to Forestry. It does not release any claims, demands, actions or causes of action whatsoever belonging to any other agency, department or instrumentality of the State of Oregon.

For the sole consideration of this Mutual Release, PacifiCorp does hereby release, acquit and forever discharge Forestry, and its successors, employees, attorneys, investigators and subcontractors; none of whom admit liability but each of whom expressly denies liability, of and from any and all claims, demands, actions or causes of action of every nature whatsoever arising out of the Fire.

Forestry and PacifiCorp also expressly understand and agree that this Mutual Release is intended to cover all known injuries, losses and damages, and any further injuries, losses and damages not now known or anticipated, but which may later develop or be discovered, including all the effects and consequences thereof arising from or related to the Fire.

Forestry and PacifiCorp stipulate, agree and covenant that they will not further sue or seek additional relief from each other for any loss or damage in any way connected with the Fire.

Forestry and PacifiCorp expressly understand that this Mutual Release and PacifiCorp's payment of THREE MILLION DOLLARS (\$3,000,000.00) to Forestry are the sole and exclusive consideration received by the undersigned for the release of the parties named herein.

The undersigned declare that they have read this Mutual Release, that it is fully understood and voluntarily accepted for the purpose of making a full, final and complete settlement and compromise of any and all claims arising out of the Fire, in whatever legal form or theory they might be asserted between the parties to this release.

Forestry and PacifiCorp agree that this Mutual Release contains all of the terms of their agreement. The terms of this Mutual Release are contractual and are not a mere recital. This Mutual Release shall not be construed against the drafting party.

The persons executing and delivering this Mutual Release on behalf of the parties represent and warrant they are duly authorized to do so and that the execution of this Mutual Release is both a lawful and a voluntary act of the parties.

This Mutual Release may be signed in multiple counterparts, which together will be one and the same instrument. This Mutual Release may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original, manual signature. Without limitation, "electronic signature" shall include faxed

versions of an original signature or electronically scanned and transmitted versions of an original signature or any symbol adopted by either party with the intent to sign this Mutual Release.

EACH OF THE UNDERSIGNED HAS READ THE FOREGOING RELEASE, FULLY UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS.

Department of Forestry

s/ Tim Holschbach

By: Tim Holschbach

06/03/2020

Fire Prevention and Policy Manager Oregon Department of Forestry 2600 State Street, Building D Salem, OR 97310 503-945-7434 Tim.J.Holschbach@Oregon.gov

Authorized Representative for the Oregon Department of Forestry

PacifiCorp

s/ Ryan Flynn

06/05/2020

Ryan Flynn, OSB #025304 Chief Legal Officer, Pacific Power General Counsel

825 NE Multnomah St., Ste. 2000, Portland OR 97232

503 813-6321 ryan.flynn@pacificorp.com

Authorized Representative for PacifiCorp

APPROVED AS TO FORM:

s/ Timothy D. Smith

Timothy D. Smith, OSB # 914374 Senior Assistant Attorney General

06/03/2020

Oregon Department of Justice | Civil Recovery Section

100 SW Market St. Portland OR 97201

503 934-4452 | tim.smith@doj.state.or.us

Attorney for the State of Oregon, Dept. of Forestry

06/08/2020 s/ Bret Reich

Bret Reich

Date

Attorney for PacifiCorp

AWEC Data Request 0130

Please refer to the following article: "PacifiCorp, DEQ pick less power over clean-coal technology," Thuermer Jr., Angus M., WYOFILE (Sept. 3, 2019). Available here: https://www.wyofile.com/pacificcorp-deq-pick-less-power-over-clean-coal-technology/)

- (a) Does PAC believe that regional haze requirements can be met through reduced generation of Jim Bridger as discussed in the referenced article? If no, why not? If yes, why?
- (b) When did PacifiCorp first consider lower generation at Jim Bridger as a way to meet regional haze requirements?
- (c) Did PacifiCorp model reduced generation of Jim Bridger as a way to meet regional haze requirements in the 2013 IRP? If no, why not?

Response to AWEC Data Request 0130

(a) PacifiCorp submitted an application to Wyoming on February 5, 2019 proposing the use of emission limits for compliance with regional haze requirements at Jim Bridger. On May 5, 2020, Wyoming issued a permit which approved the emission limits proposed by PacifiCorp. The application and the permit are publicly available and can be accessed by utilizing the following website link:

https://openair.wyo.gov

- (b) PacifiCorp first proposed the use of emission limits for compliance with regional haze requirements at Jim Bridger on February 5, 2019. Preparation of PacifiCorp's application took place in 2018 and early 2019.
- (c) No. Please refer to the Company's responses to subpart (a) and (b), above.

AWEC Data Request 0132

Please refer to PAC/2300, Link/15. At any time prior to January 1, 2014, did PacifiCorp communicate with any state or federal air quality organization about the following options alone or in combination as potential regional haze compliance options? If yes, identify which options were discussed and provide nature and outcome of the communication.

- (a) Early retirement of one or more units of Jim Bridger in 2023.
- (b) Early retirement of one or more units of Jim Bridger in 2024.
- (c) Early retirement of one or more units of Jim Bridger in 2025.
- (d) Gas conversion of one or more units of Jim Bridger in 2024.
- (e) Gas conversion of one or more units of Jim Bridger in 2025.
- (f) Reduced generation of one or more units of Jim Bridger.
- (g) Reduced generation of one or more units of Hunter.
- (h) Reduced generation of one or more units of Huntington.
- (i) Early retirement of one or more units of Hunter.

Response to AWEC Data Request 0132

PacifiCorp was unable to locate any records of communications with any state or federal air quality organization prior to January 1, 2014 regarding the items listed in subparts (a) through (i) of this data request. To the extent they occurred, records of all communications between PacifiCorp and state and federal agencies are public information and are available through public information requests to the agencies.

AWEC Data Request 0133

Please refer to PAC/2300 Link/50.

- (a) Please provide PacifiCorp's Bridger Coal Company coal price forecast in dollars per MMBTU from each forecast produced in 2003 through 2013, including but not limited to business plan forecasts, IRP forecasts, and net power cost forecasts.
- (b) Please provide PacifiCorp's actual Bridger Coal Company coal price forecast in dollars per MMBTU from each forecast produced in 2003 through 2013.

Response to AWEC Data Request 0133

PacifiCorp objects to this data request as overly burdensome, outside the scope of the proceeding and unlikely to lead to the discovery of admissible evidence. Without waiving this objection, the Company responds as follows:

- (a) Please refer to Confidential Attachment AWEC 0133 which provides PacifiCorp's Bridger Coal Company (BCC) 10-year business plan forecasts, integrated resource plan (IRP) forecasts, and net power costs (NPC) forecasts produced in 2011 through 2013, in dollars per million British thermal units (\$/MMBtu).
- (b) Please refer to the Company's response to subpart (a) above for the actual BCC coal price forecasts.

Confidential information is designated as Protected Information under the protective order in this proceeding and may only be disclosed to qualified persons as defined in that order..

Page 17 of Exhibit AWEC/501 contains Protected Information Subject to Order No. 20-040 and has been redacted in its entirety.

AWEC Data Request 0134

Please refer to PAC/2300 Link/31.

- (a) Please provide PacifiCorp's basis for concluding that the economic life of Jim Bridger was 2037 in the 2013 IRP. Please provide all supporting documentation and work papers.
- (b) In the 2013 IRP, did PacifiCorp consider the possibility that the economic life of Jim Bridger, under an SCR installation scenario, would be something other than 2037? If yes, please provide all supporting documentation and work papers.
- (c) Has PacifiCorp calculated the PVRR(d) of SCR and alternative compliance scenarios for Jim Bridger 3 and 4 under an assumed economic life of 2025? If no, why not?

Response to AWEC Data Request 0134

- (a) The basis for the 2037 economic life of Jim Bridger, as utilized in PacifiCorp's 2013 Integrated Resource Plan (IRP), was the Company's Depreciation Study based on assumed depreciable lives of Company-owned resources filed in each state, except Oregon. Please refer to Attachment AWEC 0134 which provides a copy of Exhibit RMP__(KIA-1) from Docket 13-035-02 in Utah (Depreciation Study). Note: the IRP used the assumed depreciable lives, rather than accelerated coal lives, as filed in the equivalent Oregon Depreciation Study (Docket UM-1647, consistent with Order 08-327 in Docket UM-1329).
- (b) No. In PacifiCorp's 2013 IRP, under a selective catalytic reduction (SCR) installation, the economic life of Jim Bridger was 2037. The SCR investment was considered to enable Jim Bridger to run to the end of its economic life.
- (c) The Company has not performed an analysis assuming Jim Bridger Unit 3 and Jim Bridger Unit 4 would retire at the end of 2025. The Company did analyze how the economic analysis is affected assuming a 2025 depreciable life. Please refer to Mr. Link's reply testimony at page 31 line 1 through page 32 line 2.

AWEC Data Request 0135

Please refer to PAC/2300 Link/32. Please provide the following data related to Docket UE 307:

- (a) All discovery requests, responses, and attachments related to coal prices, coal contracts, and coal capital investments.
- (b) All confidential and highly confidential exhibits and transcripts.
- (c) All Jim Bridger long term fuel plans.

Response to AWEC Data Request 0135

- (a) PacifiCorp objects to this data request as overly broad, unduly burdensome, and unlikely to lead to the discovery of admissible evidence. Without waiving this objection, the Company responds as follows:
 - Please refer to Attachment AWEC 0135-1 and Confidential Attachment AWEC 0135-2 which provides copies of all incoming data requests received by PacifiCorp submitted in docket UE 307 (the 2017 Transition Adjustment Mechanism (TAM) proceeding). The Company requests that the Alliance of Western Energy Consumers (AWEC) identify the specific data requests from docket UE 307 that AWEC would like the received the responses to.
- (b) PacifiCorp objects to this data request as overly broad, unduly burdensome, and unlikely to lead to the discovery of admissible evidence. Without waiving this objection, PacifiCorp agrees that AWEC can reference, include in testimony, or provide as an exhibit confidential and highly confidential exhibits and transcripts from docket UE 307, if first introduced as confidential or highly confidential per the protective order and modified protective order in the current proceeding, docket UE 374.
- (c) PacifiCorp objects to this data request as overly broad, unduly burdensome, and unlikely to lead to the discovery of admissible evidence. Without waiving this objection, PacifiCorp agrees that AWEC can reference, include in testimony, or provide as an exhibit Jim Bridger long-term fuel plans from docket UE 307, if first introduced as confidential or highly confidential per the protective order and modified protective order in the current proceeding, docket UE 374.

Confidential information is designated as Protected Information under the protective order in this proceeding and may only be disclosed to qualified persons as defined in that order.

AWEC Data Request 0138

Please refer to PAC/2300, Link/49, lines 13 to 17.

- (a) Please provide PacifiCorp's estimate of the PVRR(d) values in PacifiCorp 2013 IRP Tables V3.3, V3.4, and V3.5 under a 2029 retirement date for Hunter 1 in the operate as coal scenario. Please provide the basis for this estimate and all supporting work papers. If PacifiCorp declines to provide such data, please provide the basis for Mr. Link's certainty.
- (b) Is Mr. Link certain that a 2029 retirement date for Hunter 1 under the operate as coal scenario would result in a PVRR(d) net benefit for the operate as coal scenario? If yes, please provide all supporting analysis and documentation.

- (a) Referencing PacifiCorp's 2013 Integrated Resource Plan (IRP), the Company has not prepared the requested analysis to update Table V3.3 (Hunter 1 Emission Control PVRR(d) Analysis Results, 2026 SCR), Table V3.4 (Table V3.4 Hunter 1 Emission Control PVRR(d) Analysis Results, 2018 SCR), and / or Table V3.5 (Table V3.5 Hunter 1 APR Emission Control PVRR(d) Analysis Results, 2026 SCR) under a 2029 retirement date.
- (b) Please refer to the Company's response to subpart (a) above.

AWEC Data Request 0139

Please refer to PAC/2400, Van Engelenhoven/14, lines 17 to 19. Please provide PacifiCorp's estimate of the cost of reducing excavation depth by half. Please include supporting work papers.

Response to AWEC Data Request 0139

The work to identify the excavation depth has not been completed.

AWEC Data Request 0140

Please refer to PAC/2400, Van Engelenhoven/13, line 1. Given PacifiCorp's expectation that an independent evaluator, state commissions, and intervenors would likely need to review the decommissioning study analysis, did PacifiCorp include in its RFP or contract for the decommissioning study a requirement that all calculations, assumptions, and work papers be made available for review? If no, why not? If yes, please provide such documents.

Response to AWEC Data Request 0140

Assumptions made by the consultant and contractors are included in the reports and the design basis. Calculations and work papers were not included as deliverables in the request for proposals (RFP) for the demolition studies. The processes, calculations, work papers and information sources used by consultants and subcontractors for these types of studies are typically proprietary, confidential, intellectual property and trade secrets. Consultants and subcontractors typically consider this information to be essential to maintaining their competitive position.

AWEC Data Request 0141

Please refer to PAC/2400, Van Engelenhoven/14, lines 20 to 21. Can material, supplies, rolling stock, or railcars be used elsewhere in PacifiCorp's system? If no, why not?

Response to AWEC Data Request 0141

The small portion of materials and supplies (M&S) that are consumables may be usable at a generating facility that is not being decommissioned. The majority of the M&S are specific to the equipment at the generating facility that will be decommissioned. These M&S are not usable at a generating facility that will continue operation.

Generating facilities typically have all of the rolling stock needed to operate each generating facility based on the design, equipment and needs of each individual facility. Generating facilities that are not decommissioned will have little or no need or use for additional rolling stock. Transferring unneeded rolling stock to a generating facility will increase operating costs.

Company-owned railcars are only used at the Jim Bridger generating facility. No other PacifiCorp generating facility has a need or use for railcars.

AWEC Data Request 0142

Please refer to PAC/2400, Van Engelenhoven/15, lines 13 to 15. Please explain how AWEC's adjustments are not consistent across all facilities.

Response to AWEC Data Request 0142

PacifiCorp attempted to apply a consistent design basis to the estimates for all the facilities included in the study. Alliance of Western Energy Consumers (AWEC) chose to recommend adjustments for certain categories without providing a basis for the recommendation. This would allow AWEC to pick and choose adjustments based on AWEC's sole judgement and appeared to be inconsistent with the intent of the study and the process that was applied.

AWEC Data Request 0143

Please refer to PAC/2400, Van Engelenhoven/16. If PacifiCorp builds replacement generation at a previous coal site, will PacifiCorp continue to use some or all of the site's pumping facilities. If no, why not?

Response to AWEC Data Request 0143

No, PacifiCorp does not foresee the continued use of facilities for the pumping of process cooling water at any the generating facilities included in the demolition study. Integrated resource planning (IRP) indicates that future generating facilities will be made up largely of wind and solar resources. A small amount of generation several years in the future is expected to be natural gas-fueled firming or peaking power. Wind and solar generating resources do not require process cooling water. Firming and peaking generating resources require little or no process cooling water. The elevation of most of the coal-fueled generating facilities is too high to be effective for natural gas-fueled firming or peaking generating facilities. In the unlikely event natural gas-fueled firming or peaking require process cooling water the existing pumping facilities will be an order of magnitude larger than needed. Operating pumping facilities that are significantly oversized would be cost prohibitive. No currently foreseeable case justify the continued use of the existing process cooling water pumping facilities after demolition of the associated coal-fueled generating facilities.

AWEC Data Request 0144

Please refer to PacifiCorp's Response to AWEC Data Request 114. Please provide the Bridger Coal Company coal costs in \$ per MMBTU used in the 2013 and 2019 IRP for each PaR scenario. If PacifiCorp declines to provide this data, please provide such information for the coal price in \$ per MMBTU for the base gas, base CO2 PaR scenarios.

Response to AWEC Data Request 0144

Please refer to Confidential Attachment AWEC 0144 for the component cash coal price in dollars per million British thermal units (\$/MMBtu) for the base gas and base CO₂ planning and risk (PaR) model scenarios for PacifiCorp's 2019 Integrated Resource Plan (IRP) and 2013 IRP for the Bridger Coal Company (BCC).

The BCC cash price excludes non-cash expenses including depreciation, depletion, and coal inventory adjustments. In addition, for the 2019 IRP, reclamation contributions to the trust fund were excluded and the Bridger mine is closed at the end of 2028 versus Bridger mine closure in 2037 in the 2013 IRP.

Confidential information is designated as Protected Information under the protective order in this proceeding and may only be disclosed to qualified persons as defined in that order.

Page 28 of Exhibit AWEC/501 contains Protected Information Subject to Order No. 20-040 and has been redacted in its entirety.

AWEC Data Request 0145

Please refer to PAC/2600 Ralston/18.

- (a) Does PacifiCorp agree that the Jim Bridger water rights can be transferred to a third party?
- (b) Does PacifiCorp agree that the Jim Bridger water rights have monetary value?
- (c) Has PacifiCorp considered issuing an RFQ for the transfer, sale, or lease of any coal generation related water rights? If so, please identify the anticipated date for issuing the RFQ and any agreed upon elements of the RFQ, such as bidder qualifications. If not, why not?

- (a) PacifiCorp believes that some portion of the water rights for the Jim Bridger plant could be available for transfer to a third party subject to requirements of Wyoming law and assuming a market for the particular water rights exists.
- (b) Yes, subject to the limitations addressed in the response to (a) above.
- (c) No. PacifiCorp has not yet made the determination that it should transfer, sell or lease its water rights.

AWEC Data Request 0147

Please refer to PAC/3100, McCoy/39 at lines 11 to 13.

- (a) Please identify the FERC accounts or assets that the referenced standard practices do not apply to.
- (b) Does PAC agree that group depreciation standards and practices apply to generation plant? If no, why not?
- (c) Please provide the percent of Oregon meters by net book value that were replaced as part of the AMI rollout.
- (d) Other than the AMI rollout, has PacifiCorp performed a state-wide replacement of assets in a single depreciation group? If yes, please provide each instance and include the percent of assets replaced by count and net book value.

- (a) Group depreciation does not apply to Land, Non-Utility, Leasehold Improvement or Intangible assets.
- (b) Yes, the Company applies the concept of group depreciation to its Generation assets.
- (c) Under group depreciation, retirements of assets within a group are assumed fully depreciated and charged in their entirety to the depreciation reserve. As a result, Oregon meters replaced as part of the Advanced Metering Infrastructure (AMI) rollout were considered to be at zero net book value at the time of their retirement.
- (d) Other than AMI, the Company has not performed any state-wide replacements of assets in a single depreciation group in the state of Oregon.

AWEC Data Request 0149

Please refer to Exhibit PAC/3106, McCoy/1.

- (a) Please provide the expected timing of the \$35 million in decommissioning costs by month incurred.
- (b) Please provide the basis for the \$35 million estimate.

- (a) Demolition of Cholla Unit 4 will not begin until Arizona Public Service Company retires the remaining active generating units (Cholla Unit 1 and Cholla Unit 3) of the Cholla plant, currently scheduled for the end of 2025.
- (b) The \$35 million figure was comprised of a \$25 million estimate related to pond closures and post-closure monitoring, a \$5 million estimate related to other demolition activities which would include site preparation, removal of stack and cooling tower, dismantling and removal of common site structures, and final site grading, and a \$5 million estimate related to the reclamation of Cholla Lake.

AWEC Data Request 0151

Please refer to Paragraph 18 of the Stipulation in UE 352. Please identify all accounting entries made by PacifiCorp to comply with this paragraph.

Response to AWEC Data Request 0151

The accounting entries made by PacifiCorp are shown below:

(1) To book additional depreciation expense as a result of the release of Oregon buy-down of repowered wind assets:

FERC	Description	<u>Debit</u>	<u>Credit</u>
403	Depreciation Expense – OR Incr	160,022,477	
108	Accumulated Depreciation - OR Incr		160,022,477
282	DTL - PP&E	39,344,086	
411.1	Deferred Tax Exp-CR-Federal-Electric		32,079,066
411.1	Deferred Tax Exp-CR-State-Electric		7,265,020

(2) To book the reduction of non-property excess deferred income taxes (EDIT) regulatory liability and related tax impacts:

<u>Description</u>	<u>Debit</u>	<u>Credit</u>
RL – Non-Property EDIT - OR	15,768,650	
Deferred Tax Exp-CR-Federal-Electric		15,052,754
Deferred Tax Exp-CR-State-Electric		715,897
DTA 705.282 RL Non-Property EDIT - OR		3,876,975
Deferred Tax Exp-CR-Federal-Electric	3,161,078	
Deferred Tax Exp-CR-State-Electric	715,897	
	RL – Non-Property EDIT - OR Deferred Tax Exp-CR-Federal-Electric Deferred Tax Exp-CR-State-Electric DTA 705.282 RL Non-Property EDIT - OR Deferred Tax Exp-CR-Federal-Electric	RL – Non-Property EDIT - OR Deferred Tax Exp-CR-Federal-Electric Deferred Tax Exp-CR-State-Electric DTA 705.282 RL Non-Property EDIT - OR Deferred Tax Exp-CR-Federal-Electric 3,161,078

(3) To book the reduction of non-protected property, plant and equipment (PP&E) EDIT regulatory liability and related tax impacts:

FERC	<u>Description</u>	<u>Debit</u>	<u>Credit</u>
254	Reg Liab - Non-Prot PP&E EDIT - OR	99,997,829	
282	DTA RL - Non-Prot PP&E EDIT		75,411,763
190	DTA RL - Non-Prot PP&E EDIT - Gross Up		24,586,066
282	DTL Non-Prot PP&E EDIT - OR	75,411,763	
411.1	Deferred Tax Exp-CR-Federal-Electric		75,411,763

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.

(4) To book reduction of the protected PP&E EDIT amortization regulatory liability and related tax impacts:

FERC	<u>Description</u>	<u>Debit</u>	<u>Credit</u>
254	RL - Protected PP&E Amort - OR	44,255,999	
411.1	Deferred Tax Exp-CR-Federal-Electric		42,246,777
411.1	Deferred Tax Exp-CR-State-Electric		2,009,222
190	DTA 705.348 RL Protected PP&E Amort OR		10,881,045
410.1	Deferred Tax Exp-DR-Federal-Electric	8,871,823	
410.1	Deferred Tax Exp-DR-State-Electric	2,009,222	

Please refer to the information provided below which provides an overall summary of the accounting entries:

FERC	Category	Debit/(Credit)
108	Accumulated Depreciation	(160,022,477)
254	Regulatory Liability	160,022,477
190	Deferred Tax Asset	(39,344,086)
282	Deferred Tax Liability - Property	39,344,086
	Subtotal: Deferred Income Tax Balance	-
Subtotal:	Balance Sheet Impact	<u>-</u>
403	Depreciation Expense	160,022,477
411.1	Deferred Tax Expense - Credit - Fed & State	(174,780,497)
410.1	Deferred Tax Expense - Debit - Fed & State	14,758,020
	Subtotal: Deferred Income Tax Expense	(160,022,477)
Subtotal:	Income Statement Impact	-

AWEC Data Request 0152

Please refer to PAC/3100, McCoy/52.

- (a) Does PacifiCorp expect the assessed value for the Cholla facility to change once the plant stops operating?
- (b) Does PacifiCorp expect the assessed value for the Cholla facility to change as facilities are demolished?
- (c) Did PacifiCorp include or consider property tax in the Cholla decommissioning costs on Exhibit PAC/3106, McCoy/1?

- (a) Yes. PacifiCorp currently expects the assessed value assigned to Cholla Unit 4 to decline after the plant stops operating and thus the amount of Cholla related property tax expense for tax year 2022 should be lower than the amount of Cholla related property tax expense for tax year 2021.
- (b) No.
- (c) No, property taxes are not considered decommissioning costs, and were therefore not included in the Cholla decommissioning cost estimates.

UE 307 / PacifiCorp May 11, 2016 OPUC Data Request 1

OPUC Data Request 1

Coal Costs - Please refer to PacifiCorp's long term supply plan for Jim Bridger filed on December 30, 2015 in compliance with Order No. 13-387 in docket UE 264 and Order No. 14-331 in docket UE 287.

- (a) Please provide all work papers used to generate this document. Please ensure that such work papers support the values presented in Confidential Table 3 of the referenced document (See confidential attachment to this DR).
- (b) Were the costs associated with the [Begin Confidential] [End Confidential] Jim Bridger rail unloading facility upgrade included in the 2013 PacifiCorp IRP analysis?
- (c) If the response to (b) above is yes, please provide the Jim Bridger coal costs in the 2013 IRP and demonstrate how the rail unloading facility upgrade costs were included.
- (d) Were the costs associated with the [Begin Confidential] [End Confidential] Jim Bridger rail unloading facility upgrade included in the 2015 PacifiCorp IRP analysis?
- (e) If the response to (d) above is yes, please provide the Jim Bridger coal costs and demonstrate how the rail unloading facility upgrade costs were included.
- (f) What was the expected depletion date for Bridger Coal Company's underground operations in 2013?
- (g) What was the expected depletion date for Bridger Coal Company's underground operations in 2015?

Response to OPUC Data Request 1

- (a) Please refer to Confidential Attachment OPUC 1 for the workpapers requested.
- (b) No, the fuel source for Jim Bridger Plant in the 2013 IRP analysis did not include external coal in sufficient quantities to require a rail unloading facility upgrade.
- (c) Not applicable.
- (d) No, the preliminary estimate of [Begin Confidential] [End Confidential] for rail unloading facility modifications required to support external coal supplies was developed for planning purposes in May 2015 for inclusion in Company's fall 2015 business plan. Potential rail unloading facility modification scope and costs will continue to be refined as future long term fueling plans are

UE 307 / PacifiCorp May 11, 2016 OPUC Data Request 1

developed.

(e) Not applicable.

Responses subparts (f) and (g) below are submitted following further clarification of the request as provided by OPUC Staff.

- (f) The expected depletion date for Bridger Coal Company's underground operations as of the April 30, 2013 IRP filing was 2037.
- (g) The expected depletion date for Bridger Coal Company's underground operations as of the March 31, 2015 IRP filing was 2023.

Confidential information is designated as Protected Information under Order No. 16-128 and may only be disclosed to qualified persons as defined in that order.

Pages 37-38 of Exhibit AWEC/501 contains Protected Information Subject to Order No. 20-040 and has been redacted in its entirety.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

	UE 374
In the Matter of)
PACIFICORP, dba PACIFIC POWER,)
Request for a General Rate Revision.)
)

EXHIBIT AWEC/502 EXCERPT OF AWEC OPENING TESTIMONY IN UM 1662

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1662

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REPLY TESTIMONY OF BRADLEY G. MULLINS ON BEHALF OF THE INDUSTRIAL CUSTOMERS OF NORTHWEST UTILITIES

May 11, 2015

recovery through their proposed RRTM. On the other hand, if market prices are higher in actual operation than in the Joint Utilities' forecast, the proposed RRTM may result in an increased refund to customers, despite the fact that the Joint Utilities' overall power costs may be higher as a result of higher market prices. This fundamental problem with the Joint Utilities' proposal would produce results that are not reasonable, suggesting that the RRTM should be rejected.

D. Renewable Resource Variability

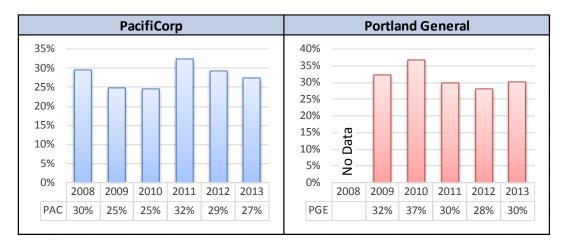
Q. HOW DOES THE YEAR-TO-YEAR VARIABILITY OF RENEWABLE RESOURCES COMPARE TO OTHER ASPECTS OF POWER COSTS?

A. The annual level of generation expected from renewable resources remains relatively stable, year-to-year, compared with other aspects of power costs. Figure 1, below, demonstrates the actual capacity factor of the Joint Utilities' wind resources between 2008 and 2013. The figure demonstrates the relative stability of wind output on an annual basis. The relative standard deviation of the year-to-year variation in wind output is approximately 10.8% and 10.7% percent for PacifiCorp and PGE, respectively.

Figure 1

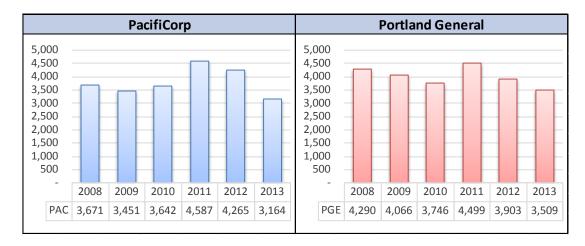
<u>Actual Wind Generation (System Capacity Factor)</u>

2008 – 2013



A threshold question for determining whether the variability associated with renewable resources is so extraordinary to warrant unique rate treatment is whether renewable resource generation is more variable year-to-year than other power cost items. As a comparator, Figure 2, below, details the Joint Utilities' actual hydro generation between 2008 and 2013.

Figure 2
Actual Hydro Generation (GWh)
2008 – 2013



As can be noted from a comparison of the two figures, the year-to-year variability of wind output between 2008 and 2013 has been comparable to the variability of hydro output over the same period. In contrast to wind output, with a relative standard deviation of approximately 11.0% for both utilities, the relative standard deviation of hydro output detailed in the above figure above was 14.0% and 9.0% for PacifiCorp and PGE, respectively. This demonstrates that the year-to-year variability in hydro output was comparable to that of wind output in the period 2008 to 2013. Based on this, it does not appear that the annual variability of renewable resource generation is so significant as to warrant the extraordinary rate treatment proposed by the utilities.

In Order No. 05-1261, the Commission determined that recovery under a hydroonly PCAM should be "limited to unusual events." Given that hydro output has been at least as variable as wind output, such variability does not provide a basis for the Joint Utilities to request a special recovery mechanism that is not subject to the same design criteria as their hydro resources.

Q. DO YOU AGREE WITH THE UTILITIES THAT SB 838 COMPLIANCE HAS MADE IT MORE DIFFICULT TO FORECAST POWER COSTS?

A. No. The Joint Utilities argue that their circumstances have changed since SB 838 was passed and that they now have far more renewable resources on their systems, which is making it more difficult to forecast power costs. They argue that "[t]his problem will only become worse as the Joint Utilities' renewable energy requirements increase to 25 percent of retail load in 2025." The data, however, does not support the Joint Utilities' position that increased renewables on the system are making it more difficult for them to forecast power costs. Figure 3, below, details the absolute value of deviations between forecast and actual power costs between 2008 and 2013, on a percentage basis.

Docket Nos. UE 165/UM 1187, Order No. 05-1261 at 8 (Dec. 21, 2005).

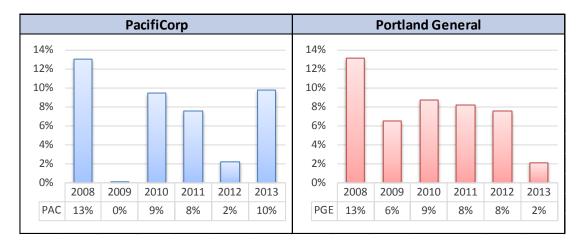
PGE-PAC/100 at 5:17-6:2.

 $[\]frac{28}{}$ Id. at 7:14-15.

Figure 3

Absolute Percent Deviation between Forecast and Actual Power Costs

2008 – 2013



In 2008, the difference between PacifiCorp's forecast and actual power costs was \$127.7 million on a total-company basis, a deviation of 13%. In 2014, its forecast deviation was 10%, and in no year since 2008 did the difference between the utility's forecasted and actual power costs exceeded 13%. The same is true for PGE. The utility's forecast deviation in 2008 was also 13%, compared to a forecast deviation of two percent in 2013. Like PacifiCorp, in no year since 2008 did the utility's forecast deviation exceeded 13%. Between 2008 and 2013, PacifiCorp and PGE added approximately 1,300 MW and 325 MW of new wind resources, respectively. Yet, the power cost differentials over this period actually declined. Thus, the data does not support the Joint Utilities' argument that increased renewable resources on their systems has made it more difficult to forecast power costs in rates.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UE 374

In the Matter of)
PACIFICORP, dba PACIFIC POWER,)
Request for a General Rate Revision.)

EXHIBIT AWEC/503

REVISED AWEC ADJUSTMENTS TO KIEWIT DECOMMISSIONING REPORT

(REDACTED VERSION)

Exhibit AWEC/503 contains Protected Information Subject to Order No. 20-040 and has been redacted in its entirety.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

	UE 374
In the Matter of)
PACIFICORP, dba PACIFIC POWER,)
Request for a General Rate Revision.)
)

EXHIBIT AWEC/504

AWEC SUMMARY OF PACIFICORP RESPONSE TO AWEC DR 100

Misc. Closure Costs by Offset Account 2016 to 2019

Misc. Closure Costs by Offset Account 2016		W 1004 0
Row Labels	Sum of	ValCOArCur
EAST MOUNTAIN ENERGY LLC		13377733.84
Payroll/Salary-Net P		4748374.806
W W CLYDE & CO		2751848.65
VENABLE LLP		577883.4
STOEL RIVES LLP		400415
STAKER & PARSON COMPANIES		339276.5
JONES & DEMILLE ENGINEERING		268848.69
U S DEPT OF THE INTERIOR		120468
OCTOBER THREE CONSULTING LLC		111072.52
Consult-Tech Serv		107080.46
JACKSON KELLY PLLC		92780.76
EMERY COUNTY ROAD DEPT		62305
AMERICAN ARBITRATION ASSN INC		58310.6
Annual Incentive Pln		54113.1
SGS NORTH AMERICA INC		53947.06
NIELSON CONSTRUCTION CO		52723.98
AERO-GRAPHICS INC		49655
DRINKER BIDDLE & REATH LLP		48544.8
CHRISTIANSEN LAW PLLC		44826.13
EMERY TELCOM		44738.37
FAS 158 Pen Liab Adj		44227.98
Prov Unemp Tax		40189.92
SANCHEZ CLEANING SERVICES INC		36519.79
BHE Affl Svc-Lbr/Ovh		32948.63
Corp Card Clear Acct		32596.59
ENERGY VENTURES ANALYSIS INC		31500
DAVID STANTON SMITH		27109.95
SKYDANCE HELICOPTERS OF NORTHERN		24540
GOODIN MACBRIDE SQUERI & DAY LLC		24535.23
MIDDLEMAN SETTLEMENT PAYMENTS		23311.91
ENVIROWEST LLC		22621.48
Legal Cnslt Sv-LFee		20290
ARMEDA MCKINNON ILLIQUID ASSTS TRST		19000
RHINEHART OIL CO INC		18239.36
JOHN T BOYD CO		16937.5
K-Plus Emplyr Cntr-F		16671.49
Purch Card Trans Lia		15593.27
BODEC INC		14703.77
SOCIO ECOLOGICAL CONCEPTS		14606.75
Accr - Payroll/Salar		14188.87
AON RISK SERVICES CENTRAL INC		13934.76
STAPLES CONTRACT & COMMERCIAL INC		12218.9
MT NEBO SCIENTIFIC INC		11358.2
LANCASTER DRILLING INC		9908.02
CARLSON SOFTWARE INC		9750
CEMENTATION USA INC		9129
T&E Expense Liab		9038.03
GOODIN MACBRIDE SQUERI & DAY LLP		8344.33
K V FENCING		8303
J PHILLIP COOK & ASSOCIATES LLC		7811.11
SMITH AUTO COMPANY		7750.69

VERIZON WIRELESS	7620.36
GENCO MINE SERVICE WELLS FARGO BANK NA	7460.97
NELCO CONTRACTORS INC	7206.52 6880.78
LONGWALL WEST	6663.71
A&M ENGINEERING LLC	6634.22
INTERWEST MINING CO	6600
RIGHT OF WAY	6500
CROWELL & MORING LLP	5740.5
CASTLE VALLEY LANDSCAPING	5659
ERIK C PETERSEN	5510
I/Co A/P - MEC	5050.55
EARTHFAX ENGINEERING INC	4927.35
CCI MECHANICAL INC	4762.94
J P MORGAN SECURITIES INC	4759.74
AUTODESK INC	4586.62
RAND WORLDWIDE SUBSIDIARY INC	4366.51
Oth Salary Overhd	4278.63
Incentive Plan - Cor	4152.56
STATE OF UTAH	4137.72
ABB ENTERPRISE SOFTWARE INC	3887.43
BHE AffI Svc-Emp Exp MONSEN ENGINEERING INC	3670.53 3661.65
RECORD XPRESS OF CALIFORNIA LLC	3497.78
AAA FIRE SAFETY & ALARM INC	3420.66
PETERSEN HYDROLOGIC LLC	2967
STATE OF UTAH - TAX COMMISSION	2889.3
EARTHFAX ENGINEERING GROUP LLC	2426.6
HP INC	2288.52
ELWOOD STAFFING SERVICES INC	2280.96
BRUNOS PLUMBING	2069.94
PLANET DEPOS LLC	2054.58
WHEELER MACHINERY CO	1963.15
J & D AUTOMOTIVE	1951.66
HUNTINGTON CITY	1843.13
CITIBANK USA NA	1673.1
CULLIGAN WATER TEK INC	1515.76
INTER-MOUNTAIN LABORATORIES INC	1493.9
LANDON JACOBSON WASTE CONNECTIONS OF UTAH	1278.17 1217.68
RAY QUINNEY & NEBEKER	1217.00
HORIZON LABORATORIES	1018.55
Post-Ret Exp(Ben)NSC	854.11
Med/Dent/Vision - En	851.19
DATADOC IMAGING SERVICES	838.32
CHEMTECH-FORD INC	820
Cntr Reg A 2016 Pn P	769.43
CDW LLC	697.72
COLE-PARMER INSTRUMENT CO INC	697.34
ALSCO INC	672.91
Utah Vehicle License & Registration	644.76
FEDERAL EXPRESS CORP	527.29
BOOKCLIFF SALES INC	422.1
Wright Fuel Card	378.18

XTELESIS CORPORATION	365.33
BLAIR ENTERPRISES LLC	315
WORKFORCE QA CSS HOLDINGS LLC	315
South Eastern Utah Title	310.5
BULLS EYE SOLUTIONS INC	291.36
ARDMORE POWER LOGISTICS LLC	228.87
ENTRY SYSTEMS INC	228.43
ROCKY MOUNTAIN HP CONSULTANTS INC	225
HORIZON LABORATORIES INC	222.92
ECHO GLOBAL LOGISTICS INC	222.13
SUN ADVOCATE	180
LARRY H MILLER FORD TRUCKLAND	165.45
UNIVERSAL FIELD SERVICES INC	127.3
SecurID	104
WASTE CONNECTIONS INC	102.98
HAROLD LEMAY SERVICES	52.98
HAROLD LEMAY ENTERPRISES	52.98
Comp Hardware	32.90 41
ROBERT JAMES DAVIS	24.16
PRECISION TRUCK & TRAILER	15
QWEST COMMUNICATIONS SVCS	3.46
Minnesota Life Insur	-3.31
Misc M&S	-17.77
P/R Tax Payable	-22.24
Dental Insur Payable	-30.61
Vision Insur Payable	-45.94
CASTLE VALLEY HOSPITAL	-105
GR/IR Clearing	-149.81
RegA-Post-Ret-Settle	-206.02
PITNEY BOWES	-383.96
Lodging	-389.13
Med/Dent/Vision	-744.63
Medical Insur Payabl	-763.8
Prov Soc Sec Tax	-1256.13
Accrued Unemp Tax-UT	-2012.32
HOLMES MURPHY & ASSOC LLC	-3927
PT Accrual Non-Union	-5900.62
Reg Asset - FAS 158	-8709.96
Safety Awards Pay	-9105.4
Equipment Rent	-11314.1
RAFAEL REYES	-16836.75
Interco A/R-Curr	-17288.82
Secondary Labor Adj	-19528
UWUA 127 Reg/Ord	-21500
Severance Pay	-38960.52
EW Cash AP	-52786.92
FAS 158 Pen Liab	-67905
HEALTHSMART	-70791.96
Accrued A/P - Mining	-94364.46
Post Employ Ben-FAS	-126780
Mn Dep-Dep Clr Acct	-152169.42
Misc Contr/Serv	-158401.99
State Street Bank & Trust (Retiree	-187998.34
Accr - Severance	-377960.47

 (blank)
 -1316131.89

 Grand Total
 21,373,877.84

Misc. Closure Costs by Cost Element 2016 to 2019

Row Labels	Sum of ValCOArCur
Misc Contr/Serv	14258293.28
Consult-Tech Serv	2902436.97
Non Union Reg/Ord	2601007.1
Legal Cnslt Sv-LgFee	1156792.31
Misc M&S	353507.07
Bonuses and Awards	352683.33
Manager	276303.72
Annual Incentive Pln	236904.25
401(k) Expense	225239.7
Mgt Fee: Pacificorp	184600
Payroll Tax Exp	174395.3059
Coal Leases	144029.27
MdAm Aff Srv-Lbr/Orh	69199.22
Engineer Serv	54060.39
Stock/401(k)/ESOP	53109.09
Unused Leave Payout	48537.85
Filing Fees	38188.41
Bonuses and Awards-O	26708.75
401(k) - Enhanced Fx	23223.03
Comp Software/Lic	20431.94
Pension - Non Union	19185.45
Office Supplies	12594.32
Const & Maint Other	12317.8
Veh/Mob Equip-Fuels	12271.41
Bank Chgs & Fees	12171.89
Property Services	11796.4
Vehicles-Ext Serv	11090.13
Dental	10974.14
Rights of Way Exp	9801
Auto/Park/Mileage	9237.6
Cell Phone	8015.27
MdAm Aff Srv-Emp Exp	7902.75
Legal Cnslt Srv-Expt	7811.11
Auto Expense-Mileage	6181.87
Journeyman	5310.72
Life	5077.61
Other Emp Rel Exp	4991.05
Liab Ins-Surety Bond	4580
Vehicles	4549.54
VEHICLE EXPENSE - LI	4500.48
Storage Serv	3942.78
I.T. SW Maint. Svcs	3887.43
Comp Hardware	3853.38
Payroll Tax Exp-Unem	2542.93
Temp Services-Other	2280.96
Freight Serv	2124.71
Legal Conslt Sv-LCos	1940.36
Procurement Common	1812
Permits & Licenses	1687.72
Dues & Licenses	1620.56
On-Site Meals & Refr	1607.74

Janitorial Serv	1605.85
Meals/Entertain	1489.59
Lubricants, Oil, Gre	1443.83
Water	1031.51
Non Union O/T Pay	824.16
Vision	797.43
Lodging	774.81
Pension Expense	769.43
Serv and Recog Awrds	696.67
Transformers	632.71
Oth Elect Equip/Supp	569.4
Other Deductions	501.99
Oth Royalties -Mines	500
Wood Products	422.04
Other Tax and Fees	396
Sfty Sppl Stp/Allwnc	340.07
Poleline Hardware	268.91
	250.45
Stores Exp Distribut	222.91
Veh-Axles/Brk Sys	194
Books & Subscript	180
Journeyman Unched OT	163.09
Uniform / Safety Eqp	
Repair/Maint	105
Liability Insurance	102.76
Insulators	94.2
Breakers & Switches	74.41
Conductor	70.27
Postage	60.44
Misc A&G Exps	57.03
Printing and Imaging Mechanic	50.72
	47.94
Delivery/Courier Ser	45.64
Vehicle Rental & Exp	32.7
Other Ground Transp	29.1
Veh-Acces/Elec Acces	27.53
Fasteners	22.96
Printing/Imaging Svc	21.32
Tools	21.31
Telecom-Dial-up/Remo	12
Sever/Redund	1.45519E-11
Advert Serv	-42.95
RegA-Deer C-Misc Cost	-396
Black Lung Benefit	-3927
Other O&M Expense	-7647.9
Oth Salary Overhd	-10878.41
Equipment Rent	-11144.1
Const & Maint Labor	-12026.44
Secondary Labor Adj	-19528
Supp Enemp Ben	-34608.52
Telephone	-61307.76
Unusd Leave Acc-NonU	-74963.96
Royalties	-94110.46
Supervisor/Engineer	-104848
PostRetire Exp-NonUn	-127832.74

 Sever Pay
 -151393.5

 Staff
 -242000

 Reg/Ordinary Time
 -474244

 Medical
 -617484.7

 Grand Total
 21373877.84

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

	UE 374
In the Matter of)
PACIFICORP, dba PACIFIC POWER)
Request for a General Rate Revision.)
)

REBUTTAL TESTIMONY OF MICHAEL P. GORMAN ON BEHALF OF ALLIANCE OF WESTERN ENERGY CONSUMERS

July 24, 2020

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1		I. INTRODUCTION AND SUMMARY
2	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
3	A.	My name is Michael P. Gorman. My business address is 16690 Swingley Ridge Road,
4		Suite 140, Chesterfield, MO 63017. I am employed by the firm of Brubaker &
5		Associates, Inc. ("BAI"), regulatory and economic consultants with corporate
6		headquarters in Chesterfield, Missouri. My qualifications were provided in Exhibit
7		AWEC/201.
8	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?
9	A.	I am testifying on behalf of the Alliance of Western Energy Consumers ("AWEC").
10		AWEC members include large energy consumers that purchase services from PacifiCorp,
11		dba Pacific Power ("PacifiCorp" or the "Company").
12 13	Q.	ARE YOU SPONSORING ANY EXHIBITS IN CONNECTION WITH YOUR TESTIMONY?
14	A.	Yes. I am sponsoring Exhibit AWEC/601 through Exhibit AWEC/603.
15	Q.	WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?
16	A.	I will respond to certain assertions made in the Reply Testimony of PacifiCorp witnesses
17		Nicki L. Kobliha and Ann E. Bulkley.
18		II. RESPONSE TO MS. KOBLIHA
19 20	Q.	DID MS. KOBLIHA TAKE ISSUE WITH POSITIONS YOU TOOK IN YOUR OPENING TESTIMONY?
21	A.	Yes. Ms. Kobliha argues that my adjustments to the Company's proposed capital
22		structure offered in my Opening Testimony are not reasonable. In that testimony, I
23		demonstrated that the Company's proposal to set rates based on a forecasted ratemaking
24		capital structure for the projected test year of December 31, 2021 of 53.52% is not

economically justified. Based on my analysis, I recommended a ratemaking capital structure composed of 50.64% common equity.

3 Q. PLEASE DESCRIBE MS. KOBLIHA'S REBUTTAL TO YOUR CAPITAL STRUCTURE ADJUSTMENT.

- 5 A. Ms. Kobliha's rebuttal to my position includes the following:
 - 1. She believes it is not appropriate to consider historical capital structure information in determining an appropriate forecasted test year capital structure in this proceeding.¹/
 - 2. She states that my recommended capital structure does not recognize the weakening Funds From Operations ("FFO") to Debt that was caused by the recent Tax Cuts and Jobs Act ("TCJA") tax law change that took effect beginning in 2018. She states that because of the tax law change an increase and adjustment to previous capital structures are necessary in order to maintain a strong FFO to Debt ratio.
 - 3. She also states that because the Company recently has entered into renewable purchased power agreements ("PPA") for wind and solar, it is not reasonable to assume that the imputed off-balance sheet ("OBS") debt for PPAs will decline.^{3/}
- Q. PLEASE RESPOND TO MS. KOBLIHA'S ASSERTIONS THAT YOUR CONSIDERATION OF HISTORICAL DATA, AND FAILURE TO RECOGNIZE THE CHANGE IN FFO CAUSED BY THE TCJA RENDERS YOUR RECOMMENDATION INVALID.
- A. Ms. Kobliha's characterization that my capital structure analysis was based entirely on historical data is in error. My capital structure analysis did consider historical debt ratios.

 In that portion of my capital structure analysis, I did review credit rating agencies' assessment of historical capital structures and their ability to maintain or support PacifiCorp's credit rating. But importantly, my capital structure analysis did not conclude with a review of only historical data. Instead, I looked at the trend in credit

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 \underline{J} Id. at Kobliha/6.

<u>1</u>/ PAC/2100 at Kobliha/6.

 $[\]underline{2}$ *Id.*

rating benchmarks over time, and tested whether or not a continuation of that credit rating would be adequate to support PacifiCorp's bond rating in the prospective future test year. This was done by making projections using the Company's forecasted capital structure mix with off-balance debt equivalents, and short-term debt balances to project PacifiCorp's core Standard & Poor's ("S&P") credit metric coverage of debt. Setting a ratemaking capital structure that maintains financial integrity and credit standing while at the most reasonable cost to customers, is a balanced and reasonable capital structure to use for setting rates. Ms. Kobliha's arguments simply do not address the reasonable cost standard of establishing an overall fair rate of return.

A.

10 Q. PLEASE COMMENT ON MS. KOBLIHA'S CHARACTERIZATION THAT PACIFICORP'S FFO TO DEBT RATIO IS WEAKENING OVER TIME.

At Kobliha/7 of PAC/2100, Ms. Kobliha outlines the Company's proposed FFO to Debt ratio over the period 2009-2019. As shown on that schedule, the FFO to Debt ratio does decrease considerably for the period after 2018, relative to the FFO to Debt ratios prior to 2018. I do acknowledge that the likely cause of the reduction in the FFO to Debt is the impact from the TCJA. However, the relevant factor that is not addressed by Mr. Kobliha is whether or not the resulting FFO to Debt ratio in 2019 of 18.4% is adequate to support the bond rating. And further, whether or not the FFO to Debt ratios over the period 2009-2018 were much stronger than necessary to support PacifiCorp's actual bond rating.

It is significant to understand that prior to the TCJA, utilities' cash flows were enhanced by the tax law that was in effect. The previous tax law included a higher income tax rate, with accelerated tax recovery for plant investment under normal conditions. However, the previous tax law also included bonus depreciation which

further enhanced utilities' cash flows. The bonus depreciation went away, and the accelerated depreciation under the new tax law was mitigated by the reduction in the federal corporate income tax rate.

While all these circumstances are certainly relevant, what is more important is whether or not the Company's cash flow under the new tax law is still adequate to support its bond rating, at reasonable cost to customers. As I demonstrated in my Opening Testimony, it is.^{4/}

Q. PLEASE RESPOND TO MS. KOBLIHA'S SUGGESTION THAT THE
 COMPANY'S OBS DEBT EQUIVALENTS FOR PPAS WILL INCREASE AS A
 RESULT OF ANTICIPATED PPAS FOR WIND AND SOLAR RENEWABLE
 ENERGY.

Ms. Kobliha did provide a confidential schedule that provided S&P's updated 2019 off-balance debt equivalents for PacifiCorp. I have confirmed Ms. Kobliha's testimony that the Company's purchased power OBS debt equivalent did increase in 2019. Based on Ms. Kobliha's testimony, that is due to purchased power agreements related to wind and solar generation.

Since this increased OBS debt equivalent can be confirmed, I have updated by capital structure to reflect this higher number in my test year capital structure assessment as described in my Opening Testimony. As shown on my Exhibit AWEC/601 and as outlined in Table 1 below, reflecting the increased OBS debt equivalent based on the 2019 update from S&P, would support a ratemaking capital structure with a 51.86% common equity ratio. This is an increase from the 50.64% common equity ratio recommended in my Opening Testimony.⁵/

A.

^{4/} AWEC/200, Gorman/63:3-6.

 $[\]underline{5}'$ AWEC/200, Gorman/29 (Table 8).

TABLE 1

Gorman's Proposed Capital Structure (December 31, 2021)

Description	Weight
Long-Term Debt Preferred Stock Common Equity Total Regulatory Capital Structure	48.13% 0.01% <u>51.86%</u> 100.00%
Source: Exhibit AWEC/601.	

This updated ratemaking capital structure analysis was based on the same financial capital structure to regulatory capital structure assessment described in my Opening Testimony. Again, the only change made to the analysis was the update in the OBS debt equivalent provided by Ms. Kobliha in her Confidential Exhibit PAC/2101.

- 5 Q. WILL THE REVISED CAPITAL STRUCTURE IN TABLE 1 6 **CONTINUE SUPPORT METRICS FUNDS** TO **CREDIT OF** 7 OPERATIONS ("FFO") AND EARNINGS BEFORE INTEREST, TAXES, 8 DEPRECIATION AND AMORTIZATION ("EBITDA") IN LINE WITH S&P'S 9 BENCHMARKS THAT SUPPORT PACIFICORP'S BOND RATING?
- 10 A. Yes. As also included in Exhibit AWEC/602, page 1, I show revised FFO to Debt, and
 11 Debt to EBITDA metrics. At my recommended rate of return, and the adjusted
 12 ratemaking capital structure described in Table 1 above, the FFO and EBITDA strength
 13 of the Company continues to support its current bond rating.

III. RESPONSE TO MS. BULKLEY

- 15 Q. PLEASE SUMMARIZE MS. BULKLEY'S OVERVIEW OF RETURN ON EQUITY POSITIONS IN THIS PROCEEDING.
- 17 A. Ms. Bulkley's rebuttal is summarized as follows:

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1.	Ms. Bulkley finds that Staff witnesses Mr. Matt Muldoon and Ms. Moya
	Enright's recommended return on equity of 9% and my recommended return
	on equity of 9.2% are unreasonable in comparison to the authorized returns
	for vertically integrated electric utilities in the U.S. ⁶ /

- 2. She believes the adjustments the non-Company return on equity witnesses make to her return on equity analyses are unreasonable. 2/
- 3. She also observes that the witnesses are not recognizing current market conditions. More specifically, she believes that my assessment of market conditions is incomplete, and that I do not recognize the distinction in utility betas in recognizing the importance of changes in beta on measurement of a utility's cost of equity.⁸/
- 4. She also states that many regulatory commissions are looking beyond the results of market-based models in establishing a fair return on equity. From this, she believes regulatory commissions are awarding returns on equity for utility companies in the range of 9.5% to 9.99% within 2018.⁹/
- 5. She also opines that the TCJA has the effect of increasing utility investment risk, which was not considered by other witnesses in this proceeding.
- Q. PLEASE RESPOND TO MS. BULKLEY'S BELIEF THAT YOUR RECOMMENDED RETURN ON EQUITY IS TOO LOW IN COMPARISON TO OTHER COMMISSION AUTHORIZED RETURNS ON EQUITY FOR VERTICALLY INTEGRATED ELECTRIC UTILITY COMPANIES.
- 22 A. I disagree with Ms. Bulkley's conclusion. Indeed, my recommended return on equity 23 range is reasonably consistent with authorized returns on equity found appropriate by 24 regulatory commissions at least through the first six months of 2019. This is a period 25 where observable bond yields were much higher than they are today. As shown on my attached Exhibit AWEC/603, a majority of the authorized returns on equity for utility 26 companies fell below 9.5% (11 out of 20 decisions in 2020 through mid-July) and 27 28 overwhelmingly, these authorized returns on equity were used in conjunction with 29 ratemaking capital structures with equity ratios of about 50%. This includes a recent

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 $[\]underline{6}$ PAC/2200 at Bulkley/4.

 $[\]underline{7}$ *Id.*

 $[\]underline{8}$ *Id*.

 $[\]underline{9}$ *Id.* at Bulkley/5.

decision in Washington for Puget Sound Energy, Inc. – 9.4% ROE and 48.5% equity ratio. These industry findings are in line with my recommendation for PacifiCorp.

Also on my Exhibit AWEC/603, I show the monthly average A and Baa bond utility yields as well as Treasury bond yields in 2019 up through the end of June of 2020. As shown on this exhibit, observable utility bond yields have dropped significantly from the first half of 2019, a period that encapsulates the authorized returns on equity well below 9.5% on the majority of observations. If the authorized returns on equity follow changes in capital market costs, the authorized return on equity for PacifiCorp would logically be lower in the current market than it would be in the market that existed at the beginning of 2019.

- 11 Q. PLEASE RESPOND TO MS. BULKLEY'S ASSERTION THAT YOU DID NOT 12 REFLECT THE CURRENT MARKETPLACE IN RECOMMENDING A 13 RETURN ON EQUITY FOR PACIFICORP.
- 14 A. I disagree. Indeed, my Opening Testimony went into significant detail to assess the
 15 current market evidence that demonstrates that my recommended return on equity is
 16 economically logical and consistent with current capital market costs. In arriving at my
 17 return on equity, I observed the following:
 - 1. Utility bond yields are relatively low in the market that exists currently.
 - 2. Utility stock yields generally track utility bond yields, but at a discount. Since utility stocks provide investors both growth and income return via yield, historically utility stocks have had a negative yield spread to observable utility bond yields. However, in the current market, utility stock yields align with utility bond yields with very little spread. This is an indication that the yield component of utility stocks is very high right now, providing a much higher expected return relative to bond yields. This yield component is a factor in the DCF analysis, as well as the growth factor. The DCF model in this case is producing economically logical results and indicates the current market cost of equity is well below 9% for regulated utility companies.

3. I observed that market evidence does support above average risk premiums in the current marketplace. That is, for securities of increasing levels of investment risk, the equity risk premium relative to a risk-free rate is expanding. This expansion is much higher than that observable from historical data. Based on this evidence, I recommended a return on equity that reflected an above average equity risk premium in measuring a fair return for PacifiCorp.

A.

4. I did observe that utility beta estimates were low by historical standards. I found this observation to be economically illogical based on observable market evidence. Market evidence suggests that utility risks are relatively stable, but utility betas seem to be producing illogical results. In a period where utility stocks are having relatively stable investment outlooks, and the general market is much more volatile as a result of uncertain futures, that non-normal variation of utility stock returns versus market stock returns is producing obscure beta estimates. Because the current published betas are below historical standards, I thought it was more accurate, and produced a more reasonable result, to use historical average betas in my Capital Asset Pricing Model ("CAPM") study.

19 Q. DID YOU CONSIDER THE EFFECTS OF THE TCJA IN PROPOSING A FAIR RISK-ADJUSTED RETURN FOR PACIFICORP IN THIS PROCEEDING?

Yes. As noted above, the TCJA did change tax law and had the effect of negatively impacting utility cash flows. That negative impact on cash flows was done in comparison to abnormally high utility cash flows that existed under the tax law prior to adoption of the TCJA. While utility cash flows have been reduced, those cash flows are still strong and adequate to support the utilities' investment grade bond ratings. In effect, the TCJA took away the enhanced cash flows that were made available to utilities under the old tax depreciation law, which included bonus depreciation in conjunction with normal accelerated depreciation allowed under Internal Revenue Service ("IRS") rules.

Because utilities' cash flows remain adequate to support their bond ratings, a reduction in cash flows has not increased investment risk. Rather, it has just required utilities to rely more on external capital in conjunction with internally generated cash flow in order to support capital programs and to make dividend payments. This change

in risk, to the extent it impacts return on equity, is already baked into the market data and market outlooks for utility stock investments, dividend payments, and ability to support capital programs that will grow earnings and dividends over time. The risk is known by market participants and is already reflected in observable stock prices and market data.

A.

- 5 Q. PLEASE RESPOND TO MS. BULKLEY'S ASSERTION THAT YOUR RECOMMENDED RETURN ON EQUITY DOES NOT FULLY REFLECT CURRENT MARKET CONDITIONS AND CHANGES IN *THE VALUE LINE* INVESTMENT SURVEY ("VALUE LINE") UTILITY BETAS.
 - This assertion simply has no merit. In performing my CAPM analysis, I carefully reviewed the development of the current market risk premium, and assessed whether or not I believe more recent declines in utility betas are reliable in assessing the market's perception of utility investment risk. It is my thought that because utility stocks have been more stable in the face of more general market volatility, utility betas moved in unexpected relationships with that of the overall market. This phenomenon can cause abnormally high or low utility beta estimates.

Because market observable data indicates that risk premiums are probably higher than industry averages, I found it a conflict to assume that a utility with a below average beta was producing reasonable results. Similarly, had the betas been unusually high, I would have compared that to market data to determine whether or not using a high beta in relationship to a low risk-free rate produces an economically logical result. In any event, I carefully reviewed the total combined inputs to the CAPM analysis in order to produce what I believe to be a reliable CAPM return estimate in light of changing market conditions. This is particularly relevant under turbulent market times such as we are experiencing now with a global pandemic, volatile oil markets, and great uncertainty about the near-term impacts on investments.

2 3	Ų.	AWARDING PACIFICORP A RETURN ON EQUITY IN THE LOW 9% RANGE AS YOU HAVE PROPOSED?
4	A.	Yes. Authorized returns on equity have fallen below 9.5% on an industry average basis.
5		Utility bond yields have dropped to very low levels relative to historical periods.
6		Utility stock valuations have remained quite robust, where stock yields have
7		actually come in line with bond yields. This is an indication that DCF return estimates
8		are actually producing high expected return results for utility stock investments, not low
9		returns as implied by Ms. Bulkley.
10		Utilities have attracted significant amounts of capital to support very large capital
11		programs while rates are being set reflecting today's very low capital market costs. This
12		is clear and observable evidence that authorized returns on equity reflecting these low
13		capital market costs are fair to investors, fair to ratepayers, and support the utility's
14		financial integrity and access to capital.
15	Q.	DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

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A.

Yes, it does.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UE 374

In the Matter of

PACIFICORP, dba PACIFIC POWER

Request for a General Rate Revision.

EXHIBIT AWEC/601 GORMAN RECOMMENDED RATE OF RETURN (PAGE 1) GORMAN PROPOSED CAPITAL STRUCTURE (PAGE 2) (REDACTED VERSION)

Gorman Recommended Rate of Return

(December 31, 2021)

<u>Line</u>	<u>Description</u>	Weight (1)	<u>Cost</u> (2)	Weighted Cost (3)
1	Long-Term Debt	48.13%	4.77%	2.30%
2	Preferred Stock	0.01%	6.75%	0.00%
3	Common Equity	<u>51.86%</u>	9.20%	<u>4.77%</u>
4	Total	100.00%		7.07%

Source:

Confidential Exhibit AWEC/601, Gorman/2.

Capital Structure

(December 31, 2021) (In Millions)

			PacifiCorp	Proposed		Gorman Proposed			
		Regulatory ¹		Financial		Financial		Regulatory	
<u>Line</u>	<u>Description</u>	Amount (1)	Weight (2)	Amount (3)	Weight (4)	Capital ³ (5)	Weight (6)	Amount (7)	Weight (8)
1	Long-Term Debt	\$ 8,433	46.47%		45.43%		48.25%		49.35%
2	Short-Term Debt	\$ -	0.00%	2	0.17%		0.17%		0.00%
3	Off-Balance Sheet Debt	\$ -	0.00%	3	2.07%		2.07%		0.00%
4	Preferred Stock	\$ 2	0.01%		0.01%		0.01%		0.01%
5	Common Equity	\$ 9,713	<u>53.52%</u>		<u>52.32%</u>		<u>49.5%</u>		<u>50.64%</u>
6	Total	\$ 18,148	100.00%		100.00%		100.0%		100.00%

Sources:

¹Exhibit PAC/300, Kobliha/3.

²Response to AWEC 0034, Attachment 0034.

³Kobliha Reply, Confidential Exhibit PAC/2101.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

In the Matter of)
PACIFICORP, dba PACIFIC POWER)
Request for a General Rate Revision.)

EXHIBIT AWEC/602 STANDARD & POOR'S CREDIT METRICS

Standard & Poor's Credit Metrics

		Co	Retail ost of Service	S&P Benc	hmark (Medial	Volatility)	
<u>Line</u>	<u>Description</u>		Amount	Intermediate	Significant	Aggressive	Reference
			(1)	(2)	(3)	(4)	(5)
1	Rate Base	\$ 4	1,194,704,290				Exhibit PAC/1302, McCoy/6.
2	Weighted Common Return		4.77%				Exhibit AWEC/602, Gorman/2, Line 3, Col. 3.
3	Pre-Tax Rate of Return		8.84%				Exhibit AWEC/602 Gorman/2, Line 4, Col. 4.
4	Income to Common	\$	200,127,822				Line 1 x Line 2.
5	EBIT	\$	370,669,841				Line 1 x Line 3.
6	Depreciation & Amortization	\$	337,652,003				Exhibit PAC/1302, McCoy/6.
7	Imputed Amortization	\$	17,783,509				S&P Capital IQ, downloaded July 9, 2020.
8	Capitalized Interest*	\$	22,134				Response to AWEC Data Request 0033.
9	Deferred Income Taxes & ITC	\$	(11,537,533)				Exhibit PAC/1302, McCoy/6.
10	Funds from Operations (FFO)	\$	544,047,935				Sum of Line 4 and Lines 6 through 9.
11	Imputed Interest Expense	\$	6,470,624				S&P Capital IQ, downloaded July 9, 2020.
12	EBITDA	\$	732,575,977				Sum of Lines 5 through 7 and Line 11.
13	Adjusted Debt [*]	\$ 2	2,597,502,380				Confidential Exhibit AWEC/204, Gorman/1, Sum of Lines1-4, Col. 5 x OR RB Allocator.
14	Total Adjusted Debt Ratio		50.5%				Exhibit AWEC/204, Gorman/1, Sum Lines 1-4, Col 6.
15	Debt to EBITDA		3.5x	2.5x - 3.5x	3.5x - 4.5x	4.5x - 5.5x	Line 13 / Line 12.
16	FFO to Total Debt		21%	23% - 35%	13% - 23%	9% - 13%	Line 10 / Line 13.
17	Indicative Credit Rating		•	Α	A-	BBB	S&P Methodology, November 19, 2013.

Note:

Based on the April 2020 S&P report, PacifiCorp has an "Excellent" business profile and a "Significant" financial profile, and falls under the 'Medial Volatility' matrix.

S&P Business/Financial Risk Profile Matrix									
Business Risk	Financial Risk Profile								
Profile	3 (intermediate) 4 (significant) 5 (aggress								
1 (excellent)	a+/a	a-	bbb						
2 (strong)	a-/bbb+	bbb	bb+						
3 (satisfactory)	bbb/bbb-	bbb-/bb+	bb						

Sources:
Standard & Poor's: "Criteria: Corporate Methodology," November 19, 2013.
* The allocation factor was derived from the June 2019 OR Rate Base and the Total Company Rate base as shown on Exhibit PAC/1302, McCoy/8.

Standard & Poor's Credit Metrics (Pre-Tax Rate of Return)

<u>Line</u>	<u>Description</u>	Weight (1)	Cost (2)	Weighted Cost (3)	Pre-Tax Weighted <u>Cost</u> (4)
1	Long-Term Debt	48.13%	4.77%	2.30%	2.30%
2	Preferred Stock	0.01%	6.75%	0.00%	0.00%
3	Common Equity	<u>51.86%</u>	9.20%	4.77%	<u>6.54%</u>
4	Total	100.00%		7.07%	8.84%
5	Tax Conversion Rate*				1.37080

Sources:

Exhibit AWEC/601.

^{*}Exhibit PAC/1302, McCoy/6.

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EXHIBIT AWEC/603

MAJOR RATE CASE DECISIONS (PAGES 1-2)

TREASURY AND UTILITY BOND YIELDS (PAGE 3)

PacifiCorp Oregon

Recent Rate Case Decisions Electric Utility Rate Case Decisions - Excludes Limited Issue Riders

	Decision					Common Equity as %			Rate Change Amount	
Line	Date	Company	State	ROR (%)	ROE (%)	of Capital	Test year	Rate Base	(\$000)	Case Type
1	1/8/2020	Interstate Power and Light Co.	IA	7.23	10.02	51.00	12/31/2020	Average	127,000	Vertically Integrated
2	1/16/2020	Consolidated Edison Co. of New York, Inc.	NY	6.61	8.80	48.00	12/31/2020	Average	113,251	Distribution
3	1/22/2020	Rockland Electric Co.	NJ	7.11	9.50	48.32	9/30/2019	Year-end	12,000	Distribution
4	1/23/2020	Indiana Michigan Power Co.	MI	6.08	9.86	46.56	12/31/2020	Average	36,400	Vertically Integrated
5	2/6/2020	PacifiCorp	CA	N/A	10.00	51.96	12/31/2019	Average	(5,834)	Vertically Integrated
6	2/11/2020	Public Service Co. of Colorado	CO	6.97	9.30	55.61	8/31/2019	Average	280,544	Vertically Integrated
7	2/14/2020	CenterPoint Energy Houston Electric, LLC	TX	6.51	9.40	42.50	12/31/2018	Year-end	55,942	Distribution
8		Central Maine Power Co.	ME	6.30	8.25	50.00	6/30/2018	Average	17,420	Distribution
9	2/24/2020	Virginia Electric and Power Co.	NC	7.20	9.75	52.00	12/31/2018	Year-end	N/A	Vertically Integrated
10	2/27/2020	AEP Texas Inc.	TX	6.45	9.40	42.50	12/31/2018	Year-end	743	Distribution
11	2/28/2020	Oklahoma Gas and Electric Co.	AR	5.33	N/A	37.92	3/31/2020	Year-end	5,191	Vertically Integrated
12	3/11/2020	Indiana Michigan Power Co.	IN	5.61	9.70	37.55	12/31/2020	Year-end	77,082	Vertically Integrated
13	3/17/2020	Mississippi Power Co.	MS	7.57	N/A	53.00	12/31/2020	Year-end	(16,681)	Vertically Integrated
14		Union Electric Co.	MO	N/A	N/A	N/A	12/31/2018	N/A	(32,000)	Vertically Integrated
15	3/25/2020	Avista Corp.	WA	7.21	9.40	48.50	12/31/2018	N/A	28,500	Vertically Integrated
16	4/6/2020	Kentucky Utilities Company	VA	N/A	N/A	N/A	12/31/2018	N/A	9,000	Vertically Integrated
17	4/7/2020	Northern States Power Company - MN	MN	N/A	N/A	N/A	N/A	N/A	N/A	Vertically Integrated
18	4/17/2020	Fitchburg Gas and Electric Light Company	MA	7.99	9.70	52.45	12/31/2018	Year-end	1,067	Distribution
19	4/27/2020	Duke Energy Kentucky, Inc.	KY	6.41	9.25	48.23	3/31/2021	Average	24,124	Vertically Integrated
20	5/8/2020	DTE Electric Company	MI	5.46	9.90	38.32	4/30/2021	Average	188,285	Vertically Integrated
21	5/20/2020	Southwestern Public Service Company	NM	7.19	9.45	54.77	3/31/2019	Year-end	31,000	Vertically Integrated
22	6/29/2020	Duke Energy Indiana, LLC	IN	5.71	9.70	40.98	12/31/2020	Year-end	145,867	Vertically Integrated
23		Liberty Utilities (Granite State Electric) Corp.	NH	7.60	9.10	52.00	12/31/2018	Year-end	4,150	Distribution
24		Empire District Electric Company	MO	N/A	N/A	N/A	N/A	N/A	N/A	Vertically Integrated
25		Puget Sound Energy, Inc.	WA	7.39	9.40	48.50	12/31/2018	Year-end	29,457	Vertically Integrated
26	7/14/2020	Delmarva Power & Light Company	MD	6.84	9.60	50.53	8/31/2019	Average	11,715	Distribution
27		1st Half 2020: Averages/Total		6.70	9.47	47.78		•	1,144,222	
28		Observations		21	20	22			23	
29		Number Observations at or below 9.5%			11					
30		Number Observations between 9.5% and 10.0%			8					
31		Number Observations above 10.0%			1					

Sources:

1st Quarter Data: S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions -- January - March 2020, Table 5 - Chronology. Post 1st Quarter Data: S&P Global Market Intelligence, Downloaded 7/21/20.

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Recent Rate Case Decisions Gas Utility Rate Case Decisions - Excludes Limited Issue Riders

	Decision					Common Equity as %	,		Rate Change)
Line	Date	Company	State	ROR (%)	ROE (%)	of Capital	Test year	Rate Base	(\$000)	Case Type
1	1/15/2020	MDU Resources Group Inc.	WY	7.08	9.35	51.25	12/31/2018	Year-end	828	Distribution
2	1/16/2020	Consolidated Edison Company of New York, Inc.	NY	6.61	8.80	48.00	12/31/2020	Average	83,923	Distribution
3	1/24/2020	Roanoke Gas Company	VA	7.28	9.44	59.64	12/31/2017	Average	7,250	Distribution
4	2/3/2020	Cascade Natural Gas Corporation	WA	7.24	9.40	49.10	12/31/2018	N/A	6,500	Distribution
5	2/24/2020	Atmos Energy Corporation	KS	7.03	9.10	56.32	3/31/2019	Year-end	3,067	Distribution
6	2/25/2020	Questar Gas Company	UT	7.18	9.50	55.00	12/31/2020	Average	2,680	Distribution
7	2/28/2020	Fitchburg Gas and Electric Light Company	MA	7.99	9.70	52.45	12/31/2018	Year-end	4,596	Distribution
8	3/25/2020	Avista Corporation	WA	7.21	9.40	48.50	12/31/2018	N/A	8,000	Distribution
9	3/26/2020	Northern Utilities, Inc.	ME	7.34	9.48	50.00	12/31/2018	Year-end	3,605	Distribution
10	4/21/2020	Atmos Energy Corporation	TX	7.71	9.80	60.12	N/A	N/A	(300)	Distribution
11	5/19/2020	Black Hills Colorado Gas, Inc.	CO	6.76	9.20	50.15	6/30/2018	Average	(3,329)	Distribution
12	6/16/2020	CenterPoint Energy Resources Corp.	TX	7.38	9.65	56.95	6/30/2019	Year-end	4,000	Distribution
13	7/8/2020	Puget Sound Energy, Inc.	WA	N/A	9.40	48.50	12/31/2018	Year-end	36,532	Distribution
14	7/8/2020	Oklahoma Natural Gas Company	OK	N/A	N/A	N/A	12/31/2019	N/A	9,650	Distribution
15		1st Half 2020: Averages/Total		7.23	9.40	52.77			120,820	
16		Observations		12	13	13			12	
17		Number Observations at or below 9.5%			10					
18		Number Observations between 9.5% and 10.0%			3					
19		Number Observations above 10.0%			0					

Sources:

1st Quarter Data: S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions -- January - March 2020, Table 5 - Chronology. Post 1st Quarter Data: S&P Global Market Intelligence, Downloaded 7/21/20.

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Treasury and Utility Bond Yields

<u>Line</u>	<u>Date</u>	Treasury Bond Yield ¹ (1)	"A" Rated Utility Bond Yield ² (2)	"Baa" Rated Utility Bond Yield ² (3)
1	07/17/20	1.33%	2.74%	3.07%
2	07/10/20	1.33%	2.80%	3.15%
3	07/02/20	1.43%	2.99%	3.36%
4	06/26/20	1.37%	2.95%	3.35%
5	06/19/20	1.47%	3.00%	3.40%
6	06/12/20	1.45%	3.05%	3.41%
7	06/05/20	1.68%	3.23%	3.59%
8	05/29/20	1.41%	3.11%	3.47%
9	05/22/20	1.37%	3.14%	3.61%
10	05/15/20	1.32%	3.17%	3.70%
11	05/08/20	1.39%	3.13%	3.68%
12	05/01/20	1.27%	2.95%	3.50%
13	04/24/20	1.17%	2.93%	3.49%
14	04/17/20	1.27%	3.02%	3.60%
15	04/09/20	1.35%	3.47%	4.08%
16	04/03/20	1.24%	3.55%	4.26%
17	03/27/20	1.29%	3.94%	4.45%
18	03/20/20	1.55%	4.18%	4.69%
19	03/13/20	1.56%	3.44%	3.90%
20	03/06/20	1.25%	2.68%	3.01%
21	02/28/20	1.65%	2.97%	3.27%
22	02/21/20	1.90%	3.05%	3.37%
23	02/14/20	2.04%	3.14%	3.45%
24	02/07/20	2.05%	3.16%	3.45%
25	01/31/20	1.99%	3.13%	3.44%
26	01/24/20	2.14%	3.18%	3.49%
27	Average	1.38%	3.01%	3.44%
28	Spread To Treasury	<i>'</i>	1.63%	2.06%

¹ St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org. ² http://credittrends.moodys.com/.