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## VIA ELECTRONIC FILING AND U.S. MAIL

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**Re: Docket No. UM 1355**

Enclosed for filing in the above-referenced docket are an original and five copies of PacifiCorp's Reply Brief.

A copy of this filing has been served on all parties to this proceeding as indicated on the attached certificate of service.

Very truly yours,



Katherine McDowell

cc: Service List

1 **CERTIFICATE OF SERVICE**

2 I hereby certify that I served a true and correct copy of the foregoing document in  
3 Docket UM 1355 on the following named person(s) on the date indicated below by email  
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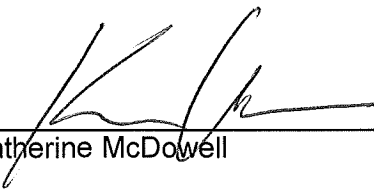
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1                               **BEFORE THE PUBLIC UTILITY COMMISSION**  
2   **OF OREGON**

3   **UM 1355**

4 In the Matter of

5 THE PUBLIC UTILITY COMMISSION  
6 OF OREGON,

7 Investigation into Forecasting Forced  
8 Outage Rates for Electric Generating  
Units.

**PACIFICORP'S REPLY BRIEF**

9               PacifiCorp d/b/a Pacific Power (PacifiCorp or the Company) submits to the Public  
10 Utility Commission of Oregon (Commission) this Reply Brief to the Opening Briefs of Staff  
11 of the Public Utility Commission (Staff), the Industrial Customers of Northwest Utilities  
12 (ICNU), the Citizens' Utility Board of Oregon (CUB), and Portland General Electric  
13 Company (PGE).

14   **I. ARGUMENT**

15 **A.       The Commission Should Continue Using a Four-Year Average with Case-By-**  
16 **Case Analysis For Extreme Outages.**

17               The Commission's continued use of a four-year rolling average, coupled with a  
18 case-by-case analysis to address extreme outages, ensures a fair and accurately predictive  
19 forecast of the forced outage rates (FOR) for net power costs. As PGE argues, this method  
20 is the most straightforward and durable method proposed in this docket. PGE's Opening  
21 Brief at 2.

22               ICNU is critical of the use of a four-year average and argues that PGE "inaccurately  
23 asserts that a four-year forced outage rate is used because more recent data is best for  
24 forecasting forced outage rates." Second Opening Brief of ICNU at 9. ICNU's own  
25 analysis, however, concluded that the "four-year moving average produces the lowest sum-  
26 squared error" even when compared with a straight long-term average. ICNU/400,

1 Falkenberg/16, ll. 10-11. Thus, although ICNU’s brief argues that “there is little forecast  
2 accuracy improvement between a four-year forced outage rate and a twenty-year forced  
3 outage rate,” its testimony actually reflects that the use of the 20-year average *decreases*  
4 the accuracy of the forecast. Second Opening Brief of ICNU at 16. ICNU also  
5 acknowledged that outage rates exhibit short term trends, which makes the use of long-  
6 term averages problematic for forecasting on a year-ahead basis. See ICNU/400,  
7 Falkenberg/15, ll. 5-6; Second Opening Brief of ICNU at 10. Thus, the testimony and  
8 analysis in this docket supports use of the four-year methodology without material  
9 adjustments.

10 Case-by-case analysis of extreme outages, as the Commission successfully used in  
11 past dockets, is a straightforward and durable approach. Because of the unique nature of  
12 outages and differences in the circumstances of the three electric utilities in this docket,  
13 adopting a one-size-fits-all approach for extreme outages may prove problematic. CUB  
14 acknowledges that uniform methodologies may not necessarily be appropriate for all  
15 outages. Opening Brief of CUB at 3 (“CUB continues to believe that a one size fits all  
16 [approach] is not the best approach”). PGE likewise argues that because each outage  
17 event is unique, a case-by-case approach is appropriate. PGE Opening Brief at 3;  
18 PGE/200, Niman-Hager-Tinker/15, ll. 9-11.

19 This case-by-case analysis also lacks the downward bias created by the Staff and  
20 ICNU collar mechanisms. PGE identified this bias and it has not been refuted. See  
21 PGE/300, Tinker-Weitzel/13, l. 14 - /14, l. 2.

22 As discussed below, ICNU has proposed new, material adjustments to the  
23 Commission’s collar in its Opening Brief. This demonstrates the potential for continued  
24 litigation around application of any collar mechanism adopted in this case. To avoid this, the  
25 Commission should return to its historical approach for calculating FOR, addressing  
26 extreme outages individually as they arise.

1 **B. If the Commission Adopts a Collar Mechanism, It Should Use the Mechanism**  
2 **Proposed in Order No. 09-479.**

3 The Commission's Order No. 09-479 collar enjoys the most widespread support of  
4 the parties, relies on actual unit historical data, and is capable of implementation in the  
5 2011 TAM.

6 Staff, ICNU, and CUB all support the use of the Commission's proposed collar  
7 mechanism. See Staff's Opening Brief at 6; Second Opening Brief of ICNU at 2; Opening  
8 Brief of CUB at 2. While PGE supports Staff's original collar, PGE agrees that if the  
9 Commission adopts a collar mechanism that uses a historical average replacement value,  
10 the Commission should adopt its own and not ICNU's. PGE Opening Brief at 10. Idaho  
11 Power's proposed Stipulation also adopts the Commission's collar. Idaho Power Stipulation  
12 at ¶ 18. The Commission's proposal is supported by a majority of the parties to this docket,  
13 adding to its durability.

14 The Commission's collar also uses actual historical data as the replacement value  
15 for excluded outages, which ICNU correctly argues is certifiable and the best predictor of  
16 future events. Second Opening Brief of ICNU at 13-14. Additionally, as PacifiCorp  
17 indicated in its Opening Brief and testimony, the Company can implement this proposal in  
18 its 2011 TAM. ICNU concedes in its brief that the Commission should consider  
19 implementation issues in deciding this case. Second Opening Brief of ICNU at 4.

20 Although ICNU argues that the Commission's collar mechanism is reasonable, it  
21 also suggests, for the first time, material modifications to that collar. ICNU failed to raise  
22 these issues in testimony or at the hearing through cross-examination of Staff witness  
23 Kelcey Brown, who presented testimony in support of the Commission's methodology. The  
24 Commission should refuse to consider ICNU's proposed modifications on the basis that  
25 they were not raised in a timely manner and the record on them is insufficient. If the  
26 Commission does address the merits of these proposals, it should reject them.

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First, ICNU argues that utilities should be precluded from “recreating” historical data in the event that the actual data is unavailable. Second Opening Brief of ICNU at 14-15. In Order No. 09-479, the Commission ruled that there is a “rebuttable presumption” that the historical records are available or recreatable. Order No. 09-479 at 3. ICNU’s proposed modification is unnecessary because the presumption around the availability of historical data is rebuttable. If ICNU or any other party believes that recreated outage data is unreliable, it is free to present such an argument.

Second, ICNU argues that the Commission should require utilities to demonstrate that they have used the same or substantially similar outage rate reporting systems throughout the unit’s history. Second Opening Brief of ICNU at 15. Nothing in the record suggests that the utilities’ methods have changed over time and therefore ICNU’s proposal lacks an evidentiary basis. Moreover, when ICNU proposed its own collar that used a 20-year historical average, it raised no concerns about the validity of historical data.

Third, ICNU argues that the Commission should exclude from the historical average the first year of a plant’s operations.<sup>1</sup> Second Opening Brief of ICNU at 15. Other than anecdotal testimony, ICNU fails to provide actual data to back up its claim that the first year of operations for PacifiCorp’s plants are anomalous or otherwise represent an outlier. Moreover, even if the first year of operation is an outlier, it is unnecessary to exclude that data because the use of a long-term historical average makes exclusion of particular outliers unnecessary. The Commission previously recognized this fact in rejecting the exclusion of outliers from the replacement FOR in Order No. 09-479.

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<sup>1</sup> ICNU’s brief proposed excluding both the first year’s outage data and the first two year’s outage data. It is thus unclear what ICNU’s actual proposal entails. In either case, however, the same arguments apply.

1 **C. The Commission Should Reject Staff's New Collar Mechanism.**

2 Staff argues in its Opening Brief that the Commission should adopt the collar  
3 mechanism proposed in Order No. 09-479. If the Commission does not do so, however,  
4 Staff argues that the Commission should adopt its ten-year rolling average proposal, set  
5 forth for the first time in its reply testimony. Staff's Opening Brief at 4. The Commission  
6 should reject this proposal.

7 First, as argued by PacifiCorp, CUB, and PGE, because Staff proposed this  
8 methodology in the final round of testimony, it has not been properly vetted or analyzed.  
9 Opening Brief of CUB at 6; PGE Opening Brief at 10. No party was able to file responsive  
10 testimony and the record is so limited with respect to this proposal that it is unclear how the  
11 method will work, if it will actually improve forecast accuracy, or whether it is capable of  
12 implementation. The Commission should reject the proposal on this basis alone.

13 Second, Staff developed this alternative mechanism specifically because it had  
14 concerns over the amount of historical data available for the "specific coal-fired generating  
15 units of the individual utilities." Staff's Opening Brief at 3. Notably, Staff has never argued  
16 that PacifiCorp is one of the "individual utilities" to which this concern applies or that  
17 PacifiCorp's units are the specific units that concern Staff. Indeed, Staff acknowledged at  
18 hearing that PacifiCorp had at least 20 years of data for most of its plants. Tr. 18, ll. 9-12.  
19 The concerns that prompted Staff to propose this new alternative were not raised by  
20 PacifiCorp, are not applicable to PacifiCorp, and Staff has made no compelling argument as  
21 to why this proposal should apply to PacifiCorp.

22 Third, Staff's method fails to address the stated concerns that lead it to develop its  
23 proposal in the first place. Staff argues that it proposed the use of a ten-year average  
24 because: (1) concerns raised by PGE and Idaho Power (not PacifiCorp) regarding the  
25 quality of historical data; and (2) Staff was concerned that sufficient plant data may be  
26



1 unavailable to use a life-of-plant average. Staff's Opening Brief at 3. Staff's proposal fails  
2 to resolve these issues.

3 As Staff explained for the first time at hearing, if the ten-year average includes an  
4 outlier, then that outlier value is replaced for purposes of the ten-year average by the ten-  
5 year average immediately preceding the outlier year. Tr. 20, ll. 9-11; Tr. 23, ll. 9-11.

6 Because Staff's proposed NERC collar boundary values will identify outliers every six  
7 years, presumably every ten year period will include at least one outlier. Staff Response to  
8 PacifiCorp Data Request 4.9(b) (upper limit applied to PacifiCorp data set 16 percent of the  
9 time); Staff Response to PacifiCorp Data Request 4.7 (lower limit applied 1 percent of the  
10 time). Thus the replacement of excluded outages will necessarily draw from older and older  
11 historical data even though Staff's stated purpose was to eliminate concerns over the use of  
12 historic data.

13 Staff's Colstrip example illustrates the problem with Staff's proposal. See Staff's  
14 Opening Brief at 4. Staff's example assumes that the Colstrip plant has an outlier year in  
15 2009 and therefore that year's outage rate must be replaced by the most recent ten-year  
16 average.<sup>2</sup> Within that ten year history (1999 to 2008), Staff explains that the Colstrip plant  
17 had an outlier in 2002. Therefore, under Staff's proposal that value would be replaced by  
18 the ten-year average from 1992 to 2001. Assuming that the 1992 to 2001 data set  
19 contained no outliers (which is unlikely when one out of every six years is an outlier), in  
20 Staff's example the 2009 outage rate would be calculated using 17-year-old data from  
21 1992. Staff's method, therefore, draws upon the same historic data it was meant to avoid.

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24 <sup>2</sup> Staff's Opening Brief does not directly state that this is the assumption governing its example.  
25 However, if Staff's example replaces the 2002 outage with the 1999 to 2008 outage rate then the  
26 example in the brief is completely different from the example provided at hearing—demonstrating the  
lack of clarity regarding Staff's proposal.

1           Moreover, in the event that the 1992 to 2001 data set contains an outlier, even older  
2           outage data will be used to replace the excluded 2009 outage.<sup>3</sup> If Staff was concerned  
3           about the use of historical data, its method fails to address this concern because the  
4           replacement strategy for outliers requires going back through all of the plant's historical  
5           data to finally obtain a "clean" data set with no outliers. Thus, this method relies on the  
6           same historical data that Staff was concerned about using in the first place.

7           Staff's proposal was also intended to address concerns that particular plants—  
8           plants with histories of less than 10 to 15 years—may lack sufficient historical data to use a  
9           long-term average. Staff/400, Brown/7, ll. 6-10. But even in the Colstrip example in Staff's  
10          brief, its method can only work if the plant has at least 17 years of historical data—  
11          assuming that the 1992 to 2001 data set is free of outliers. If a plant has only 10 years of  
12          historical data (the type of plant Staff's proposal was meant to address), then Staff's  
13          method does not work. If any value in the ten-year history is an outlier, Staff's proposal has  
14          no replacement value.<sup>4</sup> Staff's replacement strategy for excluding outliers from the ten-year  
15          average is ineffective because it relies on data that does not exist. Thus, Staff's proposal  
16          again fails to remedy the particular concerns it was designed to address and is unworkable.

17          **D.     The Commission Should Reject ICNU's Proposed Collar Mechanism.**

18          ICNU's proposal was already rejected by the Commission in Order No. 09-479 and  
19          ICNU provided no compelling justification for the Commission to change its position. ICNU  
20          acknowledges that the Commission's method of using the entire historical data set is  
21          reasonable, as is the use of NERC data to establish the collar's boundary values. Second

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22                     <sup>3</sup> For example, if the 1995 outage rate was an outlier, that value would be replaced with the  
23                     1985 to 1994 average. Embedded in it, if the 1986 outage rate was an outlier, that value would be  
24                     replaced with the 1976 to 1985 average. Thus, in this example even to replace the 2002 outage rate,  
                      one would use historical data going back to 1976.

25                     <sup>4</sup> For example, if a plant has been on-line since 1999, how does one calculate a ten-year  
26                     average if 2002 is an outlier? Staff's proposal would use 1992 to 2001 data but that data does not exist  
                      for this plant.

1 Opening Brief of ICNU at 14. ICNU acknowledges that the Commission’s collar is based on  
2 the same underlying principle as its own proposal—using long-term averages to replace  
3 outlier rates. Second Opening Brief of ICNU at 7-8. And ICNU provides no compelling  
4 argument why its 20-year proposal better satisfies its own standards than does the use of a  
5 longer-term historical average. Considering that ICNU generally supports the  
6 Commission’s collar as reasonable, there is no reason to adopt ICNU’s proposal.

7 ICNU’s own arguments also undercut the support for its collar proposal. ICNU  
8 argues that the Commission should continue to use a four-year rolling average in part  
9 because using long-term averages “would require more data and analysis in the annual  
10 power cost proceedings.” Second Opening Brief of ICNU at 11; ICNU/400, Falkenberg/16,  
11 II. 10-11. ICNU’s collar, however, by definition replaces one out of every five years of  
12 data—meaning that every five years the FOR calculation “would require more data and  
13 analysis in the annual power cost proceedings” than is reasonable. See ICNU/300,  
14 Falkenberg/13, II. 7-9.

15 The Commission should again reject ICNU’s proposal to exclude outlier outages  
16 from the historical data set used to replace extreme outages. ICNU argues that in addition  
17 to adopting a collar, the Commission should also use a 28-day cap to exclude outliers from  
18 the historical data set used to determine the replacement values in the collar. Second  
19 Opening Brief of ICNU at 17. The Commission already rejected this proposal in Order No.  
20 09-479 and it should do so again. When using long-term averages, outliers need not be  
21 excluded from the historical average. Opening Brief of CUB at 4; Tr. 25, II. 21-24; Tr. 26, II.  
22 18-20.

23 Moreover, ICNU argues that the Commission should include its 28-day cap because  
24 the Commission’s collar fails to “address abnormally long outages.” Second Opening Brief  
25 of ICNU at 16. The entire purpose behind the Commission’s collar, however, is to address  
26 abnormally long outages because those are the outages replaced as outliers, a fact

1 acknowledged by ICNU. See ICNU/100, Falkenberg/10, I. 3 (long outages are extreme  
2 events). ICNU's own testimony states that outages in excess of 28-days are extremely  
3 rare. ICNU/100, Falkenberg/10, II. 7-9. Therefore, these outages will presumably be  
4 excluded by the Commission's collar mechanism and therefore there is no reason to also  
5 adopt a 28-day cap.

6 **II. CONCLUSION**

7 PacifiCorp recommends that the Commission continue its long-standing practice,  
8 using a four-year rolling average to forecast FOR and a case-by-case analysis to address  
9 extreme outages. This method has worked well in the past and is the most durable method  
10 going forward. If the Commission decides to adopt a collar mechanism, it should adopt its  
11 proposal set forth in Order No. 09-479. This proposal uses actual plant data as  
12 replacement values, is sufficiently developed in the record, and PacifiCorp can implement it  
13 in the 2011 TAM.

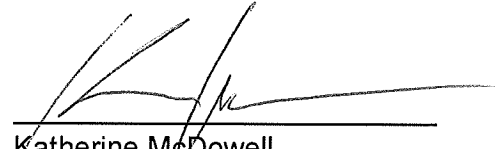
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15 DATED: September 16, 2010.

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