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September 16, 2010

Via Electronic and U.S. Mail

Public Utility Commission
Attn: Filing Center
550 Capitol St. NE #215
P.O. Box 2148
Salem OR 97308-2148

Re: In the Matter of PUBLIC UTILITY COMMISSION OF OREGON Investigation into Forecasting Forced Outage Rates for Electric Generating Units
Docket No. UM 1355

Dear Filing Center:

Enclosed please find an original and five copies of the Second Reply Brief on behalf of the Industrial Customers of Northwest Utilities in the above-referenced docket.

Thank you for your assistance.

Sincerely yours,

/s/ Jacqueline E. Smith
Jacqueline E. Smith

Enclosures
cc: Service List

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the foregoing Second Reply Brief on behalf of the Industrial Customers of Northwest Utilities upon the parties on the service list, shown below, by causing the same to be sent by electronic mail to all parties, as well as, deposited in the U.S. Mail, postage-prepaid, to parties which have not waived paper service.

Dated at Portland, Oregon, this 16th day of September, 2010.

/s/ Jacqueline E. Smith
Jacqueline E. Smith

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BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1355

In the Matter of	)	
	)	SECOND REPLY BRIEF OF THE
THE PUBLIC UTILITY COMMISSION OF OREGON	)	INDUSTRIAL CUSTOMERS OF NORTHWEST UTILITIES
	)	
Investigation into Forecasting Forced Outage Rates for Electric Generating Units.	)	

I. INTRODUCTION

Pursuant to the Administrative Law Judge's ("ALJ") August 6, 2010 Ruling, the Industrial Customers of Northwest Utilities ("ICNU") submits this Reply Brief in the Oregon Public Utility Commission's (the "Commission" or "OPUC") second phase of the investigation into forecasting forced outage rates for electric generating units. The Commission should resolve all issues related to the forced outage collar by either adopting ICNU's collar or a modified version of the Commission's collar. Although it is not the preferred approach of any party, all parties except Portland General Electric Company ("PGE") agree that the Commission's hybrid collar would reasonably forecast forced outage rates. PGE's and PacifiCorp's concerns regarding both ICNU's and the Commission's collars are based on flawed statistical analysis and a desire to set inflated outage rates that assume extraordinary and rare outages will occur every four years. The few legitimate concerns regarding the Commission's collar would only require minor modifications to ensure that it is more accurate, easier to implement, and less subject to manipulation by the utilities.

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II. ARGUMENT

1. The Commission Should Reject PGE's Contradictory and Unsupported Arguments

PGE's fundamental position is that the Commission should not modify the four-year forced outage rate, and it should include abnormal outages which are unlikely to occur during the period in which rates are in effect. PGE Brief 1-4. PGE, however, is willing to agree to use the original Staff methodology because it would have the smallest impact on the forced outage rates. While PGE criticizes the ICNU and Commission collars, PGE never provides any evidence that either of its preferred approaches are more accurately predictive or in any way superior. Thus, PGE fails to meet its burden to demonstrate that its approach would result in more accurate forced outage rates or in just and reasonable rates.

PGE criticizes ICNU for not demonstrating that ICNU's proposal is more accurately predictive than PGE's North American Electric Reliability Council ("NERC") collar. PGE Brief at 6. PGE alleges that ICNU "eschews using any NERC data" and "is therefore attacking a straw man." Id. PGE's complaint goes to the fact that no party has obtained the actual NERC data to evaluate the accuracy of a NERC collar. ICNU acknowledged this issue in its testimony. ICNU/400, Falkenberg/40-41. PGE's position is ironic because PGE itself is proposing that the Commission adopt a collar based entirely upon NERC data that PGE has not itself reviewed or analyzed. Id.

ICNU's analysis compared the accuracy improvements associated with removing extreme outages and replacing them with either "nearly as extreme" outages or average outages. ICNU/400, Falkenberg/1-5. As explained in ICNU's first Opening Brief, although historic plant data is likely to be more accurately predictive, the use of NERC or historic data is not the key

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factor in ICNU's analysis. ICNU First Opening Brief at 11-12. The most important issue is how to replace extreme outages. ICNU/400, Falkenberg/36; Tr. at 36-37 (Falkenberg). Regardless, PGE has not presented any evidence that its preferred NERC collar is more accurate, or that it is a collar that replaces extreme outages in a way that is more accurate than either ICNU's or the Commission's collar.

PGE also asserts that the evidence in the second phase of this proceeding focuses on ICNU's proposal and not the Commission's collar, and that none of the evidence regarding the ICNU collar is "probative or directly applicable to the Commission's" collar. PGE Brief at 5. ICNU's collar is the best understood and most heavily analyzed collar in this proceeding, and it is the only collar which has been demonstrated to have actual accuracy improvements. Although there are certain aspects of the Commission's collar which have not been analyzed (e.g., no analysis of the use of NERC data and no review of data from the entire history of each plant), the fundamental conclusions regarding the accuracy improvements of the ICNU collar apply to any of the other collar mechanisms. ICNU's analysis that forced outage rates for mature plants generally return to the average outage rate following extreme events supports the adoption of the ICNU's or the Commission's collar.

PacifiCorp takes completely the opposite position of PGE and argues that only the Commission's collar, and not ICNU's collar, has been "studied, vetted and clarified." PacifiCorp Brief 2, 8. This is inaccurate. While the evidence in this proceeding supports the use of a historic average to calculate replacement outages, no party has submitted testimony regarding the exact accuracy improvements regarding the Commission's collar. No party, except the utilities, have been able to study, vet, or understand the actual impacts of the Commission's

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collar. In contrast, the ICNU collar has been fully reviewed with additional discovery and testimony that focused specifically on how it would work. The impacts of ICNU's collar are known, and the evidence shows that it will have actual accuracy improvements that are reasonable.

In addition, while the Commission has clarified its collar, there will likely be significant disputes regarding the availability and use of historic data that may make the implementation of the Commission's collar subject to dispute. PacifiCorp asserts that it can implement the Commission's collar, but any changes may result in a delay in the incorporation of the collar in the upcoming power cost updates. PacifiCorp Brief at 8. PacifiCorp ignores the fact that it also has had nearly a year to review ICNU's collar. ICNU's collar uses a more limited data set and caps extreme outages at 28 days, instead of relying upon un-reviewed outage data from the life of the plants. ICNU's collar will likely be significantly easier to implement and subject to less litigation over the reasonableness of the data than the Commission's collar.

2. The Evidence Demonstrates that ICNU's or the Commission's Collar Will Improve Forecast Accuracy

PGE argues that the accuracy improvements demonstrated by ICNU are "not statistically significant." PGE Brief at 7-9. Notably, PGE's Brief does not address many of the arguments raised in its testimony regarding ICNU's collar, presumably because PGE has dropped those positions after reviewing ICNU's and Staff's reply testimony. PGE's main remaining argument is that the accuracy improvements of the ICNU collar reflect random differences. Id. This argument is based on flawed interpretation of the evidence and, even if correct, would not show that PGE's method is superior, but rather that statistics cannot

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distinguish which method is better. ICNU/400, Falkenberg/19. Notably, PGE has presented no evidence that its proposal would be more accurately predictive.

PGE claims that the "accepted standard for statistical significance is a P-value of 5% or less," and PGE then proceeds to argue that the accuracy improvements in ICNU's collar are the result of random chance because some tests show "P-values" of between 10.2% and 20%. PGE Brief at 7-8. A P-value test is performed to ascertain whether improvements in sample tests are the result of random chance. ICNU/400, Falkenberg/21-22. The P-value test is the result of hundreds of simulations to determine the difference between the two samples, and if a small percentage of the tests show a low number (e.g., 5%), then the improvements were unlikely to have been by random chance. Id.

P-values above 5% do not mean that the results are not statistically significant or that the results were the result of random chance. For example, a P-value of 10% simply means that there is a 10% chance that the improvements were the result of random chance, and a 90% likelihood that the improvements were due to the superiority of the method. Thus, Mr. Falkenberg conditioned his conclusions depending on the P-values of his results. Mr. Falkenberg concluded that: 1) the accuracy improvements of the ICNU collar compared to no changes in four-year forced outage rate except capping outages at 28 days were "extremely unlikely" to have been random chance (a 0.4% to 0.5% P-value); 2) the accuracy improvements of the ICNU collar compared to the using the 90/10 replacements (PGE's bad outage replacement strategy) were "very unlikely" to have been via chance (3.7% to 5.9% P-value); and 3) the accuracy improvements of the ICNU collar compared to the 90/10 replacements when

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making adjustments to remove future or "ex ante" data were still "unlikely" to have been due to chance (P-values from 10.2% to 20%). ICNU/400, Falkenberg/24, 29.

In other words, when using a wide variety of methods to test the ICNU collar, they all show that the accuracy improvements are unlikely to be merely the result of random chance. PGE would have the Commission reject any of ICNU's analysis that is less than 95% certain not to be due to random chance and adopt its proposal under which PGE has presented no analysis of its accuracy improvements. In other words, PGE would require almost absolute certainty to accept a methodology it disagrees with, while requiring no evidence at all favoring the method it prefers. Finally, while Mr. Falkenberg's analysis is specifically directed toward the ICNU collar, Mr. Falkenberg's general conclusions support any collar that uses a similar data set and replaces extreme outages with average outages.

3. The Commission Should Not Adopt the Staff Alternative Collar Because It Is Less Accurate than the ICNU Collar

Staff proposed an alternative collar in its reply testimony. Staff/400, Brown/2. Idaho Power and PGE raised concerns regarding the use of long-term historic data, and Staff proposed an alternative collar that would use ten year average data for replacement data to "address the issues raised by PGE and Idaho Power." Id. at Brown/8. ICNU recommends that the Commission not adopt Staff's alternative collar because it would be less accurate than ICNU's collar.

Staff's proposed alternative collar is relatively simple and easy to analyze. PGE and PacifiCorp complained that there was insufficient time to analyze Staff's alternative collar. Tr. at 41-44 (Weitzel); 48-49 (Duvall). PGE, however, did not even attempt to analyze the Staff

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collar and did not conduct any discovery on the Staff alternative. Tr. at 45 (Weitzel). Mr. Falkenberg was able to review the Staff alternative easily because it was "not difficult to compute." Tr. at 37 (Falkenberg). While the Staff alternative is more accurate than the use of 90/10 replacement collar, Mr. Falkenberg concluded that the Staff alternative is "unnecessary" and does not provide "any advantage at all over" the ICNU collar. Id. at 37-38.

ICNU, however, shares Staff's concerns regarding the use of longer term data in the Commission's collar. The Commission should address this issue by adopting either the ICNU collar or modifying the Commission collar to use 20 years of historic data that can be easily verified by the Commission and caps outages at 28 days. See ICNU Second Opening Brief at 13-16. Capping outages at 28 days and the use of 20 years of data addresses Staff's concerns regarding the use of longer term data sets and the availability of certain data. For example, PacifiCorp has limited historic data for some plants (only 19 of 26 plants even have 20 years of data). PacifiCorp Brief at 8; Tr. at 13, 18 (Brown). ICNU's proposal addresses this data availability problem and reduces potential litigation by using a more limited data set and capping extreme outages at 28 days. ICNU recommends that, at a minimum, the Commission should exclude from any replacement collar: 1) data from the early years of historic plant operations; 2) data that cannot be easily located; 3) outage data longer than 28 days and 4) data that cannot be demonstrated did not result from imprudent outages.

4. The Commission Should Reject PacifiCorp's Criticisms of the ICNU Collar

PacifiCorp raises a variety of arguments criticizing the ICNU collar, most of which will not be responded to herein because they have been fully addressed previously. PacifiCorp argues that long outages should not be capped at 28 days because the use of a long

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term average eliminates the need to cap long outages, and that there is nothing in the record that suggests that a 20-year average is more accurate forecast than a life-of-the-plant average forced outage rate. PacifiCorp Brief at 12-13. The evidence in the record contradicts PacifiCorp's assertions.

There is no evidence in the record that the use of a life-of-the-plant rate will eliminate the need for capping outages at 28 days. To support its position, PacifiCorp relies upon a statement from Staff witness Brown at the hearing regarding her understanding of why the Commission's collar used the life of the plant without capping long outages at 28 days. PacifiCorp Brief at 12; Tr. at 24-25 (Brown). There is no evidence to support this assumption. In contrast, there is voluminous evidence regarding the accuracy improvements regarding capping long outages at 28 days because all of ICNU's, PGE's and PacifiCorp's analyses assumed that long outages would be capped. ICNU/400, Falkenberg/2 n.3, 32-34. The capping of outages at 28 days was critical to the accuracy improvements of these collars.

PacifiCorp is incorrect that there is nothing in the record to support the use of a 20-year average over the life of the plant. First, there is evidence that outages experience a "bathtub" curve in which the first years of plant operations have abnormally high outages which should be excluded from normalized ratemaking. ICNU/400, Falkenberg/15 n.29. ICNU raised the issue of excluding the early years of plant operations in its first round of testimony. ICNU/100, Falkenberg/12-13. Outage rates for mature plants should not be inflated with the abnormally high outages that occur during the first years of plant operations. Second, ICNU analyzed a limited amount of 30-year PacifiCorp outage data, and it showed less of an accuracy improvement than use of 20-year data. ICNU/400, Falkenberg/24. Finally, there are legitimate

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concerns regarding the reliability and administrative ease of longer-term data which support using a 20-year average. Modifying the Commission collar to use 20 years of data and capping extreme outages at 28 days should be easy to implement and will reduce the complexity and disputes surrounding forecasting forced outage rates.

III. CONCLUSION

The Commission should adopt ICNU's forced outage rate collar or a modified version of the Commission's collar because both would accurately normalize outage rates to reflect conditions which are reasonably expected to occur. The Commission should reject PGE's proposal to adopt a collar that replaces extreme outages with bad outages because it will produce less accurate forced outage forecasts. If the Commission does not adopt the ICNU collar, the Commission should modify its collar to utilize a 20-year data set rather than outages from the life of the plant, or at a minimum, cap long outages and remove outages during the first years of a unit's operations.

Dated this 16th day of September, 2010.

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