BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1355

In the Matter of

THE PUBLIC UTILITY COMMISSION OF OREGON Investigation into Forecasting Forced Outage Rates for Electric Generating Units

PORTLAND GENERAL ELECTRIC COMPANY'S REPLY BRIEF

Portland General Electric Company ("PGE") hereby submits its reply brief.

I. Introduction.

The opening briefs in this final phase illustrate what we said in our opening brief. After years of testimony, number crunching, data requests, workshops, settlement negotiations, and still more process after an all-party PGE stipulation, the alternative approaches are all inferior to the Commission's traditional four-year rolling average. The alternatives possess no real advantages. In fact, almost everyone recognizes that the alternatives offer no material improvements in predictive performance. On the other hand, the alternatives have significant disadvantages. The alternative methodologies are more complex, untested in contested case proceedings, and more likely lead to wasteful disputes.

Alternatives that use historic averages raise the specter of intractable disputes about outages that occurred 10, 20, or 30 years ago. Thus, we read in opening briefs new proposals that, in determining long-term forced outage rate averages, (i) utilities must prove that outage reporting methods in the distant past are the same as, or substantially similar to, reporting methods used today and (ii) utilities must prove that each outage is not the result of imprudence. These alternatives will cause multiple prudence reviews and disputed issues

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whenever the Commission forecasts forced outage rates. There might be an argument for adopting such a complex, dispute-riddled, and resource intensive approach if the current methodology was broken and the new alternative enjoyed wide-spread support and fixed the problems. But the four-year rolling average is not broken and there is no consensus alternative with demonstrated improvements in predictive performance. We therefore urge the Commission to use the results in this docket to inform its continued use of the four-year rolling average in the future.

The Commission has before it no less than five alternatives:

- The traditional four-year rolling average adjusted on a case-by-case basis;
- The 90/10 percentile NERC-based collar with 90/10 percentile NERC replacement values supported in the all-party PGE stipulation (the "Staff-Stipulated Methodology");
- The Commission proposed 90/10 NERC-based collar with life-of-the-plant mean replacement values (the hybrid approach suggested in Order Nos. 09-479 and 10-157);
- ICNU's 90/10 collar and mean replacement strategy using 20-year plant specific historical data;
- Staff's 90/10 NERC-based collar with 10-year plant averages as replacement values

Given the complexity of the issues and the alternatives, we want to be clear about our position. The truncated 20-year average (ICNU) and 10-year average (Staff) as replacement values are unacceptable alternatives. We appreciate Staff's effort to find a consensus alternative but we agree with CUB and others that "the revision was advocated so late in the

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process" that it denied others the ability to analyze it. In fact, Staff acknowledged that the alternative was introduced so late that *it* had not modeled and fully analyzed the alternative.

In Commission Order Nos. 09-479 and 10-157, the Commission declined to adopt either the ICNU collar or its mean replacement strategy. No evidence in this final phase should change that conclusion. In fact, as ICNU articulates the details of its proposal, the problems multiply and become more evident.

This leaves three alternatives. While the 10-year and 20-year average approaches have serious flaws that cannot be remedied, we acknowledge that it is a closer call when comparing the final three options. Nevertheless, we continue to support the four-year rolling average as adjusted on a case-by-case basis. This approach has stood the test of time and provides the Commission with the flexibility to adjust its application as needed. Next we support the Staff-Stipulated Methodology as a reasonable approach that enjoyed the support of all parties. Of these final three options, the Commission's hybrid approach is our least preferred alternative.

II. The Commission Should Reject Staff's Alternative 10-year Average Approach.

At the outset, we appreciate Staff's behind offering a compromise alternative to address specific concerns. Nevertheless, the opening briefs demonstrate that this alternative was introduced too late in the proceeding to allow parties to review and analyze the approach. In fact, Staff acknowledges it (i) has no workpapers regarding the methodology (Hearing Trans. at 10), (ii) never modeled this approach (*id.* at 25), and (iii) performed no analysis showing that its approach was superior to the alternatives in terms of predictive accuracy. *Id.* at 27. No party, other than Staff, supports the approach and even Staff prefers the Commission's hybrid alternative. Staff's Opening Brief at 6; Hearing Trans. at 12. We

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and other parties agree with CUB's assessment that, while Staff's intention was laudable, the Commission should reject "Staff's most recent revision to that formula since the revision was advocated so late in the process denying others the ability to properly vet and comment on it." CUB Opening Brief at 6.

The lack of thorough analysis is evident. When calculating the 10-year average replacement value, Staff proposes to remove "outlier" years and replace them with the 10-year average from the previous 10 years. Staff Opening Brief at 5; Hearing Trans. 20-24. Nevertheless, this will create an iterative process likely leading back to beginning of the plant's life given that outliers occur about 17 percent of the time or about once every six years. PacifiCorp Opening Brief at 11 (citing Staff's response to PacifiCorp Data Request 4.9). But what do we use as a replacement value if an outlier occurs within this first 10 years? We have no answer given the lack of analysis and time afforded to articulate and test Staff's suggestion.

III. The Commission Should Reject ICNU's 20-year Methodology.

ICNU proposes to use a plant's 20-year operation to determine outlier years and mean replacement values. The Commission declined to adopt either of these alternatives. Instead, the Commission adopted the 90/10 percentile NERC-based collar and life-of-the-plant average replacement value. In particular, the Commission rejected ICNU's approach of removing outliers from the historical average used to determine replacement values. Commission Order No. 09-479 at 3 (Dec. 7, 2009) ("Although the actual data for the outside-the-collar forced outage year will not be used in the computation of the FOR four-year moving average, it will (if not due to imprudence) become part of the historical data set that

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will be utilized in subsequent outside-the-collar FOR calculations"). No evidence in this final phase indicates that the Commission should change that conclusion.

The evidence ICNU introduced in this final phase did not address the Commission's hybrid approach or the Staff-Stipulated Methodology. Instead, ICNU analyzed different replacement strategies using plant-specific data. As ICNU openly acknowledged, it never modeled the NERC collar approach proposed in the PGE all-party stipulation and adopted by the Commission. ICNU/400, Falkenberg/40-41 ("none of your [Falkenberg's] analysis deals with the OPUC collar or other collars that depend on the NERC data"). In short, the evidence in the final phase offered no reason to change the Commission's decision not to adopt ICNU's approach.

In fact, the methodological problems revealed in the final phase confirm this result. As PGE and Staff have noted, ICNU improperly used data that would not have been available at the time forced outage rates would have been forecasted. In response, ICNU claims that PGE and PacifiCorp used "ex ante" data in "the analyses they presented in the collar mechanism." ICNU Opening Brief at 12.

ICNU's comparison misses the crux of our objection. PGE used ex ante data when calculating the NERC collar used to identify outliers for the Staff-Stipulated Methodology. This was done because of the limited set of NERC data available. This is a far cry from what Mr. Falkenberg did. Mr. Falkenberg used ex ante data to calculate mean replacement values for his approach and for his approach alone. This biased the results in favor of his mean replacement value approach by using data from the very same period of time that his methodology was forecasting. This is like testing someone's knowledge after you have given them the answer sheet. As Staff observed, we would not need to create forecasting tools if

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we already knew the answers. Staff/400, Brown/8. Simply using ex ante information to identify outlier years for all methodologies (as we did) has none of serious methodological problems inherent in Mr. Falkenberg's analysis.

ICNU's brief also illustrates that its approach is unworkable and unduly complex. For example, ICNU now claims that (i) utilities must demonstrate that the forced outage reporting system currently used is the same as, or substantially similar to, the system that produced the historic data; (ii) utilities must verify that older outages were not the result of utility imprudence; and (iii) all outages during the first two years of operation should be excluded. ICNU Opening Brief at 14-15. These proposed requirements illustrate what we said in our opening brief. The use of long-term plant information to calculate replacement value is likely to multiply wasteful disputes without any demonstrated improvement in forecasting accuracy. We take up each of ICNU's proposed adjustments:

First, ICNU's proposal to place the burden of proof on utilities virtually insures that the burden will not be met given that it would require evidence concerning outage reporting practices 20 or 30 years ago. Such a one-sided and in many cases unattainable standard is unfair and inappropriate. In addition, ICNU's proposed requirement is unworkable because it fails to identify what happens if reporting methods have changed or if there is simply no evidence about reporting methods.

Second, placing the burden of proof on utilities to show that each outage was not the result of imprudence again imposes an unrealistic and nearly impossible to meet standard, particularly for outages that occurred 20 and 30 years ago. Not only is this burden of proof biased, it will lead to wasteful and time consuming disputes. Forecasting forced outage rates

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will spawn numerous prudence reviews with parties litigating the cause of outages that occurred long ago.

Third, removing the first two years of a plant's operation is another ad-hoc adjustment that none of the parties has analyzed in these proceedings. ICNU's proposal is not fully articulated and its implication unknown and unstudied. It appears that ICNU is proposing to eliminate the first two years of a plant's operation for calculating replacement values but it is unclear how INCU's "bathtub adjustment" applies to the calculation of the four-year rolling average and the identification of outliers. If the Commission adopts an historic average approach for replacement values, it should decline to adopt overly broad and rigid principles such as this one that have little or no evidentiary basis. The Commission should retain the flexibility to address such implementation issues on a case-by-case basis.

IV. The Commission Has Three Viable Forecasting Tools - - It Should Continue to Use the Traditional Four-Year Average.

This proceeding has provided the Commission and parties with valuable information that will lead to improvements in forecasting forced outage rates in the future. We appreciate the parties' commitment of resources during workshops, discovery, filing of testimony, settlement negotiations, procedural disputes, and hearing. The evidence presented in this docket will be helpful in implementing any of the three remaining alternatives; however, it is our position that the evidence showed that the Commission has before it no superior alternative to the traditional four-year rolling average.

The four-year rolling average continues to offer the Commission predictive accuracy that is as good as any of the alternatives. Indeed, ICNU acknowledges that long-term averages provide little change in predicting forced outage rates over a four-year average.

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> In fact, there is little difference in forecast accuracy between the use of a twenty-year average and the use of a four-year average. In other words, a four-year average and a long-term average are nearly the same in terms of their ability to predict outage rates.

ICNU Opening Brief at 11 (internal citations omitted). While offering no improvement in predictive performance, the alternatives are untested, complex, and may well lead to an increase in the number of disputes that demand more resources from the Commission and parties. This docket started with the question of whether there is a better alternative to the four-year average to improve predictive performance. The answer is "no."

Our next preferred option is the Staff-Stipulated Methodology. This approach is relatively simple, offers comparable predictive performance, and enjoyed the support of CUB, ICNU, Staff and PGE. We continue to believe it offers a reasonable forecasting tool without the significant shortcomings associated with the use of long-term plant operations.

Of these last three approaches, the Commission's hybrid approach is our least preferred option. While it offers important advantages over either the 10-year or 20-year average approaches, it is no better at predicting forced outage rates than the traditional four-year average, while creating the risk of more wasteful disputes and time-consuming controversies. Perhaps most important, none of evidence offered in this final phase addressed or supported the Commission's hybrid approach. Instead, as directed by Commission Order No. 10-157 at 5 (April 26, 2010), the evidence focused on ICNU's plant history collar and mean replacement strategy, which the Commission declined to adopt. The evidence in this final phase proved that the Commission was right in rejecting ICNU's approach but offered no evidentiary support for the Commission's hybrid method.

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V. Conclusion.

For the reasons stated above, the four-year rolling average adjusted on a case-by-case basis as appropriate offers the Commission the best forecasting alternative. However, if the Commission determines that a change to the forced outage rate methodology is appropriate, it should adopt the Staff-Stipulated Methodology. If however the Commission determines that an historic average is appropriate for replacement values, the full plant history should be used instead of the truncated approaches embodied in ICNU's 20-year average approach and the 10-year alternative Staff described.

DATED this 16th day of September, 2010.

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CERTIFICATE OF SERVICE

I hereby certify that on this day I served the foregoing **PORTLAND GENERAL ELECTRIC COMPANY'S REPLY BRIEF** by e-mail and/or mailing a copy thereof, to each party that has not waived paper service, in a sealed, first-class postage prepaid envelope, addressed to each party listed below and depositing in the US mail at Portland, Oregon

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