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September 16, 2009

Via Electronic and US 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 the original Opening Brief on behalf of the Industrial
Customers of Northwest Utilities in the above-referenced docket.

Thank you for your assistance.

Sincerely,

/s/ Brendan E. Levenick
Brendan E. Levenick

Enclosures
cc: Service List

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the foregoing Opening Brief on behalf of the of the Industrial Customers of Northwest Utilities upon the parties, on the service list, by causing the same to be deposited in the U.S. Mail, postage-prepaid, and via electronic mail where paper service has been waived.

Dated at Portland, Oregon, this 16th day of September, 2009.

Sincerely,

/s/ Brendan E. Levenick

Brendan E. Levenick

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1355

In the Matter of)	
)	OPENING BRIEF OF THE
THE PUBLIC UTILITY COMMISSION OF)	INDUSTRIAL CUSTOMERS OF
OREGON)	NORTHWEST UTILITIES
)	
Investigation into Forecasting Forced Outage)	
<u>Rates for Electric Generating Units.</u>)	

I. INTRODUCTION

Pursuant to the Administrative Law Judge’s (“ALJ”) August 20, 2009 Ruling, the Industrial Customers of Northwest Utilities (“ICNU”) submits this Opening Brief in the Oregon Public Utility Commission’s (the “Commission” or “OPUC”) investigation into forecasting forced outage rates for electric generating units. The parties have been able to resolve all issues related to Portland General Electric Company (“PGE”) and Idaho Power Company (“Idaho Power”), and there are only a few remaining issues regarding PacifiCorp (or the “Company”) which are before the Commission in this proceeding.

For PacifiCorp, ICNU recommends that the Commission adopt ICNU’s forced outage rate (“FOR”) collar, and reject PacifiCorp’s alternative collar proposal because the Company’s collar would result in an inaccurate estimate of outage rates. Staff has developed a reasonable and objective collar; however, ICNU’s collar is the best solution because it most accurately normalizes outage rates to reflect conditions which are reasonably expected to occur and provides more accurate forecasts. PGE has already

agreed that its forced outage rates should be subject to a collar and that extreme outages should be removed to ensure more accurate forecasts of forced outages.

The Commission should also adopt ICNU's minimum loading and heat rates proposals to more correctly apply outage rates and to ensure that PacifiCorp's power cost model does not produce absurd results. Failing to make these adjustments will increase power costs because the GRID's outage modeling overstates output and heat rates. Staff supports ICNU's proposals and PGE's power cost model does not need to be changed because it already correctly models minimum capacity and heat rates.

ICNU also recommends that the Commission adopt the stipulation which resolves all forced outage issues for PGE, and the partial stipulation which resolves most forced outage issues for PacifiCorp. These stipulations are reasonable resolutions of many complex forced outage issues.

II. BACKGROUND

The Commission initially opened this proceeding to address the issue of what the most accurate forecast is for forced outages for ratemaking purposes. Re PGE, Docket Nos. UE 180, UE 181 and UE 184, Order No. 07-015 at 15 (Jan. 12, 2007). The parties had raised concerns about PGE's four year forced outage rate, including whether a four year period should be used and technical concerns regarding the details of PGE's methodology. Id. at 13-15.

The ALJ adopted the parties' consolidated Issues List on January 30, 2009. Re Investigation into Forecasting Forced Outage Rates, Docket No. UM 1355, Ruling (Jan. 30, 2009). The Issues List included seventeen forced outage issues. Each party has had the opportunity to submit three rounds of testimony, and the Commission

held a workshop on May 28, 2009. Settlements resolving all forced outage issues for PGE was filed on August 19, 2009, and for Idaho Power on September 1, 2009, and a partial settlement that resolves or moves to a separate proceeding all but two issues for PacifiCorp was filed on September 4, 2009. The two remaining issues for PacifiCorp are: 1) addressing outliers and extreme events in the forced outage rate; and 2) the modeling of the minimum capacity and heat rate curves.^{1/}

III. ARGUMENT

1. The Utilities Have the Burden of Proof

The utilities have the burden of proof to establish that their forced outage rate methodologies will produce just and reasonable rates. See ORS § 757.210(1); Pac. Northwest Bell Tel. Co. v. Sabin, 21 Or. App. 200, 213-214 (1975). The Commission also has the independent responsibility to ensure that utility rates are just and reasonable. See ORS § 756.040(1); Pac. Northwest Bell Tel. Co., 21 Or. App. at 213. The burden of proof is borne by the utilities “throughout the proceeding and does not shift to any other party.” Re PacifiCorp, Docket No. UE 116, Order No. 01-787 at 6 (Sept. 7, 2001). When other parties propose changes to the utilities’ forced outage methodologies, the utilities retain the ultimate burden to show that their proposals are just and reasonable. See id. Although this proceeding is a generic Commission investigation, the methodologies approved in this proceeding will be used to set utility rates. Thus, the utilities must demonstrate that their forced outage methodologies will produce just and reasonable rates.

^{1/} The issues of minimum capacity and heat rate curves are actually two separate, but interrelated issues that the parties have addressed as a single issue in their testimony.

2. The Commission Should Require the Utilities Properly Model Minimum Capacity and Heat Rates

The utilities' forced outage rate modeling should accurately reflect a resources' minimum capacity and heat rate. PGE already complies with commonly accepted industry modeling practices and properly models minimum capacity and heat rates of its generation units. The Commission should adopt ICNU and Staff's recommendation to require PacifiCorp to adopt PGE's methodology regarding minimum capacities and heat rates. ICNU's proposals would make PacifiCorp's GRID model consistent with the forced outage methodology that "is well accepted in the community of production cost modeling experts." ICNU/100, Falkenberg/55. In contrast, "PacifiCorp's method is simply wrong and can produce absurd results." ICNU/100, Falkenberg/2. The issue does not only impact PacifiCorp, as PGE may change its model in the future if the Commission allows PacifiCorp to inaccurately model minimum capacities and heat rates.

A. Power Cost Models Should Correctly Model Minimum Capacity

Power cost models typically model outages with a "deration" methodology. The goal is to replace the actual capacity of a generator with its "expected value," or the capacity that is expected to occur under normal conditions. Both PGE and PacifiCorp's models derate (or reduce) the maximum capacity of a generator to determine its actual expected capacity. For example, if a 100 MW generator has an outage rate of 5%, both GRID and PGE's MONET model represent the unit as having a maximum capacity of 95 MWs 100% of the time. ICNU/100, Falkenberg/50-51. There are other more sophisticated and realistic methods to model forced outages; however, ICNU is not

opposed to the use of an appropriate derating methodology because it is well accepted and commonly used in power cost models. Id.

Proper use of the deration method requires an adjustment to the generator's minimum capacity as well as the maximum capacity. PGE's MONET model correctly derates the minimum capacity, but PacifiCorp's GRID model does not. PGE makes the common sense assumption that when a generator is on outage, it cannot run at either the minimum or maximum capacity. ICNU/200, Falkenberg/10. In contrast, PacifiCorp's GRID model makes the absurd assumption "that when a plant is on outage, it cannot run at its maximum capacity, but it could run at its minimum capacity." Id.

Without an adjustment to the minimum capacity, PacifiCorp's GRID model can and has simulated situations in which the generator's maximum capacity is less than its minimum capacity. ICNU/100, Falkenberg/52-53. PacifiCorp asserts that there "is no mathematical possibility that could result in the derated maximum generation being below the minimum generation." PPL/400, Duvall/14. This is false because GRID has simulated the maximum capacity as less than the minimum capacity in at least three different proceedings. ICNU/100, Falkenberg/52. PacifiCorp's assertion is based on the fact that the Company recently stopped using monthly outage rates; however, this does not eliminate the problem, but instead makes it less obvious by blending a high monthly outage rate with all other months. See id. at Falkenberg/58, lines 13-19. There is no guarantee that PacifiCorp will not use monthly outages in the future, and regardless, PacifiCorp should not be allowed to hide this problem through creative modeling.

More importantly, the failure to derate the minimum capacity results in GRID estimating that numerous generators produce far more electricity than they actually

do. GRID inappropriately shows units “as having 100 percent availability” when the model dispatches the units at the minimum operating capacity. Staff/300, Brown/19-20. This is a significant problem because there are a substantial number of resources operating at their minimum capacity in GRID. ICNU/100, Falkenberg/52-53.

The following example illustrates why a generator’s minimum capacity must be derated. For simplicity’s sake, consider a generator with a 100 MW maximum capacity, a 10 MW minimum capacity, and a 10% outage rate. Both GRID and MONET derate the generator to treat it as having maximum capacity of 90 MWs. MONET derates the minimum capacity to 9 MWs, but GRID still models a minimum capacity of 10 MWs. When GRID shows the generator operating at its minimum capacity, the generator will show a 10 MW minimum capacity 100% of the time even though part of the time it will not be operating. See id. at Falkenberg/53; Staff/300, Brown/19-20. In contrast, PGE and industry standard models recognize that outages can occur at times when a generator is operating at its minimum capacity. PacifiCorp’s methodology unrealistically estimates that its generators producing far more electricity than they are actually expected to produce during times when the generators operate at their minimum capacities.

PacifiCorp’s main objection to derating the minimum capacity is that GRID will simulate operation levels below their actual minimum capacity. Id. at Falkenberg/59; PPL/400, Duvall/13, lines 11-13, Duvall/15, lines 1-2, Duvall/16, lines 9-16. PacifiCorp ignores that “GRID already derates the maximum capacity even though that prevents the unit from *ever* running at a capacity it actually *can achieve*.” ICNU/100, Falkenberg/59 (emphasis in the original). PacifiCorp has never explained why it is appropriate in GRID to derate a generator so it never “operates” at the

maximum capacity, but it is inappropriate to derate a generator's minimum capacity. In effect, PacifiCorp recognizes the maximum capacity is not available all of the time, but models the minimum capacity as available all of the time.

The goal of derating a generator's minimum and maximum capacity is to estimate its expected operational levels. If a generator's minimum capacity is not derated, then the power cost model simply assumes that the unit will never experience an outage when the generator operates at its minimum capacity. This fails to accurately model expected operations and unnecessarily increases power costs.

B. The Commission Should Adopt ICNU's Heat Rate Adjustment to Ensure that GRID Does Not Overstate the Amount of Heat Consumed

An adjustment to each generator's heat rate must also be made to correctly use the deration methodology to model forced outages. Both Staff and ICNU recommend a heat rate curve adjustment to ensure that GRID does not increase power costs by unrealistically modeling generator operations. Staff/300, Brown/18-19; ICNU/100, Falkenberg/2. The ICNU heat rate adjustment would ensure that PacifiCorp's GRID model is consistent with industry standard modeling, including PGE's MONET model. ICNU/100, Falkenberg/55; Staff/300, Brown/19.

A heat rate is the amount of heat a generating unit consumes based on the capacity level the generating unit operates at. ICNU/100, Falkenberg/53; Staff/300, Brown/18. Thermal generating units typically show that they need less thermal energy per units of output when output rises. Staff/300, Brown/18-19. In other words, thermal units "become more efficient at converting fuel into energy as the output increases." Id.; ICNU/100, Falkenberg/54.

As previously explained, most power cost models estimate the expected value of a generating unit by derating the unit's capacity by its expected outage rate. When derating a generating unit's maximum capacity, PacifiCorp's GRID model treats the generating unit as if it were smaller than it actually is. ICNU/100, Falkenberg/54. For example, when GRID derates the maximum capacity of a generator "the corresponding heat rate indicates the plant is less efficient than it actually is at the operating maximum, and creates an unrealistic scenario in the GRID model." Staff/300, Brown/19.

The heat rate must be adjusted to ensure that there is not "an overstatement of the amount of heat consumed." ICNU/100, Falkenberg/54. The proper way to ensure that derated generating units in the power cost model are not assumed to be less efficient than actual operations is to adjust the heat rate curve. The heat rate curve "is the input/output relationship for a generating unit." Staff/300, Brown/18. The heat rate curve should be adjusted so that the heat rate curve "produces the same heat consumption at the derated maximum and minimum capacities as the unit would actually experience in normal operation at the maximum and minimum" capacities. ICNU/100, Falkenberg/55 (emphasis added). In other words, the heat rate consumption at the derated maximum capacity should equal the generator's actual maximum capacity, and the heat rate at the derated minimum capacity should equal the generator's actual heat rate at minimum capacity. The reason for this is that forced outages do not directly impact the heat rate of a generator; but PacifiCorp's model has the heat rate increasing because of forced outages.

PacifiCorp did not dispute that GRID overstates the amount of heat generators consume, but instead criticized ICNU's adjustment as producing the "unintended consequence" of making generating units more efficient than they allegedly actually are. PPL/405, Duvall/19. Upon careful review, however, the Company's analysis does not demonstrate any flaws in ICNU's proposal. ICNU/300, Falkenberg/19. The evidence actually demonstrates that, ICNU's heat rate adjustment "improves the system average heat rate results as compared to the current method modeled in GRID." ICNU/100, Falkenberg/61.

It is important to note that PacifiCorp only alleges that ICNU's heat rate adjustment creates a problem during a small minority of the time during which generating units are expected to be operating. PacifiCorp claims that ICNU's method is less efficient only when units operate "between the minimum and derated maximum generating levels." PPL/405, Duvall/19. Since GRID only shows its units operating these allegedly problematic levels 10-11% of the time,^{2/} PacifiCorp has not presented any evidence that there are any problems with ICNU's heat adjustment for the vast majority of the time. ICNU/300, Falkenberg/18. In contrast, the Company's methodology would almost always be wrong. Id.

The overall reasonableness of ICNU's minimum capacity and heat rate adjustments is also demonstrated by the fact that PacifiCorp applies both techniques "to fractionally owned units such as Colstrip." ICNU/100, Falkenberg/56; ICNU/300, Falkenberg/19-20. Fractional ownership is essentially the same adjustment as capacity

^{2/} In GRID, thermal units run at the maximum derated capacity 75% of the time and their minimum capacity 14% of the time, and 82% of the energy generated is from units operating at the their maximum derated capacity and 8% of the energy generated is from units operating at the minimum capacity. ICNU/300, Falkenberg/18.

deration from a modeling perspective, and there is no justification for applying the techniques “for fractionally owned units, while ignoring them for units that are modeled as a fraction of their total capacity.” ICNU/100, Falkenberg/56.

3. The Commission Should Adopt an Effective “Collar” that Will Accurately Predict Future Outage Rates

Forced outage rates should be normalized with a collar mechanism to improve their overall accuracy. The collar provides a standard ratemaking normalization process which excludes extreme events from the outage rate because they are not expected to reoccur during normal conditions. ICNU, Staff, PGE and CUB all support using a rigorous collar methodology to exclude extreme events, while PacifiCorp alone disputes the efficacy of normalizing forced outage rates. ICNU recommends that the Commission adopt the collar methodology proposed by its witness, Mr. Falkenberg, because it best improves the accuracy of forced outage rate forecasts. Staff has also proposed a reasonable collar which would improve forced outage rate forecasts, but not as accurately as ICNU’s proposal. PacifiCorp, however, has proposed an alternative collar that is based on statistical slight of hand and amounts to little more than doing nothing at all.

Forced outage rates should be normalized to exclude “extremely long events, and for years that a unit experiences a significant number of small outages that is outside what would be considered normal” Staff/100, Brown/18. This is consistent with the Commission’s goal for this proceeding, which is to develop “the most accurate forecast of forced outages at the relevant plants.” Re PGE, Docket Nos. UE 180, UE 181 and UE 184, Order No. 07-015 at 14 (Jan. 12, 2007). The purpose of the normalization of outage rates is “to determine whether the forced outage rate for the test period is

reasonable and likely to occur.” Staff/100, Brown/18. The Commission should adopt ICNU’s proposal because it would provide a four year forced outage rate forecast for PacifiCorp that is the most likely to occur.

A. ICNU’s Forced Outage Collar Most Accurately Predicts Future Outages

The Commission should adopt a forced outage collar which would remove the most extreme outage events and replace those outages with normal outage rates. ICNU proposes an outage collar for PacifiCorp that would remove those extreme outages that have a greater than 90% probability of occurrence and those with a less than 10% value of occurrence. ICNU/300, Falkenberg/13. Basing extreme outages upon a 90/10 probability is supported by actual outage data, and will result in more accurate forecasts “because it is unrealistic to assume that an abnormal year will be repeated once every four years, the implicit assumption in a four year rolling average.” ICNU/300, Falkenberg/1; Staff/300, Brown/6-8. Both extremely good and bad outage years should be removed from the forced outage rate to achieve proper parity and equity. Staff/100, Brown/19-20. Removal of extreme events should be symmetrical so that there is “a fair chance for both reductions and increases to abnormal outage rates.” ICNU/300, Falkenberg/13.

The Commission should replace the extreme outages with an outage rate based on normal outage rate conditions. ICNU/300, Falkenberg/7, 13. History demonstrates that abnormal outage events are likely to be followed by ones very close to the average. Id. at Falkenberg/6. As explained by Mr. Falkenberg, during normal operations, “the year after the ‘best’ or ‘worst’ year for any unit is closer to” average operations than the year with the extreme event. Id. at Falkenberg/7. Operational history

shows that “the year after the ‘worst’ or ‘best’ years reverts almost all the way back to the mean.” Id. Therefore, the best prediction of forced outages in future years is the replacement of the most extreme with “the 20 year average or mean.” Id. at 13.

ICNU also recommends that a forced outage rate collar utilize unit specific data because it “should provide better forecasts of future performance than industry averages.” ICNU/300, Falkenberg/2. The use of North American Electric Reliability Corporation (“NERC”) data, as proposed by Staff may also be reasonable, especially when determining which outages should be considered extreme. See id. While unit specific data should more accurately predict future events, NERC data is objective and would further the goal of improving forced outage accuracy. Id. Use of NERC data could make a collar more easily to implement, since PacifiCorp has limited data for some units and it may be difficult to verify PacifiCorp’s unit specific data. Staff/300, Brown/8-10; ICNU/300, Falkenberg/14. In any event, PacifiCorp’s criticisms of using NERC data are devoid of merit because the Company has frequently sought to use and rely upon NERC data when it suits its own purposes. ICNU/300, Falkenberg/3-5.

B. PacifiCorp’s Collar Only Minimally Increases the Accuracy of Forced Outage Rates

Although PacifiCorp is critical of any collar methodology, the Company proposes its own collar that would have a deminimis impact upon improving the accuracy of forced outage rates. PacifiCorp proposes a collar based on removing extreme outages, which the Company defines as more than 97.5% and below 2.5%. ICNU/300, Falkenberg/10. The Company then replaces this limited group of extreme outages with a nearly equally bad outage at the 97.5th percentile or the 2.5th percentile. Id. As can be expected, PacifiCorp’s proposal has very limited impact on changing its forced outage

rate. Id. at Falkenberg/11-13. In effect, PacifiCorp's proposal replaces an extreme event with one that is just slightly less extreme.

PacifiCorp based its proposal to only remove 5% of the extreme outages based on two standard deviations from the mean ("two sigma") because normal statistical data shows that "the reported margin of error is about twice the standard deviation, the radius of a 95 percent confidence interval." PPL/102, Godfrey/10. Although PacifiCorp's reasoning is applicable to normal distributions (the familiar "bell shaped curve"), the two sigma approach should not apply to forced outage rates because actual outage rates do not follow a normal bell shaped curve distribution. ICNU/300, Falkenberg/9-10. Instead, actual outages are "skewed" to the high end of the range. Id. at Falkenberg/9. Since outage rates do not follow a normal distribution, use of PacifiCorp's approach would result in unrealistic and impossible outcomes. Id. at Falkenberg/9-10. Instead of the two sigma approach, the Commission should "compute the appropriate percentiles from actual distributions" which is meaningful and measurable. Id. at 10.

In addition to only removing a limited number of extreme outages, PacifiCorp's proposal is also flawed because it replaces extreme outages with almost as equally extreme outages. PacifiCorp would replace "a 'worse than one in 20 event' with a 'one in 19 event.'" Id. This results in only a minimal change to its forced outage rate because it merely replaces one extreme outage with another extreme outage.

PacifiCorp's collar does not normalize its forced outage rates or improve forecasts, but instead ensures that extremely rare events are assumed to reoccur once every four years. Id.; PacifiCorp Stipulation at 2.

C. Staff's Collar Methodology Improves Outage Rate Accuracy, But Does Not Produce the Most Accurate Outage Rates

Staff has proposed an objective and easy to implement collar methodology. Staff relies upon NERC data to exclude all extreme outages above the 90th percentile and below the 10th percentile. Staff/100, Brown/18-20; Staff/300, Brown/8-10. The 90/10 exclusions of extreme outages is similar to the ICNU proposal, is based on meaningful and measurable data, and would exclude the appropriate level of extreme outages. Id.; Staff/300, Brown/6-8; ICNU/300, Falkenberg/10. Thus, Staff relies upon solid evidence to determine which outages should be removed from the forced outage rate.

Staff's proposal replaces these extreme outages with the outage data based on the 90th percentile. Staff replaces all forced outages from the 90th to 99th percentiles with outages based on the 90th percentile. ICNU/300, Falkenberg/10-12. In other words, Staff removes the worst outages, and replaces them with bad outages.

Staff's proposal represents an improvement in forced outage rate modeling, and "improves accuracy by more than 6%, or 4 times more than the Company proposal." Id. at Falkenberg/12. In contrast, ICNU would replace all outages outside the 90th and 10th percentiles with outages based on the mean or average and ICNU's proposal better reflects expected outages. ICNU's proposal would improve forced outage rate accuracy by 11.5%, or 10 times more than PacifiCorp's approach. Id. Although the Staff proposal could be considered "a reasonable compromise" if all parties agree to use it, the Staff proposal is not the best approach because it suffers from the problem of replacing the worst outages with bad outages which are not likely to reoccur.

4. The Commission Should Adopt the PacifiCorp and PGE Stipulations

The Commission should adopt the parties' resolution of all issues related to PGE and the settled issues related to PacifiCorp.^{3/} The majority of the issues in this proceeding are complex and highly technical outage related issues that will impact other proceedings, especially the utilities' power cost filings. The parties have reached carefully crafted agreements on these stipulated issues: ICNU urges the Commission to adopt these settlements as well supported and reasonable resolutions.

A. Calculation of Forced Outage Rates

The parties agree that outage rates should be based on the NERC Equivalent Forced Outage Rate demand ("EFORD") methodology for gas peaking plants. This is consistent with Staff's and ICNU's original recommendations. ICNU/100, Falkenberg/2; Staff/100, Brown/2-3. PGE, Staff and intervenors agreed, however, that the standard EFORD methodology is not directly applicable to PGE's Beaver Units 1-7 in their current configuration, and they agreed on a proxy formula. PGE Stipulation at 2. This is a reasonable resolution because of the unique operational characteristics of PGE's Beaver plant. For combined cycle gas plants, PacifiCorp will use the weighted average of the manufacture model specific fleet availability for the first two years, and actual history once sufficient data is available. The parties also reached agreement on the use of plant availability formulas for coal plants. PGE Stipulation at 4; PacifiCorp Stipulation, Appendix A.

^{3/} ICNU does not support or oppose the Idaho Power settlement.

B. Forced Outage Modeling Should Be Based on High Load/Light Load or Weekend/Weekdays

The parties agreed that forced outages should be modeled based on premises that utilities attempt to defer outages to less expensive time periods (e.g., light load hours and/or weekends). PGE and PacifiCorp currently use a single annual average outage rate for types of unplanned and deferrable outages, although PacifiCorp historically included all deferrable outages in the weekend outage rates. ICNU/100, Falkenberg/43-44. Staff and ICNU proposed similar changes to conform the utilities models to their actual practices of deferring outages. Id.; Staff/200, Brown/2. The parties have agreed that PacifiCorp will model outages based on a weekend/weekday split while PGE will split its outages between on and off peak periods. PGE will either make the change as an outboard calculation or as an enhancement to its power cost model. PGE Stipulation at 3. The approaches for PGE and PacifiCorp will have similar practical effects and are appropriate based on the characteristics of their power cost models.

C. Hydro Forced Outage Rates

The parties agreed to defer the issue of whether PacifiCorp can model hydro forced outages to a future proceeding. PGE does not and has not proposed to model hydro forced outages. PacifiCorp has agreed to remove hydro forced outages from its current TAM (Docket No. UE 207), and to attempt to address ICNU and Staff's modeling concerns before proposing a new hydro forced outage methodology in a future TAM or general rate case.

D. Wind Availability Reporting

The parties reached agreement on the information that PGE and PacifiCorp should provide regarding wind availability. PGE Stipulation at 2; PacifiCorp

Stipulation at Appendix A. The agreement requires both PGE and PacifiCorp to provide specific annual wind availability information. The parties can request additional information in relevant proceedings before the Commission.

E. Planned or Forecast Outage Rates

PacifiCorp, Staff and intervenors agreed that PacifiCorp should use a four-year historical average, but the parties did not reach a resolution regarding how the four year average should be modeled. PGE, Staff and intervenors were unable to reach an agreement on whether PGE's outages should be based on a four year average or a forecast. The parties agreed to resolve this issue in the utility specific rate proceedings.

F. Adjustments to Forced Outages Based on New Capital Investment

CUB proposed that forced outage rates should be adjusted for new capital investments. CUB/100, Jenks-Feighner/1-2. PacifiCorp, Staff, and intervenors agreed that starting in PacifiCorp's 2011 TAM, parties may propose adjustments in the forced outage rate if a specific capital adjustment will result in a change in unit availability and the forced outage rate is adjusted on a going forward basis to avoid a double count of the actual increase or decrease in the rate.

G. Non-outage Rate Adjustments

ICNU proposed that the utilities should not be permitted to change their forced outage rates to accommodate non-outage related ramping adjustments. ICNU/100, Falkenberg/2. The Commission previously rejected an ad hoc non-outage rate proposal by PGE. Re PGE, OPUC Docket No. UE 139, Order No. 02-772 at 23-24 (Oct. 30, 2002). PGE's model no longer includes ad hoc changes, but PacifiCorp continues to include an ad hoc thermal ramping adjustment. ICNU/100, Falkenberg/16-21. Although

ICNU believes the issue of non-outage rate issues broadly applies to both utilities, for the purposes of settlement, ICNU agreed to resolve this issue in a separate PacifiCorp proceeding.

IV. CONCLUSION

The Commission should require PacifiCorp to revise its forced outage rate methodology to properly model the heat rate and derate the minimum capacity to ensure that the Company's power cost model does not overestimate the amount of thermal generation produced by adopting Mr. Falkenberg's proposals. PacifiCorp has failed to demonstrate that its minimum capacity and heat rate forced outage methodology produces reasonable results or that there is any legitimate reason for PacifiCorp to model forced outages in a manner inconsistent with standard industry techniques, including the methodology used by PGE. The Commission should also adopt ICNU's proposed collar to more accurately model forced outages by removing those extreme outages which are unlikely to reoccur with outages which are likely to occur during the rate period. Finally, the Commission should adopt, as a reasonable resolution of the issues, the PGE Stipulation and the PacifiCorp partial Stipulation.

Dated this 16th day of September, 2009.

Sincerely yours,

DAVISON VAN CLEVE, P.C.

/s/ Irion A. Sanger

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