BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1355

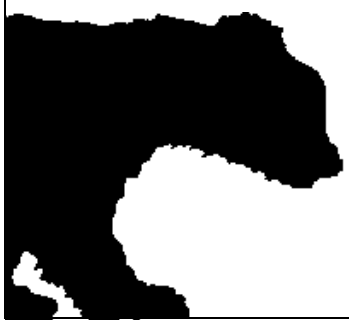
In the Matter of	)
Investigation into Forecasting Forced Outage Rates for Electric Generating Units.	)

REPLY TESTIMONY

OF THE

CITIZENS' UTILITY BOARD OF OREGON

May 13, 2009



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In the Matter of Investigation into Forecasting Forced Outage Rates for Electric Generating Units.	)	REPLY TESTIMONY OF THE CITIZENS' UTILITY BOARD OF OREGON

My name is Bob Jenks, and my qualifications are listed in CUB Exhibit 101. My name is Gordon Feighner, and my qualifications are listed in CUB Exhibit 201.

I. Introduction

This docket concerns the forecasting methodology used to predict the amount of forced outages and other downtime a generating plant will experience in a given year. The interested parties (hereafter, Parties) in the docket have attempted to reach a settlement agreement on these calculations and other issues over the course of the docket. Common ground has been found between the Parties on a number of the issues, which is noted here. This testimony describes CUB's positions on both the accepted and contested issues remaining in this docket.

With power costs now determined in annual update proceedings rather than in less-frequently filed general rate cases, it would be unfair to allow utilities to change the methodologies used in each filing in results-oriented attempts to maintain the highest possible rates. CUB therefore advocates for the standardization of the methodologies

used in forecasting outage rates. In some cases, the fact that a standard methodology is chosen will be as, or more, important than which methodology is ultimately selected.

II. Issues

This testimony, on behalf of CUB, will proceed in the same manner as CUB's Opening Testimony, working through the items in the Consolidated Issues List submitted to the Parties on January 30, 2009.

A. Thermal Plant Forecasting Methodology

CUB endorses changing the forecasting methodology for thermal plants from the formula that is currently in use. This formula, first adopted in 1984, is somewhat convoluted and, among other issues, provides room for exploitation by plant operators who can manipulate their maintenance schedules. In place of the current formula, CUB recommends that the Commission adopt a modernized forecasting methodology that is simple, straightforward, and provides a standardized percentage factor that can be compared across facilities. This new methodology should calculate the various categories of outages independently, so as to prevent the manipulation of scheduled outages by plant operators. These categories can then be reconciled in the final calculation of the equivalent availability factor. All calculations should rely on readily-available data that is currently submitted to FERC in monthly and quarterly updates. CUB also recommends that the forecasting formulae be subject to periodic review by the Parties to ensure continued relevance and reliability.

i. Peaker Plants vs. Base Load

CUB believes that there are fundamental differences between base load generating facilities and peaker plants that must be addressed in their respective

forecasting methodologies. CUB endorses ICNU's recommendation of the NERC formula for Equivalent Forced Outage Rate design (EFOR-d)[1], described in ICNU's testimony as "an industry standard measure of peaking unit electrical generating plant reliability that determines the likelihood the resource will be available during its normal 'demand period'."[2] Using a methodology that is an industry standard makes sense for peaker units that do not operate for much of the year.

Given that the data to implement the EFOR-d methodology may not be readily available, CUB recommends that the following formula be used in the interim until EFOR-d can be reliably adopted:

$$\text{Estimated EFOR} = \frac{\text{FOH + EFDH}}{\text{FOH + SH + EFDHRS}}$$

where FOH = forced outage hours, EFDH = equivalent forced derated hours, SH = service hours of the facility, and EFDHRS = equivalent forced derated hours during reserve shutdowns

CUB also supports the use of industry benchmarks to determine the acceptable range of outage rates. Four-year rolling averages of the 90^{th} and 10^{th} percentiles of industry-wide plant performance data should be sufficient indicators of what should be considered a normal level of performance. CUB recommends that plants with outage rates outside of the range of these benchmarks be adjusted to the benchmark level for forecasting purposes.

ii. Which events to include?

CUB recommends that "extreme" forced outage events should be excluded from consideration in forecasting future outage rates, for reasons discussed in CUB's Opening

[1] UM 1355/ICNU/100/6-7.
[2] UM 1355, Outage Proposal of ICNU, 10-2-08, page 5.

Testimony.[3] In cases where extended outages are determined to have been caused by imprudence on the part of the plant operator, the period of the event should be excluded from the four-year period used in forecasting. The supplemental period needed to make the forecast period whole should be determined on a case-by-case basis. Extended outages that are excluded from the forecast and are not due to imprudence should be covered in a utility's Power Cost Adjustment Model (PCAM) or, in its absence, by a deferred accounting mechanism.[4]

iii. How to apply forced outage rates within the power cost model?

CUB concurs with Staff's recommendation that the forced outage rate be applied as an annual average. Derating of a facility for forced outages should occur evenly across the number of hours in the year, while derating for maintenance and planned outages should be split between heavy load and light load hours at the plant level, based on operations history.

iv. How to treat new thermal resources?

CUB recommends that plant operators utilize the manufacturer's or project builder's expected performance data for new facilities during the first two years of operations. A further recommendation is that available industry data should be used to compare the manufacturer's data to similar facilities to ensure that these projections are on par with industry standards. Future forecast calculations should incorporate plant performance data from year 3 onward, but should always exclude the first two years of operation.

[3] UM 1355/CUB/100/3.
[4] See UM 1355/CUB/100/Jenks/4 for a more detailed discussion of this issue.

v. What is the appropriate historical period?

CUB accepts the four-year rolling average as the appropriate historical period for FOR calculations. Where exclusions are made for extreme or extended outages, the period should be extended further back into the plant's operating history to achieve an equivalent 48-month period.

vi. Should non-outage related adjustments be included?

CUB maintains no position on this issue.

vii. Should adjustments be made for new capital investments?

CUB recommends that any new capital investment that helps to improve the reliability of generation facilities should trigger an immediate adjustment in the FOR forecast to reflect that increase in reliability. This practice protects customers from having to assume the entire risk of whether the new investment actually is used and useful in terms of increasing reliability.

B. Hydro Plant Forecasting Methodology

The inherent fluctuation in annual hydro generation availability makes forecasting for these resources difficult. CUB generally believes that hydro forecasts should be based on historic availability, such as a 50-year average of water conditions and output. CUB supports the position that forced outages must result in spillage to be considered eligible to be included in future availability forecasting. For example, a generating unit may be offline, but due to the storage capacity of hydro reservoirs, no generating potential is lost. If, however, water is spilled through the dam and generating potential is lost, the dam operator could include the event in the historic average used to forecast future generation, or could propose a forced outage rate adjustment.

C. Wind Generation Reporting Methodology

CUB recommends that the Parties work towards adopting a standardized reporting format for availability at wind generation facilities.

i. How to apply wind forecasting to rates?

As is the case with thermal facilities, CUB recommends that the expected performance data described in a wind generation project's Request for Proposals (RFP) be used for the first three to five years of operation. CUB also recommends that the Commission adopt a standardized methodology for analyzing facilities that have an established operating history.

D. Planned Maintenance Calculation Methodology

CUB recommends that a four-year rolling historic average be used to calculate the anticipated POF. As explained in CUB's Opening Testimony, PGE's forecasts of planned outage rates are consistently greater than the company's actual outages.[5] The rolling historic average methodology should adequately reduce any incentive on the part of plant operators to manipulate their planned outage schedules to take advantage of particularly favorable forecasts.

E. Data Reporting Requirements

CUB largely follows ICNU's recommendations regarding standardized reporting requirement for plant outages.[6] This proposal would require utilities to provide the plant-specific outage data that is regularly submitted to NERC[7] to the Commission in each general rate case, AUT, and TAM filing. These reports include:

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[5] UM 1355/CUB/100/9.
[6] See UM 1355/ICNU/100/Falkenberg/61-62.
[7] See UM 1355/ICNU/106 for an example.

- the plant unit ID number
- the time and duration of the outage
- the type of event, NERC code, standardized NERC description, and a short narrative of the outage cause
- the actual lost megawatt hours of generation caused by the outage

In addition to these requirements, CUB also recommends that utilities be required to submit Root Cause Analysis reports for all outages exceeding seven days in length. Any additional data necessary to calculate the EFOR-d should also be provided, along with annual equivalent forced outage rates and availability factors for each year in the four-year period.

WITNESS QUALIFICATION STATEMENT

NAME: Gordon Feighner

EMPLOYER: Citizens' Utility Board of Oregon (CUB)

TITLE: Utility Analyst

ADDRESS: 610 SW Broadway, Suite 308
Portland, OR 97205

EDUCATION: Master of Environmental Management, 2005
Duke University, Durham, NC

Bachelor of Arts, Economics, 2002
Reed College, Portland, OR

EXPERIENCE: I have previously given testimony in dockets UE 196 and UE 204. Between 2004 and 2008, I worked for the US Environmental Protection Agency and the City of Portland Bureau of Environmental Services, conducting economic and environmental analyses on a number of projects. In January 2009 I joined the Citizens' Utility Board of Oregon as a Utility Analyst and began conducting research and analysis on behalf of CUB.

UM 1355 – CERTIFICATE OF SERVICE

I hereby certify that, on this 13th day of May, 2009, I served the foregoing **REPLY TESTIMONY OF THE CITIZENS' UTILITY BOARD OF OREGON, (CUB 200/Jenks and Feighner; CUB 201 Witness Qualifications Statement, Gordon Feighner)** in docket UM 1355 upon each party listed in the UM 1355 PUC Service List by email and, where paper service is not waived, by U.S. mail, postage prepaid, and upon the Commission by email and by sending an original and five copies by U.S. mail, postage prepaid, to the Commission's Salem offices.

(W denotes waiver of paper service)

(C denotes service of Confidential material authorized)

DEPARTMENT OF JUSTICE
C **MICHAEL T. WEIRICH**
ASSISTANT ATTORNEY GENERAL
RUBS
1162 COURT ST NE
SALEM OR 97301-4096
jason.w.jones@state.or.us

OPUC
KELCEY BROWN
PO BOX 2148
SALEM OR 97308-2148
kelcey.brown@state.or.us

PORTLAND GENERAL ELECTRIC
PATRICK HAGER
RATES & REGULATORY AFFAIRS
121 SW SALMON ST 1WTC 0702
PORTLAND OR 97204
pge.opuc.filings@pgn.com

PORTLAND GENERAL ELECTRIC
DOUGLAS C. TINGEY
121 SW SALMON ST 1WTC 1301
PORTLAND OR 97204
doug.tingey@pgn.com

C **RFI CONSULTING INC.**
RANDALL J. FALKENBERG
PMB 362
8343 ROSWELL RD
SANDY SPRINGS GA 30350
consultrfi@aol.com

C **DAVISON VAN CLEVE**
MELINDA DAVISON
333 SW TAYLOR – STE 400
PORTLAND, OR 97204
mail@dvclaw.com

W **IDAHO POWER COMPANY**
C Lisa D. Nordstrom
Attorney
PO BOX 70
BOISE ID 83707-0070
lnordstrom@idahopower.com

W **IDAHO POWER COMPANY**
CHRISTA BEARRY
PO BOX 70
BOISE ID 83707-0070
CBEARRY@idahopower.com

W **IDAHO POWER COMPANY**
C Gregory W. Said
Dir. Of Revenue Requirement
PO BOX 70
BOISE ID 83707-0070
gsaid@idahopower.com

W **IDAHO POWER COMPANY**
BARTON L. KLINE
SENIOR ATTORNEY
PO BOX 70
BOISE ID 83707-0070
bkline@idahopower.com

W **IDAHO POWER COMPANY**
Tim Tatum
PO BOX 70
BOISE ID 83707-0070
ttatum@idahopower.com

W **IDAHO POWER COMPANY**
C Scott Wright
PO BOX 70
BOISE ID 83707-0070
swright@idahopower.com

W **PACIFIC POWER AND LIGHT**
MICHELL R. MISHOE
LEGAL COUNSEL
825 NE MULTNOMAH STE 1800
PORTLAND OR 97232
Michelle.mishoe@pacificorp.com

W **PACIFICORP OREGON**
DOCKETS
825 NE MULTNOMAH STE 1800
PORTLAND OR 97232
Oregondockets@pacificorp.com

W **McDOWELL & RACKNER PC**
C WENDY McINDOO
OFFICE MANAGER
520 SW 6TH AVE STE 830
PORTLAND OR 97204
wendy@mcd-law.com

W **McDOWELL & RACKNER PC**
C LISA F. RACKNER
ATTORNEY
520 SW 6TH AVE STE 830
PORTLAND OR 97204
lisa@mcd-law.com

Respectfully submitted,

G. Catriona McCracken
Staff Attorney
The Citizens' Utility Board of Oregon
610 SW Broadway, Ste. 308
Portland, OR 97205
(503)227-1984
Catriona@oregoncub.org