

JOHN R. KROGER
Attorney General



MARY H. WILLIAMS
Deputy Attorney General

DEPARTMENT OF JUSTICE
GENERAL COUNSEL DIVISION

August 31, 2009

Public Utility Commission
Administrative Hearings Division
550 Capitol St NE – Suite 215
Salem OR 97301

Re: UM 1355 – Staff's errata

Dear Filing Center:

Enclosed for filing are two sets of errata documents regarding Staff's previously filed testimony found at Staff/300, Brown/4-5. The first set of documents shows the errata changes in **Bold** print. The second set of documents is a clean copy of staff's testimony that includes the referenced errata changes. *See* Staff/300, Brown/ 4 at lines 3, 10-11, and 15; and Staff/300, Brown/5 at lines 1-2.

Staff is serving a copy of both set of documents upon the parties as of the date of this letter.

Sincerely,

Michael T. Weirich
Assistant Attorney General
Regulated Utility & Business Section

MTW:nal/1601235-v1
C: Service List

Filing Center:

Enclosed for errata filing in UM 1355 are:

- replacing staff testimony Staff/300, Brown/4, Line 3 (Bold), Lines 10-11(Chart), Line 15.

A. Yes. In addition to the RMSE, I also used the **Sum of Absolute Error (SAE)** test.

Both tests yielded the same results: that the Collar mechanism is a more accurate forecast methodology than simple use of the four-year average.

Q. PLEASE DISCUSS YOUR RESULTS.

A. The following table shows two comparisons. The first is a comparison of the forecast accuracy of the four-year average forecast of forced outages rates to Staff's Collar Mechanism forecast of forced outages rates for PacifiCorp's coal-fired facilities. The second is a comparison of the forecast accuracy of the four-year average forecast of the equivalent outage rates (EOR) to PacifiCorp's Mechanism forecast for the coal-fired facilities.

Model	RMSE	Sum of ABS Error
FOR four-year average	4.83	249.73
Collar four-year average	3.91	202.71
Change from Simple Avg.	-0.91	-47.03
EOR four-year average	4.77	251.63
PacifiCorp four-year average	3.90	209.24
Change from Simple Avg.	-0.87	-42.39

A negative value in the "Change from Simple Avg." row indicates the improvement from the simple four-year average. The table makes it clear that both the Staff and PacifiCorp approach improves the accuracy of the simple four-year average. However, the Collar methodology is approximately **19%** more accurate, and the PacifiCorp methodology is approximately **18%** more accurate, therefore, Staff continues to recommend the Collar mechanism.

- one page (two sided) replacing Staff/300, Brown/5, Lines 1-2 (Bold).

A. No. For example, it would be inappropriate to compare the **3.91** RMSE of the Staff proposal to the **3.90** RMSE of the PacifiCorp proposal because the RMSE calculations are based on different data sets. However, it is possible to compare the relative improvement over the corresponding four-year average for each proposed mechanism.

- one page (two sided) replacing Staff/300, Brown/18, Line 5 (Bold).

Q. IS THE PACIFICORP METHODOLOGY MORE ACCURATE THAN THE FOUR-YEAR AVERAGE?

A. Yes. However, as I showed previously, the PacifiCorp methodology improves the accuracy on average by approximately 18 percent, while the Collar methodology showed an overall improvement of approximately **19** percent.¹

¹ The 18 and 20 percent improvement of the simple four-year average is calculated by comparing the three error terms of the four year average to the respective outlier methodology error terms.

1 A. Yes. In addition to the RMSE, I also used the Sum of Absolute Error (SAE)
2 test. Both tests yielded the same results: that the Collar mechanism is a more
3 accurate forecast methodology than simple use of the four-year average.

4 **Q. PLEASE DISCUSS YOUR RESULTS.**

5 A. The following table shows two comparisons. The first is a comparison of the
6 forecast accuracy of the four-year average forecast of forced outages rates to
7 Staff's Collar Mechanism forecast of forced outages rates for PacifiCorp's coal-
8 fired facilities. The second is a comparison of the forecast accuracy of the
9 four-year average forecast of the equivalent outage rates (EOR) to PacifiCorp's
10 Mechanism forecast for the coal-fired facilities.

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11
12 A negative value in the "Change from Simple Avg." row indicates the
13 improvement from the simple four-year average. The table makes it clear that
14 both the Staff and PacifiCorp approach improves the accuracy of the simple
15 four-year average. However, the Collar methodology is approximately 19%
16 more accurate, and the PacifiCorp methodology is approximately 18% more
17 accurate, therefore, Staff continues to recommend the Collar mechanism.

18 **Q. CAN YOU COMPARE THE ACTUAL ERROR TERMS OF THE STAFF**
19 **METHODOLOGY TO THE PACIFICORP METHODOLOGY?**

1 A. No. For example, it would be inappropriate to compare the 3.91 RMSE of the
2 Staff proposal to the 3.90 RMSE of the PacifiCorp proposal because the RMSE
3 calculations are based on different data sets. However, it is possible to
4 compare the relative improvement over the corresponding four-year average
5 for each proposed mechanism.

6 **Q. WHEN THE COMMISSION ORDERED THE OPENING OF A GENERIC**
7 **DOCKET TO FURTHER INVESTIGATE THE FORCED OUTAGE RATE,**
8 **WHAT WAS ITS PRIMARY GOAL?**

9 A. In Order No. 07-015, the Commission stated that it sought "...the most
10 accurate forecast of forced outages at the relevant plants."⁴

11 **Q. PACIFICORP HAS CRITICIZED STAFF'S STATEMENT IN A WORKSHOP**
12 **THAT IT USED A "VISUAL INTERPRETATION" OF THE DATA SET IN**
13 **ORDER TO DETERMINE THE 90TH PERCENTILE, RATHER THAN USING**
14 **STATISTICAL ANALYSIS. HOW DO YOU RESPOND TO THIS**
15 **CRITICISM?**

16 A. Both Mr. Duvall and Mr. Godfrey have criticized Staff's statement that it made a
17 "visual interpretation" that the 90th percentile is the appropriate point in the data
18 set of which to determine that a unit has incurred an outlier year. However,
19 economics is a science that is filled with graphical representations of
20 underlying data. Economists rely on graphical analysis and interpretation of
21 large data sets in order to determine underlying trends, specific patterns or
22 variations. Although visual interpretation of data can be misleading, and the

⁴ See Order No. 07-015, page 14.

1 **CERTIFICATE OF SERVICE**

2 I certify that on August 31, 2009, I served the foregoing Staff's Errata upon all parties of
3 record in this proceeding by delivering a copy by electronic mail and by mailing a copy by
4 postage prepaid first class mail or by hand delivery/shuttle mail to the parties accepting paper
5 service.

6 **W**
CITIZENS' UTILITY BOARD OF OREGON
7 G CATRIONA MCCRACKEN - **CONFIDENTIAL**
UTILITY ANALYST
8 610 SW BROADWAY - STE 308
PORTLAND OR 97205
9 catriona@oregoncub.org

10 **W**
CITIZENS' UTILITY BOARD OF OREGON
OPUC DOCKETS
11 610 SW BROADWAY STE 308
PORTLAND OR 97205
12 dockets@oregoncub.org

13 GORDON FEIGHNER
ENERGY ANALYST
14 610 SW BROADWAY, SUITE 308
PORTLAND OR 97205
gordon@oregoncub.org

15 ROBERT JENKS - **CONFIDENTIAL**
16 610 SW BROADWAY STE 308
PORTLAND OR 97205
bob@oregoncub.org

17 **DAVISON VAN CLEVE PC**
18 MELINDA J DAVISON - **CONFIDENTIAL**
333 SW TAYLOR - STE 400
19 PORTLAND OR 97204
mail@dvclaw.com

20 **W**
IDAHO POWER COMPANY
21 CHRISTA BEARRY
PO BOX 70
22 BOISE ID 83707-0070
cbearry@idahopower.com

23 BARTON L KLINE
SENIOR ATTORNEY
24 PO BOX 70
BOISE ID 83707-0070
25 bkline@idahopower.com

W
IDAHO POWER COMPANY
LISA D NORDSTROM - **CONFIDENTIAL**
ATTORNEY
PO BOX 70
BOISE ID 83707-0070
lnordstrom@idahopower.com

GREGORY W SAID- **CONFIDENTIAL**
DIRECTOR - REVENUE REQUIREMENT
PO BOX 70
BOISE ID 83707
gsaid@idahopower.com

TIM TATUM
PO BOX 70
BOISE ID 83707-0070
ttatum@idahopower.com

SCOTT WRIGHT- **CONFIDENTIAL**
PO BOX 70
BOISE ID 83707-0070
swright@idahopower.com

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

LISA F RACKNER- **CONFIDENTIAL**
ATTORNEY
520 SW SIXTH AVENUE STE 830
PORTLAND OR 97204
lisa@mcd-law.com

W
PACIFIC POWER & LIGHT
MICHELLE R MISHOE - **CONFIDENTIAL**
LEGAL COUNSEL
825 NE MULTNOMAH STE 1800
PORTLAND OR 97232
michelle.mishoe@pacificorp.com

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18
19
20
21
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23
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25
26

**W
PACIFICORP OREGON DOCKETS**

OREGON DOCKETS
825 NE MULTNOMAH ST
STE 2000
PORTLAND OR 97232
oregondockets@pacificorp.com

PORTLAND GENERAL ELECTRIC
RATES & REGULATORY AFFAIRS - OPUC FILINGS
121 SW SALMON ST 1WTC0702
PORTLAND OR 97204
pge.opuc.filings@pgn.com

PORTLAND GENERAL ELECTRIC
DOUGLAS C TINGEY
121 SW SALMON 1WTC13
PORTLAND OR 97204
doug.tingey@pgn.com

PUBLIC UTILITY COMMISSION OF OREGON
KELCEY BROWN
PO BOX 2148
SALEM OR 97301
kelcey.brown@state.or.us

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



Neoma Lane
Legal Secretary
Department of Justice
Regulated Utility & Business Section