



Portland General Electric Company
121 SW Salmon Street • Portland, Oregon 97204
PortlandGeneral.com

September 9, 2009

Via Electronic Filing and U.S. Mail

Oregon Public Utility Commission
Attention: Filing Center
550 Capitol Street NE, Ste. 215
Salem OR, 97308-2148

Re: UM 1355 Forecasting Forced Outage Rates

Attention Filing Center:

Enclosed for filing the captioned docket are an original and five copies of:

- **Joint Testimony and Exhibit of Kelcey Brown, Randall J. Falkenberg, Bob Jenks, and Patrick G. Hager (Staff-ICNU-CUB-PGE/100-101)**

An extra copy of the cover letter is enclosed. Please date stamp the extra copy and return to me in the envelope provided. Thank you in advance for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick G. Hager". The signature is written in a cursive, somewhat stylized script.

Patrick G. Hager
Manager, Regulatory Affairs

PGH/jmb

cc: UM1355 Service List

Encl.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

RECEIVED

SEP 10 2009

Public Utility Commission of Oregon
Administrative Hearing Division

UM 1355

**Investigation into Forecasting
Forced Outage Rates**

Staff-ICNU-CUB-PGE



Portland General Electric

September 9, 2009

UM 1355 / Staff – ICNU – CUB - PGE / 100
Brown – Falkenberg – Jenks – Hager

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

Forecasting Forced Outage Rates

Joint Testimony

Staff – ICNU – CUB – PGE

Kelcey Brown
Randall J. Falkenberg
Bob Jenks
Patrick G. Hager

September 9, 2009

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I. Introduction

1 **Q. What are your names and positions?**

2 A. My name is Kelcey Brown. I am a Senior Economist employed by the Public Utility
3 Commission of Oregon. My qualifications were previously provided in Staff Exhibit 101.

4 My name is Randy Falkenberg. I am a consultant working for the Industrial Customers
5 of Northwest Utilities (ICNU) in this matter. My qualifications were previously provided in
6 ICNU Exhibit 101.

7 My name is Bob Jenks. I am the Executive Director of the Citizens' Utility Board
8 (CUB). My qualifications were previously provided in CUB Exhibit 101.

9 My name is Patrick Hager. I am the Manager of Regulatory Affairs for PGE. My
10 qualifications were previously provided in PGE Exhibit 100

11 **Q. What is the purpose of your testimony?**

12 A. Our purpose is to describe and support a stipulation ("Stipulation") between Staff, ICNU,
13 CUB, and PGE (the "Parties") regarding issues raised in this docket (UM 1355). The
14 Stipulation resolves all issues identified by the Parties and, therefore, if approved by the
15 Commission, would conclude this proceeding for PGE.

16 **Q. Please summarize the agreement contained in the Stipulation.**

17 A. The Stipulation resolves identified issues that impact the calculation and forecasting of
18 thermal plant forced outage rates for the purpose of forecasting power costs. In addition,
19 certain reporting requirements are identified for wind resources. A copy of the Stipulation is
20 attached as Exhibit 101. PGE further agrees to work with the parties to incorporate the
21 changes into Monet for purposes of the 2010 AUT (UE 208), irrespective of the timing of an

1 issued Commission order approving the Stipulation. Table 1 below summarizes the terms of
2 the Stipulation.

Table 1
(UM 1355 Stipulation)

<u>Item</u>	<u>Description</u>
(1)	Applying the EFORd concept to Beaver Units 1-7, and Beaver Unit 8.
(2)	Split Maintenance Outage Rate (MOR) between on- and off-peak hours for Colstrip and Boardman.
(3)	Applying a “Collar” to Forced Outage Rates (FOR) for Colstrip and Boardman based on NERC data for comparable units.
(4)	Adoption of Staff’s proposed formulas for rates of forced outages, planned outages, and maintenance outages, or a showing of equivalence to formulas used.
(5)	Moving the issue of Planned Maintenance Outage (PMO) methodology to the UE 208 (2010 AUT) docket.
(6)	Adoption of Wind reporting requirements.

3 **Q. Please describe the first area of agreement, the application of the EFORd concept to**
4 **Beaver Units 1-7 and Beaver Unit 8.**

5 A. During workshops and settlement discussions, the Parties identified an issue regarding the
6 forced outage rate for plants that operate with a low capacity factor. Specifically, the
7 standard forced outage rate formula tends to overstate expected outages since it does not
8 distinguish between forced outage periods in which a low-capacity plant would otherwise be
9 economic to operate and periods in which it would not be economic to operate. To address

1 this concern, the Parties agree that the Equivalent Forced Outage Rate during Demand
2 (EFORd) concept should be used for PGE's Beaver facility.

3 **Q. Why not apply the specific EFORd formula provided by NERC?**

4 A. The Parties agree that the NERC EFORd formula is not directly applicable to Beaver due to
5 its unique configuration.

6 **Q. How will PGE implement the EFORd concept for Beaver?**

7 A. For Beaver Units 1-7 and Beaver Unit 8, the concept of EFORd will be implemented by
8 removing the forced maintenance outage hours from the equation to derive the forced outage
9 rate. This effectively assumes that all deferred maintenance events can be moved to a period
10 in which the plant would otherwise not be economic to operate. The Parties agree that this
11 is a reasonable approach to implementing the EFORd concept given the current state of
12 Beaver's operations as a very low capacity factor plant.

13 **Q. What if the operating characteristics of Beaver change significantly in the future?**

14 A. The Parties agree that it would be reasonable to revisit the approach for Beaver if its
15 operations changed significantly. For example, if market conditions changed such that
16 Beaver was expected to operate at much higher capacity factors, it may not be reasonable to
17 presume that all deferred maintenance events can be moved to periods in which the plant
18 would otherwise not operate.

19 **Q. What is the approximate impact on Beaver's forced outage rate forecast for 2010 (UE
20 208) as a result of this modification?**

21 A. For Beaver Units 1-7, applying the EFORd concept results in the 2010 forecast forced
22 outage rate falling from 24.6% (as filed on April 1, 2009) to approximately 11%. For
23 Beaver Unit 8, the 2010 forecast forced outage rate falls from 36.4% to approximately 10%.

1 **Q. Has PGE estimated the power cost effects of the changes in Beaver forced outage rates**
2 **for 2010?**

3 A. No. PGE is continuing to work on the implementation and the figures above should be
4 considered preliminary. PGE will work with the parties as it develops the implementation of
5 this change. PGE anticipates that it will be able to implement this change to Monet in time
6 for the September 29, 2009 update in UE 208. In the alternative, PGE will implement this
7 change no later than the final Monet update in UE 208, scheduled for November 16, 2009.

8 **Q. Please describe the second area of agreement, splitting the maintenance outage rate**
9 **(MOR) between on and off-peak hours for Boardman and Colstrip.**

10 A. During settlement discussions, certain Parties raised the issue of the degree to which PGE
11 can move forced maintenance outage hours to off-peak periods where the financial impact is
12 reduced. Since the prior methodology of developing forced outage rates assumed that
13 maintenance outage hours (MOH) were spread to on- and off-peak periods in proportion to
14 on- and off-peak hours, any flexibility to actually move greater than pro-rata peak MOH to
15 off-peak periods would be expected to reduce the power cost impact of historical
16 maintenance outages. The Parties agree that PGE should model the MOR split based on the
17 4-year historical average of the spread between on- and off-peak periods for Boardman and
18 Colstrip.

19 **Q. Has PGE implemented this change to forecast 2010 power costs?**

20 A. PGE is performing preliminary work on this change. However, the modifications have not
21 been finalized. PGE will work with the Parties to develop the calculations necessary to
22 implement this change for 2010. PGE anticipates that it will be able to include an outboard
23 calculation to Monet in time for the September 29, 2009 update in UE 208. In the

1 alternative, PGE will implement this change no later than the final Monet update in UE 208,
2 scheduled for November 16, 2009. The Parties agree that PGE may implement this change
3 fully in Monet as an enhancement in a future AUT proceeding.

4 **Q. Please describe the third area of agreement, applying a “collar” to Boardman and**
5 **Colstrip Equivalent Forced Outage Rates (EFOR) based on the 90th and 10th**
6 **percentiles of NERC data for comparable units.**

7 A. A significant issue in the UM 1355 proceeding was the question of whether the four-year
8 average of historical forced outage rates is the appropriate basis for forecasting forced
9 outage rates for PGE thermal plants. The Parties generally believe that the four-year
10 average continues to be the best method to forecast forced outages rates. However, the
11 Parties also believe that actual forced outage results outside of a range of outcomes
12 experienced nationally by thermal plants of the same fuel type and general size may not be
13 indicative of future forced outage performance. Therefore, the Parties agree to use NERC
14 data to “collar” the actual results of Boardman and Colstrip.

15 **Q. How will the NERC collar generally operate?**

16 A. The EFOR of Boardman and Colstrip will be calculated based on actual operating results for
17 each year, without adjustment. The actual EFOR will then be compared to the calculated
18 90th and 10th percentiles of NERC EFOR data for coal plants of a similar size. The
19 percentiles will be based on the distribution of the merged NERC data for the most recently
20 available four-year period. To the extent that the actual EFOR for the facility in a given year
21 is above the 90th percentile of NERC data or below the 10th percentile of NERC data, the
22 EFOR will be “collared” and the actual EFOR result replaced with the 90th or 10th percentile

1 of NERC data, as appropriate, for that year. The four-year average forced outage rate will
2 then be computed, inclusive of the collared (if appropriate) EFOR result.

3 **Q. Has PGE implemented the NERC collar in Monet to forecast 2010 power costs?**

4 A. PGE is performing preliminary work on this change. However, the modifications have not
5 yet been implemented in Monet. PGE will work with the parties to develop the
6 enhancement to Monet necessary to implement this change for 2010. PGE anticipates that it
7 will be able to implement this change to Monet in time for the September 29, 2009 update in
8 UE 208. In the alternative, PGE will implement this change no later than the final Monet
9 update in UE 208, scheduled for November 16, 2009.

10 **Q. Please describe the fourth area of agreement, adoption of Staff's formulas for**
11 **development of rates of forced outages, maintenance outage, and planned outages, or a**
12 **showing of equivalence to existing formulas.**

13 A. The Parties agree that the formulas provided by Staff (Staff/200, pages 3-4) are reasonable
14 and that PGE may either use those formulas directly or provide a mathematical showing of
15 equivalence to Staff's formulas.

16 **Q. Please describe the fifth area of agreement, moving the issue of Planned Maintenance**
17 **Methodology (PMO) to the UE 208 docket.**

18 A. The Parties agree that the appropriate methodology for forecasting PMO should be
19 addressed in UE 208. We note that a stipulation in UE 208 that encompasses this issue is
20 currently in development, reflecting a verbal agreement amongst the same parties to the
21 stipulation in this proceeding.

22 **Q. Please describe the final area of agreement regarding wind reporting requirements.**

1 A. The Parties agree that PGE should provide wind data annually for its owned resources (e.g.,
2 Biglow Canyon) as part of its Minimum Filing Requirements (MFRs) under Schedule 125.
3 The data to be provided include: 1) monthly projected and actual energy and capacity
4 factor, 2) energy and capacity factor variance, and 3) wind availability as reported by the
5 operator. In addition, PGE agrees to provide an operator definition of availability. Finally,
6 PGE also agrees to request the same information from the operators of purchase power
7 agreements tied to wind resources. For PGE, this currently includes Klondike and Vansycle
8 Ridge.

9 **Q. Has PGE provided this information to the Parties in UM 1355?**

10 A. Yes, PGE has provided this information for its Biglow project. PGE will make a good faith
11 effort to obtain, and include in future MFRs, the material for PGE's purchase power
12 contracts tied to wind resources.

13 **Q. Were there any remaining issues?**

14 A. Yes. Those two issues are how the FOR will be calculated for new plants and for new
15 capital investments.

16 **Q. How will the FOR be calculated for a new plant with no operational history?**

17 A. The Parties agree that this issue is best addressed on a case-by-case basis while taking into
18 consideration differences by utility and plant type. However, PGE will use an estimated
19 FOR based on current available sources (e.g., the vendor, contract, manufacturer, and NERC
20 GADS) as it has for the Port Westward plant for the first two years. Then as plant operating
21 data becomes available, the operating data will be used in conjunction with the estimated
22 FOR and weighted accordingly. After the plant has accumulated four years of plant data,
23 the four-year rolling average FOR will be calculated.

1 **Q. How will the FOR be calculated for new capital investments?**

2 A. The Parties agree that this issue is best addressed on a case-by-case basis. Parties may
3 propose an adjustment in the FOR, either a decrease or increase, if they can establish that a
4 specific capital investment will result in a change in unit availability. The FOR would be
5 adjusted on a going-forward basis and will avoid double-counting of the actual increase or
6 decrease.

7 **Q. What do the Parties request of the Commission?**

8 A. The Parties respectfully request that the Commission issue an Order approving the
9 Stipulation in this proceeding finding that it is in the public interest and provides for a
10 reasonable resolution of the issues identified by Parties regarding PGE in UM 1355.

11 **Q. Is the Stipulation intended to serve as a precedent for any Company other than PGE?**

12 A. The Parties do not agree about whether the Stipulation is precedential for any Company
13 other than PGE. Some of the Parties may continue to advocate similar positions with
14 respect to other utilities or may have certain alternative proposals. The Parties agree that the
15 specifics of the Stipulation only apply to PGE. Although the Stipulation is not precedential,
16 nothing precludes a party from explaining as a factual matter what the Parties agreed to in
17 this Stipulation when discussing forced outage rate issues in this and other proceedings for
18 other utilities.

19 **Q. Does this conclude your testimony?**

20 A. Yes.

List of Exhibits

<u>Exhibit</u>	<u>Description</u>
101	Stipulation in UM 1355



Portland General Electric Company
Legal Department
121 SW Salmon Street • Portland, Oregon 97204
(503) 464-8926 • Facsimile (503) 464-2200

Douglas C. Tingey
Assistant General Counsel

August 19, 2009

Via Electronic Filing and U.S. Mail

Oregon Public Utility Commission
Attention: Filing Center
550 Capitol Street NE, #215
PO Box 2148
Salem OR 97308-2148

Re: UM 1355

Attention Filing Center:

Enclosed for filing in the captioned docket are an original and five copies of:

- **STIPULATION REGARDING ALL ISSUES**

This is being filed by electronic mail with the Filing Center.

The parties intend to file joint testimony in support of the stipulation in the near future.

An extra copy of the cover letter is enclosed. Please date stamp the extra copy and return to me in the envelope provided. Thank you in advance for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "D. C. Tingey", is written over a faint, larger version of the signature.

DOUGLAS C. TINGEY
Assistant General Counsel

DCT:cbm
Enclosures
cc: UM 1355 Service List

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1355

INVESTIGATION INTO FORECASTING FORCED OUTAGE RATES FOR ELECTRIC GENERATING UNITS)))	STIPULATION REGARDING ALL ISSUES FOR PGE
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This Stipulation (“Stipulation”) is among Portland General Electric Company (“PGE”), Staff of the Public Utility Commission of Oregon (“Staff”), the Citizens’ Utility Board of Oregon, and the Industrial Customers of Northwest Utilities (collectively, the “Stipulating Parties”).

I. INTRODUCTION

This docket was initiated to address issues regarding forced outage rate forecasting in ratemaking for electric utilities in Oregon. All of the Stipulating Parties filed testimony. Several workshops have been held, including a workshop with the Commissioners. The parties have also exchanged data requests and responses. The Stipulating Parties have reached agreement settling, with respect to PGE, all issues raised in this proceeding as set forth below. By entering into this Stipulation, the Stipulating Parties do not agree that the resolution of the issues set forth below for PGE is appropriate for any other utility.

The Parties request that the Commission issue an order adopting this Stipulation.

II. TERMS OF STIPULATION

1. This Stipulation is entered to settle all issues in this docket with respect to PGE.
2. For purposes of forecasting forced outage rates for PGE thermal generating

units, the following modifications will be made to PGE's Monet power cost model:

a. **EFORd for Beaver Plant:** The Stipulating Parties agree that, even though the Commission may not yet have issued its Order in UM 1355 based upon this Stipulation, beginning in UE 208, the EFORd concept should be applied to Beaver Units 1-7 and Unit 8. The Stipulating Parties agree that the standard NERC EFORd formula is not directly applicable to Beaver 1-7, in their current configuration and operation, and agree that a proxy should be used. The Stipulating Parties agree that the proxy formula will be to remove Forced Maintenance Hours from the derivation of the FOR. The Stipulating Parties agree that the calculation for Beaver Unit 8 will be modified similarly to Units 1-7. The Stipulating Parties further agree that this formula will be revisited in the event that Beaver plant operations change significantly.

b. **Wind Availability:** PGE agrees to provide the following wind data annually for its owned resource (Biglow Canyon) as part of its Minimum Filing Requirements (MFRs) in its Schedule 125 Annual Update Tariff filings:

- monthly projected and actual energy and capacity factor,
- energy and capacity factor variance, and
- wind availability as reported by the operator (with an operator definition of availability).

PGE agrees to request this same information from the operators of the Vansycle and Klondike wind farms, and from any future operator that sells wind energy to PGE under a purchased power agreement.

c. **High-Load and Low-Load Hours Split:** PGE agrees that, even though the Commission may not yet have issued its Order in this docket based

upon this Stipulation, for the 2010 AUT (Docket UE-208), it will include an estimate of the NVPC effect of Boardman's and Colstrip's high-load and low-load MOH split as an outboard calculation in an update filing, which will reduce power costs. For future AUTs, PGE will similarly include a NVPC estimate as an outboard calculation with the initial filing. To minimize the resources required, after the initial filing, no further updates to the outboard calculation will be made. PGE will continue working with Parties to incorporate this as an enhancement in Monet. Until it does so, PGE will use the outboard calculation.

- d. **FOR "Collar":** The Stipulating Parties agree that the Forced Outage Rate collar method using the 10th and 90th percentile figures of comparable NERC coal units results in an acceptable proxy for a unit's FOR, should that unit's annual FOR fall outside the 10th or 90th percentile. The percentiles will be based on the distribution of the merged NERC data for the most recently available four-year period. This methodology does not imply "imprudence," and it is not intended to be used in the future to determine imprudence. The Parties agree that, even though the Commission may not yet have issued its Order in this docket based upon this Stipulation, the FOR collar methodology will be included in the 2010 AUT (Docket UE-208) update filing and only applies to coal plants. The Stipulating Parties agree that, should the NERC sample change significantly, the efficacy of the collar will be revisited.
- e. **PMO Forecasting:** The Stipulating Parties agree that the issue of planned maintenance outage methodology for PGE will be dealt with in Docket UE 208, PGE's currently pending Annual Update Tariff proceeding. The

Stipulating Parties also agree that, with respect to PGE, this issue will not be addressed further in UM 1355.

- f. **Staff's Three Plant Availability Formulas (POF, FOR, MOR):** The Stipulating Parties agree that PGE's calculations can be used provided PGE demonstrates that these calculations are mathematically equivalent to Staff's proposed three plant availability formulas.
- g. **Global Settlement of all issues in UM 1355:** The Stipulating Parties agree that this settlement resolves all issues in UM 1355 for PGE, but not for any other utility.

3. The Stipulating Parties recommend and request that the Commission approve the modeling adjustments described above as appropriate and reasonable resolutions of these issues for PGE.

4. The Stipulating Parties agree that this Stipulation is in the public interest and will result in rates that are fair, just and reasonable.

5. The Stipulating Parties agree that this Stipulation represents a compromise in the positions of the parties. As such, conduct, statements, and documents disclosed in the negotiation of this Stipulation shall not be admissible as evidence in this or any other proceeding. Except as provided in this Stipulation, the Stipulating Parties agree that they will not cite this Stipulation as precedent in any other proceeding other than a proceeding to enforce the terms of this Stipulation. Nothing in this paragraph precludes a party from stating as a factual matter what the parties agreed to in this Stipulation.

6. If this Stipulation is challenged by any other party to this proceeding, or any other party seeks a resolution that is inconsistent with the terms of this Stipulation, the Stipulating Parties reserve the right to cross-examine witnesses and put in such evidence as

they deem appropriate to respond fully to the issues presented, including the right to raise issues that are incorporated in the settlements embodied in this Stipulation.

Notwithstanding this reservation of rights, the Stipulating Parties agree that they will continue to support the Commission's adoption of the terms of this Stipulation.


7. If the Commission rejects all or any material part of this Stipulation, or adds any material condition to any final order which is not contemplated by this Stipulation, each Stipulating Party reserves the right to withdraw from this Stipulation upon written notice to the Commission and the other Stipulating Parties within five (5) business days of service of the final order that rejects this Stipulation or adds such material condition. Nothing in this paragraph provides any Stipulating Party the right to withdraw from this Stipulation as a result of the Commission's resolution of issues that this Stipulation does not resolve.

8. This Stipulation will be offered into the record in this proceeding as evidence pursuant to OAR § 860-14-0085. The Stipulating Parties agree to support this Stipulation throughout this proceeding and in any appeal, and recommend that the Commission issue an order adopting the settlements contained herein. The Stipulating Parties also agree to cooperate in drafting and submitting the explanatory brief or written testimony required by OAR § 860-14-0085(4).

9. By entering into this Stipulation, no Stipulating Party shall be deemed to have approved, admitted or consented to the facts, principles, methods or theories employed by any other Stipulating Party in arriving at the terms of this Stipulation. Except as provided in this Stipulation, no Stipulating Party shall be deemed to have agreed that any provision of this Stipulation is appropriate for resolving issues in any other proceeding.

10. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 18th day of August, 2009.



PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

10. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 17th day of August, 2009.

PORTLAND GENERAL ELECTRIC
COMPANY



STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON


INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

10. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 17th day of August, 2009.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON



CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this day of August, 2009.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

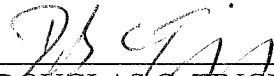


INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused **STIPULATION REGARDING ALL ISSUES** to be served by electronic mail to those parties whose email addresses appear on the attached service list, and by First Class US Mail, postage prepaid and properly addressed, to those parties on the attached service list who have not waived paper service from OPUC Docket No. 1355

Dated at Portland, Oregon, this 19th day of August, 2009.



DOUGLAS C. TINGEY

SERVICE LIST

OPUC DOCKET # UM 1355

<p>Citizen's Utility Board of Oregon OPUC Dockets dockets@oregoncub.org (*Waived Paper Service)</p>	<p>Citizen's Utility Board of Oregon Robert Jenks bob@oregoncub.org (*Waived Paper Service)</p>
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CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing **STAFF-ICNU-CUB-PGE UM 1355, JOINT TESTIMONY** to be served by electronic mail to those parties whose email addresses appear on the attached service list, and by First Class US Mail, postage prepaid and properly addressed, to those parties on the attached service list who have not waived paper service from OPUC Docket No. UM 1355.

Dated at Portland, Oregon, this 9th day of September 2009.



Patrick G. Hager
On behalf of Portland General Electric Company

Summary Report**UM 1355 INVESTIGATION INTO FORECASTING FORCED OUTAGE RATES FOR ELECTRIC GENERATING UNITS****Category:** Miscellaneous

In the Matter of
 THE PUBLIC UTILITY COMMISSION OF OREGON
 Investigation into Forecasting Forced Outage Rates for Electric Generating Units.

(See Order No. 07-015, Ordering paragraph 5.)

Filing Date: 11/2/2007**Case** BROWN, KELCEY A (503) 378-6667**Law Judge(s):** ARLOW, ALLAN (503) 378-3511**SERVICE LIST:**

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 PACIFIC POWER & LIGHT
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 PORTLAND OR 97232

Summary Report

UM 1355 INVESTIGATION INTO FORECASTING FORCED OUTAGE RATES FOR ELECTRIC GENERATING UNITS

LISA D NORDSTROM -- CONFIDENTIAL
IDAHO POWER COMPANY
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