

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

**UE 294**

**Net Variable Power Costs**

**PORTLAND GENERAL ELECTRIC COMPANY**

**Supplemental Testimony and Exhibits of**

*Michael Niman  
Terri Peschka  
Patrick G. Hager  
Michael J. Dwyer*

**July 24, 2015**

**Table of Contents**

**I. Introduction..... 1**

**II. Port Westward 1 (PW1) Scheduled Maintenance Outage ..... 3**

**III. Qualifications..... 10**

List of Exhibits..... 11

## I. Introduction

1 **Q. Please state your names and positions with Portland General Electric (PGE).**

2 A. My name is Mike Niman. My position at PGE is Manager, Financial Analysis. My  
3 qualifications previously appeared in PGE Exhibit 400.

4 My name is Terri Peschka. My position at PGE is General Manager, Power Operations.  
5 My qualifications previously appeared in PGE Exhibit 400.

6 My name is Patrick G. Hager. I am the Manager of Regulatory Affairs at PGE. My  
7 qualifications previously appeared in PGE Exhibit 400.

8 My name is Mike Dwyer. I am the Manager of Port Westward Operations. My  
9 qualifications appear at the end of this testimony.

10 **Q. What is the purpose of your supplemental testimony?**

11 A. The purpose of our supplemental testimony is to provide a further description of the changes  
12 to PGE's forecast of the 2016 planned maintenance outages for Port Westward 1 (PW1),  
13 which we initially described in our Planned Thermal Maintenance Update letter filed with  
14 the Oregon Public Utility Commission (OPUC) on June 30, 2015.<sup>1</sup> Based on discussions  
15 with parties, PGE agreed to provide additional information regarding the changes to PW1's  
16 2016 planned maintenance outages.

17 Through this supplemental testimony, we demonstrate that PGE took all reasonable  
18 steps to prevent equipment damage during the 2015 scheduled maintenance outage at PW1,  
19 and our choice to temporarily repair equipment in 2015 and then permanently repair the

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<sup>1</sup> PGE's MONET update filed on July 15, 2015 includes the scheduled maintenance outages described in PGE's Planned Thermal Maintenance Update.

1 equipment in 2016 represents the best balance of reliably meeting customer demand during  
2 the critical summer period while managing cost impacts.

3 **Q. How is the remainder of your testimony organized?**

4 A. After this introduction, our testimony has two additional sections. Section II describes the  
5 details of PW1's 2015 maintenance outage and the reasons for changing our forecast for  
6 PW1's 2016 maintenance outage. Section III provides Mr. Dwyer's qualifications.

## II. Port Westward 1 (PW1) Scheduled Maintenance Outage

1 **Q. Please describe the scheduled maintenance outage(s) at PW1 initially planned for 2016.**

2 A. As filed in our April 1, 2015 MONET update, PGE planned two scheduled maintenance  
3 outages in 2016, totaling 20 days. First, PGE planned an outage in the spring to install new  
4 gas turbine insulation and complete a catalyst replacement in the heat recovery steam  
5 generator. Second, PGE planned a short outage in the fall to complete plant water washing  
6 and winter preparation activities.

7 **Q. What changes to PW1's scheduled maintenance outage(s) is PGE proposing?**

8 A. As filed in our Planned Thermal Maintenance Update, we propose a longer spring outage in  
9 2016. We also add a short outage at the beginning of 2016. As revised, these outages total  
10 79 days. We provided details for these outages in confidential Attachments A and B filed  
11 with the Update. We include these attachments as confidential PGE Exhibits 1601C and  
12 1602C.

13 **Q. Why is PGE proposing these changes to the planned maintenance schedule?**

14 A. During PGE's 2015 scheduled maintenance outage, PGE's contractor was completing a  
15 combustion turbine major inspection and, during the associated maintenance work, damaged  
16 PGE's plant equipment. While the contractor completed temporary repairs in June 2015 to  
17 ensure Port Westward's rapid return to service for the critical summer period in 2015, PGE  
18 must plan for additional contractor work in 2016 to (1) inspect the temporary repair and (2)  
19 complete permanent repairs.

20 **Q. Did PGE consider various options for repairing the equipment?**

1 A. Yes. In consultation with the contractor, PGE identified and evaluated three options for  
2 repair. PGE Exhibit 1601C describes the options in greater detail. In general the options  
3 are:

4 **Option 1:** Contractor completes a temporary repair in 2015, and a permanent repair  
5 during the spring outage in 2016. Between the temporary and permanent repair, the  
6 contractor completes two interim inspections, the first in fall of 2015 and the second  
7 in early 2016. PGE also evaluated variants of Option 1 that considered refurbishment  
8 or replacement of the equipment in 2016.

9 **Option 2:** Contractor removes equipment in 2015 and repairs offsite.

10 **Option 3:** PGE replaces the equipment in 2015.

11 Options 2 and 3 would have required an extended outage until at least mid-July 2015, if not  
12 later.

13 **Q. What variables did PGE consider alongside the options stated above?**

14 A. PGE's primary consideration was to identify a durable and safe solution that reliably met  
15 customer demand during the summer months. As part of this consideration, we sought a  
16 third party review of the engineering principles for the repair options. Confidential PGE  
17 Exhibit 1603C is a final report of the third party findings and conclusions, which indicate  
18 that the risk of continuing operations of the plant under the temporary repair until spring  
19 2016 is minimal. PGE provided a draft version of this report as part of its response to  
20 OPUC Data Request No. 474. No material changes were made to the final version.

21 Options 2 and 3 introduced a complex equipment transportation risk with little  
22 preparation time. They also required PGE to have the plant out of service during a  
23 significant portion of the summer, which is a critical time of year when loads can be very

1 high due to hot weather, and the regional electrical system can be stressed. Additionally,  
2 forecasters projected (and continue to project) the regional hydro system to produce below  
3 average generation this summer due to the below average hydro conditions. By moving the  
4 longer outage into 2016, PGE could complete the work during a less critical time of year.

5 **Q. Did PGE consider the cost impacts of the various options?**

6 A. Yes. Confidential PGE Exhibit 1604C provides a summary of the cost impacts of various  
7 options. Options 2 and 4' in PGE Exhibit 1604C are variants of Option 1 described above.  
8 As shown on page 6 of PGE Exhibit 1604C, Option 4 (which is Option 1 described above),  
9 was one of the lowest-cost options for repairing the equipment. PGE provided this summary  
10 as part of its response to OPUC Data Request No. 474.

11 **Q. Is PGE holding the contractor responsible for the damage?**

12 A. Yes. A copy of the long-term service agreement (LTSA) between PGE and the contractor is  
13 included as confidential PGE Exhibit 1605C. After reviewing PGE's remedies under the  
14 LTSA, PGE concluded that it had a claim against the contractor, but that the amount PGE  
15 could recover was subject to certain limitations.

16 **Q. Under the contract, for what cost(s) is the contractor responsible?**

17 A. A summary of PGE's contract review is included as confidential PGE Exhibit 1606C. PGE  
18 provided this summary as part of PGE's response to OPUC Data Request No. 474. Under  
19 the terms of the agreement that PGE is currently negotiating, the contractor will cover most  
20 of the cost of repairing the damaged equipment.

21 **Q. Does the LTSA require the contractor to pay replacement power costs?**

22 A. No. Unfortunately, the contractor is not responsible for replacement power costs. Based on  
23 PGE's market experience, we know of no instance where a contractor performing plant

1 maintenance services under an LTSA has paid replacement power costs that result from  
2 damage to plant equipment during maintenance work. Replacement power cost risk is not a  
3 risk that maintenance service contractors are willing to accept under a LTSA. To do so  
4 would require the contractor to maintain business expertise in power markets and power cost  
5 risk management and expose the contractor to significant financial risk.

6 **Q. Will PGE's existing insurance agreements provide coverage for the costs associated**  
7 **with the equipment damage?**

8 A. No. PGE maintains All-Risk property insurance for loss or damage to its physical assets  
9 (e.g., generating plants), but costs associated with the damage sustained at PW1 due to the  
10 contractor's actions are excluded by the insurance policy.

11 **Q. Did the contractor complete a root cause analysis of the work performed?**

12 A. Yes. Confidential PGE Exhibit 1607C includes a summary of the event prepared by the  
13 contractor, including a summary of the root cause analysis. Based on the findings described  
14 in the report and corroborated observations by PGE personnel at the plant, the damage  
15 resulted from the contractor's actions.

16 **Q. Please describe the precautions PGE generally takes to ensure the quality of the work**  
17 **performed by contractors.**

18 A. PGE takes several precautions. With respect to the newer gas and steam turbine  
19 technologies, it is PGE's practice to enter into LTSAs that provide long-term major  
20 maintenance services to PGE's plants to ensure ongoing plant reliability. During selection  
21 of the equipment and negotiation of the LTSA, PGE only considers the most reputable  
22 suppliers, and conducts contract negotiations in consultation with experienced lawyers and  
23 engineers. PGE's LTSAs are typical of the industry with regard to warranty and



1 consequential damage terms like those that disclaim responsibility for replacement power  
2 costs.

3 In the preparation for maintenance work, PGE and the contractor hold multiple planning  
4 meetings to review the scope of work and complete scheduling and planning activities. PGE  
5 also approves the contractor site leadership. When work begins, PGE and the contractor  
6 hold joint daily work status meetings. PGE discusses any deviation from the planned work  
7 with the contractor as it arises.

8 **Q. Did PGE follow these same precautions with regard to the contractor and the**  
9 **scheduled maintenance work during the 2015 PW1 scheduled maintenance outage?**

10 A. Yes. The maintenance services that resulted in equipment damage were performed under an  
11 Extra Work Authorization (EWA), which is governed by the terms and conditions of the  
12 LTSA between PGE and the contractor. PGE's contractor is a reputable, leading supplier of  
13 equipment and services for the global power generation market. See Exhibit 5 of the LTSA  
14 (See Confidential Exhibit 1605C) that identifies the division of responsibilities between  
15 PGE and the contractor during outage services. PGE reviews and re-approves the division  
16 of responsibilities prior to every outage. As shown in the division of responsibilities, the  
17 contractor is responsible for its employees and the performance of their work. While PGE  
18 does monitor performance to the extent practical, we do not have authority to exercise  
19 day-to-day control over the contractor's employees and their work.

20 While the contractor was providing the project management and supervision necessary  
21 to perform the workscope, PGE assigned two PGE technicians, each with over 18 years of  
22 relevant experience, to provide frequent monitoring and support of the gas turbine work. A  
23 senior PGE engineer/project manager also monitored and supported the work. As part of

1 monitoring and supporting the contractor work, PGE employees were responsible for  
2 organizing support contractors<sup>2</sup>, providing parts to the contractor, and attending meetings  
3 relevant to the monitoring of maintenance work (e.g., reviewing the contractor's non-  
4 destructive examination<sup>3</sup> reports). Finally, PGE hired a senior external consultant with over  
5 20 years of experience in gas turbine major maintenance field work to monitor the work as  
6 PGE's technical advisor.

7 **Q. Has PGE benchmarked its quality assurance monitoring against industry best**  
8 **practices?**

9 A. Yes. In the past, PGE has attended users group meetings and conferences where quality  
10 assurance monitoring (as it relates to plant maintenance) was discussed. PGE's quality  
11 assurance monitoring approach was as extensive as the best practices discussed by other  
12 owners with LTSAs. Examples of best practices include our review of contractor's non-  
13 destructive examination reports and hiring of experienced consultants such as the technical  
14 advisor described above. PGE hires technical advisors in cases like turbine major  
15 inspections where the work is complex and critical.

16 **Q. Were the precautions PGE took to prevent the contractor's mistake prudent?**

17 A. Yes. PGE hired a reputable firm that performed work under an industry-standard LTSA.  
18 PGE had four skilled, experienced and knowledgeable technical personnel stationed at the  
19 plant, reviewing reports and data, advising, consulting and monitoring. The only additional  
20 precaution that PGE could have imposed would have been to station PGE personnel to  
21 watch over each of the contractor's employees, one on one. This would not have been  
22 reasonable, practical, or realistic.

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<sup>2</sup> These contractors were performing work under PGE's responsibilities.

<sup>3</sup> Non-destructive examination is the evaluation of the properties of a material or component without causing damage.

1 **Q. Is it reasonable to include PW1's revised 2016 scheduled maintenance in PGE's Net**  
2 **Variable Power Cost (NVPC) forecast?**

3 A. Yes. PGE's solution to temporarily repair equipment in 2015 and permanently repair  
4 equipment in 2016 represents the best balance of reliably meeting customer demand during  
5 the critical summer period while managing cost impacts.

6 **Q. Please summarize your testimony.**

7 A. While performing work under an industry-standard LTSA, PGE's contractor damaged plant  
8 equipment. As described above, there is no reasonable, additional action that PGE could  
9 have taken to prevent the damage. In order to permanently fix the damage, PGE has  
10 scheduled a longer spring maintenance outage in 2016 and a short inspection outage at the  
11 beginning of 2016.<sup>4</sup> While this option does increase power costs in 2016, PGE's choice to  
12 temporarily repair equipment in 2015 and permanently repair equipment in 2016 represents  
13 the best balance of reliably meeting customer demand during the critical summer period  
14 while managing cost impacts.

15 After reviewing PGE's remedies under the LTSA, PGE concluded that it had a claim  
16 against the contractor, but that the amount PGE could recover was subject to certain  
17 limitations. PGE is currently negotiating terms to an agreement with the contractor that  
18 would require the contractor to cover most of the cost of repairing the damaged equipment,  
19 but the contractor is not responsible for replacement power costs.

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<sup>4</sup> PGE will also conduct a short inspection outage in the fall of 2015.

### III. Qualifications

1 **Q. Mr. Dwyer, please describe your qualifications.**

2 A. I hold a Bachelor degree in physics from Whitman College. I obtained a Professional  
3 Engineer license in Illinois. I joined PGE in 1990 and served as Trojan Nuclear Plant  
4 preventive maintenance engineer and procurement engineering mechanical supervisor. In  
5 1994 I became PGE site engineer for construction of the Coyote Springs Power Plant,  
6 staying until mid-2006 as the senior project manager under the plant manager. In 2006 I  
7 moved to the Port Westward Power Plant as project manager and became plant manager in  
8 2008. Prior to working for PGE, I was the mechanical supervisor for Reliability  
9 Engineering at Illinois Power's Clinton Nuclear Station. I was the site mechanical  
10 engineering supervisor at Iowa Electric Light and Power's Duane Arnold Nuclear Plant. I  
11 was an officer in the US Navy nuclear submarine force, retiring from the reserves in 1999.

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

13 A. Yes.

*List of Exhibits*

<b><u>PGE Exhibit</u></b>	<b><u>Description</u></b>
1601C	Attachment A - June 30, 2015 Planned Thermal Maintenance Update
1602C	Attachment B - June 30, 2015 Planned Thermal Maintenance Update
1603C	Third Party Review of Repair Options
1604C	Analysis of Repair Options
1605C	Long-Term Service Agreement
1606C	Options Explored During Contract Negotiations
1607C	Event Summary and Root Cause Analysis

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day caused **PGE's UE 294 - SUPPLEMENTAL TESTIMONY (Net Variable Power Cost)** to be served by electronic mail to those parties whose email addresses appear on the attached service list for OPUC Docket No. UE 294.

DATED at Portland, Oregon, this 24<sup>th</sup> day of July 2015.



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