

**EXHIBIT NO. ___(SML-1CT)
DOCKET NO. UE-060266/UG-060267
2006 PSE GENERAL RATE CASE
WITNESS: SUSAN MCLAIN**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

**Docket No. UE-060266
Docket No. UG-060267**

**PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF
SUSAN MCLAIN
ON BEHALF OF PUGET SOUND ENERGY, INC.**

**REDACTED
VERSION**

REVISED JUNE 7, 2006

1 **Q. What is driving the increased demand for natural gas service?**

2 A. There are a number of factors driving the increased demand for natural gas. First,
3 with economic growth in the region, population in PSE's service territory has
4 increased. Most new housing units, especially single family homes, are equipped
5 with natural gas. Second, even with recent increases in the price of gas, the cost
6 of heating with natural gas continues to have an advantage over the cost of
7 heating with electric or oil; hence, conversions from electric and oil to gas
8 furnaces in older housing stock are expected to continue.

9 **Q. How does this increased demand affect the energy delivery system?**

10 A. For both the gas and electric systems, this increased demand results in the need
11 for additional system capacity and maintenance projects, as well as additional
12 resources to meet customer requests. Large capital investments, such as the
13 \$342 million, 194 mile, high pressure "Everett Delta" gas main project, are
14 required to provide for growth and to maintain reliable service to existing
15 customers during peak conditions. Benefits from investments of this type were
16 made apparent during the mid-December 2005 "cold snap" when below freezing
17 temperatures were experienced for multiple consecutive days. PSE's need to take
18 cold weather actions (such as curtailing gas deliveries to some customers) were
19 greatly reduced from what had been necessary in previous years with similar
20 system demands.

1 components being impacted by age, leakage, compliance initiatives, and
2 replacement as a result of unplanned events such as dig-ups.

3 **Q. What is the magnitude of the Company's gas infrastructure maintenance or**
4 **replacement spending?**

5 A. PSE has, on average, made investments (other than new customer connections) of
6 approximately \$610 million in gas infrastructure each year since 2001. PSE
7 anticipates investments of \$ million will be required in 2006 and \$ million
8 in 2007 for similar types of gas infrastructure. See Exhibit No. ___ (SML-4) at 2.
9 This represents a % increase over PSE's 2004 and 2005 investments of
10 \$1480 million. PSE's system analysis indicates that ongoing gas system
11 investments similar to 2006 and 2007 will be needed for several years beyond
12 2007.

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13 **Q. Is there a larger volume of assets requiring replacement and maintenance**
14 **than in previous years?**

15 A. Yes. For decades PSE has been adding gas plant that has been operated and
16 maintained and which eventually must be replaced. Many of PSE's gas assets
17 are nearing the end of their useful life and are in need of replacement. PSE has
18 implemented a programmatic approach to the replacement of aging facilities in
19 order to manage costs and impacts to customers. Examples of these efforts
20 include the cast iron and bare steel pipe replacement programs.

1 **Q. What are the costs associated with this work?**

2 A. PSE has made total investments of \$36 million on the cast iron replacement
3 program since 1999 and anticipates capital investments of approximately
4 \$■ million per year during 2006 and 2007.

5 PSE has made investments of \$17 million on the bare steel replacement program
6 since 2002 and anticipates capital investments of approximately \$■ million per
7 year in 2006 and 2007.

8 **Q. In addition to the programs previously discussed, are there any other areas**
9 **where gas infrastructure expenditures are made?**

10 A. Yes. As a condition of the Company being able to use public rights-of-way, the
11 Company is required from time to time to relocate its facilities as outlined in a
12 specific jurisdiction's franchise. PSE anticipates total investments of \$■ million
13 during 2006 and 2007 in this area, which represents a ■% increase over PSE's
14 2004 and 2005 investment level of \$~~22~~19 million. The anticipated increase is due
15 to expected road and transportation projects, as well as increased requirements
16 during project construction, such as erosion remediation, restrictive work hours
17 for traffic or noise mitigation and increased restoration requirements.

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1 **E. Details Regarding PSE's Electric Infrastructure Investment Needs**

2 **Q. Please describe the Company's electric infrastructure that requires**
3 **maintenance or replacement spending.**

4 A. Electric infrastructure includes PSE-owned transmission and distribution poles,
5 cables, conductors, transformers, circuit breakers, structures, switches, controls
6 and associated apparatus needed to provide electric service to PSE's customers.

7 Reliability, replacement and remediation projects include work designed to
8 improve system components which can be impacted by trees, animals,
9 environmental degradation, age, compliance initiatives and projects that arise due
10 to unplanned events such as car-pole accidents, dig-ups or equipment failure.

11 PSE has several well-established maintenance and refurbishment programs
12 including cable replacement and substation maintenance. Maintenance and
13 replacement strategies are based on the age and condition of the equipment. But,
14 maintenance requirements often increase for aging equipment. PSE uses planned
15 inspection and maintenance programs to identify or mitigate problems in a
16 proactive manner.

17 **Q. What is the magnitude of the Company's electric infrastructure maintenance**
18 **or replacement spending?**

19 A. PSE has, on average, made investments (other than new customer connections) of
20 approximately \$~~81~~79 million in electric infrastructure each year since 2001. PSE

1 anticipates that investments of \$ [REDACTED] million will be required in 2006 and
2 \$ [REDACTED] million in 2007 for similar types of electric infrastructure. See Exhibit
3 No. ___(SML-4) at 3. This represents a [REDACTED]% increase over PSE's 2004 and
4 2005 investments of \$~~223~~215 million. Based upon PSE's analysis of the system,
5 ongoing electric system investments similar to 2006 and 2007 will be needed for
6 several years beyond 2007.

7 **Q. Is there a larger volume of assets requiring replacement and maintenance**
8 **than in previous years?**

9 A. Yes. For decades PSE has been adding electric plant that has been operated and
10 maintained and which eventually must be replaced. Many of PSE's electric assets
11 are nearing the end of their useful lives and are in need of replacement. PSE has
12 implemented a programmatic approach to the replacement of aging facilities in
13 order to manage costs and impacts to customers. Examples of these efforts
14 include the pole replacement and cable remediation programs.

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15 **Q. Please describe the Company's pole replacement programs.**

16 A PSE began a ground inspection program in 1999 to inspect the approximately
17 31,500 transmission poles on its system. By the end of 2005, all of the
18 Company's transmission poles have been inspected. During 2005, approximately
19 140 transmission poles were proactively replaced as part of the transmission pole
20 replacement program. The inspection identified an additional 7,000 structures
21 where further review is needed to determine the timing and scope of pole and

1 Cables are selected for remediation using a prioritization process in which
2 Company-wide outage history is reviewed. Those neighborhoods or commercial
3 areas with repeated outages are reviewed for remediation. Factors evaluated are:
4 number and frequency of outages due to cable failures, number of customers
5 affected, physical condition of the cable, and length of the outages.

6 **Q. What is the status of this program?**

7 A. The underground cable remediation program is an ongoing reliability and cost
8 control initiative. 2005 marked the sixteenth year of the cable remediation
9 program, resulting in a total of over 1,821 miles of cable remediated out of the
10 estimated 4,800 miles of HMW cable installed Company-wide.

11 In order to maintain the objective of less than 1,500 cable outages per year, the
12 program was expanded in 2004. For example, the annual cable outage rate in
13 year 2001 was 1,076 outages. By 2003 the annual outage rate had risen to ~~1,333~~
14 1,383 outages. Accelerating the program in 2004 and 2005 lowered the outage
15 rate to 1,139 outages in 2005. While the total miles of HMW cables have been
16 reduced, the failure rate of the remaining cable is increasing. As a result, PSE
17 continues to monitor the performance of these cables to determine if the
18 remediation program should be expanded further.

1 existing overhead line to underground facilities at some expense to the Company
2 under its tariff Schedule 74. PSE anticipates investments of \$ [REDACTED] million during
3 2006 and 2007. This represents a [REDACTED] % increase over PSE's 2004 and 2005
4 investments of \$2325 million. The anticipated increase is due to expected road
5 and transportation projects, as well as increased requirements during project
6 construction, such as erosion remediation, restrictive work hours for traffic or
7 noise mitigation and increased restoration requirements.

8 **Q. For what new electric transmission reliability measures is the Company**
9 **responsible?**

10 A. PSE's transmission system is planned and operated according to reliability criteria
11 that are established by the North American Electric Reliability Council ("NERC")
12 and the Western Electricity Coordinating Council ("WECC"). These criteria
13 consist of both the NERC/WECC planning/operating standards as well as the
14 WECC Reliability Management Systems ("RMS"). After the August 2003
15 blackout in the Northeastern United States, NERC clarified and consolidated all
16 90 of its standards into a new Version 0, which became effective on April 1,
17 2005. More NERC standards are being developed.

18 In anticipation of these evolving reliability standards, PSE is proactively planning
19 new transmission infrastructure to continue to maintain a reliable system. PSE
20 anticipates average annual expenditures of \$23 million in 2006 and 2007 to meet
21 emerging needs.

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JUNE 7, 2006**