

**EXHIBIT NO. ___(SML-1T)
DOCKET NO. UE-11___/UG-11___
2011 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-11___
Docket No. UG-11___**

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

JUNE 13, 2011

PUGET SOUND ENERGY, INC.

**PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF
SUSAN MCLAIN**

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1 **PUGET SOUND ENERGY, INC.**

2 **PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF**
3 **SUSAN MCLAIN**

4 **I. INTRODUCTION AND OVERVIEW**

5 **Q. Please state your name and business address.**

6 A. My name is Susan ("Sue") McLain. My business address is 10885 NE 4th Street,
7 P.O. Box 97034, Bellevue WA 98009-9734.

8 **Q. By whom are you employed and in what capacity?**

9 A. I am employed by Puget Sound Energy, Inc. ("PSE" or the "Company") as Senior
10 Vice President Delivery Operations.

11 **Q. What are your duties as Senior Vice President Delivery Operations?**

12 A. I have overall responsibility for activities associated with the routine construction,
13 operation and maintenance of PSE's natural gas and electric delivery systems.
14 These duties include: electric and gas first response to address customer issues
15 such as power outages and reports of gas odors; new customer construction;
16 construction, maintenance and operation of electric and gas transmission and
17 distribution infrastructure and substations; system controls and protection;
18 vegetation management; leak surveying; contractor management; emergency and

1 storm response; quality control; gas and electric control centers and dispatch; bulk
2 electric transmission contracts, sales and interconnections; and customer care
3 efforts – including operations in our customer access centers, billing and metering
4 areas.

5 **Q. Have you prepared an exhibit describing your education, relevant**
6 **employment experience and other professional qualifications?**

7 A. Yes, I have. It is Exhibit No. ___(SML-2).

8 **Q. As the officer at PSE responsible for the operation of the electric and natural**
9 **gas system and the impact of that operation on PSE’s customers, what keeps**
10 **you awake at night?**

11 A. I have three areas of concern all of which comprise an overarching theme of
12 maintaining reliable electric and natural gas service:

13 1. Aging Infrastructure: For over 130 years, PSE has been providing safe and
14 reliable natural gas and electric service to more than 100 communities in
15 Western Washington and parts of Central Washington. Given this longevity,
16 replacements and remediation to PSE’s aging delivery system are constantly
17 needed to fulfill PSE’s obligation to serve customers safely and reliably.

18 Additionally, PSE’s information technology systems supporting field

1 operations, customer services and customer billing are out-dated and in need
2 of upgrade.

3 2. Trees: PSE currently has over 1.1 million electric customers located in 9
4 counties, across a geographically diverse service area that spans 4,000 square
5 miles. Much of PSE's electric overhead distribution and transmission system
6 (over 13,000 miles) is in heavily treed right-of-way or adjacent to heavily
7 treed private property. Spurred by a moderate, rainy climate, these trees grow
8 quickly and to great heights but have shallow root structure, making them
9 particularly vulnerable to damage from strong winds that are also typical in
10 the region.

11 3. Compliance Costs and Changing Local Construction Standards: In addition to
12 the physical realities of our aging and diverse system, the list of regulatory
13 compliance requirements applicable to PSE continues to grow and local
14 construction standards are becoming more stringent and hence more costly.

15 All three of these areas of concern are driving increased needs for capital and
16 operations and maintenance ("O&M") investment during a time when our
17 customers are suffering through the worst economic conditions in seventy years.

18 In short, I don't sleep much.

1 **Q. What areas will you address in your testimony?**

2 A. I describe the major issues and challenges facing the day-to-day operation of
3 PSE's natural gas and electric delivery systems and customer care operation.

4 Specifically, my testimony addresses the following issues:

- 5 • The cost control measures the Company has taken with regard to
6 billing and uncollectible accounts, infrastructure project
7 reprioritization and in outsourcing natural gas construction and
8 maintenance work;
- 9 • PSE's efforts to maintain or improve reliability, customer service and
10 prompt emergency response;
- 11 • The cost impact of maintaining a large and aging electric and gas
12 delivery system;
- 13 • The cost impact of significant and increasing regulatory compliance
14 requirements;
- 15 • The cost impact of increasingly more rigorous and costly municipal,
16 county and state jurisdictional construction requirements;
- 17 • The cost impact of the downturn in the economy;
- 18 • PSE's request to eliminate Service Quality Index: Disconnection Ratio
19 (SQI-9).

20 **II. COST CONTROL MEASURES**

21 **Q. How do PSE's O&M costs compare to the O&M costs of other utilities?**

22 A. When looking at natural gas and electric O&M costs per customer, PSE remains
23 one of the lower cost providers among investor-owned utilities in the United
24 States, as is reflected in Exhibit No. ____ (SML-3).

1 **Q. Please describe the actions PSE is taking to control costs.**

2 A. Managers and employees engage in process improvement efforts, participate in
3 industry benchmarking and best practice studies, and prioritize the use of capital
4 investment dollars. In addition, the Company has created a Performance
5 Excellence group that works with managers to drive process improvements.
6 Their work has increased management and employee focus on implementation of
7 the process changes and new technologies which result in cost reductions or
8 improved service levels at the same cost. These efforts have resulted in materials
9 purchase savings; overtime reductions while maintaining a high level of
10 performance (as reflected in both gas and electric emergency response times); the
11 addition of fuel efficient vehicles to our fleet; outsourcing certain credit and
12 collection activities; and reprioritization of infrastructure projects.

13 **A. Efficiencies in Billing and Uncollectible Accounts**

14 **Q. Please describe what PSE has done to control uncollectible energy accounts.**

15 A. In 2010, many of the credit and collections functions (e.g. bankruptcies) were
16 outsourced to ER Solutions, a third-party collections service provider in Renton.
17 This outsourcing reduced internal costs for credit and collections activities by
18 \$140,000 in 2010 and provided workforce scheduling flexibility in assigning
19 active credit work. In addition, ER Solutions leverages technology it already has
20 in place to improve PSE collections and reduce PSE accounts receivable without

1 additional technology costs to PSE. These process improvements allowed PSE to
2 reduce the dollar amount and aging of the accounts receivables being worked
3 from \$1,000 and 90 days or greater outstanding, to \$400 and 60 days or greater
4 outstanding.

5 **Q. Are there other changes that PSE has adopted to reduce costs?**

6 A. Yes. PSE continues to leverage technology to improve Customer Care processes
7 and procedures. For example, PSE's Corporate Billing Department utilizes a
8 computer software tool, which has the ability to compare customer usage patterns
9 by neighborhood, rate class and energy type. When discrepancies are discovered,
10 field employees are dispatched to ensure that meters and associated equipment are
11 functioning properly or to make appropriate repairs. This allows PSE to address
12 potential billing exceptions and metering equipment malfunctions earlier than the
13 process had allowed previously.

14 In addition, PSE provides its customers with electronic paperless billing options,
15 and PSE is currently in the first quartile compared to industry peers with 15
16 percent customer participation rate in paperless billing. Paperless billings
17 typically result in lower costs than traditional mailed paper bills. For example, a
18 traditional paper bill costs approximately 42 cents to print and mail (based on
19 2011 postage costs) while a paperless bill costs approximately 21 cents to bill.

1 During 2010, PSE's estimated savings from paperless billing was approximately
2 \$340,000.

3 **B. Cost Control from Infrastructure Project Reprioritization**

4 **Q. Has the Company made changes to capital construction projects due to the**
5 **recession?**

6 A. Yes. In June 2010 the Company reduced its capital spending from the budgeted
7 amounts by approximately \$23 million in natural gas infrastructure projects which
8 were tied to expected growth in demand. The Company also reduced capital
9 spending by approximately \$56 million in electric infrastructure projects, which
10 were tied to expected growth in demand. The Company eliminated a number of
11 positions related to these projects, which resulted in the layoff of a number of
12 employees in the middle of the year.

13 **Q. Did these layoffs reduce test year expenses?**

14 A. Yes. The impact on capital and O&M expenditures during 2010 was
15 approximately \$1.1 million and \$428,000, respectively. The layoffs reflect PSE's
16 decision to defer certain planned natural gas and electric capital projects due to
17 the downturn in the economy and the slow pace of economic recovery. This
18 means near-term natural gas and electric capital spending was lower than
19 previously predicted.

1 **C. Cost Control from Outsourcing Construction Work**

2 **Q. Please describe PSE's historical use of construction contractors.**

3 A. Before 1990, PSE used outside contractors to complete major capital construction
4 projects, provide specialized services, and augment the internal construction and
5 maintenance workforce. For example, PSE had for many decades used
6 contractors for both natural gas and electric system construction, locating
7 underground facilities, gas leak inspections and vegetation management. During
8 the 1990s, approximately 45 percent of PSE's combined natural gas/electric
9 delivery infrastructure construction was performed by outside contractors. In the
10 early 2000s, PSE increased the scope of outsourcing construction and related
11 services by awarding contracts covering new customer construction, second
12 response, routine system operation and maintenance, and routine system
13 construction (with design, permitting and project management services) to two
14 contractors, referred to as service providers.

15 **Q. Have PSE's customers benefited by the decision to outsource these duties?**

16 A. Yes. PSE measures the value of the service provider model on both a qualitative
17 and quantitative basis. These factors include: the size and capabilities of the
18 service providers selected, the resulting strategic alignment and workflow
19 between the PSE and service provider workforces, the quality of customer service
20 and the operational efficiency and cost savings achieved by entering into service

1 provider agreements, and periodic market comparisons through project bidding
2 and/or full service provider work scope Request for Proposal ("RFP").

3 PSE has selected large contractors that have national presence for the majority of
4 its outsourced work. Because of their relative size, these entities are able to
5 provide benefits that a standalone utility could not provide with its own internal
6 workforce. These benefits include:

- 7 • A regional pool of trained and specialized workers that can be easily
8 transported into PSE's system territory;
- 9 • A larger, national pool of trained and specialized workers that can be
10 transported to Washington for an emergency event or a unique
11 construction project that is limited to the Washington region;
- 12 • A significant inventory of specialized equipment (e.g., tracked
13 vehicles, snow cats, etc.) that would likely sit idle for periods of time,
14 yet would be required to be purchased and maintained by the
15 Company to provide availability for unique situations; and
- 16 • A division of work scope that provides for "optionality" depending
17 upon operating conditions. For example, during normal operating
18 conditions, PSE is able to focus on emergency or first response service
19 calls leaving its service provider to focus on second response calls,
20 system construction, new customer construction and related services.

21 **Q. Has PSE taken actions to evaluate the costs associated with its construction**
22 **contractors?**

23 A. Yes. One example is that in 2010 PSE initiated a review and request for
24 proposals on its routine natural gas construction and maintenance work performed

1 by one of the Company's major service provider contractors, representing
2 approximately \$75 to \$85 million per year of construction effort.

3 **Q. Please provide an update on the RFP of the natural gas service provider**
4 **scope of work that was initiated in 2010.**

5 A. PSE used a strategic sourcing competitive RFP bid process to examine the
6 opportunity for improvement in its natural gas service provider arrangement.
7 This process was completed in early 2011 and resulted in the selection of a new
8 service provider. The sourcing process included RFP development with
9 assistance from key internal PSE stakeholders, RFP release to bidders, initial
10 responses and screening to determine finalists, internal PSE stakeholder
11 discussions with finalist bidders, reference checking with other utilities using
12 these contractors, finalist screening negotiations, and final selection of a new
13 service provider.

14 **Q. What benefits does the Company expect as a result of this change?**

15 A. Based upon analysis conducted through the RFP process, the Company and
16 customers are expected to pay approximately \$13 million less in capital and
17 O&M costs than if the services were performed in-house, and approximately \$6.7
18 million less in capital and O&M costs than if the prior arrangement had been
19 maintained. The majority of these savings are capital savings. A pro forma
20 adjustment has been included in both the gas and electric revenue deficiency

1 calculation to reflect these savings as described in the testimony of Mr. John
2 Story in Exhibit No. ____ (JHS-1T).

3 **Q. Does the Company plan to issue an RFP on the electric system service**
4 **provider work scope?**

5 A. Yes, but not in the immediate future. The schedule of such an RFP will be
6 considered after the natural gas service provider transition is completed. The new
7 gas service provider and the electric service provider are interested in engaging in
8 joint operational efficiency efforts, which the Company will be considering and
9 implementing procedural changes where justified.

10 Additionally, the Company is in the process of installing significant new
11 technologies (an Outage Management System, Geospatial Information System
12 and Customer Information System) and the operational resources involved in a
13 significant service provider RFP process will be involved in these other efforts.

1 **III. PROVIDING SAFE AND RELIABLE NATURAL GAS AND**
2 **ELECTRIC DELIVERY SERVICE**

3 **A. PSE's Natural Gas and Electric Delivery Systems**

4 **Q. Please describe PSE's natural gas and electric delivery systems.**

5 A. PSE delivers more than 302 million cubic feet ("MMcf") of natural gas to over
6 750,000 customers daily through a pipeline network consisting of 12,000 miles of
7 mains and 13,000 miles of gas service lines. These natural gas mains and service
8 lines consist of several vintages of steel and plastic pipe in varying physical
9 condition. The system is designed and built for extreme cold weather conditions
10 –gas throughput set an all time new peak on November 24, 2010 that exceeded
11 820 MMcf for a 24-hour period. In addition, on December 9, 2009, the
12 Company's all time peak morning four-hour sendout of more than 166 MMcf
13 occurred.

14 PSE delivers on average approximately 62,000 megawatt-hours of electricity per
15 day to over 1.1 million customers through approximately 20,500 miles of
16 distribution lines and approximately 2,600 miles of transmission lines. The
17 electric delivery system is also designed and built for this area's extreme weather
18 conditions and is able to support maximum expected peak loads, as experienced
19 in 2009 when area loads reached an all time high of approximately 5,160

1 megawatts. Similar to the gas system, the electric system is comprised of
2 equipment of varying ages and physical condition.

3 **Q. PSE recently experienced record peak usage on both the electric and gas**
4 **systems. What is driving the increases in peak usage?**

5 A. The increases in peak usage are driven primarily by:

- 6 • Cold weather;
- 7 • New customer additions; and
- 8 • New consumer products, such as household electronics, heat pumps and on-
9 demand gas hot water heaters which add to the peak when used during peak
10 periods. For example, on-demand natural gas hot water heaters typically
11 require installation of larger and more expensive services to the home in order
12 for the required volume of gas to be delivered. On an annual basis, an on-
13 demand hot water heater uses less natural gas than a conventional water
14 heater. However, when it is in operation, an on-demand water heater requires
15 more gas than a conventional hot water heater, thus adding to the peak
16 volumes.

1 **B. Efforts to Improve System Reliability**

2 **Q. What are some of the techniques PSE's uses to maintain the safety and**
3 **reliability of its gas and electric systems?**

4 A. PSE uses a comprehensive set of standards for system design, construction,
5 operation, and maintenance which are updated regularly to take into account
6 proven practices, changes in regulatory mandates, component performance,
7 worker feedback and advancements within the industry. These standards are
8 complemented by a collection of equipment and materials specifications and are
9 available in both hard copy and electronic format. The latter allows for real time
10 distribution of updates, the ability to quickly search entire manuals, and ready
11 access by field personnel.

12 The PSE workforce receives training to ensure they are versed in current
13 standards, equipment operation, and material specifications. This training is a
14 fundamental component for realizing the Company's safety and reliability
15 objectives. Having standards and specifications improves system safety and
16 reliability by establishing a foundation for commodity quality, operational
17 efficiency, and consistency in workforce performance.

1 **1. Natural Gas Operations Training and Quality Assessments**

2 **Q. How does PSE monitor and improve natural gas system safety and**
3 **reliability?**

4 A. The Company's Quality Control Department performs quality assessments and
5 investigations on work performed by Gas Operations personnel. These
6 assessments and investigations identify where standards are being followed and
7 areas where worker performance needs to improve. When requirements and
8 performance are not in accord, PSE has processes in place to effect improvement.

9 The underlying premise of the Company's written Quality Control Plan is that
10 performing quality work depends upon a disciplined and integrated approach to
11 understanding the requirements, and preparing for, executing, and following-up
12 on the work required to comply with applicable standards.

13 **Q. Does PSE provide training to personnel who work on the gas infrastructure?**

14 A. Yes. PSE's Gas Operations Training Department assists in preparing workers to
15 safely construct, operate, inspect and maintain the natural gas delivery system.
16 As part of its ongoing review and upgrades of Company practices, in 2010 the
17 Company made a significant change in the way training is provided and
18 evaluated. The Operator Qualification ("OQ") training increased the number of
19 performance evaluations for tasks performed by natural gas journeymen and

1 moved them to a hands-on field simulation. A training area at PSE's Georgetown
2 Operations Base contains actual system infrastructure where students perform the
3 work covered by the performance evaluations outdoors – in a live simulated, yet
4 controlled environment – rather than in an indoor lecture and verbal response
5 format. Using gas system mock-ups, the training staff is able to evaluate an
6 employee's ability to perform tasks in a more realistic maintenance or emergency
7 scenario to ensure that the employee has the necessary understanding and ability
8 to complete the task as required.

9 The Gas Operations Training Department actively participated in the
10 development of the Company's new learning management system which provides
11 on-line training materials and testing with improved tracking and reporting. The
12 Company's use of computer-based training through its membership in the Energy
13 Industry CBT Alliance ("EICA") has also increased the customizable library of
14 on-line training available for employees in the field. These new resources have
15 expanded the amount of training that can be provided electronically to employees
16 and have minimized time required to get new practices or procedures to field
17 personnel.

18 The Company also monitors the effectiveness of contractor training programs
19 through its quality assurance inspections described later in this testimony.

20 Contractors are required to have quality control plans in place and the Company

1 performs quality assurance inspections and audits to confirm a contractor's
2 quality control efforts are effective.

3 **2. Electric Operations Training and Risk Management**

4 **Q. Would you please describe PSE's training and development of skilled electric**
5 **operations personnel?**

6 A. PSE has undertaken a number of efforts to promote and maintain a productive and
7 skilled workforce. Since 2008, approximately 20 percent of PSE's service
8 linemen have retired. Based on the ages of the remaining workforce, PSE could
9 lose an additional 30 percent of this work group in the next five years.

10 Anticipating this possibility, an inventory of essential knowledge-transfer subjects
11 was compiled and topics are regularly discussed during staff meetings and
12 training sessions. Service linemen partnering assignments place newer hires with
13 more experienced personnel, and the staffing level was augmented to include
14 sufficient time for knowledge transfer prior to a service lineman's retirement.

15 Service lineman training materials are provided to all new hires and are used in
16 ongoing education. PSE also collaborated with the International Brotherhood of
17 Electrical Workers ("IBEW") to update the service lineman hiring, testing and
18 interview process.

1 **3. Quality Assurance Inspections**

2 **Q. Please describe PSE's Quality Assurance efforts as they pertain to improving**
3 **natural gas and electric system safety and reliability.**

4 A. PSE requires that work performed on its natural gas and electric delivery systems
5 be in compliance with its documented standards. To that end, PSE has in place a
6 system of audit and inspection activities to monitor the effectiveness of its service
7 providers' and contractors' quality control programs.

8 PSE's Quality Assurance and Inspection ("QA&I") Department performs both
9 routine and specialized target audits. Routine audits are conducted monthly,
10 quarterly and annually. Once developed, routine audit procedures are repeated
11 for subsequent audits. For example, in 2010 QA&I performed approximately
12 1,400 gas site audit inspections of the work conducted by PSE's natural gas
13 service provider and approximately 1,500 electric site audit inspections of the
14 work conducted by PSE's electric service provider.

15 Inspections of high pressure gas projects (pipelines intended to operate at or over
16 100 psig) are separated from other gas site audits. Because of the higher system
17 pressures and potential for more significant damage if a high pressure system
18 fails, PSE's quality control oversight on work performed by service providers
19 and/or other contractors on high pressure gas systems is heightened. High
20 pressure main installations under construction are inspected daily and often an

1 inspector is present full time. During construction, PSE inspectors routinely
2 discuss and resolve project issues with contractor personnel in order to minimize
3 the potential for non-conforming work.

4 IV. FACTORS IMPACTING PSE'S COSTS

5 **Q. What factors are driving up PSE's cost to provide natural gas and electric
6 service to its customers?**

7 A. PSE's natural gas and electric delivery systems are both increasing in size and
8 they are aging. At the same time, new regulatory compliance obligations are
9 being imposed on PSE and the existing ones are being modified to include more
10 stringent requirements. These obligations pertain to federal natural gas safety
11 regulations, mandated federal electric reliability standards, as well as municipal,
12 county and state jurisdictional construction requirements. The slow economic
13 recovery has also affected costs. These factors are discussed more fully later in
14 this testimony.

15 **Q. Are there other factors that affect PSE's costs?**

16 A. Yes. Weather or other natural occurrences can affect PSE's costs when a
17 significant storm, fire or earthquake destroys infrastructure or adversely affects
18 service to customers. In the test year 2010 there was one catastrophic storm

1 event. The financial impact of this storm is further discussed in the testimony of
2 Mr. John Story, Exhibit No. ____ (JHS-1T).

3 **A. The Size and Age of PSE's Delivery System Infrastructure**

4 **Q. How has the size of PSE's natural gas and electric delivery systems changed**
5 **over the past few years?**

6 A. The number of miles of main in PSE's gas system has increased by approximately
7 482 miles from the beginning of 2007 to the end of 2010. Likewise in this same
8 time period, the number of miles of PSE's electric delivery system has grown by
9 approximately 678 miles of transmission and distribution lines and by 15
10 transmission and distribution substations. Adding more line miles or more major
11 infrastructure components (e.g., substations) to a system increases the size and
12 quantity of facilities that must be inspected, maintained and eventually replaced.
13 This system growth increases future capital investment and operating costs.

14 **Q. How does aging infrastructure affect PSE's costs?**

15 A. With continued maintenance, natural gas and electric infrastructure can last for
16 many decades; however, there comes a point where the continued investment in
17 maintenance is insufficient to provide for the continued safe and reliable
18 operation of the system. A significant percentage of PSE's delivery infrastructure
19 is at that point. For instance, approximately 17 percent of PSE's gas mains

1 (approximately 2,100 miles) were installed prior to 1970 and are candidates for
2 replacement. In addition, 50 percent of PSE's substation transformers are more
3 than 30 years old and will likely be in need of replacement to allow for continued
4 safe and reliable operation of the system. Another example is that approximately
5 two and-a-half percent of PSE's wood distribution poles (7,500 poles) were
6 installed prior to 1955. As discussed below, the new plant is significantly more
7 expensive than plant being replaced and it must be periodically inspected and
8 tested and properly maintained.

9 **Q. Using the pre-1970s gas main example, at what rate is that system being**
10 **replaced?**

11 A. During the period 2008 through 2010, PSE replaced or retired approximately 50
12 miles of main (of all types and ages) on average each year. At this rate, it would
13 take approximately 42 more years to replace or retire the remaining pre-1970s
14 mains.

15 **Q. How does PSE determine when gas or electric infrastructure needs to be**
16 **replaced?**

17 A. As described later in this testimony, for certain types of equipment components,
18 the Company has developed proactive plans based upon engineering analytics;
19 vintage; equipment performance; and other factors. Replacing infrastructure in
20 this manner maintains the reliability of the gas and electric delivery systems and

1 minimizes the impact of having to replace large quantities of equipment or
2 distribution facilities in an emergency or unplanned manner.

3 **1. Maintenance and Replacement of Natural Gas Infrastructure**

4 **Q. Please generally describe PSE's ongoing maintenance and replacement of**
5 **natural gas infrastructure.**

6 A. PSE-owned natural gas infrastructure includes mains, services, valves, meters,
7 cathodic protection sites, and pressure-regulating stations necessary to provide
8 gas service to PSE customers. The Company's natural gas replacement and
9 remediation projects target system components that are impacted by leakage,
10 compliance initiatives, age, and damage caused by unplanned events such as
11 third-party dig-ups.

12 As natural gas mains age, they may become more susceptible to leakage, which
13 directly affects natural gas system reliability and safety. PSE evaluates aging
14 natural gas systems to determine which ones have the highest priority for
15 replacement. Additionally, as part of PSE's bare steel pipe replacement effort, the
16 Company has been replacing bare steel pipe, which was installed prior to the
17 advent of wrapped steel or plastic pipe. The program covers over 200 miles of
18 bare steel mains and services and is expected to be completed in 2014. Through
19 2010, PSE has replaced approximately 122 miles of main and anticipates
20 replacing an additional 24 miles in 2011. The Company expects to invest nearly

1 \$200 million dollars over the life of the replacement program. PSE is also
2 evaluating wrapped steel service lines that were installed prior to 1972 (when
3 cathodic protection requirements were established) in order to identify service
4 lines to be proactively replaced as they near the end of their service life.

5 PSE evaluates natural gas mains that are not currently under a programmatic
6 replacement effort based upon field condition reports generated when the natural
7 gas main is exposed for repairs or other work coupled with operating history, such
8 as leakage and cathodic protection data. PSE evaluates other natural gas
9 facilities, such as district regulator stations, for replacement based upon their
10 condition and maintainability as reported in regular inspection reports.

11 **Q. Are there other factors that may impact the way in which the Company**
12 **approaches maintenance and replacement of natural gas infrastructure?**

13 Yes. The recent pipeline explosions in California, Pennsylvania and elsewhere
14 have heightened awareness of pipeline age, public safety and infrastructure
15 replacement needs. Several measures are being debated in Congress that, if
16 enacted, could impose additional obligations on gas utilities that would need to be
17 incorporated in the Company's maintenance and replacement analyses.

18 Additionally, in November 2009, the Pipeline and Hazardous Materials Safety
19 Administration ("PHMSA") issued its final rule on Distribution Integrity
20 Management Program ("DIMP"). This federal rule required natural gas

1 distribution pipeline operators to develop a written program to identify threats to
2 the pipeline system and develop mitigation strategies to minimize these threats to
3 continue the safe and reliable operation of the system. As the Company develops
4 its DIMP, it will be looking at its entire pipeline network and anticipates
5 additional maintenance and replacement programs may be identified and
6 implemented.

7 **Q. How does PSE's proposed Pipeline Integrity Program integrate with these**
8 **other programs?**

9 A. The Pipeline Integrity Program ("PIP") proposal, filed on April 26, 2011 in
10 Docket UG-110723, is intended to advance public safety by providing for the
11 timely recovery of the Company's investment in new plant for specific pipeline
12 safety programs. The initial scope of the PIP is limited to: (1) Bare Steel
13 Replacement; (2) Wrapped Steel Service Assessment; (3) Wrapped Steel Main
14 Assessment; and (4) Older Polyethylene Pipe Replacement. The PIP is meant to
15 target system replacement where both the Company and the Commission, through
16 the Office of Pipeline Safety, concur on the scope and schedule of a defined
17 maintenance or replacement program that addresses and enhances the highest
18 public safety priorities.

1 **Q. Are any new natural gas replacement programs anticipated?**

2 A. Yes. As discussed earlier in this testimony and in response to the federal PHMSA
3 requirement, the Company is developing its DIMP, which will identify pipeline
4 integrity risks, as well as plans and programs to address these risks. As system
5 components age and field reports and inspection information is collected and
6 analyzed, other holistic replacement programs could be developed and
7 implemented.

8 **2. Maintenance and Replacement of Electric Infrastructure**

9 **Q. Please generally describe PSE's ongoing maintenance and replacement of**
10 **electric infrastructure.**

11 A. PSE's transmission and distribution equipment includes, among other things,
12 substation equipment (including control and protection equipment), transmission
13 and distribution poles and crossarms, and underground cables. Programmatic
14 replacement of assets is generally limited to assets that have a high consequence
15 of failure (such as substation equipment) or a well-defined end of life condition
16 (such as poles or cables that fail inspection).

17 Certain equipment requires continual maintenance and testing such as substation
18 transformers, circuit breakers, control and protection systems, and switches. PSE
19 maintains this type of equipment by using condition-based maintenance which
20 includes monitoring the equipment's age, make and model, number of operations

1 performed, maintenance history, and inspection results. PSE replaces the
2 equipment when it is no longer economical to maintain based on its condition or
3 the availability of spare parts. Other types of equipment, such as wood poles and
4 underground cable, are replaced based upon condition as determined by field
5 observations of PSE employees or service providers or by systematic inspection
6 programs. One such systematic inspection program is the testing and treating of
7 older wood poles, which allows PSE to either schedule the replacement of the
8 pole or extend its lifespan by inhibiting wood decay.

9 **Q. Are any new electric infrastructure replacement programs anticipated?**

10 A. Not at this time. However, similar to natural gas infrastructure, as electric system
11 components age and field reports and inspection information is collected and
12 analyzed, other holistic replacement programs could be developed and
13 implemented. For example, some electric distribution system components do not
14 impact a significant number of customers and pose a minimal safety risk when
15 they fail (e.g., when a residential transformer stops operating). Even though this
16 type of equipment is not currently part of a programmatic replacement effort, the
17 Company continues to monitor industry trends, considers field reports on
18 component performance, and may consider additional replacement programs in
19 the future.

1 **3. Prioritization of Infrastructure Replacement**

2 **Q. How does PSE prioritize its replacement of gas and electric infrastructure?**

3 A. Infrastructure replacement is driven by a number of factors including operating
4 performance (e.g., outages, leaks), vintage (e.g., age, condition, manufacturer),
5 maintenance and inspection history (both findings and actions), compliance
6 criteria, operating environment (e.g., wet, dry, freeze/thaw, exposure to salt air),
7 cost to maintain versus cost to replace, and opportunity to package replacement
8 work with other planned actions to lower costs. These factors can, but do not
9 always, determine what projects are funded. For example, replacements due to
10 compliance obligations and relocations have generally been increasing even
11 though these facilities often would not have been candidates for replacement due
12 to age, and this leaves fewer dollars available for other prioritized projects.
13 Although the Company includes compliance and mandated relocation
14 replacement projects in the prioritization modeling, the compliance and relocation
15 replacement projects are not optional and will be performed irrespective of the
16 modeling results.

17 That said, the Company performs infrastructure replacement in addition to the
18 compliance and relocation replacement projects in order to minimize
19 compromising service to customers. PSE aspires to replace infrastructure before
20 reliability is compromised, but the need to spend dollars on compliance and

1 mandated requirements, along with the quantity of older system components
2 eligible for replacement, will require many decades of investment.

3 PSE's system planning process utilizes a variety of engineering modeling,
4 financial analysis and analytical hierarchy decision-making tools to plan and
5 prioritize its gas and electric system infrastructure investments that are not
6 otherwise prescribed by customer requests on tariffed services, regulatory
7 requirements, or jurisdictional relocation mandates. For example, PSE has
8 several well-established maintenance and refurbishment initiatives, including
9 cable replacement and substation maintenance. The system planning process
10 measures the benefits versus costs of a given project and provides practical
11 decision options from a portfolio of hundreds of projects. This decision-making
12 process allows PSE to evaluate and prioritize capital spending initiatives and
13 programs. Projects are compared against one another, with an emphasis on
14 maximizing the benefits across the project portfolio. Typically, system reliability,
15 increased capacity and other kinds of projects are prioritized utilizing the system
16 planning process. The process and tools continually evolve in an effort to
17 optimize and improve the benefits obtained from PSE's capital investments.

1 **4. Costs to Replace and Upgrade Delivery System Assets**

2 **Q. Has PSE experienced increasing costs related to electric and natural gas**
3 **system asset replacements and installations?**

4 A. Yes. The cost to replace an aging system asset today needs to be compared to the
5 cost of its original installation, which, on average, was approximately 30 years
6 ago. In 1980, the cost to purchase and install a 45-foot distribution pole was
7 \$530; by 2010, the cost increased to over \$4,790. During 2010 PSE installed
8 approximately 2,900 45-foot distribution poles of which approximately 1,150
9 poles (roughly 40 percent), were replacement of poles deemed to be close to
10 failure. This replacement increased the Company's depreciation expense per unit
11 for these items by nine times the 1980 cost of comparable items. In addition, rate
12 base increased by the cost of the new poles as the old poles were close to, or
13 already, fully depreciated.

14 As another example, the cost to purchase and install four-inch diameter plastic
15 gas main has increased from \$9 per foot in 1980 to \$109 per foot in 2010. During
16 2010 PSE installed nearly 15 miles of four-inch diameter plastic gas main of
17 which approximately 2.5 miles (approximately 16 percent) was replacement of
18 existing older infrastructure. This replacement increased depreciation per unit by
19 over 10 times the 1980 cost of comparable items. Again, rate base increased by
20 the cost of the new pipe as the old pipe was close to, or already, fully depreciated.

1 **Q. Does PSE expect ongoing high levels of capital spending for the natural gas**
2 **and electric delivery systems?**

3 A. Yes, although capital spending is less than would have been the case in a robust
4 and growing economy, PSE expects high levels of capital spending will be
5 required to meet mandated infrastructure investment requirements, continue to
6 maintain reliability levels, eliminate localized peak capacity constraints, and
7 address needs associated with the Company's aging system. Capital spending
8 could further increase: (1) if there are significant increases in housing starts; (2) if
9 there are additional pipeline safety, electric reliability and municipal and county
10 mandates, requirements and commitments; and (3) if the Company's own findings
11 and system assessment determine the need for additional capital spending to
12 maintain the safety of the systems. All of these factors could affect the quantity
13 of system to be added, remediated or replaced.

14 **Q. How much capital does PSE anticipate investing in 2011 for the natural gas**
15 **system?**

16 A. As shown in Exhibit No. ___(SML-4), the Company anticipates capital spending
17 in the following categories:

- 18 • Gas compliance and/or mandated construction (the construction of
19 infrastructure to meet regulatory commitments and timelines, often
20 replacing older components) – approximately \$52.6 million;

- 1 • Gas new customer construction (the construction of both main
2 extensions and services requested by customers) – approximately
3 \$43.0 million;
- 4 • Gas increased capacity (the construction and/or upgrade of facilities to
5 support current and future anticipated system demands) –
6 approximately \$9.2 million;
- 7 • Gas external commitments (the construction and/or relocation of
8 facilities as required by jurisdictions as a condition of the franchise) –
9 approximately \$15.9 million;
- 10 • Gas unplanned construction (the construction of infrastructure that
11 fails during the course of the year) – approximately \$6.0 million;
- 12 • Gas planned remediation/replacements (the construction of
13 infrastructure that the company deems necessary above compliance
14 requirements, such as additional gas gauges and SCADA points) –
15 approximately \$2.3 million; and
- 16 • Gas other costs (includes customer reimbursed projects, fleet, capital
17 tools, security systems, etc.) – approximately \$3.0 million.

18 **Q. How much capital does PSE anticipate investing in 2011 for the electric**
19 **system?**

20 A. As shown in Exhibit No. ___(SML-4) the Company anticipates capital spending
21 in the following categories:

- 22 • Electric compliance projects including new transmission lines, re-built
23 and uprated transmission lines that can carry more power, and the
24 replacement of older components as necessary to meet NERC
25 reliability standards. These projects total approximately \$41.3
26 million;
- 27 • Electric new customer construction (the construction of both complex
28 line extensions and simple services requested by customers) –
29 approximately \$17.8 million;

- 1 • Electric increased capacity (the construction and/or upgrade of
2 facilities to support current and future anticipated system demands) –
3 approximately \$38.8 million;
- 4 • Electric external commitments (the construction and/or relocation of
5 facilities as required by jurisdictions as a condition of the franchise) –
6 approximately \$21.9 million;
- 7 • Electric unplanned construction (the repair or replacement of
8 infrastructure that fails during the course of the year) – approximately
9 \$29.7 million;
- 10 • Electric planned reliability projects (the construction or modification
11 of system facilities to improve delivery reliability) – approximately
12 \$99.7 million; and
- 13 • Electric other costs (includes customer reimbursed projects, fleet,
14 capital tools, security systems, etc.) – approximately \$1.8 million.

15 **Q. How does capital investment affect O&M spending?**

16 A. In certain instances capital investment has a direct effect on the Company's O&M
17 expense. For example, when PSE installs energy delivery system assets where
18 there were previously none, the result will be an increase in ongoing O&M
19 expenses since the newly-installed assets will need to be inspected and
20 maintained for compliance with regulatory requirements and for system integrity
21 purposes.

22 Energy delivery system assets that are installed to replace existing assets (e.g., as
23 part of aging infrastructure replacement programs) may result in a reduction in the
24 ongoing maintenance costs in the near term on that particular part of the system
25 (e.g., fewer leaks requiring monitoring or fewer unplanned power outages).

1 However, replacement does not generally eliminate maintenance costs. For
2 example, the replacement of gas mains and services would not eliminate
3 maintenance since these replaced mains and services must be inspected at regular
4 intervals or may have cathodic protection systems that can short-out due to third
5 party interference or action. The monitoring of cathodic protection systems to
6 identify a problem and its ultimate repair is not necessarily driven by age, but
7 often by the inadvertent action of others. In addition, as the average age of the
8 system increases, maintenance costs increase as new areas of maintenance are
9 created. The net effect is that, overall for the entire system, O&M is going up.

10 Increasing capital investments can also generate an associated O&M expense
11 related to the construction cost. As prescribed by FERC accounting practices
12 under the Uniform System of Accounts, when certain construction activities take
13 place, there is an associated operations and maintenance component. For
14 example, when an older gas main is replaced and the service lines going to
15 residences and businesses are not replaced, the work associated with tying the
16 existing services into the new gas main is required to be accounted for as O&M
17 expense.

1 **B. Regulatory Compliance Requirements**

2 **Q. Please provide an overview of PSE's regulatory compliance obligations.**

3 A. The Company is subject to numerous regulatory compliance obligations, each of
4 them distinct in nature:

- 5 • Federal and state gas pipeline safety regulations;
- 6 • Accelerated pipe replacements as a result of safety commitments;
- 7 • Electric reliability standards (including stringent vegetation management
8 practices under transmission lines) and Critical Infrastructure Protection
9 standards (cyber security protection); and
- 10 • State and local regulations or ordinances concerning prescribed work, safety
11 or environmental practices which influence the quantity and skill sets of
12 workers, equipment and materials needed to perform work.

13 **Q. Please describe PSE's efforts to improve and maintain compliance with**
14 **natural gas and electric regulatory requirements.**

15 A. The Company is committed to constructing, operating and maintaining safe gas
16 and electric delivery systems that comply with applicable regulations. Because
17 there has been an increase in the number of regulations and requirements that
18 govern PSE's natural gas and electric businesses, PSE compliance activities and

1 associated costs have increased accordingly. Additionally, PSE has taken steps
2 over the last several years to support and strengthen its regulatory compliance
3 procedures in concert with discussions with the WUTC's Office of Pipeline
4 Safety.

5 PSE has also implemented internal corporate ethics and compliance training, as
6 well as other safeguards to promote employee understanding and accurate
7 reporting associated with regulatory compliance.

8 **Q. Are there any other factors to be considered?**

9 A. Yes. PSE has electric system facilities that are subject both to FERC and WUTC
10 jurisdiction. Specifically for PSE's electric transmission facilities, FERC has
11 authority to approve reliability standards and assess penalties and sanctions when
12 users, owners and operators of the bulk-power system (such as PSE) do not
13 comply with those standards. FERC certified the North American Electric
14 Reliability Corporation ("NERC") as the Electric Reliability Organization to
15 oversee the reliability of the U.S. portion of the North American bulk-power
16 system. NERC also works with eight "Regional Entities" as part of its regulatory
17 duties and has delegated portions of its compliance and enforcement authority to
18 them. PSE, by virtue of its location and service territory in the Western United
19 States, is under the enforcement authority of the Western Electricity Coordinating
20 Council ("WECC").

1 FERC has moved to redefine the bulk electric system and its regulatory reliability
2 authority over the bulk electric system to a 100 kV threshold. This has the effect
3 of imposing FERC, NERC and WECC compliance on much more of PSE's
4 electric system than just the 230 kV system and thus increases costs. For
5 example, NERC issued a recent Alert (which is further described later in this
6 testimony) and as a consequence the Company is obligated to ensure that
7 transmission lines are not encroached upon thus affecting the operation of the
8 lines. PSE has chosen the use of light detection and ranging ("LiDAR")
9 equipment as the most effective and accurate means of assessing the condition of
10 the system. Ultimately, the Company will need to address any encroachments it
11 finds, but using the new 100 kV threshold, the Company estimates the LiDAR
12 assessment will cost approximately \$1.4 million, which does not include costs
13 associated with addressing encroachment issues.

14 To ensure that transmission costs are properly allocated between customer
15 groups, PSE is currently evaluating the possible reclassification of its distribution
16 and transmission assets to align with FERC's definition

17 **1. Increasing Electric Reliability Compliance Obligations**

18 **Q. Do specific federal reliability standards apply to PSE?**

19 A. Yes. PSE performs and is registered with NERC to carry out the following
20 functions: Balancing Authority, Distribution Provider, Generation Operator,

1 Generation Owner, Load Serving Entity, Planning Authority, Purchasing-Selling
2 Entity, Resource Planner, Transmission Operator, Transmission Owner,
3 Transmission Planner, and Transmission service provider. An entity that registers
4 as performing a particular function is required to comply with the reliability
5 standards and requirements associated with that function.

6 **Q. Please describe the evolving nature of these reliability standards.**

7 A. NERC has developed three-year cycles for its standards development and review
8 efforts. Many of the NERC reliability standards have been revised and are more
9 prescriptive and often have broader application than the prior version. In 2010,
10 Version 3 of the Critical Infrastructure Protection ("CIP") standards became
11 effective and increased the requirements for security of monitoring equipment and
12 management of personnel who are not authorized for access to critical asset areas.
13 Additionally, a standard relative to transmission loadability (PRC-023) became
14 effective and required an increase in engineering studies and coordination of
15 transmission relays to ensure they do not limit the loadability of transmission
16 lines.

17 Another example of the evolving nature of these compliance mandates is the 2008
18 launch of the NERC Alerts system. The purpose of the Alerts system is to rapidly
19 disseminate vulnerability information to utilities in order to maintain reliability.

20 As a registered entity, PSE is required to participate in the process and must take

1 action to understand the ramifications of the identified vulnerability to PSE's
2 system. Reviewing, taking action and responding to these Alerts requires
3 significant investment of resources. For example, as was covered earlier, the
4 Company is reviewing and responding to a current Alert on possible transmission
5 line corridor encroachments which is expected to take three years, involves PSE's
6 Engineering, Transmission Planning, Vegetation Management, Real Estate, and
7 Compliance resources, and will cost approximately \$1.4 million to perform the
8 required assessment, not including any needed mitigation.

9 **Q. Please describe the WECC reliability audit process.**

10 A. WECC conducts an on-site audit of PSE's compliance with the NERC Reliability
11 Standards every three years. In August 2010, WECC performed its second audit
12 of PSE's reliability compliance efforts. Since the first audit in 2007, WECC's
13 audit teams have matured and are reviewing compliance records with increased
14 scrutiny as demonstrated by the audit length increasing from one week to two
15 weeks. In addition, the audit scope was expanded to include all 12 of PSE's
16 registered NERC functions. The number of on-site auditors increased from 9 to
17 19, and the audit team included a FERC member and an observer from the SERC
18 Reliability Corporation (one of the other eight regional entities working with
19 NERC). Focused preparation efforts for the 2010 audit began in 2009, including
20 weekly meetings of 14 different organizations within PSE who had responsibility
21 for meeting standards and development of processes and maintaining evidence,

1 which was submitted electronically. In the final six weeks before the audit,
2 employees compiled thousands of pages of evidence in the required electronic
3 format.

4 **Q. Please describe other electric system compliance standards with which PSE**
5 **must comply.**

6 A. PSE is governed by, and complies with, various provisions in the Washington
7 Administrative Code (“WAC”) addressing employee workplace safety, personal
8 protective equipment, consumer rules, metering rules, and safety and standards
9 rules. These regulations are intended to protect the workforce and mitigate
10 potential workplace hazards to the extent possible, and to protect consumers and
11 the public in general.

12 **2. Increasing Pipeline Safety Compliance Obligations**

13 **Q. What are some of the new pipeline safety regulations that impact PSE?**

14 A. As discussed previously, the Pipeline and Hazardous Materials Safety
15 Administration (“PHMSA”) issued the final Distribution Integrity Management
16 Program (“DIMP”) rule. The DIMP rule requires operators of gas distribution
17 lines to develop and implement integrity management programs for their pipeline
18 systems in order to identify threats, evaluate risks and implement measures to
19 reduce risks to the distribution system. The Company's initial DIMP must be

1 developed by August 2011. In 2010 the Company added staff in order to develop
2 its DIMP. Additionally, in order to fully comply with the intent of DIMP, more
3 comprehensive gas asset records must be collected and become more easily
4 available for engineering analytics, which is a significant driver toward the
5 Company's implementation of a geospatial information system ("GIS").

6 Another PHMSA requirement is that PSE must develop a Control Room
7 Management ("CRM") plan by August 1, 2011 with full implementation by
8 February 1, 2013, and expedited implementation deadlines have been proposed.
9 Irrespective of the final effective date, PSE's CRM plan must schedule work shifts
10 that do not contribute to gas control worker fatigue, and provide workers with
11 information, training and processes to fulfill the responsibilities as prescribed by
12 the regulation. Based upon the CRM regulations, PSE added three employees to
13 allow for sufficient off-duty times to mitigate potential operator fatigue and to
14 perform the ongoing alarm system analysis, examination and programming
15 modification. Even though the Company's prior staffing levels have not adversely
16 affected safety in the past, the Company is required by the regulations to make
17 these changes.

1 **3. Increasing Costs from Safety and Reliability Compliance**
2 **Obligations**

3 **Q. Are O&M and capital costs affected by changes in regulatory compliance**
4 **requirements?**

5 A. Yes. Although a new regulatory obligation may not always drive a change in a
6 particular work practice, it often results in modifications in record keeping,
7 technology systems, oversight and administrative processes because the Company
8 must be able to demonstrate compliance with the regulation. In some cases,
9 however, the Company must also adjust its work practices as a result of
10 regulatory change (e.g., the requirement to install excess flow valves on new
11 residential gas services).

12 Additionally, regulatory compliance requirements and settlement commitments
13 can prescribe a specific schedule for remediation or replacement of infrastructure
14 and the Company may not be able to delay the related capital construction and
15 O&M costs.

16 **Q. Have the overall impacts of natural gas and electric compliance mandates**
17 **resulted in increased capital costs?**

18 A. Yes. In 2005, the Company spent roughly \$21 million in investments targeted for
19 regulatory driven compliance mandates for natural gas. In 2010, this same
20 category of spending grew to \$50 million. Compliance mandates also resulted in

1 an increase in capital spending on the electric system. In 2005, PSE spent
2 roughly \$17 million in investments targeted for regulatory driven compliance
3 work and by 2010 this same category of spending had grown to roughly \$42
4 million.

5 Although the Company would have ultimately made many of these investments
6 the ability to choose when to do so has been removed from the Company's
7 purview. During a time when customers may prefer PSE to reduce or even defer
8 its spending, the Company has not had the latitude to consider doing so, and there
9 has been a combined \$54 million increase in compliance related capital
10 investments.

11 **C. Municipal, County and State Jurisdictional Construction**
12 **Requirements**

13 **1. Increasing Natural Gas Construction Requirements**

14 **Q. Please describe the municipal, county and other requirements that have**
15 **increased PSE's cost of natural gas construction.**

16 A. There are a number of new municipal and county construction requirements that
17 increase PSE's natural gas construction costs. As I discussed previously, the cost
18 to install one foot of 4-inch diameter gas main has increased from \$9 per foot in
19 1980 to nearly \$109 per foot in 2010. This is due, at least in part, to the fact that
20 in many jurisdictions current mandates did not necessarily exist or did not apply

1 to installations twenty or in some cases even five years ago. The types of current
2 requirements I am referring to include: permitting; municipal or county
3 inspections; traffic control plans and associated labor and equipment; preventive
4 actions to minimize soil erosion, including the contamination of streams and
5 drainages; and partial and, in some cases, full roadbed and paving restorations.

6 To further illustrate the changes in construction practices that are often now
7 required, please refer to Exhibit No. ___(SML-5), which consists of a series of
8 comparative photographs of natural gas main installations.

9 **Q. Have natural gas construction costs also been affected by state or local**
10 **construction permit requirements?**

11 A. Yes. There have been general permit rate increases and an increasing number of
12 PSE natural gas projects now require a permit and fee. For example, in 2006, the
13 Department of Ecology changed the threshold for new storm water discharge
14 requirements from five acres of work site area to one acre of work site area.
15 Although the majority of the Company's natural gas construction projects are
16 below the five-acre threshold, many projects are not below the one-acre threshold.
17 Therefore, an increasing number of PSE's natural gas construction projects are
18 now subject to the storm water discharge requirements, which include obtaining a
19 National Pollutant Discharge Elimination System ("NPDES") permit, a State
20 Environmental Policy Act ("SEPA") permit, and a Shoreline Substantial

1 Development Permit ("SSDP") as well as preparing a Storm Water Pollution
2 Prevention Plan.

3 **2. Increasing Electric Construction Requirements**

4 **Q. Please describe the municipal, county, and other requirements that have**
5 **increased PSE's cost of electric construction.**

6 A. Much like the natural gas side of the business, PSE faces changing jurisdictional-
7 imposed requirements on a continual basis. Many jurisdictions have adopted
8 "Clear Zone" requirements which specify a calculated distance from the "traveled
9 roadway" where no objects greater than four inches in height or four inches in
10 diameter are allowed. These Clear Zone requirements vary from jurisdiction to
11 jurisdiction but are generally based upon the average traffic volume, road
12 configuration and the speed limit of the road.

13 Often times when PSE is performing routine maintenance or upgrades on
14 overhead distribution or transmission lines affecting more than a single pole, or
15 when the Company is renewing a franchise agreement with Washington State
16 Department of Transportation, the Clear Zone requirements necessitate PSE
17 relocate the entire series of poles to meet clear zone mandates. In many cases,
18 these poles are not otherwise in need of replacement and in some cases, there may
19 not be adequate right-of-way for the new pole locations and PSE is then faced
20 with the added cost of acquiring easements. Although these Clear Zone

1 requirements are not new, jurisdictions have become more aggressive about
2 enforcing the requirements.

3 **Q. Have electric construction costs also been affected by state or local**
4 **construction permit requirements?**

5 A. Yes, both hourly and flat permitting fees have generally increased across
6 jurisdictions at the state, county and municipal levels. In addition to fee
7 increases, PSE continues to see increasing costs for environmental mitigation
8 during construction (surface water management, etc.) and for restoration (full
9 width paving, planting and irrigation, etc.) in the same way as these requirements
10 have affected natural gas construction costs.

11 **Q. Do you have an example of where municipal or county requirements have**
12 **increased PSE's electric construction costs?**

13 A. Yes. Please refer to Exhibit No. ___(SML-6), which consists of a set of
14 comparative photographs and a description of a recent electric transmission line
15 upgrade construction project. The transmission line crosses the Stillaguamish
16 River in unincorporated Snohomish County. PSE initially intended to use a three-
17 pole design with the 90-foot steel poles directly embedded in the ground as part of
18 the line upgrade. It was determined by the county that the line crosses the
19 Channel Migration Zone of the Stillaguamish River. As a consequence,

1 Snohomish County required the Company to complete a Channel Migration Zone
2 Analysis and a 100-Year Scour Analysis.

3 The studies show that the transmission line runs through a flood plain and would
4 need to be constructed in accordance with relevant County flood hazard
5 requirements, including the compliance requirements set forth in guidelines
6 issued by the Federal Emergency Management Agency (“FEMA”) for
7 construction in a flood plain. In order to comply with the jurisdictional code, the
8 poles would need to be able to withstand the erosion of 23 feet of terra firma in
9 the event of a flood, and still have an adequate foundation to remain standing. If
10 followed, the flood hazard requirements would have necessitated the Company
11 construct two 145-foot poles, each with an 80-foot foundation adjacent to the
12 existing 75-foot H-frame structures. The PSE planning team believed that the
13 145-foot pole design would inhibit future line maintenance, was not aesthetically
14 pleasing and would be rejected by nearby landowners. PSE proposed an alternate
15 design to the County. The County ultimately approved the use of two 120-foot
16 double circuit steel poles installed on 70-foot and 60-foot foundations.

17 **Q. Did the Company experience an increase in costs due to the County code**
18 **requirements?**

19 A. Yes. The migration/scour study cost approximately \$103,000. The double circuit
20 steel poles with labor for installation cost approximately \$287,000 and the cost

1 for the deep concrete foundations was \$531,000. If PSE had been able to use the
2 single circuit steel poles embedded directly into the ground as it originally
3 intended, the poles and installation would have cost approximately \$219,000.
4 The total incremental cost between the original design/cost estimate and the cost
5 of the design that was ultimately required, including the cost of the study, was
6 approximately \$702,000.

7 **D. The Economic Downturn**

8 **Q. Has the economic downturn affected PSE's costs?**

9 A. Yes. The severe economic downturn has made it increasingly difficult for more
10 of PSE's customers to pay for their gas and electric service, including customers
11 that have not been late or delinquent in the past. The Company's bad debt is at an
12 all time high. PSE's accumulated provision for uncollectible accounts (APUA)
13 has increased from \$11.8 million in 2008 to \$16.4 million in 2009 and to \$16.9
14 million in 2010.

15 **Q. Has the Company seen any change in the number of customer calls received?**

16 A. Yes. The economic downturn appears to have also increased the quantity of
17 customer calls received. For example, customers that are balancing limited
18 resources and reduced income levels with ongoing living expenses may contact
19 PSE multiple times regarding their electric or gas bills, first to make payment

1 arrangements and then additional times in order to negotiate smaller payments to
2 match their available income. Calls to make payment arrangements and to
3 negotiate smaller payments take more time than calls regarding typical billing or
4 outage questions which has driven the average call length from approximately
5 four to seven minutes.

6 The increased time spent on a call also increases the cost per call. The average
7 cost per call in 2009 was approximately \$6 and the average cost per call in 2010
8 was almost \$8.

9 **Q. What effects has the current economic condition had on PSE's O&M**
10 **spending?**

11 A. PSE has seen an increase in the number of customer disconnects for nonpayment,
12 and subsequent reconnects, which also increase PSE's O&M costs. The
13 disconnects and reconnects are additional unplanned work, which must be
14 assimilated with the work already scheduled and planned. This work often occurs
15 after normal service hours in order to meet the customers' needs and PSE's
16 obligation for turning service back on in a timely manner.

1 **V. ELIMINATION OF SERVICE QUALITY INDEX NO. 9:**
2 **DISCONNECTION RATIO**

3 **Q. Please describe Service Quality Index No. 9: Disconnection Ratio (SQI-9).**

4 A. The Company first implemented its Service Quality Index Program pursuant to
5 Docket Nos. UE-951270 and UE-960195, which authorized the merger of
6 Washington Natural Gas Company and Puget Sound Power & Light Company.
7 One of the indices was SQI-9, the Disconnection Ratio benchmark, which set a
8 cap on how many customers in arrears can be disconnected when Commission
9 disconnection rules would permit service curtailment.

10 **Q. What is the current status of SQI-9?**

11 A. SQI-9 has been eliminated on an interim basis pursuant to Commission Order 16
12 in Docket Nos. UE-072300 and UG-072301. The Company is required to include
13 information on its disconnection activities in the annual SQI reporting exhibits.

14 **Q. Please describe the history of SQI-9.**

15 A. In October 2009, PSE requested to increase the benchmark associated with SQI-9
16 from 0.030 to 0.038 disconnections per customer in light of increasing
17 uncollectible revenues due to the deteriorating economic situation. On November
18 13, 2009, the Commission granted PSE's request in Order 14 in Docket Nos. UE-
19 072300 and UG-072301.

1 In June 2010, the Company submitted a request to eliminate SQI-9. Commission
2 Staff supported PSE's request. The Energy Project and Public Counsel opposed
3 the request at that time, arguing instead that the matter should be taken up as part
4 of the Company's next general rate case. On August 10, 2010, in Order 16, the
5 Commission granted PSE's application to eliminate SQI-9 on an interim basis and
6 ordered that permanent elimination of the benchmark be considered in PSE's next
7 general rate proceeding.

8 **Q. Would it be appropriate to permanently eliminate SQI-9 at this time?**

9 A. Yes. The benchmarking index in SQI-9 hinders PSE's ability to carry out
10 Commission credit and disconnection rules set forth in the WAC. There are
11 potential unintended financial and customer effects of any disconnection
12 benchmark. Such a benchmark can result in inequitable treatment because some
13 customers eligible to be disconnected for nonpayment are, in fact, disconnected
14 each month while others are not – simply because the quota of allowed
15 disconnects has been met. More specifically with regard to SQI-9, maintaining
16 the benchmark is likely to interfere with proper application of customer
17 protections including rules governing refusal of service, disconnection of service,
18 complaint/dispute resolution, and billing and payment requirements.

19 PSE believes the Commission's credit and disconnection rules protect customers,
20 and reinstatement of SQI-9 could interfere with proper application of the

1 customer protections listed above. The Company offers payment plans and
2 various financial assistance opportunities to help customers manage their bills and
3 avoid service disconnection. The budget payment plan and the time payment
4 arrangements are available to all customers as provided in PSE's tariffs. PSE also
5 works with local community agencies to support customers who need extra help.
6 These programs include PSE's conservation low-income weatherization program
7 to reduce customer usage and payment assistance programs such as PSE's HELP
8 program and Warm Home Fund, the federal government's LIHEAP Program, and
9 pledges from local charities.

10 In light of the payment assistance programs and the credit and disconnect
11 guidelines set forth in the Commission rules, PSE customers are adequately
12 protected when SQI-9 is eliminated. Therefore, the Company proposes to
13 permanently eliminate SQI-9. PSE is agreeable to continuing to provide the
14 information on disconnection activities in the exhibit section of its annual SQI
15 filing, should the Commission wish the Company do so.

16 VI. CONCLUSION

17 **Q. Please summarize your testimony.**

18 A. PSE continues to be an efficient provider of safe and reliable electric and natural
19 gas service to its customers. However, the Company's aging electric and gas
20 delivery systems, increasing regulatory and compliance requirements and ongoing

1 (albeit slower) system growth continue to drive high levels of capital investment
2 and operations and maintenance expenditures. In the current economic situation,
3 PSE continues to see customers having difficulty paying their energy bills, which
4 has created higher levels of uncollectible accounts and confirms PSE's decision to
5 seek approval to permanently eliminate SQI-9.

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

7 A. Yes, it does.