EXHIBIT NO. ___(GJZ-10T)
DOCKET NO. UE-072300/UG-072301
2007 PSE GENERAL RATE CASE
WITNESS: GREGORY J. ZELLER

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-072300** **Docket No. UG-072301**

PREFILED REBUTTAL TESTIMONY (NONCONFIDENTIAL) OF GREGORY J. ZELLER ON BEHALF OF PUGET SOUND ENERGY, INC.

JULY 3, 2008

PUGET SOUND ENERGY, INC.

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PUGET SOUND ENERGY, INC.

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I. INTRODUCTION

Q. Are you the same Gregory J. Zeller who provided prefiled direct testimony in this proceeding on December 3, 2007, on behalf of Puget Sound Energy, Inc. ("PSE" or "the Company")?

A. Yes. On December 3, 2007, I filed direct testimony, Exhibit No. ___(GJZ-1T), and eight exhibits supporting such direct testimony, Exhibit No. ___(GJZ-2) through Exhibit No. ___(GJZ-9).

Q. Please summarize the purpose of your rebuttal testimony.

A. This rebuttal testimony responds to the direct testimony of the Energy Project, Public Counsel and Commission Staff regarding (i) PSE's storm response, (ii) PSE's general storm management and preparedness, and (iii) PSE's vegetation management program.

My testimony explains why the Commission should reject the Energy Project's and Public Counsel's (the "Joint Parties") recommendation to disallow 5% of PSE's Hanukkah Eve Storm costs. The Joint Parties base their proposed disallowance on their opinion that PSE was not as well prepared for the storm as it might have been. *See* Exhibit No. ___(BRA-1TC) at page 9, lines 4-5. My

rebuttal testimony describes how PSE prepared for and performed during the Hanukkah Eve Storm.

My rebuttal testimony also explains how PSE's communication procedures, vegetation management program, and general storm management contributed to the overall positive review documented in the KEMA Storm Restoration and Readiness Review dated July 2, 2007 (the "KEMA Report"). *See* Exhibit No. ___(GJZ-8).

II. PSE'S STORM RESPONSE IS EFFECTIVE AND EFFICIENT

A. Hanukkah Eve Storm Response

Q Do you agree with the Joint Parties' characterization that PSE did not prepare itself or its system to respond to the Hanukkah Eve Storm as effectively or as efficiently as it might have otherwise?

A. No. As discussed below, many aspects of PSE's Hanukkah Eve Storm response and preparedness drew praise from KEMA, customers and government officials. Based on National Weather Service predictions of a new major storm and subsequent briefings, PSE made the decision to retain 145 crews that had been working to restore service from a smaller storm that hit earlier in the week. PSE assumed the cost and risk to hold and rest these crews the day of December 14, 2006. KEMA commended this decision stating, "PSE estimated the impact of the storm and wisely held 145 crews . . . ." *See* Exhibit No. ___(GJZ-8) at page 28.

KEMA added: "The availability of the additional crews paid dividends by shortening the time necessary for crews to arrive ensuring that PSE would have the additional and rested crews at the beginning of the restoration." *See* Exhibit No. ___(GJZ-8) at page 28.

In addition, prior to the onset of the storm, PSE crews and management personnel had reported to their pre-assigned emergency response roles. KEMA applauded this decision as well, stating that PSE's Corporate Emergency Response Plan ("CERP") is consistent with leading practices and that PSE executed its CERP very well: "Due to the magnitude of the storm, PSE quickly adjusted its plan and adapted well to the 'unique' challenges by developing ad hoc practices as needed." *See* Exhibit No. ___(GJZ-8) at page 6.

B. The KEMA Report

Q. Why did you engage KEMA to perform the after event review?

A. PSE voluntarily engaged KEMA to perform an after event review to provide a third party analysis of ways to improve future performance. Taking this step does not mean that the Company failed in its performance during this historic event. Instead, it demonstrates that the Company strives to make improvements and increase the quality of service.

Q. Do you agree with the Joint Parties' interpretation of the KEMA Report results on page 9 of Exhibit No. ___(BRA-1TC) as stating PSE and its electrical system were unprepared for the Hanukkah Eve Storm?

A. No. The Joint Parties imply that the KEMA Report was negative, but overall, KEMA's conclusion was positive. Specifically, the KEMA Report states:

> PSE, its employees, and service providers performed well in restoring power after this record-breaking storm. Employees at all levels overcame many obstacles caused by the sheer magnitude of the storm damage and overwhelming volume of restoration activities.

See Exhibit No. ___(GJZ-8) at page 5. KEMA was particularly impressed with PSE's ability to acquire additional storm crews: "The rapid response by PSE management to secure additional resources was a significant factor in the Company's ability to fully restore the system in approximately 12 days." *See* Exhibit No. ___(GJZ-8) at page 5. The KEMA Report listed the following areas in which PSE executed "extremely well" during the Hanukkah Eve Storm:

- crew and materials acquisition to support restoration,
- employee and contractor safety,
- logistics support for the off-system crews brought to the area, and
- performance of PSE employees in rising to the extreme challenge presented in this storm.

See Exhibit No. ___(GJZ-8) at page 6. Additionally, "PSE performed very well in the execution of the CERP." *See* Exhibit No. ___(GJZ-8) at page 6.

The KEMA Report also praised PSE's flexibility:

> During the course of the unprecedented event, the company recognized the need to deviate from the plan and institute new processes to address previously unforeseen situations. This effort in itself was a major undertaking and one that demonstrated the intent of the company to respond in whatever manner necessary to restore service.

See Exhibit No. ___(GJZ-8) at page 6. Furthermore, in a testament to PSE's dedication to safety, nearly 500 PSE and non-PSE crews worked under extreme conditions restoring service without a single injury.

C. Outage Management System

Q. How was PSE able to track outages during the Hanukkah Eve Storm?

A. PSE has a history of skilled storm management that is based on safety, field assessment, repair prioritization, speed of restoration, and customer communication. PSE currently uses the Outage Response Tracking feature of the ConsumerLinX ("CLX") as its outage management tool. This tool enables communication with customers, tracking of outage repair estimates and storm damage information. CLX is integrated with an interactive voice response unit ("IVRU") so that customers can receive general outage information and specific outage status. This resource was fully utilized during the Hanukkah Eve Storm.

In addition, PSE utilizes advanced metering infrastructure ("AMI") to access meter data. PSE was able to use its AMI during the latter stages of the storm to check individual or groups of meters to verify if restoration was complete.

Q. Has PSE considered other methods of tracking storm outages?

A. Yes. In 2003, well before the Hanukkah Eve Storm, PSE began work to prepare a long-term operations technology road map to evaluate and implement operations technologies such as Mobile Workforce, Geospatial Information System ("GIS") and an outage management system ("OMS"), among other technologies. PSE's operations technology road map laid out a progression of technological improvements. The first major element of the plan, Mobile Workforce Management, began in late 2007 and was implemented in Electric Operations in 2008.

Even before the Hanukkah Eve Storm, PSE recognized that there are benefits related to an OMS with GIS capabilities. However, the high costs associated with evolving technologies such as these demanded that PSE conduct further review before implementation. In 2008, PSE conducted a third party cost benefit analysis of implementing an OMS with GIS capabilities.

Based on PSE's technology road map and KEMA's recommendation, PSE hired KEMA to further define (1) what a new enterprise-level architecture for integrating an OMS and the supporting GIS would require, (2) the benefits of implementing an OMS with supporting GIS, and (3) the costs of implementing an OMS with supporting GIS. KEMA determined an OMS with GIS would cost millions to implement.

Q. Would an OMS have been useful during the Hanukkah Eve Storm?

A. An OMS system would likely not have been valuable in predicting damage site location information during the early stages of the Hanukkah Eve Storm because of the manner in which an OMS system is meant to interact with a utility's distribution system. When transmission lines are out of service, the distribution substations that they feed and each of their individual feeders are consequently out of service. One of the primary benefits of an OMS system with GIS capabilities is the ability to receive and analyze customer calls reporting outages and to predict where damage to individual distribution system components has occurred. This is accomplished by comparing customer outage call information to the electric system connectivity model information. This information must be validated in the field before service restoration and repair can begin. Because the Hanukkah Eve Storm damaged 85 PSE transmission lines, in turn disabling service to 159 substations, one would not expect that the OMS could accurately predict where the damage might have occurred. Simply too much of the upstream system (e.g., transmission lines and substations) had been damaged, and the distribution system incurred damage after it had become de-energized. In a storm of this magnitude, reliance on OMS software predictions could have caused significant safety concerns and restoration delays. With the goal of restoring transmission lines first and then distribution substations, PSE initiated a manual assessment of its entire system. Personnel manually patrolled all feeders extending out from substations, validated and recorded all damage information,

and then prioritized locations for repair.

Q. Are there any limitations to an OMS?

A. Yes. Even though the Joint Parties admonish PSE on page 21, lines 15-19, of Exhibit No. ___(BRA-1TC) for not using a modern OMS during the Hanukkah Eve Storm, the Joint Parties themselves highlight the potential drawbacks to an OMS by discussing, on page 20 of Exhibit No. ___(BRA-1TC), the District of Columbia Public Service Commission's investigation of Potomac Electric Power Company ("PEPCO") after its OMS experienced problems during the August thunderstorms of 2003 and Hurricane Isabel. As part of this investigation, PEPCO described how it disconnected its OMS from its emergency management system to prevent "inappropriate breaker condition assessment".[1] This means that PEPCO's OMS was unable to process the large amount of data being sent to it by the emergency management system. The utility had to resort to recording its outage data manually and reverting to a backup process to keep its OMS database up-to-date. "PEPCO acknowledges that its OMS system was overloaded during the August 2003 storms and that the overloading made it more difficult and time consuming for PEPCO's field crews to identify and respond to identified outages."[2]

In the early days of a major storm, the enormous volume of data can overwhelm an OMS. An OMS can also be rendered ineffective due to a lack of data because

[1] *See* D.C. Public Service Commission, Docket No. F.C. 982, Order No. 13381 (Sept. 15, 2004), ¶46.

of widespread transmission outages like those that occurred during the Hanukkah Eve Storm. Therefore, backup plans must be available and implemented, as in PEPCO's case. The District of Columbia Public Service Commission eventually determined that PEPCO's overall response to the August thunderstorms of 2003 and Hurricane Isabel was acceptable, given the challenging circumstances the company faced.[3]

Q. Would PSE experience the same problems as PEPCO if it were to implement an OMS?

A. It is unclear whether PSE would experience the same problems as PEPCO if it were to implement an OMS. As stated earlier, an OMS would likely not have proven useful during the early stages of the Hanukkah Eve Storm, and PSE would have had to rely on its EMS system (as it did) to determine overall system status. It is likely that during the last few days of the repair, a modern OMS may have helped to increase the level of communication with customers regarding estimated restoration time once the majority of the transmission lines and substations had been restored to service. However, the number of repair locations would not have changed, and it is difficult to determine whether the duration of repairs would have been reduced with a modern OMS.

Q. What do other parties in this proceeding recommend with regard to OMS?

A. Commission Staff is the only other party that provided testimony regarding an

[2] *Id.* at ¶ 26.

OMS, and it recommended that PSE not implement an OMS at this time. *See* Exhibit No. ___(DEK-1TC) at page 19, line 11. Commission Staff witness Douglas Kilpatrick states that PSE is progressing appropriately with its review of an OMS. Mr. Kilpatrick recommends that PSE update the Commission with results of its OMS evaluation.

Q. Does PSE agree with Commission Staff's recommendation?

A. Yes. Prior to this historic storm, PSE has effectively served its customers utilizing its existing systems and processes. As noted earlier, the high costs and other issues associated with these evolving technologies demand that PSE carefully review implementation of new technology.

Q. Do you agree with Commission Staff's claim on page 19 of Exhibit No. ___(DEK-1TC) that an OMS will reduce PSE's system average interruption duration index ("SAIDI")?

A. It is not a clear yes or no answer. A well-integrated OMS based on a complete and accurate GIS connectivity model that can leverage other technology systems (such as Mobile Work Force, Distribution Automation, and AMI) has the potential to improve several aspects of PSE's storm response and restoration efforts. However, following the installation of an OMS, it is not uncommon for utilities to experience increases in their SAIDI. In a recent survey of 18 member utilities of the Edison Electric Institute ("EEI") regarding OMS, 10 of the 18

[3] *See id.* at ¶¶1 and 91.

respondents experienced increases in SAIDI of between 10% and 300%, seven utilities saw no difference in SAIDI, and only one utility realized a decrease.

Q. Do you agree with the Joint Parties' proposal to disallow recovery of 5% of the costs of the Hanukkah Eve Storm?

A. No. The Joint Parties do not question any aspect of PSE's response to any of the other dozen storm events that occurred during the test year, which together resulted in approximately $28 million in costs. PSE believes that cost disallowances are to be supported by factual information. The Joint Parties provide no evidence that any of PSE's restoration costs were imprudent, and they do not provide a factual basis for the calculation of their recommended disallowance. It is important to note that no other parties have proposed any Hanukkah Eve Storm cost disallowances.

III. PSE STORM MANAGEMENT

Q. Do you agree with the Joint Parties assertion on page 9 of Exhibit No. ___(BRA-1TC) that customers were not able to get outage information for their areas during the Hanukkah Eve Storm?

A. PSE has acknowledged the need to improve early restoration estimates and has developed a process to determine storm levels with corresponding time frames in order to provide early Company-wide and regional-level restoration times. However, while KEMA noted that PSE could have improved the specificity of outage information early in the Hanukkah Eve Storm, the KEMA Report lists

several examples of daily sequential messages that PSE provided to customers during these early days of the storm. *See* Exhibit No. ___(GJZ-8) at page 42. The KEMA report states that on December 18, 2006, PSE began to provide region-specific restoration estimates referring to specific days of the week. This coincided with PSE reenergizing a significant number of its substations. *See* Exhibit No. ___(GJZ-8) at page 42.

Q. Do you agree with the Joint Parties' assertion that PSE did not effectively communicate with state and local officials during the Hanukkah Eve Storm?

A. No. As noted in the KEMA Report, due to the magnitude of the storm, some governmental stakeholders desired improved messaging. However, PSE staffed the King County Emergency Operations Center ("EOC") and sent representatives to the Washington State EOC, which facilitated regional coordination with other jurisdictional EOCs.

At PSE, the purpose of an "after event review" is to improve future performance. It is within this context that the Company actively participated in the Governor's After Action Review and developed the position of "EOC Liason" to report to state or county EOCs as requested.

Q. Please describe PSE's specific communication efforts during the Hanukkah Eve Storm.

A. PSE provided the EOC updates that were distributed to state, county and city emergency management personnel, as well as to the Red Cross and the

Community Trade & Economic Development ("CTED") agency.[4] Further, EOC updates are provided by PSE regularly during all storm events and, at a minimum, are sent four times daily. PSE's Community Relations Managers communicated regularly with the cities they had responsibility for and were available on cell phones 24 hours a day. They also frequented city EOCs to provide PSE restoration status information.

Q. Do you agree with the Joint Parties' opinion that PSE's tree trimming and vegetation management policies and spending levels contributed to the amount of the damage sustained in the Hanukkah Eve Storm and other major weather-related events? *See* Exhibit No. ___(BRA-1TC) at page 10.

A. No. The Joint Parties' assertion has no basis in fact. The severity of the storm damage was a factor of tree damage caused by the wind and rain, as outlined in my direct testimony, Exhibit No. ___(GJZ-1T). The KEMA Report commended PSE's vegetation management system and specifically praised PSE's TreeWatch program. *See* Exhibit No. ___(GJZ-8) at page 74. KEMA referred to PSE's effective distribution tree trimming program, and further pointed out that PSE's transmission lines are in narrow rights-of-way with respect to the height of trees due to "regional, cultural, and political considerations". *See* Exhibit No. ___(GJZ-8) at page 79.

Costs associated with the Hannukah Eve Storm were predominately due to labor

[4] CTED's Office of Energy Policy is the designated state agency to staff the Energy desk

associated with crew restoration efforts. KEMA's review stated that the number of crews and total restoration time was commendable given the extent of the damage and available tools to manage such an event. In addition, while PSE acknowledges the need to provide early restoration estimates and has accepted KEMA's recommendation to develop a process to determine storm levels with corresponding time frames for providing corporate and regional level restoration times, such processes have little bearing on the actual costs associated with the restoration of PSE's system.

The Company's focus is to improve its solid performance and advance KEMA's recognition that policy changes could enhance the Company's vegetation management program. PSE is participating in a broad stakeholder working group that includes Commission Staff and lawmakers to develop policy proposals for consideration by the Legislature in the 2009 session. Additionally, PSE is engaged in rule-making processes at CTED and the State Department of Natural Resources in an effort to prioritize protection of utility infrastructure in the State administrative code and local ordinances. Finally, as stated on page 17 of Exhibit No. ___(DEK-1TC), Commission Staff agrees with PSE and KEMA regarding transmission rights-of-way, encouraging PSE to use its own judgment in determining how it will interact with local and state entities to develop solutions to the problems associated with vegetation and rights-of-way width for its facilities.

in the State EOC during activations.

IV. CONCLUSION

Q. Please summarize your testimony.

A. This Commission should reject the Joint Parties' unsupported proposal to disallow 5% of PSE's Hanukkah Eve Storm costs. Nothing in the Joint Parties' testimony supports this drastic recommendation. As the primary reason to disallow $4 million in costs, the Joint Parties point to PSE's decision to presently forego a modern outage management system; a decision, in fact, that Commission Staff supports. The Joint Parties also point to the KEMA Report as support. However, the KEMA report commends PSE's storm management, both in general and specifically regarding the Hanukkah Eve Storm. The Joint Parties have no issues with the other 12 storms that PSE responded to during the test year in this proceeding, and their entire justification for recommending a $4 million disallowance is their interpretation of the PSE-initiated KEMA Report. The Commission should reject the Joint Parties' recommendation.

Q. Does that conclude your prefiled rebuttal testimony?

A. Yes.