EXHIBIT NO. ___(GZ-1T)
DOCKET NO. UE-051828/UE-051966
WITNESS: GREG ZELLER

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WESTERN VILLAGE, LLC, D/B/A WESTERN VILLAGE ESTATES, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.** **Respondent.**	**Docket No. UE-051828**
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-051966**

PREFILED DIRECT TESTIMONY OF GREG ZELLER, P.E. ON BEHALF OF PUGET SOUND ENERGY, INC.

MARCH 8, 2006

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PUGET SOUND ENERGY, INC.

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I. INTRODUCTION

Q. Please state your name, business address, and position with Puget Sound Energy, Inc.

A. My name is Greg Zeller, P.E. My business address is 10885 N.E. Fourth Street Bellevue, WA 98004. I am the Director, Electric Operations for Puget Sound Energy, Inc. ("PSE" or "the Company").

Q. What are your duties as Director of Electric Operations for PSE?

A. My responsibilities include management of the day to day operations of PSE's electrical transmission and distribution system. In the context of this case, I have responsibility over electric first response ("first response") operations. First response's primary responsibility is to respond to electrical outages and non-outage emergencies, assess the location and cause of outages and provide for maintenance and repair of electrical service. First Response will make temporary or permanent repairs to restore service when possible including service to secondary voltage facilities. First response does not make repairs when the problem is on customer owned equipment or the work requires a line crew.

Q. Please describe your relevant employment experience and other professional qualifications.

A. I began working for Puget Sound Power & Light ("PSP&L") in the engineering department in 1973. I worked my way up through increasingly progressive engineering responsibilities over the next thirteen years. From 1986 through 1992, I managed a portion of PSP&L's Customer Service Engineering function. In this capacity, I was responsible for design and related customer service related to new construction, maintenance and operations of PSP&L's electrical transmission and distribution system. As such, I was involved in many aspects of the customer service, maintenance, operation and engineering design processes.

From 1992-2000, I was a consulting engineer in PSP&L's major projects department. In 2000, I became manager of total energy system planning for PSE, where I managed electric and gas planning for PSE. In 2003, I became Director of Safety, Operations and Performance, and in 2005 I became Director, Electric Operations.

I am a registered Professional Engineer in the State of Washington.

Q. Please summarize your testimony in this proceeding.

A. My testimony provides background information regarding how the Company's electric distribution system is designed and constructed with respect to the portion of PSE’s distribution system, just prior to where an end-use customer obtains

electric service. I focus in particular on the Point of Delivery at which responsibility for electric service is handed off by PSE to customers at mobile home parks or multi-family residential structures.

I also describe how PSE electric first responders respond to calls regarding service interruptions and how they go about restoring or assisting with restoration of service to customers. I focus in particular on the process by which PSE responds to service outages at mobile home parks and multi-family residences and works with representatives at such properties to coordinate restoration of service at the properties.

II. PSE'S ELECTRIC DISTRIBUTION SYSTEM

Q. Please describe the electric distribution system at the customer's end of PSE's distribution system.

A. PSE's electric distribution system consists of electric facilities that include primary voltage conductors that distribute electricity at high voltage – 7.2 kilovolts ("kV") – to single-phase transformers throughout PSE's distribution system to establish points close to where individual customers receive electric service. When the primary voltage conductors are located underground, they are often referred to as primary voltage cables. The transformers to which the primary voltage conductor is connected convert the 7.2 kV primary voltage to a 120/240 Volt ("V") secondary voltage. Such conversion is necessary to make the electricity useable by non-industrial customers.

Where the primary voltage cable is underground, the transformer will either be a pad mounted transformer or a total underground transformer. A pad mounted transformer is a transformer that is placed on a concrete pad typically installed at grade. The transformer and the connection points encased within its metal enclosure are accessible from above ground. A total underground transformer is placed completely below grade, inside a vault.

After the primary voltage is converted to secondary voltage by the transformer, it is in some cases carried directly from the load (customer) side of connectors on the transformer to the end-use customer through a secondary voltage service line. This secondary voltage service line is referred to using a variety of terms including "service line" and "secondary service facility". It is this secondary voltage service line that is impacted by the Company's proposed tariff revisions in Docket No. UE-051966, not the distribution system up to the point at which the secondary voltage service line begins.

The single-phase secondary voltage service line typically consists of three wires, two of which are commonly called "legs", each with the potential of 120V with respect to neutral (ground). The service line conductors are insulated and wrapped together with the third wire (neutral) in the same line. Household lighting and small appliance loads are balanced between the two legs of the service at the customers service panel. Large appliances (e.g. electric dryer, oven, electric water heater) require both legs, 240V. Secondary facilities for mobile

homes include the meter pedestal and its associated electric and other hardware, but not the actual meter owned by PSE that is plugged into the meter pedestal.

A schematic illustration of the above description is provided as Exhibit No. ___(GZ-2).

Q. Under what circumstances does the secondary voltage service line *not* begin at the load side of the transformer's connectors?

A. PSE does not install a transformer for each of its end-use customers. Instead, several customers typically share a transformer. If, because of geography and distance, a service line would have to continue along a public right of way or cross property lines before reaching the end-use customer for that service line, PSE typically prefers to install, as part of its underground distribution system, secondary voltage cable from the load side of the transformer connectors along the right of way or a PSE easement to a point at which the service lines for individual customers served by that transformer do not have to extend across other properties or the public right of way. In that case, for underground service lines, PSE installs a secondary "handhole" or a splice.

A handhole is simply an underground space with a cover that can be removed by a qualified electrical worker when necessary to access connectors that connect PSE's secondary voltage cable with the service lines that then extend from that point to individual end-use customers. A handhole is typically installed on or near a lot line.

In some cases, PSE installs a splice rather than a handhole to demarcate the end of PSE's distribution system and the beginning of the customer's secondary service line at the point where PSE's distribution system crosses the property line of the lot being served.

Several different illustrations of the above description are provided as Exhibit No. ___(GZ-3).

Q. How do the above descriptions relate to the distribution system and secondary service lines found in mobile home parks?

A. The above descriptions apply as well to mobile home parks. However, in such cases, PSE's primary voltage cable, transformers, secondary voltage cable and handholes typically will be located on rights of way within the larger parcel of property on which the mobile home park is located, with transformers, handholes or splices located on or near the edges of the individual spaces on which mobile homes are located. Thus, each secondary service line from the load-side of a PSE transformer or handhole connectors or from a splice to an individual mobile home typically will extend only from the edge of the individual space on which the mobile home is located to the meter pedestal that serves that mobile home. *See* Exhibit No. ___(GZ-3).

Q. How do the above descriptions relate to the distribution system and secondary service lines found in multi-family residential structures?

A. There are a number of different types of multi-family residential structures, from duplexes to high-rise condominiums and apartments. The above descriptions hold true for multi-family residential structures that look more like individual dwelling units, such as duplexes. However, for apartment buildings the load density will be greater, therefore transformers may be larger and can be either single-phase or three-phase. The transformers may be positioned to serve multiple apartment buildings. The complex owner will often reimburse PSE for extra costs incurred to locate a transformer closer to a building than the location where PSE would otherwise have installed the transformer to minimize the costs of the developer's service conductor installation.

In addition, pedestals are used only for single home applications and generally only for mobile homes. Consequently, there are no meter pedestals for individual units; instead, for multi-family structures, meters will typically be placed together in one location on each building or structure in a meter assembly that is considered part of the building's electrical system.

Q. How do the above descriptions relate to ownership and maintenance responsibilities for electric facilities under PSE's tariff schedules?

A. The Company's tariff schedules set forth whether the Company or the Customer is responsible for various portions of the electric system. Generally, the Point of

Delivery marks the location at which the Company's responsibility ends and the Customer's responsibility begins. As described in the testimony of Mr. Lynn Logen, Exhibit No. ___(LFL-1T), Schedule 85 provides that in mobile home parks and for multi-family residential structures, the Company's responsibility ends where the secondary voltage service line begins: at the load (customer) side of the connectors at the transformer or handhole or, where the transformer or handhole is located in the public right of way, at the edge of the space on which the individual mobile home is located that is served by that service line, at the point that the service line crosses the lot line.

III. NEW SERVICE REQUESTS AND SERVICE INTERRUPTIONS

A. Installation of New Service Lines is Ordered and Directed by Mobile Home Park and Multi-Family Residential Structure Owners

Q. Please explain the process that occurs when a mobile home park requests new underground electric service.

A. The person applying for such service is typically the mobile home park owner or the owner's representative, such as the park manager. PSE provides that representative with an electric service handbook that explains the applicant's and the Company's responsibilities with respect to the new installation. A copy of this handbook is provided as Exhibit No.___(GZ-4). The applicant's responsibilities are described in this handbook as "customer" responsibilities because the

applicant is the customer for the new installation. The customer's responsibilities are summarized at page 13 of Exhibit No. ___(GZ-4).

The handbook explains that the customer is responsible among other things, for furnishing, installing, and maintaining all required service entrance equipment including secondary voltage service lines from the meter socket (i.e. meter pedestal) to PSE's designated Point of Delivery. Exhibit No. ___(GZ-4), page 17.

The customer must file an application for electric service with PSE, provide site drawings and load information, install the underground service line and meter pedestal, pay any applicable preconstruction costs, and obtain an approved electrical inspection from a government agency. After the customer's contractor completes the installation of the secondary voltage service line, including the meter pedestal, PSE will connect the new service and install a Company-owned meter in the meter pedestal to measure the power used via the new service line.

Q. Is this the same process that would occur at a multi-family development?

A. Yes.

B. Repair of Existing Service Lines is Coordinated With and Paid For By Mobile Home Park and Multi-Family Residential Structure Owners

Q. Please describe the process that occurs when a mobile home park electric service fails.

A. Typically, an electric first responder will be dispatched to the site and will determine the cause of the outage. Pursuant to Schedule 85, if the electric first responder determines that the failure is due to damage located on the Company's side of the Point of Delivery, then PSE will locate and repair the damage and restore service.

If the failure is due to damage on the customer's side of the Point of Delivery, then PSE is not responsible for the repair. In the case of a failed customer-owned service, the electric first responder will typically offer to install an auto transformer as a temporary fix, if possible, to put the customer back in power while the customer makes arrangements to repair the secondary voltage service line or other facilities on the customer side of the Point of Delivery that are causing the problem. PSE charges the mobile home park owner for the installation and removal of the auto transformer.

Q. How are repairs to the secondary voltage service line then accomplished?

A. At mobile home parks, the park owner or manager then typically hires a private electrician to locate and repair the damage to the service line or to install a new service line. In order to accommodate such installation, a PSE first responder

disconnects the power from the Point of Delivery while this repair is made during an agreed window of time. This disconnect/reconnect of service is performed by PSE and charged to the mobile home park owner.

If the mobile home park owner or manager prefers, PSE will provide for the necessary repairs through PSE's contractor, and the mobile home park owner is then billed for those costs. However, mobile home park owners or managers may have electricians that they prefer to work with other than PSE's service contractors.

Q. Is the description above applicable as well to multi-family residential structures?

A. Yes. However, the autotransformer will not work when multiple customers are experiencing an outage due to a customer service conductor failure

C. Coordination With and Payment By Owners Rather Than Tenants is a Long-Standing PSE Practice

Q. Has the process you describe always been the process for installing and repairing service lines at mobile home parks or multi-family residential structures?

A. Based on my understanding of the Company's historic tariffs, the process I describe has been the process that has been followed with respect to mobile home park and multi-family residential structure service lines at least since 1977. As

described in Mr. Logen's testimony, the customer, property owner or developer – rather than the Company – has been responsible for the ownership and operation of all non-residential underground service lines and for all costs for installation, ownership, maintenance, and replacement thereof at mobile home parks since a tariff revision that was approved by the Commission in 1977.

Based on my personal experience in the field, which date back to 1973, the procedures I describe above – including working with mobile home park and multi-family residential structure owners rather than individual tenants – have been followed since at least 1977.

D. It Is Reasonable to Expect Mobile Home Park and Multi-Family Residential Structure Owners – Rather Than Their Tenants – to Take On Service Line Repair Responsibilities.

Q. Do you have any observations or opinions regarding whether an end-use customer – a tenant at a mobile home park – should be responsible for repairing secondary voltage service lines rather than the park owner?

A. Based on my experiences in the field, it seems to me much more reasonable for the mobile home park owner to have this responsibility rather than the tenant. Park owners typically have managers on site who are engaged on a regular basis in maintenance and upkeep of the park properties, and who have established relationships with service providers such as electricians. They seem to me better positioned to coordinate the work required to repair or replace a service line.

In addition, park owners appear to be in a better position than individual tenants to take measures to protect service lines and access to such service lines over time. A park owner decides where the service lines, including the meter pedestals, will be placed at the time a park is initially constructed. Thereafter, a park owner may choose to change the layout of a park over time, or to install new mobile homes or structures where they might conflict with underground service lines. In fact, it is the experience of the Company that mobile homes on rented lots are often placed over or encroach on the underground utility facilities. Individual park tenants would appear to have little say in how such matters are addressed by park owners over time.

Q. Why do you say that "it is the experience of the Company that mobile homes on rented lots are often placed over or encroach on the underground utility facilities"?

A. I am aware of a number of incidents where mobile homes have been placed on top of electric service lines or transformers. For example, at Western Village Estates, a transformer in a vault failed December 1993 and required replacement. Due to the fact that a mobile home had been positioned over the top of the transformer vault, PSE had to install a new transformer in a different location and re-work the underground primary and secondary conductors to repair and restore electric service.

IV. CONCLUSION

Q. Does that conclude your testimony?

A. Yes, it does.

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