

**EXHIBIT NO. ___(GZ-5T)
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 TESTIMONY OF
GREG ZELLER, P.E.
ON BEHALF OF PUGET SOUND ENERGY, INC.
IN RESPONSE TO THE
PREFILED TESTIMONY OF WESTERN VILLAGE, LLC
DATED MARCH 8, 2006**

APRIL 19, 2006

PUGET SOUND ENERGY, INC.

PREFILED RESPONSE TESTIMONY OF GREG ZELLER

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PUGET SOUND ENERGY, INC.

2

PREFILED RESPONSE TESTIMONY OF GREG ZELLER

3

I. INTRODUCTION

4

Q. Are you the same Greg Zeller who prefiled direct testimony on behalf of Puget Sound Energy, Inc. ("PSE" or "the Company") in this consolidated proceeding on March 8, 2006?

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A. Yes.

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Q. What is the purpose of this response testimony?

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A. In accordance with the Prehearing Conference Order in this proceeding, this

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testimony responds to the direct testimony filed by complainant Western Village,

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LLC ("Western Village") on March 8, 2006, which was Western Village's direct

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testimony on issues in which it has the burden of proof. On March 8, 2006,

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Western Village filed the Declaration of Doug Anderson, the manager of Western

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Village Estates mobile home park. My testimony responds to assertions made by

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Mr. Anderson that are within my areas of knowledge and expertise.

1 **II. THE ELECTRICAL SERVICE FACILITIES AT WESTERN**
2 **VILLAGE INCLUDE TWO DISTINCT SYSTEMS: (1) PSE'S**
3 **DISTRIBUTION SYSTEM UP TO THE POINT OF DELIVERY;**
4 **AND (2) THE SECONDARY VOLTAGE SERVICE LINES, FOR**
5 **WHICH PSE IS NOT RESPONSIBLE**

6 **Q. Do you have any general observations about the Anderson Declaration?**

7 A. Yes. The Anderson Declaration states numerous times that PSE operates and has
8 repaired and maintained the "electrical service facilities" at Western Village
9 mobile home park. It is not clear to me from the context in which these terms are
10 used whether Mr. Anderson or Western Village are aware of the distinction
11 between: (1) secondary voltage service lines, on the one hand; and (2) the
12 primary voltage conductors, transformers, secondary voltage cable and handholes
13 that bring electricity to those secondary voltage service lines. As described in my
14 prefiled direct testimony in this proceeding, Exhibit No. ___(GZ-1T) at pages 3-8,
15 and as described in the prefiled direct testimony of Mr. Lynn Logen, Exhibit
16 No. ___(LFL-1T) at pages 4-5, this distinction is critical with respect to which
17 party is responsible for the electric facilities.

18 It is only the Company's treatment of secondary voltage service lines (referred to
19 by terms including "service lines" and "secondary service facilities") that is at
20 issue in the Western Village complaint, not the distribution system up to the point
21 of delivery at which the secondary voltage service line begins. This is because
22 there is no dispute that PSE owns, operates and maintains the distribution system
23 up to the secondary voltage service line. PSE has in the past, and continues to,

1 make repairs to its distribution system as required at Western Village as well as at
2 other mobile home parks in its service territory.

3 However, as described in Mr. Lynn Logen's prefiled direct testimony, my prefiled
4 direct testimony, and the Company's tariff schedules, PSE is not responsible for
5 the secondary voltage service lines at mobile home parks (or other locations
6 considered as Non-Residential per PSE's tariff). It is simply not true that PSE
7 owns, operates, or maintains "*all electrical service facilities*" at Western Village
8 or other mobile home parks.

9 **Q. Would you please illustrate this distinction?**

10 A. As described below, Exhibit No. ___(GZ-13) is a worksketch showing a rebuild
11 of the electrical distribution system that PSE performed at Western Village in
12 1993. I have prepared an Exhibit No. ___(GZ-6) that is based on a section of
13 Exhibit No. ___(GZ-13), as shown by the referenced lot numbers. The lot lines
14 and streets are shown in black ink, PSE's electrical distribution system up to the
15 point of delivery is shown in blue highlight (the hexagon shapes are handholes
16 and the squares are transformers), and the service lines that are at issue in this
17 case are shown in pink highlight.

18 Please note that Exhibit No. ___(GZ-6) is illustrative and approximate because it
19 is based on a worksketch rather than a final, "as-built" diagram of the electrical
20 system at Western Village. PSE does not have such an "as-built" in its possession
21 and rarely prepares such drawings. Preparation of an exact drawing would also

1 require a locating service to determine precisely where the service lines are
2 placed. However, the works sketch on which Exhibit No. ___(GZ-6) is based very
3 likely shows where PSE's current distribution system is generally located at
4 Western Village.

5 **Q. What about the meter for each end-use customer?**

6 A. PSE is responsible for the meter itself, which is the device used to measure the
7 amount of electricity consumed by an end-use customer, as explained in my
8 prefiled direct testimony, Exhibit No. ___(GZ-1T) at page 4. At a mobile home
9 park, the meter plugs into a meter socket that is connected to the service line at an
10 above-ground pedestal from which service line pigtailed extend to the individual
11 mobile homes at the park. PSE is only responsible for its meter, not the socket,
12 pedestal or service line.

13 **Q. Is it possible that a failure to distinguish between the secondary voltage**
14 **service lines and PSE's distribution system up to the service lines and/or**
15 **PSE's meter has impacted Mr. Anderson's perceptions as well as his**
16 **testimony in this case?**

17 A. Yes, I believe so. Mr. Anderson's Declaration claims that PSE has installed,
18 maintained and replaced electrical service facilities at each resident's lot from
19 time to time and at all times relevant to this matter. *See* Anderson Decl. at ¶¶ 8-9.
20 But when PSE asked Western Village to describe and document all such work,
21 Western Village responded:

1 Since the electrical service installation, repair and maintenance of
2 Puget Powers/Puget Sound Energy's system is the property and
3 responsibility of Puget Sound Energy, we have no specific dates or
4 records regarding the maintenance or upgrades of the electrical
5 distribution system. At all times when there has been a
6 maintenance or service issue with the primary lines or secondary
7 lines leading to and including the meter, Puget Power/Puget Sound
8 Energy has responded and repaired the problem.

9 *See* Western Village Estates Responses to PSE's Data Request Nos. 007 – 009. A
10 similar response was provided in Western Village Estates Response to PSE's Data
11 Request No. 004. Copies of these data request responses are provided as Exhibit
12 No. ___(GZ-7).

13 The Company did install all of the electric facilities at Western Village during the
14 1967 through 1972 time period, including the service lines (except that Western
15 Village and/or its agents provided the trench and backfill for the service lines).
16 At that time, as discussed in Mr. Logen's prefiled direct testimony, the Company's
17 tariffs provided generally that the Company would install underground service
18 lines as part of line extensions.

19 The Company has also performed work on the electrical facilities at Western
20 Village from time to time after the initial installation of the system. However,
21 with two exceptions, such subsequent work appears to have been limited to work
22 on PSE's distribution system at Western Village and has not been on service lines.
23 The two exceptions are: (1) re-routing of several service lines that PSE
24 performed to permit PSE to reconfigure the location of a PSE transformer within
25 PSE's distribution system at Western Village; and (2) the repair of the failed
26 service line during the summer of 2005 that gave rise to Western Village's formal

1 complaint. While PSE's investigation of the historic treatment of service lines at
2 Western Village continues, PSE has been unable to identify to date any other
3 instances in which it performed work on service lines at Western Village after the
4 initial installations in 1967 through 1972.

5 **Q. Please describe the initial installation of electric facilities at Western Village.**

6 A. Mr. Anderson's Declaration states that Western Village "was built in 1973."
7 Anderson Decl. ¶ 2. In fact, the construction was undertaken in three phases in
8 1967, 1970 and 1972, as Western Village has acknowledged in a subsequent data
9 request response to PSE. *See* Western Village Estates Response to PSE's Data
10 Request No. 011, copy provided as Exhibit No. ____(GZ-8).

11 Exhibit No. ____(GZ-9) is a copy of the Company's Workskech No. 62114, dated
12 8/22/1967. This documents the initial installation of an underground electric
13 distribution system to serve lots 1–58 of Western Village Estates.

14 Exhibit No. ____(GZ-10) is a copy of the Company's Workskech No. 72014,
15 dated 8/14/1970. This documents the installation of an underground electric
16 distribution system to serve lots 59-79 of Western Village Estates.

17 Exhibit No. ____(GZ-11) is a copy of the Company's Workskech No. 76263-R,
18 dated 7/22/1972. This documents the installation of an underground electric
19 distribution system to serve lots 81-116 of Western Village Estates.

1 **Q. Please explain what these worksketches show about the initial installation of**
2 **electric service facilities at Western Village.**

3 A. These worksketches show that PSE’s predecessor, Puget Sound Power & Light
4 Company, installed an underground electric distribution system consisting of
5 electric facilities that included primary voltage cable and transformers that
6 convert primary voltage to secondary voltage. They also show that for some of
7 the lots in the park, a service line was installed directly from a transformer into a
8 lot and for other lots, secondary cable was extended to a handhole, with the
9 service line then installed from the handhole into the lot.

10 Note that at the time of the installation of the underground electric distribution
11 system for each respective section shown in the worksketches, it is unlikely that
12 mobile homes, hence meter pedestals, were on site. Given this, PSE's predecessor
13 would have installed the electric system and “stubbed” a service to each new lot
14 (a stub is a short piece of wire). Stubs are shown on the worksketches as a dashed
15 line typically perpendicular to the lot frontage. The source of feed to the “stub”
16 would come from a transformer (depicted as a square box) or a secondary
17 handhole (depicted as a hexagon). As tenants moved into Western Village, at the
18 request of the park owner or manager, the Company then also installed the service
19 line for each mobile home. However, the park owner or manager provided the
20 trench and backfill for each such service line.

1 **Q. Why do you state that Western Village or its agents provided the trench and**
2 **backfill for the service lines?**

3 A. This is evident from the depiction of new trenches and trenching responsibilities
4 that are specifically called out on worksketch 62114, Exhibit No. ___(GZ-9). A
5 dashed line denotes new trench with a letter symbol as follows: J = Joint trench,
6 P = Puget trench, C = Customer Trench and T = Tel (telephone) trench (see
7 "Symbols" at the lower right of the trench drawing).

8 As shown in the worksketch, secondary voltage cable as well as transformers and
9 handholes were installed in trenches excavated and backfilled by the Company or
10 jointly with other utilities that were installing systems at Western Village Estates
11 at the same time. However, trench and backfill for the service lines from the
12 transformer or handhole to the service connection pedestal were provided by the
13 predecessor to Western Village that owned Western Village Estates at the time of
14 such installation.

15 The responsibilities depicted on this worksketch with respect to trenching and
16 backfill are consistent with my experience in the field for the Company and in
17 managing field operations going back over thirty years.

18 **Q. Please describe work that has been performed by PSE at Western Village**
19 **subsequent to the initial installation of electric facilities.**

20 A. Exhibit No. ___(GZ-12) is a copy of Worksketch No. 50-33309, dated
21 12/23/1985, which documents maintenance, repair and replacement of a portion

1 of the underground electric distribution system in Western Village. Specifically,
2 a transformer in a vault had failed and required replacement. Due to the fact that
3 a mobile home had been positioned over the top of the transformer vault, PSE had
4 to install a new transformer in a different location and re-work the underground
5 primary and secondary conductors to repair and restore electric service. Note that
6 this worksketch shows that the Company re-routed several service lines that had
7 been connected to the failed transformer as part of the job.

8 **Q. Who paid for the re-routed service lines?**

9 A. The Company has been unable to locate any records showing that Western
10 Village paid for the work on these service lines. It may well be that they did not
11 and that the Company absorbed the cost of this work. I say this because it
12 appears from the worksketch that the service lines themselves were not the cause
13 of the work; rather PSE's failed transformer. If the Company chose to relocate the
14 transformer to a position it found to be superior, those responsible for the job
15 likely would have included the service line re-route as a Company-driven task for
16 which the Company paid.

17 **Q. Why didn't the Company force Western Village to pay for the relocation if a**
18 **mobile home had been placed on top of the Company's old transformer?**

19 A. In theory, the Company may have been able to pursue such a course of action,
20 although I have not specifically reviewed any easement rights the Company had
21 at the time as against this worksketch. However, any such course of action is

1 typically very expensive and time consuming in terms of legal fees and Company
2 resources that have to be dedicated to rights reviews, demand letters and filing
3 and litigating or settling court actions. And as I understand it, even if the
4 Company wins, it cannot recover its attorneys fees. In the case of a single
5 transformer and a few service lines, it would not surprise me if the work went
6 forward at the Company's expense, especially since customers would be out of
7 power during such a course of action.

8 **Q. What was the other work the Company performed at Western Village?**

9 A. Exhibit No. ___(GZ-13) is a copy of documents related to Work Order No. 94
10 00524, including worksketches dated 11/30/1993. These items document
11 maintenance, repair and replacement of PSE's underground electric distribution
12 system in Western Village (but not of the existing secondary voltage service lines
13 at Western Village).

14 Specifically, new primary voltage cables and transformers were installed along
15 the road frontage within the Western Village development. These cable and
16 transformers replaced those installed in the original three sections shown in
17 Exhibit No. ___(GZ-9) and Exhibit No. ___(GZ-10).

18 **Q. Why did the Company re-build its electric distribution system at Western**
19 **Village in 1993?**

20 A. This replacement was likely necessitated by primary cable failures combined with
21 inaccessibility that impacted PSE's ability to make repairs to the original system

1 due to back lot line construction and encroachments. By moving the distribution
2 system to the front of the lots, along the streets in the mobile home park, the
3 Company would have better access to its facilities for future work as needed.

4 **Q. How did the Company accomplish this reconfiguration without replacing the**
5 **service lines at Western Village?**

6 A. As part of the re-build, the old transformers on back lot lines were removed and
7 the transformer vaults were converted to secondary handholes. New secondary
8 voltage cable was then installed between the new transformers and the new
9 handholes so that the new distribution system could be connected to the existing
10 secondary voltage service lines that were already in place at Western Village.

11 **Q. Who is responsible for the new secondary voltage cable and handholes?**

12 A. These are part of the Company's electric distribution system at Western Village,
13 and PSE is responsible for maintaining and repairing them. PSE's responsibility
14 ends at the customer side of the secondary connectors in the handholes, where the
15 secondary service line begins. The service lines, which are the responsibility of
16 Western Village, are depicted in pink highlight on my Exhibit No. ___(GZ-6).

17 **Q. You mentioned above that PSE is continuing to investigate its historic**
18 **treatment of service lines at Western Village. Why?**

19 A. It is clear that the Company's tariff schedules required mobile home park
20 developers, owners and/or customers to install, maintain and replace service lines

1 at mobile home parks after October 21, 1977, as described in PSE's prefiled direct
2 testimonies in this proceeding. However, as described in Mr. Logen's response
3 testimony, the Company's Northern Division was not consistently enforcing the
4 tariff change as to repairs of existing service lines from that time until
5 approximately 1994. Up to 1992, Island County, where Western Village is
6 located, was in the Company's Northern Division.

7 I had some personal involvement with this issue in that I spearheaded a Company
8 initiative beginning in 1992 to better organize the customer service and
9 engineering operations of the Company. As a manager of one of the Company
10 districts with such responsibilities, I served as lead among my peer managers to
11 increase communication and consistency between the Company's districts. I
12 believe it was through such coordination that the Company learned that crews in
13 the Northern Division had continued to perform some service line repairs.

14 Although we have been unable to locate any specific information or records
15 showing that repairs to service lines were made at Western Village after 1977
16 other than the work described above, we are continuing to investigate this issue to
17 determine the extent of the noncompliance with the Company's filed tariff by
18 Company field crews.

1 **III. THE COMMISSION SHOULD REJECT WESTERN**
2 **VILLAGES' CLAIMS THAT IT HAD NO CONTROL OVER HOW**
3 **SERVICE LINES WERE INSTALLED AND WOULD HAVE**
4 **PROTECTED THEM BETTER IF IT HAD**

5 **Q. The Anderson Declaration states that neither Western Village nor its**
6 **residents "had any control over how the electrical service facilities were**
7 **installed by PSE" and that if they "had initially installed the electrical**
8 **service facilities...they could have taken measures to protect the electrical**
9 **service facilities from deterioration." (Anderson Decl. ¶¶ 10-11). Do you**
10 **agree?**

11 A. No. First of all, this statement is only relevant with respect to underground
12 service lines at the mobile home park, since PSE is not asking Western Village to
13 make or pay for repairs to PSE's electric distribution system up to the point of
14 delivery where the service lines begin.

15 Second, as described above, Western Village was responsible for providing the
16 trench and backfill for the service lines. The quality of the backfill used to cover
17 an underground service line is a critical factor in the life of the underground
18 service line.

19 **Q. Do you know what "measures" Western Village believes it could have taken**
20 **had it installed the service lines itself?**

21 A. In response to PSE's data request asking this question, Western Village stated:

1 The residents could have selected higher quality hardware and
2 equipment and install[ed] the underground wire into conduit so
3 that a failed wire could have been pulled and replaced, rather than
4 trenched. The Community could have implemented a long term
5 plan with regard to the location, distribution, and maintenance of
6 service facilities.

7 Exhibit No. ____ (GZ-14).

8 **Q. Do you agree with that such measures would have been taken?**

9 A. No. As to the quality of the hardware or equipment, the same cable was
10 commercially available to both utilities and private contractors at the time.

11 As to installing the service lines in conduit, I disagree that Western Village would
12 have installed more conduit than currently exists for service lines at the mobile
13 home park.

14 **Q. Why do you disagree with the suggestion that Western Village would have**
15 **installed conduit had it known it would be responsible for the service lines in**
16 **the future?**

17 A. When electrical cable is installed by being buried directly in the ground and
18 backfilled with the proper backfill material, free of sharp stones and debris, it will
19 provide many years of trouble free service. Conduit generally is not installed to
20 protect underground service lines when the trench has been properly constructed,
21 but rather is installed to protect pavement or surface improvements in the event
22 that service lines need to be accessed for subsequent repairs.

1 In the case of PSE, for example, the Company's tariff requires PSE to install,
2 maintain, and replace underground service lines at single family residences.
3 PSE's general practice for the installation of underground electric service cable in
4 cases where the Company's tariff requires PSE to install and later repair or replace
5 the service line is to bury it without conduit. But whenever the cable route will
6 pass underneath a hard surface such as a driveway, sidewalk, patio, or deck, PSE
7 requires a customer to supply conduit for that portion of the service line. In the
8 unlikely event that a failure occurs in that section of cable, it would save the
9 customer the inconvenience of having PSE disturb the function and appearance of
10 the customer's surface improvement to excavate PSE's facility. PSE also allows
11 its customers the option of supplying conduit for their service installations as a
12 convenience to them. Since customers must supply the trench for the service
13 cable, it is often helpful to them to expedite their construction schedule (i.e. final
14 grading, landscaping, concrete pour, etc) by installing conduit and backfilling the
15 trench prior to PSE's arrival to install service cable. Exhibit No. ___(GZ-15) is a
16 copy of PSE's Standard 6325.3200, which establishes requirements for residential
17 and nonresidential underground service installations at voltages less than 600
18 volts.

19 I do not believe that a reasonable engineer or electrician would have installed
20 conduit throughout Western Village for the service lines on the property rather
21 than trench and proper backfill. Instead, just as the Company did (as shown in the
22 worksketch provided as Exhibit No. ___(GZ-11)), conduit would have been
23 limited to short sections of the service lines that pass under driveways. In

1 addition to the lack of need for conduit to protect service lines, it is typically
2 simpler and less expensive to excavate and repair a service line at the point of
3 failure than to replace the entire service line.

4 **Q. How would such a repair be accomplished by a mobile home park owner?**

5 A. PSE would first turn off the electricity to a failed service line. The electrical
6 contractor hired by the property owner would then utilize fault finding equipment
7 to locate the point at which the service line failed. The contractor would then dig
8 down to the service line, clear a space of about two feet around the point of
9 failure, fix the failure through a splice, then replace the dirt around the service
10 line.

11 **Q. The Anderson Declaration also states that neither Western Village nor its
12 residents "were allowed to participate in the maintenance of the electrical
13 service facilities over time." (Anderson Decl. ¶ 12). Do you agree?**

14 A. No. As described in my prefiled direct testimony and Mr. Logen's prefiled direct
15 testimony, Western Village has not only been allowed to participate in the
16 maintenance of the service lines at its mobile home park, it has been required to
17 do so under the Company's tariff since 1977.

18 Moreover, there typically is no need to maintain underground service lines other
19 than to repair any failures that occur. Once installed and buried, underground
20 service lines will likely continue to provide service for many years provided that

1 proper trench and backfill was utilized. Should a failure occur, it will likely be
2 due to improper backfill or third party damagesuch as a cut or nick in the
3 insulation. . These type of spot failures can be easily repaired, as described
4 above.

5 **Q. The Anderson Declaration further states: "The current and future problems**
6 **with the electrical service facilities are due to causes beyond either [Western**
7 **Village's] or its residents' control." (Anderson Decl. ¶ 12). Do you agree?**

8 A. To the extent this statement refers to "current problems" with service lines at
9 Western Village, I am not aware that there are any "current problems." One
10 service line failed in the summer of 2005 -- first one leg of the line and then the
11 other, but all just one service line.

12 To the extent the quoted statement refers to "future problems" with electrical
13 service facilities at Western Village, I do not see how Western Village can make
14 this statement. Certainly Western Village can control whether it damages
15 electrical cable by accidentally digging it up: it needs to hire a locating service to
16 locate underground utilities prior to working in an area (as it is legally required to
17 do in any case, see RCW 19.122). Western Village can also control whether it
18 installs mobile homes or other structures on top of service lines.

19 Even in the absence of physical damage to the service lines, there will certainly
20 be "future problems" at some point with each of the service lines since all
21 electrical facilities deteriorate over time. However, such deterioration is not a

1 matter of causation by Western Village or PSE or anyone else; rather, it is a
2 matter of physics. Future problems with service lines could occur more quickly
3 than under other conditions if the quality of the backfill in the service line
4 trenches is poor. This would have been caused by Western Village. However, I
5 do not believe that the backfill was of poor quality because the existing service
6 lines that were originally installed by the Company continue to perform virtually
7 problem free nearly 40 years after installation.

8 **IV. CONCLUSION**

9 **Q. Does that conclude your testimony?**

10 A. Yes, it does.

11

12 [BA061080.031](#)