EXHIBIT NO. ___(JH-1T)
DOCKET NO. PG-041624
WITNESS: JAMES HOGAN

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. PG-041624**

PREFILED DIRECT TESTIMONY OF JAMES HOGAN ON BEHALF OF PUGET SOUND ENERGY, INC.

AUGUST 15, 2005

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY OF JAMES HOGAN

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EXHIBIT LIST

Exhibit No. _____ (JH-2)	City of Bellevue Fire Department's News Release dated September 4, 2004
Exhibit No. _____ (JH-3)	Image of a P-trap
Exhibit No. _____ (JH-4)	Pipe Segment Integrity Study
Exhibit No. _____ (JH-5)	WUTC Staff's Answer to PSE Data Request No. 1
Exhibit No. _____ (JH-6)	WUTC Staff's Answer to PSE Data Request No. 6

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY OF JAMES HOGAN

I. INTRODUCTION

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

A. My name is James Hogan. My business address is 10885 N.E. Fourth Street, P.O. Box 97034, Bellevue, Washington 98009-9734. I am the Manager of the Standards and Compliance Department for Puget Sound Energy, Inc. ("PSE" or "the Company").

Q. What is your educational and professional experience?

A. I have a Bachelor of Science degree in Mechanical Engineering from Washington State University and am a graduate of the University of Idaho Utility Executive Course. I have been the Manager of the Standards and Compliance Department since February 2003. In this role I am active in various industry groups and am a member of the American Gas Association (AGA) Operations Safety Regulatory Action Committee and the Distribution Integrity Management Steering Group.

Prior to becoming the Manager of the Standards and Compliance Department, I spent two years leading a team of project managers responsible for large capital projects in PSE's gas and electric transmission and distribution system. During this time I was also the project manager for development of PSE's Liquefied Natural Gas facility in Gig Harbor, Washington. Prior to that assignment, I was

project manager for the construction and commissioning of two 55-megawatt combustion turbines at PSE's Fredonia generation site.

Before joining PSE in 2000, I spent nine years in various engineering, construction management, and project management roles, generally associated with light industrial, process equipment, and heavy infrastructure projects. During this time I gained some experience in hazardous liquid pipelines through my involvement with the design and construction of a petroleum bulk storage facility in Samara, Russia, and a ship-to-shore transfer system in Long Beach, California.

I am also a city council member for the City of Enumclaw, Washington.

Q. What are your duties as the PSE Manager of the Standards and Compliance Department ?

A. I oversee a staff of approximately 28 personnel who are responsible for the creation of all company standards, procedures, and policies governing the design, construction, operation, and maintenance of PSE's gas and electric distribution system. In addition, my staff specifies and approves all materials and equipment used in PSE's delivery systems.

In the compliance arena, my department is responsible for ensuring that the company has standards and procedures in place that are in compliance with all state and federal regulations pertaining to gas and electric utility distribution systems. I also manage and/or provide oversight to several gas compliance programs including Operator Qualification, Transmission Integrity Management, and the DOT Drug and Alcohol Testing Program. My staff tracks and participates in all applicable rulemaking activities and is active in industry organizations. My staff is also responsible for the day-to-day interactions between PSE and the WUTC Pipeline Safety Division, which includes ongoing

audits, formal WUTC actions, and incident reporting.

As the Manager of Standards and Compliance I am responsible for failure investigations per the requirements of 49 C.F.R. § 192.617. In this role, I have coordinated the Company's investigation of the September 2, 2004, Bellevue house explosion and any subsequent changes to standards or procedures that have or will be identified as a result of this investigation.

II. SCOPE OF TESTIMONY

Q. What is the scope of your testimony in this proceeding?

A. I will discuss: (1) PSE's monitoring of the Vasa Park Rectifier before the incident in compliance with federal and state regulations; (2) PSE's investigation after the explosion; (3) the circumstances surrounding the cross-wired rectifier; (4) PSE's compliance with federal and state cathodic protection statutes; and (5) PSE's response to the WUTC Staff's Recommendations.

III. SUMMARY OF TESTIMONY

Q. Please summarize your testimony.

A. PSE's gas distribution system is safe, well maintained and operating in accordance with federal and state gas regulations. The Vasa Park Rectifier (the "Rectifier") was operating in compliance with federal and state regulations in the year leading up to the incident. The September 2, 2004 incident was a result of unique factual circumstances and was not caused by the short-term reversal of the Rectifier. The reversal was fixed upon discovery, so that state regulations regarding cathodic protection were never violated. Moreover, the evidence from the investigations following the explosion shows that the Spiritridge neighborhood gas distribution

system was safe and operating normally, and there is simply no evidence to suggest that the rest of PSE's gas distribution system is unsafe. Accordingly, there is no justification for PSE to deviate from established federal and state regulations in the manner recommended by the WUTC Staff.

IV. GAS DISTRIBUTION IN SPIRITRIDGE AND THE SCHMITZ RESIDENCE

Q. Have you reviewed the pre-filed testimony of Susan McLain and Harry Shapiro in this matter?

A. Yes.

Q. Do you agree with their description of PSE's gas distribution system, the service line servicing Mrs. Schmitz's house, and the type of cathodic protection protecting Mrs. Schmitz's house and the Spiritridge neighborhood?

A. Yes, I do.

V. THE NATURE OF PSE'S INVESTIGATION

Q. Please provide an overview of the nature of the investigation PSE has undertaken to determine the cause of the incident.

A. Immediately after the incident, PSE joined with a team of investigators from the Bellevue Fire Department and the Washington State Utilities and Transportation Commission. In the months after the incident, PSE worked with Staff and with its own experts from CC Technologies Services, Inc. ("CCT") to determine the cause of the incident.

Q. What did the investigation by Staff, the Bellevue Fire Department, and PSE find?

A. The results of that investigation are described in the City of Bellevue Fire Department's News Release dated September 4, 2004, attached as Exhibit No. ___ (JH-2) to my testimony. Generally, that investigation immediately identified that there was corrosion in the service line upstream from its connection with the gas meter. Additionally, that investigation discovered that an unusual drainage system from a basement sink of the home may have contributed to the explosion.

Q. How could the basement sink drain have contributed to the explosion?

A. Instead of having a normal plumbing system in place, a pipe had been diverted through the foundation wall so that any materials poured down the drain would flow out of the residence onto the soil above the gas service line. Accordingly, the ground directly above the gas service and main lines had been used as a small drainage area for a sink located in the lower level of the home. The plumbing for the sink was unique, in that instead of installing a "P-Trap" and connecting the sink drain to the house sewer lines, a hose was attached to the sink drain and routed directly out through the foundation wall below grade. A "P-Trap" is a device required on all drains that prevents gas (normally sewer gas) from back flowing from the sewer system into a home through a sink, bathtub, or shower drain. *See* Exhibit No. ___ (JH-3). The foundation penetration alone provided a potential path for gas to enter directly into the home. This unusual sink drain not only could have increased the likelihood of corrosion on the pipe, but it also allowed gas that escaped the service line an easy avenue to enter the house via the drain.

Q. What else has PSE done to investigate the cause of the accident?

A. PSE has worked with CCT to conduct soil analyses of the soil surrounding the Schmitz residence, metallurgical analyses of the service line, and analyses of service risers in the Spiritridge neighborhood. These studies and their results are described in the testimony of Mr. Garrity. PSE itself conducted coating surveys in the Spiritridge neighborhood.

Q. Have you reviewed all of the reports prepared by CCT?

A. Yes.

Q. What conclusions can you draw from these reports?

A. These reports show, first, that the leak was caused by corrosion that existed long before the reversal of the Rectifier. That fact is agreed upon by Staff's expert, Dr. Bell. These reports also show that the explosion itself was a combination of factors that are unique to the Schmitz residence, including the drainage system at the residence which allowed gas to enter directly into the house. Most importantly, these reports show that PSE's gas distribution system is safe and operating within federal and state guidelines.

Q. Is this consistent with PSE's own investigations?

A. Yes.

Q. Please explain why.

A. PSE spent approximately $275,000 to conduct a coating survey of various service lines in the Spiritridge neighborhood. This is also known as the Pipe Segment Integrity Study, and is attached to my testimony as Exhibit No. _____ (JH-4). The Pipe Segment Integrity Study used two complimentary techniques, Direct Current Voltage Gradient and Close Interval Survey for evaluating the coating on

the pipes in the Spiritridge neighborhood.

Q. What was your involvement with the Pipe Segment Integrity Study?

A. I was aware of all aspects of the study, observed some of the field visits where coating surveys were done, and reviewed the draft final report.

Q. What conclusions can you draw from the Pipe Segment Integrity Study?

A. The Pipe Segment Integrity Study verified that the integrity of the system in that area is good. Although we detected some service line coating flaws, when those lines were dug up and examined, the damage proved to be minor and effectively neutralized by cathodic protection. More importantly, the Study unearthed no evidence of systematic problems or cause for concern.

VI. THE ROLE OF THE CROSS-WIRED RECTIFIER

Q. What did PSE discover about the Rectifier immediately after the explosion?

A. On the morning of September 3, 2004, PSE discovered that the Rectifier's lead wires were crosswired.

Q. Did PSE immediately correct this problem?

A. Yes.

Q. How long was the Rectifier cross-wired?

A. It is unknown. PSE has evidence that the Rectifier was functioning properly on June 30, 2004. PSE then discovered and corrected the cross-wired rectifier on September 3, 2005. Accordingly, sometime between July 1, 2004 and September 3, 2004, the Rectifier became cross-wired.

Q. Does PSE know who cross-wired the Rectifier?

A. No. There is no evidence that PSE personnel cross-wired the Rectifier, and PSE has been unable to identify any outside party that was responsible for the cross-wiring.

Q. Was the Rectifier locked?

A. Yes, it was, but it was possible to bypass the lock and gain access to the control panel.

Q. What area does the Rectifier serve?

A. Normally, it serves approximately 2600 homes. However, because of troubleshooting PSE was conducting in the vicinity, a far fewer number of homes were connected to the Rectifier between July 1, 2004, and September 3, 2004.

Q. Approximately how many homes were connected to the Rectifier during that time period?

A. Approximately 600 homes in the Spiritridge neighborhood would have been connected to and affected by the Rectifier.

Q. Do you agree with Dr. Bell's conclusion that "it is highly unlikely that the rectifier reversal was a major or primary contributor to the leak?" 64:2-3 (Bell).

A. Yes.

Q. Please explain.

A. As explained in further detail by Kevin Garrity of CCT, the evidence from all of the reports and studies shows that the corrosion in Mrs. Schmitz's service line occurred long before the reversal of the Rectifier.

Q. To your knowledge, did the Rectifier miswiring have any significant role or impact in causing the September 2 explosion?

A. No. The WUTC Staff's answer to PSE Data Request No. 1, Exhibit No. _____ (JH-5), confirms that the gas "leak most likely occurred prior to he mis-wiring of the rectifier." In the answer to PSE Data Request No. 6, Exhibit No. _____ (JH-6), they admit that "there is no ability to measure the impact of cross-wiring on the Schmitz house service line."

Q. What are PSE's conclusions about the cause of the explosion?

A. The tragic explosion was caused by a combination of unique factors. Particularly, the drainage system from the basement sink at Mrs. Schmitz's house created a condition that allowed the leaking gas to enter her house where, unfortunately, the gas odor was undetected, and an unknown source of ignition was present.

VII. PSE'S COMPLIANCE WITH THE APPLICABLE CODES AND REGULATIONS

Q. Are you familiar with the state and federal codes and regulations that govern cathodic protection of wrapped-steel pipe?

A. Yes.

Q. Was the cross-wiring of the rectifier a violation of those codes and regulations?

A. No.

Q. Please explain.

A. The Code of Federal Regulations ("CFR") in 49 C.F.R. § 192.465(d) states that an operator shall take "prompt remedial action" to correct any cathodic protection deficiencies. The Washington Administrative Code ("WAC") at 480-93-110

allows for 90 days to correct deficiencies in cathodic protection from the point where they are discovered. The Rectifier was correctly re-wired within hours of PSE's discovery that it was cross-wired. From the available data, the only date on which we can confirm knowledge of rectifier problems is September 3. But, even if we use the date the Rectifier could have first been cross-wired, July 1, 2004, there is a maximum of 64 days that the Rectifier could not have been providing sufficient voltage. Sixty-four days, however, is well under the 90-day period. Additionally, because PSE was operating in accordance with applicable codes and regulations, it was not operating an unsafe system under RCW 80.25.210.

Q. **Earlier, you indicated that PSE was troubleshooting the cathodic protection system in the vicinity of the Rectifier. Staff noted that this separate investigation and identification of the problem took more than 90 days. Could you please explain why it took an extended period of time to discover this?**

A. Yes. Identifying issues affecting the cathodic protection afforded underground pipeline can be exceedingly difficult and time consuming. One method we use to identify such issues is the exposed pipe condition report ("EPCR"), which is discussed in greater detail in the testimony of Mr. Shapiro. There were two bad EPCR readings in mid-2004 that triggered PSE's investigation of the cathodic protection system in the area near the Rectifier. PSE discovered that not one but two factors resulted in the bad EPCR reads. Further, these causes were ultimately determined to be a cracked insulator and a ground wire from a cell tower touching PSE's main. Isolating these issues over a very large area of gas service and main required isolating sections of the main and service through disbonding. This process involves isolating sections of the main and service in an effort to identify that portion of the main or service that has a problem. However, once isolated you still have to find the specific source, and, in the case of a cracked insulator or

ground wire from a cell tower, this can still take a significant amount of time. This is a great example of the reason PSE urged the Commission in rulemaking procedures to significantly relax the rule that requires identification and correction of certain cathodic protection issues within 90 days (although PSE acknowledges that Staff has relaxed the rule to 120 days in certain circumstances). It is not an issue of convenience, it is a function of the sometimes exceedingly difficult and time consuming task of both finding and correcting the problem. In the case of PSE, we have over 11,000 miles of distribution system. This is why the corresponding federal rule allows for "prompt action" to identify and correct these issues, which is generally accepted as one year. PSE is not calling for the federal standard, but we still strongly urge the Commission to reconsider this rule in light of what is feasible in maintaining and troubleshooting a cathodic protection system in non-emergency situations.

VIII. PSE'S RESPONSE TO THE WUTC'S STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Q. Have you reviewed all of WUTC Staff's prefiled testimony in this matter?

A. Yes.

Q. Do you agree with Dr. Bell's Conclusion No. 4: The situation within the Spiritridge subdivision is not unique in the PSE system. The results of the Puget Sound Energy, "Puget Sound Energy Pipe Segment Integrity Study in the Vicinity of the Vasa Park Rectifier," dated June 21, 2005, indicated that undiscovered leaks are still present in the system and that the condition of the system is typical for construction from this vintage.

A. I disagree with Dr. Bell's conclusion that PSE has a systemic problem based on the isolated events surrounding the Schmitz house explosion. The factors causing

the explosion were unique, as evidenced by the fact that, to the best of PSE's knowledge, a leaking service line has not caused a house explosion in the history of PSE or its predecessor, Washington Natural Gas. Mrs. Schmitz's house had a drainage system leading from the basement sink that was not connected to any sewer system, but rather ended at the ground above the pipeline. This could not only have advanced corrosion, but allowed the gas leak to enter into the house, where it was undetected and then ignited.

Q. Do you agree with Dr. Bell's assertion in Conclusion No. 4 that there are undiscovered leaks within PSE's gas distribution system?

A. It is impossible to have a pipeline distribution system that does not suffer from corrosion and leaks; such corrosion and leaks, though, do not equate to potential dangerous or catastrophic events. Federal and state laws and regulations, standard industry practice, and PSE's own internal standards and procedures anticipate that such leaks will occur and gas distribution systems, including PSE's, are designed to ensure that the pipeline distribution system is being adequately monitored and, when appropriate, repaired.

Q. What is your assessment of the recommendation outlined in Dr. Bell's testimony that PSE inventory neighborhoods with similar type and vintage of service lines as the kind that exists in the Spiritridge neighborhood and conduct additional leak surveys and other kinds of surveys in these neighborhoods?

A. I disagree with Dr. Bell's conclusion because his assumptions about the gas distribution system are incorrect. PSE strongly maintains our gas distribution system is safe and the act of complying with his recommendation would artificially raise the cost of gas service in the Puget Sound area. As described in Ms. McLain's testimony, Dr. Bell's proposed procedures, while they sound

reasonable, are not justified in the light of the evidence, which shows that the occurrence of the tragic accident at Mrs. Schmitz's home was a result of unique factors, and that the gas pipeline distribution system in the Spiritridge neighborhood is generally in good condition, as evidenced by the Riser Study and Pipe Segment Integrity Study. There is simply no evidence to suggest that there is any heightened risk of a catastrophic event happening in other areas of PSE's gas distribution system so that surveys outside of what is required by federal and state regulations should be imposed upon PSE. Ultimately, complying with the recommendations by Staff would not be cost-effective.

Q. Why do you believe Dr. Bell is making these recommendations?

A. Dr. Bell seems to erroneously assume that the only safe gas distribution system is a leak-free one. However, this is not realistic. All gas distribution systems leak. The federal and state regulations recognize and anticipate this fact by providing procedures and regulations for monitoring and repairing leaks on gas distribution systems.

Q. What is your opinion of Staff's second through fourth recommendations, as outlined by Mr. Chu?

A. As described in more detail by Ms. McLain, these recommendations are reasonable and PSE has already implemented many of them.

Q. Does this conclude your direct testimony?

A. Yes, it does.