**BEFORE THE WASHINGTON**

**UTILITIES & TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKET PG-160924

DIRECT TESTIMONY OF SEBASTIAN COPPOLA (SC-1T)

ON BEHALF OF

PUBLIC COUNSEL

**April 24, 2017**

DIRECT TESTIMONY OF SEBASTIAN COPPOLA (SC-1T)

DOCKET PG-160924

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Exhibit No. SC-5 Puget Sound Energy Response to WUTC Staff Data Request No. 06 on Corrosion Survey

Exhibit No. SC-6 Puget Sound Energy Response to Public Counsel Data Request No. 25(j) on Inspection Reports

Exhibit No. SC-7 Puget Sound Energy Response to Public Counsel Data Request No. 28 on Inspection Program

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Exhibit No. SC-9 Puget Sound Energy Response to Public Counsel Data Request No. 030 Failure to Remove Abandoned Service Line

Exhibit No. SC-10 Puget Sound Energy Responses to Public Counsel Data Request No. 007 Supplemental on Valve Shut-off Sequence

Exhibit No. SC-11 Puget Sound Energy Responses to Public Counsel and WUTC Staff Data Requests on PSE Affirmative Defenses

Exhibit No. SC-12 PHMSA Advisory Bulletin – 81 FR 54512, 54514 (August 16, 2016)

# IINTRODUCTION

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

A: My name is Sebastian Coppola. My business address is 5928 Southgate Rd., Rochester, Michigan 48306.

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

A**:** I am President of Corporate Analytics, Inc., a consulting firm that provides expert witness services on regulated energy issues.

**Q:** **On whose behalf are you testifying?**

A**:** I am testifying on behalf of the Public Counsel Unit of the Washington Attorney General’s Office (“Public Counsel”).

**Q:** **Please describe your educational background and professional experience.**

A: I am a business consultant specializing in financial and strategic business issues in the fields of energy and utility regulation. I have more than 30 years of experience in public utility and related energy work, both as a consultant and utility company executive. I have testified in several regulatory proceedings before State Public Service Commissions.

 I have prepared and filed testimony in pipeline and infrastructure replacement programs, electric and gas rate cases, power supply and gas cost recovery proceedings, revenue and cost tracking mechanisms/riders and other regulatory proceedings. As manager and later financial executive for two regulated gas utilities with operations in Michigan and Alaska, I have been intricately involved in both financial and operating areas of gas utilities and energy companies.

**Q: What experience do you have with gas utilities?**

A: I spent the first 26 years of my professional career working for two gas utilities with customer bases ranging from 430,000 to 1.2 million customers in residential commercial and industrial sectors located in both rural and urban areas. During this lengthy career, I worked in both financial and operating areas of the gas utilities, such as customer service and billing, material warehousing and inventory control procuring pipe and fittings for construction projects, and interacting with field services and gas distribution operations.

 As a consultant and expert witnesses in regulatory proceedings, I have testified extensively on gas utility pipelines, service lines and inside meters replacement programs related to at-risk pipes that provide safety issues to customers and the general public. I have also performed rate case analyses and filed testimony in several gas general rate cases addressing issues on revenue requirement, sales level determination, capital expenditure programs, operation and maintenance expenses, cost allocations, cost of capital, cost of service and rate design, and various cost tracking mechanisms. In addition, I have performed analysis of gas supply programs and filed testimony in gas supply cost recovery mechanisms, including reconciliation of annual gas supply costs.

Q: Have you previously filed testimony before the Washington Utilities and Transportation Commission?

A: Yes. In September 2012, I filed testimony on behalf of Public Counsel in Avista’s general rate case, Dockets UE-120436 and UG-120437. In March 2013, I prepared reports on behalf of Public Counsel analyzing the natural gas price hedging programs and gas procurements practices of gas utilities in the state of Washington. The reports were filed in Dockets UG-121501, UG-121592, UG‑121434 and UG-121569. In June 2013, I filed testimony on behalf of Public Counsel in PacifiCorp’s general rate case, Docket UE-130043. In 2014, I assisted Public Counsel in the restructuring of Puget Sound Energy’s (PSE) Power Cost Adjustment mechanism, which resulted in the filing of a settlement agreement in Docket UE-130617 on March 27, 2015.

 I have also submitted written testimony before the Michigan Public Service Commission, the Public Utilities Commission of Ohio, and the Regulatory Commission of Alaska.

 Please see Exhibit No. SC-2 for more information regarding my credentials in the regulated energy field, professional experience, educational background, and a list of testimony filed in other cases.

Q: What is the purpose of your testimony?

A:I have been requested by Public Counsel to perform a review and analysis of the Settlement Agreement and the Narrative Supporting the Settlement Agreement filed on March 28, 2017, in this docket by the Staff of the Washington Utilities and Transportation Commission (“Staff”) and Puget Sound Energy (“PSE” or “Company”). Public Counsel also requested that I provide recommendations regarding the appropriate level of penalties to be imposed on PSE and improvements to the Deactivated Gas Line Inspection and Remediation Program filed as Appendix A to the Settlement Agreement.

Q: What documents did you review in preparation of this testimony?

A:I reviewed several documents, including:

1. The Commission Complaint filed September 19, 2016 (“Complaint”).
2. The Staff Investigation Report filed on September 20, 2016 (“Staff Investigation Report”).
3. The UTC Incident Investigation Form prepared by Staff on July 20, 2016 (“Staff Incident Investigation-Supplement”).
4. PSE’s Answer to Complaint and Affirmative Defenses filed October 3, 2016.
5. The Company’s responses to several data requests issued by Public Counsel and Staff.
6. Various PSE’s operating standards and procedures regarding the installation, abandonment, and inspection of completed work.
7. Federal and state of Washington rules, regulations and safety standards regarding gas pipeline installation, abandonment, and maintenance.
8. The Settlement Agreement and Narrative Supporting the Settlement Agreement (“Settlement Agreement”).

Q: What exhibits are you sponsoring in this proceeding?

A: I am sponsoring the following exhibits:

1. Exhibit No. SC-2, Sebastian Coppola Summary of Qualifications;
2. Exhibit No. SC-3, Photographs of the Explosion Site;
3. Exhibit No. SC-4, PSE Response to Public Counsel Data Request No. 29 on Operating Standard 2525.3600;
4. Exhibit No. SC-5, PSE Response to WUTC Staff Data Request No. 06 on Corrosion Survey;
5. Exhibit No. SC-6, PSE Response to Public Counsel Data Request No. 25(j) on Inspection Reports;
6. Exhibit No. SC-7, PSE Response to Public Counsel Data Request No. 28 on Inspection Program;
7. Exhibit No. SC-8, PSE Responses to Public Counsel Data Request No. 006 and WUTC Staff Data Request No. 027 on Active and Deactivated Cut-and-Capped Service Lines;
8. Exhibit No. SC-9, PSE Response to Public Counsel Data Request No. 030 Failure to Remove Abandoned Service Line;
9. Exhibit No. SC-10, PSE Responses to Public Counsel Data Request No. 007 Supplemental on Valve Shut-off Sequence;
10. Exhibit No. SC-11, PSE Responses to Public Counsel and WUTC Staff Data Requests on PSE Affirmative Defenses; and
11. Exhibit No. SC-12, PHMSA Advisory Bulletin - 81 FR 54512, 54514 (August 16, 2016).

# SUMMARY OF TESTIMONY

**Q: Please summarize your major findings and recommendations.**

A: I have determined that the 17 violations of federal and state safety rules and regulations identified in the Complaint do not include other violations by PSE. The Company, or its agent, also failed to comply with other standards and procedures, failed to implement an effective quality control program during the cut-and-cap and abandonment of the service line at 8409/8411 Greenwood Avenue North, failed to remove the abandoned service line, did not maintain accurate records of the abandoned service line, and delayed the shut-off of gas flow to the explosion site placing property and people in further danger.

 I have also determined that the Complaint established a maximum penalty amount of $3.2 million to be imposed on PSE based on the 17 violations. However, if the additional violations of procedures and standards are included, the maximum penalty amount should have been $4.0 million, as I will describe later in my testimony.

 I find that the Settlement Agreement is significantly flawed and should not be approved by the Commission without revisions. I find that the firm penalty amount of $1.5 million is too low relative to the violations and PSE’s recurring failures to follow internal procedures and safety rules. The contingent portion of the penalty amount is unnecessary and contrary to sound regulatory policy. The Deactivated Gas Line Inspection and Remediation Program, although generally acceptable, should include certain improvements.

 Therefore, I recommend that the Commission take the following actions:

1. The Commission reject the $1.5 million firm penalty amount and the $1.25 million contingent penalty, and instead impose at least the entire $3.2 million maximum penalty stated in the Complaint, or alternatively the Commission could amend the Complaint and impose penalties in the amount of $4.0 million, with no contingent amount.
2. The Commission inform the Company that all costs that it incurs in implementing the Deactivated Gas Line Inspection and Remediation Program would not be recoverable in the current and future general rate cases.
3. The Commission could approve the Deactivated Gas Line Inspection and Remediation Program with the following conditions:
	1. Strike the words “by Pilchuck” on the first line of the Population 2 paragraph on page 2 of Appendix A.
	2. Clarify in the definition on page 1 of Appendix A that High Occupancy Structures includes businesses.
	3. Set the confidence level at one percent for Population 3 and 4 to be consistent with Population 2.
	4. Require that, as part of PSE’s Quality Management program, the Company maintain a record of each individual who performs the inspection of a deactivated service line or main (cut-and-cap and/or removal) along with a checklist of the verification steps undertaken.
	5. Encourage or direct the Company to remove above ground services that have been inactive for at least 12 months unless there is an agreement with the property owner that service will resume relatively soon.

 The remainder of my testimony provides further details to support these summary findings and recommendations.

# BACKGROUND

**Q: Please briefly describe the reason for the Complaint issued by the Commission on September 19, 2016.**

A: On March 9, 2016, at approximately 1:43 a.m., a natural gas explosion occurred in the vicinity of 8411 Greenwood Avenue North in the city of Seattle, Washington.[[1]](#footnote-1) The explosion caused significant property damage and personal injuries to nine first responders. The gas that ignited leaked from a ruptured above-ground service line suspended from the wall of the building at 8411 Greenwood Avenue North (commonly known as “Mr. Gyros”). The rupture allowed natural gas to migrate into or under the Mr. Gyros structure, where it subsequently ignited.

 According to records provided by PSE, the Company considered the service line abandoned and inactive, subsequent to a cut-and-cap order scheduled to be completed on or about September 1, 2004. However, the cut-and-cap work was not properly completed and the line remained active retaining pressurized natural gas for nearly 12 years, until the explosion in March 2016. PSE or its agent failed to perform several procedures during the cut-and-cap work. PSE also failed to monitor and maintain the supposedly abandoned line. These failures and the resulting effect will be discussed in further detail in the remainder of my testimony.

 PSE’s improper abandonment of the service line was the primary cause of the March 9, 2016, leak and explosion. Photos of the devastating results of the explosion are shown in Exhibit No. SC-3. Additional photos and building schematics of the neighborhood are included in the Staff Investigation Report. It is noteworthy to point out that the fire caused by the explosion lasted nearly six hours as a result of the Company’s inability to quickly and effectively locate and shut-off the correct gas main feeding the broken service line.

# VIOLATION OF RULES & REGULATIONS

**Q: Please describe the violations of state and federal rules included in the Complaint issued by the Commission and the basis for each violation.**

A: The Complaint contains 17 violations. With the description below of each rule or regulation where the violations occurred, I have included information and findings presented in the Staff Investigation Report and the Staff Incident Investigation-Supplement. This additional information provides a more complete definition than shown in the Complaint about the standards and requirements with which PSE, or its agent, should have complied. It also explains PSE’s, or its agent’s failure, to comply with those requirements.

## 49 C.F.R. § 192.727(b) – Improper Deactivation of a Pipeline.

PSE’s attempted service line abandonment did not conform to 49 C.F.R. § 192.727(b), which is enforceable by the Commission under WAC 480-93-999. The version of 49 C.F.R. § 192.727(b) in effect on September 1, 2004, provided in relevant part:

Each pipeline abandoned in place must be disconnected from all sources and supplies of gas; purged of gas; in the case of offshore pipelines, filled with water or inert materials; and sealed at the ends. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard.[[2]](#footnote-2)

The 3/4” service line installed to 8409, 8411 and 8413/8415 Greenwood Avenue North was not properly abandoned or deactivated as scheduled on September 1, 2004. PSE or its agent failed to disconnect the line from all sources of gas. They failed to purge the line, inject inert material, and seal the ends of the line. There was also a lack of situational awareness among the construction crew performing the cut-and-cap. Typically, when cutting an active line, there would be a distinct odor of Mercaptan from the gas still present in the line.[[3]](#footnote-3) The odor could not have been present in this situation because the active line was not cut. The lack of an odor should have been a strong indication to the service crew that the correct line had not been cut. Therefore, the service line remained operationally active for more than 12 years until the March 2016 explosion. Based on Staff’s recommendation, the Commission considered this failure one violation of 49 C.F.R. § 192.727(b).

## WAC 480-93-180 – Failure to Follow Internal Procedures.

PSE’s service line abandonment of September 1, 2004, did not conform to the Company’s Gas Operating Standard 2525.3600, effective March 1, 2004.[[4]](#footnote-4) Under WAC 480-93-180, PSE was required to follow internal written procedures. The version of WAC 480-93-180 in effect on September 1, 2004, provided in relevant part: “[E]very gas company shall develop appropriate operating, maintenance, safety, and inspection plans and procedures and an emergency policy.”[[5]](#footnote-5)

Each gas pipeline company must have and follow a gas pipeline plan and procedure manual for operation, maintenance, inspection, and emergency response activities that is specific to the gas pipeline company's system. The manual must include plans and procedures for meeting all applicable requirements of 49 C.F.R. §§ 191, 192 and chapter 480-93 WAC, and any plans or procedures used by a gas pipeline company's associated contractors. PSE has adopted a Gas Operating Standards manual in accordance with WAC 480-93-180(1). Effective March 1, 2004, Gas Operating Standard 2525.3600, section 3.1, provided in relevant part: “Each facility abandoned in place or each line not subject to gas pressure, shall be disconnected from all sources and supplies of gas, purged of gas in accordance with Operating Standard 2525.3400, “Purging,” and sealed at the ends with expansive foam.”

PSE’s contractor did not correctly follow procedure 2525.3600, Section 3.1 to properly deactivate a service line. Section 3.1 states that the ends of the deactivated line will be sealed with expansive foam. Job records show that on September 1, 2004, the service line was deactivated serving 8409, 8411, and 8415 Greenwood Avenue North. However, the foreign line recovered at the location where the construction records said the work was performed did not have the ends sealed.

 PSE’s attempted service line abandonment did not conform to Gas Operating Standard 2525.3600. The service line remained operationally active, un-purged, and unsealed until shortly after the March 2016 explosion.

 Based on Staff’s recommendation, the Commission considered this failure one violation of WAC 480-93-180.

## WAC 480-93-188 – Failure to Perform Gas Leak Surveys.

PSE performed no annual gas leak surveys with respect to the improperly abandoned (active) service line from September 1, 2004, at the latest, until March 9, 2016. PSE failed to perform a minimum of 11 surveys.[[6]](#footnote-6) Under WAC 480-93-188, PSE was required to perform such tests at least once annually, as follows:

(1) Each gas pipeline company must perform gas leak surveys using a gas detection instrument covering the following areas and circumstances:

(a) Over all mains, services, and transmission lines including the testing of the atmosphere near other utility (gas, electric, telephone, sewer, or water) boxes or manholes, and other underground structures;[[7]](#footnote-7)

(3) Each gas pipeline company must conduct gas leak surveys according to the following minimum frequencies:

(a) Business districts - At least once annually, but not to exceed fifteen months between surveys. All mains in the right of way adjoining a business district must be included in the survey[.][[8]](#footnote-8)

PSE did not perform the leakage surveys of this service line in this business district since 2004. When PSE conducted the leakage surveys, the person performing the task did not note this idle service riser. If the surveys had been conducted, it is likely that the surveyor would have noticed and reported the condition of the idle service riser and the presence of a safety issue with transient individuals congregating nearby.

 Based on Staff’s recommendation, the Commission considered this failure to be 11 violations of WAC 480-93-188.

## 49 C.F.R. § 192.481(a) – Failure to Perform Atmospheric Corrosion Tests.

 PSE performed no atmospheric corrosion tests with respect to the improperly abandoned (active) service line from July 22, 2004, until March 9, 2016. Under 49 C.F.R. § 192.481(a), PSE was required to perform such tests at least once every three years. PSE failed to perform a minimum of three tests.[[9]](#footnote-9)

 The version of 49 C.F.R. § 192.481(a) in effect on September 1, 2004, provided in relevant part: “Each operator must inspect each pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion, as follows: [For onshore pipelines:] At least once every 3 calendar years, but with intervals not exceeding 39 months.”

 PSE’s response to WUTC Staff Informal Data Request No. 6 indicates that the last atmospheric corrosion reading the 8409/8411 dual (twin) service was on July 22, 2004.[[10]](#footnote-10) According to Staff’s conclusion, this was before the service was changed to be fed from the 2” MPE main in the alley on August 8, 2004, and before the date PSE thought they had deactivated the line.[[11]](#footnote-11) Staff concluded that the 8411 Greenwood Ave North meter that was being checked for atmospheric corrosion was obviously the new meter that was set on the two meter manifold because there was no longer a meter on the non-deactivated service line that caused the release of gas and resulting explosion on March 9, 2016.

 Based on Staff’s recommendation, the Commission considered this failure to be three violations of 49 C.F.R. § 192.481(a).

## 49 C.F.R. § 192.465(a) – Failure to Perform External Corrosion Tests.

PSE performed no external corrosion tests with respect to the improperly abandoned (active) service line from September 1, 2004, at the latest, until March 9, 2016. Under 49 C.F.R. § 192.465(a), PSE was required to perform such tests at least once every 10 years, since the improperly abandoned service line was a “separately protected service line.” PSE failed to perform a minimum of one test.[[12]](#footnote-12)

 The version of 49 C.F.R. § 192.465(a) in effect on September 1, 2004, provided in relevant part:

Each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of § 192.463. However, if tests at those intervals are impractical for separately protected short sections of mains or transmission lines, not in excess of 100 feet (30 meters), or separately protected service lines, these pipelines may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period.[[13]](#footnote-13)

 Based on Staff’s recommendation, the Commission considered this failure to be one violation of 49 C.F.R. § 192.465(a).

# OTHER FAILURES

**Q: Please describe other problems you have discovered which were not included in the Complaint.**

A: In reviewing the information provided by the Company in response to data requests from Public Counsel and Staff, as well as information gathered from reviewing the Staff Investigation Report and the Staff Incident Investigation-Supplement, I have discovered the following additional failures:

1. **Improperly Completed Form D-4** - The D-4 Form capturing the improperly completed cut-and-cap work for 8409 Greenwood Avenue North was not signed by the Pilchuck crew member who completed the work but instead by the crew foreman. This is a violation of Section 3.12.2.7 of the Company’s Gas Operating Standard 2500.1800, which requires that the name of the fitter performing the work be shown in the back of the D-4 Form. The crew foreman should be performing the on-site inspection of the work completed by the Fitter. By allowing the crew foreman to sign the D-4 card, PSE or its agent undermines the separation of duties and the quality assurance program, to the extent that one existed at that time. The Commission previously found PSE to have committed a similar violation with incorrect records completed by Pilchuck.[[14]](#footnote-14)

This is a violation of WAC 480-93-018 for not maintaining accurate records.

1. **Unreliable Quality Control Program** - There is no evidence that a thorough on-site inspection and quality assurance program existed in September 2004. PSE was requested to provide a copy of the inspection report showing that the contractor or a PSE employee had inspected and verified that the cut & cap and purging of the service line to 8409 Greenwood Avenue North had taken place. In response to Public Counsel Data Request No. 025(j), the Company stated that there were no such records. Exhibit No. SC-6 includes a copy of the response to the data request. In response to other data requests, PSE stated that it requires its construction contractors to have a written quality control program. However, no evidence that such a program was in place in September 2004, or is in place now, was provided. According to PSE’s response to Public Counsel Data Request No. 028(d), the quality control program requires the crew foreman to inspect 100 percent of the work performed. Apparently, in September 2004 for the 8409 Greenwood Avenue North cut-and-cap, and perhaps for other jobs, the 100 percent inspection did not occur. Furthermore, the Company’s own quality assurance program did not include an inspection of the 8409 Greenwood Avenue North cut-and-cap work. Exhibit No. SC-7 includes the pertinent PSE responses on its quality assurance program.

The Company’s inspection program consists of audits of a sample of in‑progress (crew on-site) and post-construction work. This sampling approach seems designed to determine general compliance with methods and procedures by the contractor, and is not sufficiently comprehensive to ensure that each job is completed correctly. For this, the Company relies on its contractors with apparent shortfalls. A more robust procedure, which includes written evidence that an inspection of the work was performed by the crew foreman, would be appropriate, either as part of the D-4 Form or as a separate checklist retained by the Company. To date, PSE has not implemented such a robust and verifiable inspection procedure.

 This is a violation of WAC 480-93-180 for not following plans and procedures.

1. **Incorrect Record of Deactivated Service** – In data request Public Counsel No. 006, the Company was requested to provide a list of all the service lines abandoned between January 1, 2004, and the date of the data request. The list of approximately 20,700 service lines that were cut-and-capped identifies the status of the service lines as either Active or Deactivated. The 8410 Greenwood North service line is categorized as Deactivated.[[15]](#footnote-15) Asked to explain the difference between an Active and Deactivated Status, PSE stated that an Active designation is assigned if the gas main from which the service line was disconnected is still active and a Deactivated status is assigned if the main has been subsequently retired. Exhibit No. SC-8 includes the pertinent responses to the data requests.

With regard to the service line for 8410 Greenwood Avenue North, the Deactivated designation was incorrect because the main feeding the line was still active. This failure to properly designate the status of the service as Active versus Deactivated has significant safety implications to the Company’s employees and the general public. The expectation of a Deactivated service line is that the gas main also had been retired and was inactive. Instead, this was not the case. The gas leak and the explosion show that both the service line and gas main were both active and fully pressurized with natural gas. It is likely that this incorrect designation contributed to the six-hour lapsed time between when the explosion occurred and when the gas was ultimately shut-off to the explosion site. PSE field personnel on site were likely operating on the assumption that the gas main feeding the service line was inactive when in fact it was not. This failure to properly designate the status of the service line is another indication of PSE’s poor record keeping and procedural failures compromising safety.

 This is a violation of WAC 480-93-018 for not maintaining accurate records.

1. **Abandoned Above Ground Service Line Not Removed** – According to the Company’s records, the service line serving the buildings at 8409-8415 Greenwood Avenue North was 92 feet in length from the property line to the meter location. Of this total length, 62 feet was above ground and apparently running along the side of the building at a height of approximately two feet from the ground. In response to Public Counsel Data Request No. 30, subpart (a)(iv), the Company stated that PSE Operating Standard 2525.2100, Section 6 – Service Deactivation requires that exposed service piping be removed at the building when the service is abandoned.[[16]](#footnote-16)

This did not occur and failure to comply with its own operating standard had catastrophic results. If the Company had fully implemented its own procedure, the entire incident would have been avoided. Instead, the compounding of multiple failures to properly cut-and-cap the service line, not purging and sealing it, and not removing the portion aboveground created an unsafe and dangerous situation.

 This is a violation of WAC 480-93-180 for not following plans and procedures.

1. **Delay In Shutting-Off Gas Flow To The Explosion Site** – According to the timeline of events following the explosion at 1:43 a.m. on March 9, 2016, the Company attempted to shut-off the gas flow to the explosion site by closing various service line and gas main valves in the streets surrounding the explosion site. The first attempt was made at 2:48 a.m. by closing service line valves at various locations around the Greenwood area. This step proved unsuccessful and the fire continued to burn. The next attempt was to excavate the plastic main near the Greenwood area and squeeze it shut. This step was completed at 5:11 a.m. and still proved unsuccessful. Subsequently, the Company proceeded to shut-off six gas main valves in sequence in the gas line grid located in the roads surrounding the Greenwood explosion site. Ultimately, at 7:28 a.m. the gas flow was stopped and the fire was extinguished at 7:55 a.m., approximately six hours after the explosion. Exhibit No. SC-10 provides the PSE data request response with the specific sequence of valve closure and timeline.

The lengthy process to stop the flow of gas to the explosion site and the sequence of valve closures raise several questions about the preparedness and approach that PSE takes in such situations such as:

* 1. Was the incorrect designation of the abandoned service line at 8410 Greenwood North as Deactivated a contributing factor;
	2. Why was main Valve A closed last when it was the closest valve to the explosion site relative to the other main valves closed before it; and
	3. Why were the valve closing performed sequentially and not simultaneously when the fire was raging for multiple hours?

This failure to timely shut-off gas flow to the explosion site is another indication of systemic problems with PSE’s procedures and processes. Such systemic problems justify more severe penalties to strongly signal to the Company the necessity to remedy the problems.

# PENALTIES

**Q: Please describe the monetary penalties included in the Complaint issued by the Commission and the basis for each penalty.**

A: According to the Complaint, Staff requested that the Commission impose the maximum penalty amount of $3.2 million. Staff arrived at this amount, as follows:[[17]](#footnote-17)

 The total of the amounts for items 1 through 5 above is $3.2 million. In addition, in the Complaint Staff requested that the Commission order PSE to implement a compliance program.

Q: Do the Additional Failures You Discussed Earlier Violate Existing Rules or Regulations.

A: Yes. The Commission could find that PSE committed two violations of WAC 480-93-018 due to the Improperly Completed Form D-4 and Incorrect Record of Deactivated Service. The Commission also could find that PSE committed two violations of WAC 480-93-180 for the Unreliable Quality Control Program and for the Abandoned Aboveground Service Line Not Removed. Each of these violations would entail a $200,000 penalty. Therefore, the Commission could impose an additional $800,000 in penalties, which would increase the total maximum penalties to $4.0 million.

# STAFF AND PSE PROPOSED SETTLEMENT

**Q: Please briefly describe the terms of the Settlement Agreement that Staff and PSE have reached.**

A: The Settlement Agreement specifies that PSE will pay $1.5 million in penalties to the Commission and also a suspended penalty of $1.25 million if PSE fails to implement the Deactivated Gas Line Inspection and Remediation Program.

 In the Settlement Agreement, PSE agrees not to contest, but does not affirmatively admit the violations listed in the Complaint issued by the Commission. PSE further agrees to implement the Deactivated Gas Line Inspection and Remediation Program shown in Appendix A to the agreement.

 The Narrative Supporting the Settlement Agreement provides additional details and arguments in support of the Settlement Agreement.

# ASSESSMENT OF THE PROPOSED SETTLEMENT

**Q: Please provide your assessment of the Settlement Agreement proposed by Staff and PSE.**

A: The Settlement Agreement is significantly flawed and should not be approved by the Commission without modifications. Primarily, the amount of $1.5 million in firm penalties is wholly insufficient for the violations listed in the Complaint and the additional procedural and safety failures I have discussed above in my testimony. The $1.5 million firm penalty represents less than 50 percent of the $3.2 million alleged in the Complaint. The $1.25 million contingent penalty amount is a ruse. It is likely that PSE will never pay this amount because it has agreed to implement the compliance program in Appendix A and knows that it is in the Company’s self-interest to follow through with its commitment. Therefore, the $1.25 million will never be paid and the only realistic penalty amount that PSE will pay is $1.5 million.

 The $1.5 million in penalties also is unreasonable and wholly inadequate for the following reasons:

1. In its Answer to Complaint and Affirmative Defenses filed on October 3, 2016, PSE admitted to several factual allegations, denied certain allegations and stated that it was not able to admit or deny other allegations in the Complaint because it had insufficient information. In response to several data requests made by Public Counsel and Staff, the Company was not able to explain what information it was lacking and when it would obtain that information. Exhibit No. SC-11 includes some of these responses. In other words, PSE has not adequately rebutted the veracity of the violations included in the Complaint.
2. Staff has not proposed in either the Settlement or the Narrative supporting the settlement to withdraw any of the violations or allegations made in the Complaint or the Staff Investigation Report. Therefore, a settlement that brings the firm penalty amount down to less than half of the $3.2 million proposed in the Complaint would seem to be an abdication of its positions and claims. In fact, there is no basis or justification to reduce the firm penalty amount to $1.5 million, because Staff still holds firm to violations included in the Complaint and repeated on pages 2 through 4 of the Settlement Agreement.
3. The Settlement Agreement did not consider the additional failures by PSE to follow procedures, and the weaknesses in its quality assurance program and other processes I discussed in Section V of my testimony. These failures became clearer after the Complaint was issued and do not seem to have been adequately considered by Staff in reaching a decision on the penalty amount. The compounding of multiple failures makes it abundantly clear that there are systemic problems with the Company’s processes and its ability to follow procedures that ensure the safe operation of its gas system. This multitude of failures warrants imposing at least the maximum $3.2 million of penalties alleged in the Complaint and possibly up to the $4.0 million.
4. The implementation of the Deactivated Gas Line Inspection and Remediation Program will likely result in substantial costs over the time period it will be implemented. It is likely that PSE will request recovery in rates of the increase in operations and maintenance expense and/or capital costs to implement the program and to remedy any problems. The Settlement Agreement currently does not prevent recovery of the implementation costs of the program. Therefore, PSE’s customers could end up paying for a compliance program of procedures that the Company should have followed all along. Customers could in effect pay twice for work poorly completed when the service lines were first cut-and-capped and abandoned, and again when re-inspected and remediated.
5. PSE has a long history of failures in implementing procedures and violating safety rules for which the Commission has imposed penalties. Some of these violations and penalties are listed below:
	1. In July 2002, the Commission imposed $50,000 in penalties on PSE for failing to actively implement its **anti-drug and alcohol misuse prevention** program from 1997 through 2000. It is unclear how many violations were found.[[18]](#footnote-18) The required Compliance Plan appears to have expired in August 2006.
	2. In 2004, the Commission ordered remedies and a financial penalty of $90,000 based on **two pipeline safety violations** for PSE’s failure to correctly configure a **corrosion prevention** device which caused a **gas leak** and **explosion** at a residential building in Bellevue, WA.[[19]](#footnote-19) The required Compliance Plan appears to still be active.
	3. In 2005, the Commission cited PSE for **three violations** of **improper** **cathodic testing** and imposed a $15,000 penalty for an **improper purging of a gas line** which caused an **injury to a crew member** of PSE’s contractor, Pilchuck, during installation of a 2‑inch tie-in to a 6-inch main.[[20]](#footnote-20) There does not appear to have been a compliance plan for this case.
	4. In 2005, the Commission imposed a firm penalty on PSE of $500,000 for **not maintaining adequate records** and other compounding violations related to **corrosion** and **gas leaks**. At settlement, PSE admitted to **67 violations**.[[21]](#footnote-21) The required Compliance Plan appears to have expired in March 2015.
	5. In 2006, the Commission found that PSE was **improperly monitoring cathodically protected gas mains**, **not inspecting idle risers**, **not tracking where gas mains crossed railroad tracks**, and **not performing annual leak surveys**. It is unclear how many violations were found.[[22]](#footnote-22) The required Compliance Plan appears to have expired in January 2008.
	6. In 2008, the Commission found **209 violations** by the Company’s contractor, Pilchuck, of **intentionally falsifying inspection records** related to gas leaks and imposed a penalty of $1.25 million on PSE.[[23]](#footnote-23) The required Compliance Plan appears to have expired in January 2013.
	7. In 2013, the Commission imposed a penalty of $275,000 based on **eight violations** of the Company failing to perform an appropriate **gas leak survey** and repair which led to an **explosion**.[[24]](#footnote-24) The required Compliance Plan appears to have expired in November 2014.

Since July 2002, the above cases total 289 documented violations in the past 177 months. These and other incidents show a pattern of recurring and systemic failures to maintain accurate records and comply with internal procedures and gas safety rules.

1. In the May 4, 2016, Incident Report that PSE filed with the Department of Transportation (“DOT”) on Form PHMSA F7100.1 relating to the explosion at 8411 Greenwood North, the Company estimated the damage from the explosion at approximately $3 million. In response to Public Counsel Data Request No. 43, PSE refused to provide further details as to how it arrived at this number and what assumptions were made. Given the extensive damage to multiple buildings, the loss of business income, and the impact on the livelihood and income of those who worked and lived in the impact area, it is likely that the financial impact of the explosion is considerably more than $3 million. This was a significant incident, perhaps unprecedented in the history of the Company as to its scale.

Clearly, the $1.5 million firm penalty amount is insufficient in the context of the scale of this incident and the number of violations discussed above.

**Q: Should the Commission apply its prior practice of imposing contingent penalties in this case?**

A: No. As previously described in my testimony, this is a major incident that involves multiple failures to follow procedures and safety rules and regulations. There is no reasonable justification to assign $1.25 million as a contingent penalty for the Company to implement an inspection program of abandoned service lines that should have been completed correctly the first time. If the Company had retained more complete records with regard to the quality control and inspections performed by its contractors when cutting and capping service lines, the necessity of a costly inspection program could have been avoided or the scope significantly reduced.

 If the $1.25 million contingent penalty is meant as an incentive for PSE to complete the inspection program, this objective is misguided. Of the previous violation dockets listed above, only Docket UG-001116 imposed the maximum penalty and required a compliance plan. All the other dockets reduced the penalty amount by 28 to 89 percent. Reducing the penalty amount does not appear to incentivize PSE to comply with federal and state of Washington rules and regulations, or the Company’s own internal policies and procedures. Reducing the penalty amount, in fact, removes the incentive of utilities to comply with procedures and safety regulations if they conclude that they can avoid penalties by agreeing to comply with procedures and programs they should have done in the first place. The Commission should not agree to reduce the penalty amount in this case.

**Q: Do you have any observations with regard to the statements and analysis presented by Staff in the Narrative Supporting the Settlement Agreement that the Settlement is consistent with the principles expressed in the Commission’s Enforcement Policy?**

A: Yes. Beginning on page 9 of the Narrative Supporting the Settlement Agreement, Staff describes how the Settlement aligns with the 11 principles in the Commission’s Enforcement Policy. Although I agree with the some of the factual statements made by Staff, the justifications provided in certain areas are incomplete and diminish the severity of the incident and PSE’s faulty practices in an attempt to justify a lower penalty amount than the maximum amount initially proposed in the Complaint. Therefore, I will state my observations with regard to the following principles:

* **Whether the Violation is Intentional** – Although the Company did not intentionally fail to deactivate the service line at 8409 Greenwood Avenue North, the failure of not having a robust inspection program that would ensure the line was actually deactivated and also not removing the inactive gas line, rise to a level of irresponsibility and imprudence that approximates an intentional act. An August 16, 2016, Advisory Bulletin by the Pipeline and Hazardous Materials Safety Administration (“PHMSA”) within DOT reinforces this point. In the Advisory Bulletin, PHMSA stated that: “Pipeline owners and operators are fully responsible for the safety of their pipeline facilities at all times and during all operational statuses.”[[25]](#footnote-25) PHMSA includes abandoned pipelines in its definition of operational statuses. The Advisory Bulletin highlights a case study from Wilmington, California, where the pipeline company was cited and fined by the state regulator because it did not properly abandon the pipeline facility. The pipeline company was aware of the pipeline and believed it had been properly abandoned by its previous owner/operator. Exhibit SC-12 includes the pertinent section of the PHMSA Advisory Bulletin.
* **The Number of Violations** – Staff states: “[T]he number of violations is small . . . . [T]he Agreement properly imposes a severe monetary penalty [and] requires acknowledgment of past mistakes.”[[26]](#footnote-26) I disagree. As discussed earlier in my testimony, the evidence shows that there were several compounding failures to follow procedures and safety rules. These were not just a few minor violations. Also, the Company has not affirmatively acknowledged its past mistakes. It has only agreed not to contest the violations. The monetary penalties are less than half of the maximum amount that could have been imposed under the Complaint. Lastly, PSE has been involved in numerous incidents in prior years where the Company failed to follow procedures and safety rules. Therefore, Staff’s attempt to diminish the severity of the Number of Violations is disturbing.
* **The Number of Customers Affected** – Staff does not adequately address the impact on customers affected by the explosion. The explosion affected multiple businesses and individuals who lived in the area or made their living from those businesses. This incident and the relative impact on the customers of the Company may be unprecedented.
* **The Likelihood of Recurrence** – Although the inspection program outlined in Appendix A to the Settlement Agreement will provide some assurance that any analogous situations may be remediated, the Company’s quality control program is still deficient as I have previously discussed. This deficiency makes the likelihood of a recurrence a real possibility, which Staff has failed to recognize.
* **The Company’s Past Performance Regarding Compliance, Violations, and Penalties** – Although Staff lists some prior violations, it does not seem to give sufficient weight or consideration to them in setting an appropriate, firm penalty amount closer to the maximum level of $3.2 million.
* **The Company’s Existing Compliance Program** – Again, Staff acknowledges the lack of compliance as a result of the incident and violations, but it does not seem to give sufficient weight or consideration to them in setting an appropriate, firm penalty amount.
* **The Size of the Company** – Staff states that PSE is the largest natural gas utility in the state of Washington, but does not mention that the Company’s gas revenues were $890 million in 2016, and its total revenues including the electric operation exceeded $3.1 billion. The $1.5 million penalty amount agreed to by Staff represents only approximately 1/10th of one percent of gas revenues.

 In summary, the analysis performed by Staff against the Enforcement Policy Principles is incomplete and deficient in many respects and fails to justify the recommended penalty amounts in the Settlement Agreement.

**Q: Are you proposing any improvements to the** **Deactivated Gas Line Inspection and Remediation Program?**

A: Yes. Although I generally find most of the actions and requirements reflected in the program acceptable, there are a few improvements that the Commission should accept to make the program more robust. First, on page 2 of Appendix A, the Population 2 sample should not be limited to only services retired by Pilchuck between 2000 and 2010. It should be broadened to all services retired between 2000 and 2010, no matter who performed the work.

 Although Population 1 correctly prioritizes the inspection of all services retired by Pilchuck in the Business Districts between 2000 and 2010, once the inspection program moves down to Population 2, it makes no sense to limit the inspection to services retired only by Pilchuck. To do so would leave an inspection gap where services retired between 2000 and 2010 by other contractors, or by PSE employees, would not be inspected. This gap is evident in reading the requirements of Population 3 and 4 for retirements performed before the year 2000 and after the year 2010 where there is no limitation as to which party performed the service retirement.

 The Commission should correct this error by striking the words “by Pilchuck” on the first line of the Population 2 paragraph, page 2 of Appendix A.

 Second, the Commission should clarify in the definition on page 1 of Appendix A that High Occupancy Structures includes businesses.

 Third, while Population 2 sets a confidence level of one percent, Population 3 and 4 require a confidence level of two percent or double the percent. There is no valid reason to differentiate between the three population groups. The services retired before the year 2000 or after the year 2010 are not any less risky than those retired between 2000 and 2010. The Commission should set the confidence level at one percent for Population 3 and 4 to be consistent with Population 2.

 Fourth, on page 4 of Appendix A, the document briefly addresses the PSE’s Quality Management process. This section of the program fails to specifically address the deficiencies in the quality control inspections performed by construction contractors and Company employees. The Company needs to include in its quality management systems a record of who performed each inspection of the work performed when deactivating a service line, or main, along with a check list of the verifications steps undertaken. Without such a comprehensive quality inspection and record keeping program, there is a significant risk of a repeat incident similar to what occurred at 8409 Greenwood North.

 Fifth, beginning on page 4 of Appendix A, the document describes the actions that PSE needs to take to inspect and remediate Aboveground Service Pipe installations. Specifically, in part b on page 5 of the Appendix, the program leaves the removal of any aboveground unmetered services to the discretion of the Company. PSE estimates that the number of active unmetered services is 4,381. Although a large portion of these services are likely locations awaiting the installation of a new meter, many of the locations likely include services where the meter may have been removed for non-payment or other reasons with a long period of inactivity of gas service. These unmetered aboveground services provide a risk level similar to what occurred at 8411 Greenwood Avenue North because they are likely to be active gas lines holding natural gas at pressure. The Commission should encourage or direct the Company to remove aboveground services that have been inactive for at least 12 months unless there is an agreement with the property owner that service will resume relatively soon.

# CONCLUSIONS AND RECOMMENDATIONS

**Q: What are you conclusions and recommendations?**

A: The Settlement Agreement is not acceptable in its current form. The firm penalty amount of $1.5 million is too low relative to the violations and recurring failures by PSE to follow internal procedures and safety rules. The contingent portion of the penalty amount is unnecessary and contrary to good regulatory policy. The Deactivated Gas Line Inspection and Remediation Program, although generally acceptable, could be improved. Therefore, I recommend the following:

1. The Commission reject the $1.5 million firm penalty amount and the $1.25 million contingent penalty, and instead impose at least the entire $3.2 million maximum penalty stated in the Complaint, or alternatively amend the Complaint and impose penalties in the amount of $4.0 million, with no contingent amount.
2. The Commission inform the Company that any costs that it incurs in implementing the Deactivated Gas Line Inspection and Remediation Program would not be recoverable in the current and future general rate cases.
3. The Commission could approve the Deactivated Gas Line Inspection and Remediation Program with the following conditions:
	1. Strike the words “by Pilchuck” on the first line of the Population 2 paragraph on page 2 of Appendix A.
	2. Clarify in the definition on page 1 of Appendix A that High Occupancy Structures includes businesses.
	3. Set the confidence level at one percent for Population 3 and 4 to be consistent with Population 2.
	4. Require that, as part of PSE’s Quality Management program, the Company maintain a record of each individual performing inspections when PSE or its agent deactivate a service line or main (cut-and-cap and/or removal) along with a checklist of the verifications steps undertaken.
	5. Encourage or direct the Company to remove aboveground service lines that have been inactive for at least 12 months, unless there is an agreement with the property owner that service will resume relatively soon.

**Q: Does this conclude your filed testimony?**

A: Yes.

1. PSE’s records show one service line from the gas main to service locations 8409 through 8415 Greenwood North. In various records, reports and responses to data requests, the address number may be different but generally refers to the same location and service line. [↑](#footnote-ref-1)
2. 49 C.F.R. § 192.727(b) (2004). [↑](#footnote-ref-2)
3. Mercaptan is a harmless but pungent-smelling, sulfur-based gas which is added to natural gas, which is colorless and odorless, to make it easier to detect. [↑](#footnote-ref-3)
4. *See* Exhibit No. SC-4. [↑](#footnote-ref-4)
5. WAC 480-93-180 (2004). [↑](#footnote-ref-5)
6. At a minimum, PSE should have performed gas leak surveys in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, and 2015. Investigation Report dated September 20, 2016 at 7. [↑](#footnote-ref-6)
7. WAC 480-93-188(1)(a). [↑](#footnote-ref-7)
8. WAC 480-93-188(3)(a). [↑](#footnote-ref-8)
9. At a minimum, PSE should have performed atmospheric corrosion tests in 2007, 2010, and 2013. *Id*. [↑](#footnote-ref-9)
10. *See* Exhibit No. SC-5. [↑](#footnote-ref-10)
11. UTC Incident Investigation Form dated July 20, 2016, at 13. [↑](#footnote-ref-11)
12. At a minimum, PSE should have performed an external corrosion test in 2014. Investigation Report dated September 20, 2016, at 8. [↑](#footnote-ref-12)
13. 49 C.F.R. § 192.465(a) (2004). [↑](#footnote-ref-13)
14. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy*, Docket PG-060215. [↑](#footnote-ref-14)
15. In Public Counsel Data Request No. 026, PSE explains that its address algorithm assigned the address 8410 Greenwood to include also 8409, 8411 and 8413/8415 Greenwood North. [↑](#footnote-ref-15)
16. *See* Exhibit No. SC-9. [↑](#footnote-ref-16)
17. Staff Investigation Report at 2. [↑](#footnote-ref-17)
18. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Docket PG-001116. [↑](#footnote-ref-18)
19. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Docket PG-041624. [↑](#footnote-ref-19)
20. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Docket PG-041209.  [↑](#footnote-ref-20)
21. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Dockets PG-030080 & PG-030128. [↑](#footnote-ref-21)
22. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy*, Dockets PG-050331 & PG-050516. [↑](#footnote-ref-22)
23. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Docket PG-060215. [↑](#footnote-ref-23)
24. *Wash. Utils. & Transp. Comm’n v. Puget Sound Energy,* Docket PG-111723. [↑](#footnote-ref-24)
25. *See* Exhibit SC-12 at 2. [↑](#footnote-ref-25)
26. Narrative Supporting Settlement Agreement ¶ 37. [↑](#footnote-ref-26)