

EXHIBIT NO. ___(DB-4)
DOCKET NO. PG-041624
WITNESS: DENNIS BURKE

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

Docket No. PG-041624

**THIRD EXHIBIT TO THE PREFILED DIRECT TESTIMONY OF
DENNIS BURKE (NONCONFIDENTIAL)
ON BEHALF OF PUGET SOUND ENERGY, INC.**

AUGUST 15, 2005

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION STAFF
RESPONSE TO DATA REQUEST

DATE PREPARED: 6/23/05
CASE NO.: PG-041624
REQUESTER:PSE

WITNESS: Alan E. Rathbun
RESPONDER: Alan E. Rathbun
TELEPHONE: 360-664-1254

PSE DATA REQUEST NO. 17 TO WUTC STAFF:

Please identify any prior case where a mis-wired rectifier or a failed cathodic protection system has been the basis of a probable or actual violation of 49 C.F.R. § 192.463(a) cited by the WUTC against any operator in this state and provide a summary of the circumstances surrounding each case.

RESPONSE:

For purposes of this response, Staff interprets "failed cathodic protection system" to include cathodic protection systems that were providing voltage readings less than the minimum levels required by Commission rules.

Because it is possible that a violation of "49 C.F.R. § 463" could encompass a violation of 49 C.F.R. § 463(a), Staff included in its search any reference to 49 C.F.R. § 463.

In order to respond to this request in a reasonable time, Staff made a query of its investigations data base for "49 C.F.R. § 192.463." The data base contains data from 1994 forward. Accordingly, there may be files dated prior to 1994 that are responsive, but it would be very time consuming to access those files.

Based on the data base query, ten investigative dockets were found to contain citations to 49 C.F.R. §192.463 and/or .463(a), that related to a failed cathodic protection system. No investigation was found that related to a cross-wired rectifier.

The violation letters are attached.

1. June 22, 2000; Prodicta Chemical Company LLC; Docket No. UG-000467

Readings did not meet the minimum criteria of $-.85v$. Basis: 49 C.F.R. § 463. [Note: Letter refers to " $-.752mv$ " and " $-.85mv$." This should either be " $-.752mv$ " and " $-.85mv$ " or " $-.752v$ " and " $-.85v$."]

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION STAFF
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TELEPHONE: 360-664-1254

2. **March 27, 2001; Avista Utilities Corporation; Docket No. UG-001851**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463.
3. **August 7, 2000; City of Buckley; Docket No. UG-000859**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463.
4. **September 15, 2004; City of Enumclaw; Docket No. PG-040525**
Reading did not meet the minimum criteria of -.85v. [Note: The basis for the violation is not explicitly stated in the letter where the less than minimum read is alleged; however, 49 C.F.R. § 463(a) is referred to elsewhere in the letter in reference to cathodic protection requirements].
5. **June 9, 2000; Puget Sound Energy; Docket No. 000576**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463(a).
6. **April 21, 2003; Puget Sound Energy; Docket No. UG-020225**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463(a).
7. **March 3, 2005; Puget Sound Energy; Docket No. PG-040210**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463(a).
8. **December 4, 2003; Puget Sound Energy; Docket No. PG-030523**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463(a).
9. **April 5, 1995; Washington Natural Gas Company; Docket No. UG-941394**
Readings did not meet the minimum criteria of -.85v. Basis: 49 C.F.R. § 463.

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION STAFF
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TELEPHONE: 360-664-1254

10. May 31, 1995; Cascade Natural Gas Company; Docket No. UG-941472

Readings did not meet the minimum criteria of $-.85v$. Basis: 49 C.F.R. § 463.



File

STATE OF WASHINGTON
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

1300 S. Evergreen Park Dr. S.W., P.O. Box 47250 • Olympia, Washington 98504-7250
(360) 664-1160 • TTY (360) 586-8203

Docket No. UG-000467

June 22, 2000

Mr. Steven A. Davey
Prodica Chemical Company LLC
PO Box 5797
Kennewick, Washington 99336

Dear Mr. Davey:

Subject: Natural Gas Pipeline Safety Audit, Docket No. UG-000467

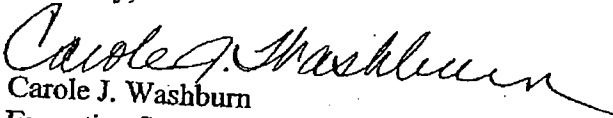
The Washington Utilities and Transportation Commission (Commission) has authority to enforce the minimum safety regulations concerning the construction, maintenance, and operation of pipelines transporting natural gas in the State of Washington (RCW 80.28.210). The Commission has adopted the Code of Federal Regulations (CFR) Title 49 Part 192 and Chapter 480-93 Washington Administrative Code (WAC) as the minimum standards.

From March 20 to March 24, 2000, Commission Staff (Staff) conducted a pipeline safety audit of Prodica Chemical Company LLC's (Prodica LLC) natural gas facilities in Kennewick, Washington. Enclosed is staff's report showing the results of the audit including nine probable violations of State and Federal pipeline safety codes. Five of these probable violations are repeat violations from the 1997 staff inspection. It is not to be assumed that this inspection detected all apparent non-compliance areas. It is incumbent upon Prodica to review their operation and determine whether there are other areas of non-compliance.

Staff would appreciate receiving your response by July 24, 2000. Your response should include a letter of intent and the date you plan on providing full compliance. If you have any questions or if staff can be of any assistance, please call Scott Rukke at (360) 664-1241 or Dennis E. Lloyd at (360) 664-1319.

Thank you for your cooperation and interest in pipeline safety.

Sincerely,


Carole J. Washburn
Executive Secretary

Enclosures



**Washington Utilities and Transportation Commission
2000 Gas Pipeline Safety Audit – Non-Compliance Report
Prodicta Chemical Company LLC, Kennewick, Washington**

The following probable non-compliance areas of the Title 49 CFR Part 192 and the WAC rules were noted as a result of the 2000 Gas Pipeline Safety Audit of Prodicta LLC's natural gas pipeline system in Kennewick, Washington.

1. Part 192.625 Odorization

Findings:

Note: This is a repeat violation from the previous audit of 1997.

The operator has not conducted periodic sampling and testing by use of an odorometer or other suitable instrument to assure that the proper concentration of odorant is present, as required by Operator's Standard Operating and Maintenance Procedures Manual Section 10.01.7.3 and CFR Part 192.625.

An Example of Compliance

Conduct periodic sampling with an odorometer or other suitable instrument, at a frequency of at least monthly, until suitable odorization history has been established. Keep all appropriate documentation of odorant levels, test locations, and the date the sample was tested. Odorant must be detectable by a person with a normal sense of smell at a concentration in air of one-fifth of the lower explosive limit.

2. WAC 480-93-115 Casing of Pipelines

Findings:

Note: This is a repeat violation from the previous audit of 1997.

The operator has two separate sections of buried, encased pipeline under railroad tracks with no test stations or test leads installed to monitor for shorts between casing and carrier pipe. Cathodic protection reads have been taken from the casing vent pipe but no reads from the carrier pipe have been taken to verify no shorted condition exists.

An Example of Compliance

Install a separate test lead wire to the casing and to the carrier pipe and perform tests on an annual basis to verify no electric short exists. Maintain all records for five years. Provide the Commission with documentation of compliance.

3. Part 192.463 External Corrosion Control: Cathodic protection

Findings:

The operator completed the installation of a rectifier for corrosion control at the Kennewick facility in January 2000. Prior to the installation of the rectifier, the operator did not record any readings of pipe to soil potential. Staff obtained pipe to soil potential readings on March 23, 2000 of -0.752mv. This does not meet the minimum criteria of -0.85mv with reference to a copper-copper sulfate half cell or the 100mv shift as required by 192.463 and the Operator's Standard Operating and Maintenance Procedures Manual Section 6.05.

An Example of Compliance

Apply the minimum cathodic protection standard of -0.85mv or 100mv shift as required by 192.463 and Operator's Standard Operating and Maintenance Procedures Manual Section 6.05.

4. Part 192.465 External Corrosion Control: Monitoring

Findings:

Note: This is a repeat violation from the previous audit of 1997.

At the time of this inspection, the operator had not monitored the cathodic protection at the required intervals. No records were available. The operator's representative stated that since cathodic protection was inadequate prior to the installation of the new rectifier in February 2000, they did not monitor the pipeline as required by 192.465.

An Example of Compliance

Test each pipeline that is under cathodic protection on an annual basis not to exceed 15 months to determine whether the cathodic protection meets the minimum requirements of 192.463 and Operator's Standard Operating and Maintenance Procedures Manual Section 6.05. Inspect each cathodic protection rectifier six times each calendar year, but with intervals not to exceed two and one half months. Maintain records as required by 192.491.

5. WAC 480-93-188 Gas Leak Surveys

Findings:

The operator is using leak survey equipment with no supporting documentation from the manufacturer as to calibration and operation and maintenance schedules. The equipment is potentially not suitable for conducting surface leak surveys. Staff requested specifications from the operator showing that the equipment was intended to be used for surface leak surveys. The operator has not provided evidence of compliance.

An Example of Compliance

Conduct leak survey using an approved Hydrogen Flame Ionization unit or other equipment capable of detecting 50 PPM gas in air for surface leak surveys. Incorporate calibration and maintenance schedules, as stipulated by the manufacturer, into Operator's Standard Operating and Maintenance Procedures Manual. Record all required leak survey results and maintain records as required. Provide the Commission with documentation of compliance.

6. 192.615 Emergency Plans, and WAC's 480-93-185, 480-93-184, 480-93-082 & 480-93-186

Note: This is a repeat violation from the previous audit of 1997.

Findings:

The operator, at the time of this inspection, did not have adequate procedures in place to respond promptly and effectively to the possibility of gas in or around a building, odor calls, gas migrating underground, and other natural gas emergencies. The operator did not have a CGI or other equipment available to pinpoint or determine the spread of an underground or inside structure natural gas leak, as required. The operator does not address specific tools and or equipment along with their usage, necessary for responding to natural gas emergencies.

An Example of Compliance

The operator must add additional procedures to deal more effectively with possible natural gas emergencies such as gas in or near buildings. Provide additional training regarding natural gas emergencies, properties of natural gas, required equipment and tools to employees designated as emergency response personnel. Provide training to ensure that personnel are "collectively" knowledgeable in all aspects of natural gas construction, operation, maintenance, emergency response, and applicable federal and state codes. Obtain a combustible gas indicator capable of determining the perimeter of an underground leak. Maintain all records and training qualifications as required. Provide a copy of the revised procedures along with training documentation to the Commission.

7. 192.481 Atmospheric Corrosion Control: Monitoring

Findings:

The operator has two sections of pipeline that are double encased and the casing is electrically shorted to the carrier pipe. The ends of both casings are open to the atmosphere and the casings and carrier pipe are buried. Moss, debris, dirt, and moisture were observed by staff inside the inner casing, in contact with the carrier pipe. The carrier pipe has not been monitored for atmospheric corrosion.

An Example of Compliance

Staff is suggesting two methods of compliance:

- a. Remove both inner and outer casings. Examine the pipeline in accordance with 192.459 and take remedial action, if necessary, according to 192.485. If pipeline is in good condition, with no signs of corrosion, properly prepare and re-coat/wrap the pipeline in accordance with 192.461. Install insulating flanges or other insulating devices as necessary, re-bury, and cathodically protect the pipeline according to 192.463 and Operator's Standard Operating and Maintenance Procedure Manual Section 6.05. Provide the Commission with evidence of compliance.

Note: It may not be necessary to insulate the buried sections, if adequate cathodic protection can be maintained by bonding over the existing insulators and supplying current from the existing rectifiers. It may be necessary to bed the pipeline in sand or other suitable material to protect the coating from damage.

- b. Remove both inner and outer casings. Examine the pipeline in accordance with 192.459 and take remedial action, if necessary, according to 192.485. If pipeline is in good condition with no signs of corrosion, properly prepare and re-coat/wrap the pipeline in accordance with 192.461. Properly support pipeline sections previously buried and leave exposed to atmosphere. Monitor according to 192.481, under atmospheric corrosion criteria. Provide the Commission with evidence of compliance.

8. WAC 480-93-110 Corrosion Control

Findings:

The operator has not completed remedial action within 90 days of the discovery of any cathodic protection deficiencies. The operator has been aware of cathodic protection deficiencies since the 1997 audit; but, as of the date of this inspection, adequate cathodic protection, meeting the minimum requirements of 192.463, has not been provided.

An Example of Compliance

If cathodic protection deficiencies are found, remedial action must be completed within 90 days. Provide the Commission with evidence of compliance.

9. 192.453 and WAC 480-93-082 Qualification of Employees

Note: This is a repeat violation from the previous audit of 1997.

Findings:

The operator does not have a person qualified in pipeline corrosion control methods overseeing the corrosion control procedures required by 192.605(b)(2).

An Example of Compliance

Provide training to educate operator's designated personnel, in pipeline corrosion control methods and ensure that operator's corrosion control procedures are carried out by, or under the direction of, trained personnel. Provide the Commission with evidence of compliance.



posted in d/bagp
8/14

STATE OF WASHINGTON

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

1300 S. Evergreen Park Dr. S.W., P.O. Box 47250 • Olympia, Washington 98504-7250
(360) 664-1160 • TTY (360) 586-8203

Docket No. UG-000859

August 7, 2000

Mayor John Blanus
City of Buckley
PO Box 1960
933 Main St.
Buckley, WA 98321

Dear Mayor Blanus:

The Washington Utilities and Transportation Commission (Commission) has the authority to enforce the minimum safety regulations concerning the construction, maintenance and operation of pipelines transporting natural gas in the state of Washington (RCW 80.28.210). The Commission has adopted the Code of Federal Regulations (CFR) Title 49 Part 192 and Chapter 480-93 WAC as the minimum standards.

Between June 14 to July 7, 2000, Commission staff (staff) conducted a pipeline safety audit of the City of Buckley's natural gas facilities and operations in Buckley, Washington. Enclosed is staff's report showing the results of the audit including 25 areas of non-compliance of state and federal pipeline safety codes. Staff found areas of non-compliance such as over-pressuring the system, lack of leakage surveys being conducted in the business district and lack of operation and maintenance of emergency sectionalization valves.

Every gas company is required to have one or more employees that are collectively knowledgeable in all aspects of gas company construction, operation, maintenance and state and federal rules and regulations. Since Buckley lost key supervisory personnel that have not been replaced, staff has found a general lack of understanding and knowledge of federal and state codes and requirements. Buckley has no formal training programs regarding policies and procedures as they relate to the construction and maintenance of the gas facilities. Buckley has not provided outside training to key gas department employees that would provide them with the necessary knowledge of the requirements to comply with state and federal pipeline safety codes. Buckley gas does not have a supervisor to ensure compliance with procedures and regulations.

To ensure the continued safe operation of the natural gas system, staff is recommending the following schedule to bring Buckley's system into compliance:

I: PIPESAFESCOTTS\Cover.doc



Within seven days of the receipt of this letter;

- ◆ Ensure all set points of regulators and pressure relieving devices are set within the operating parameters of each system.
- ◆ Calibrate leak detection equipment.
- ◆ Conduct business leak survey.
- ◆ Conduct leak survey of buildings of public assembly.
- ◆ Evaluate, classify and or repair any leak found in accordance with WAC 480-93-186.

Provide the Commission with written evidence of compliance by fax to (360) 586-1150.

Within fourteen days of the receipt of this letter;

- ◆ Conduct all required operations and maintenance by checking, operating and servicing key sectionalization valves.
- ◆ Bury all exposed PE gas pipelines by bedding and shading with sand or other approved materials as required by Part 192.361.
- ◆ Conduct all required patrols and maintain records of the pipeline to ensure the continued safe operation of the pipeline.

Provide the Commission with written evidence of compliance by fax to (360) 586-1150.

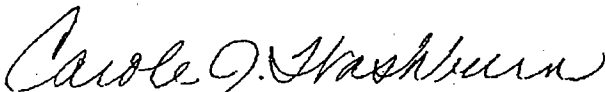
For the remaining areas of non-compliance, staff is requesting a written response within 30 days detailing Buckley's intent and the date Buckley plans on providing full compliance. Staff is recommending that these items be in compliance by 90 days from the receipt of this letter. It is not to be assumed that this inspection detected all apparent areas of non-compliance. It is incumbent upon Buckley to review their operation and determine whether there are other areas of non-compliance.

Each area of non-compliance is subject to a civil penalty of not more than \$25,000, per violation, per day, with the total for any series of violations not to exceed \$500,000. The total potential penalty for this series of violations is currently \$500,000.

If you have any questions or if staff can be of any assistance, please call Scott Rukke at (360) 664-1241 or Dennis Lloyd at (360) 664-1319.

Thank you for your cooperation and interest in pipeline safety.

Sincerely,



Carole J. Washburn
Executive Secretary

Enclosures

**Washington Utilities and Transportation Commission
2000 Gas Pipeline Safety Audit – Non-compliance Report
City of Buckley – Buckley, Washington**

The following non-compliance areas of 49 CFR Part 192 and the WAC Rules were noted as a result of the June 2000 pipeline safety audit of the City of Buckley municipal gas distribution system. The audit conducted during June and July of 2000 included a review of the procedures, records, inventory and natural gas facilities.

1. Part 192.603, 192.605, WAC 480-93-180 Operations and Procedures Manual

Findings:

The operator has not reviewed and updated their operations and maintenance procedures manual on an annual basis. Following are examples where staff found deficiencies:

- Procedures for the repair of the pipeline.
- Procedures for starting up and shutting down the pipeline.
- Making construction records, maps, and operating history available to appropriate personnel.
- Procedures for controlling corrosion as required by CFR Part 192, Subpart I.
- Recognizing unsafe operating conditions such as exceeding the maximum allowable operating pressure (maop) of the system etc.
- Information regarding the Maximum Allowable Operating Pressure (MAOP) of the system that is not accurate.
- Information regarding regulator set-points that is not accurate.

An Example of Compliance:

Revise Buckley's operations and maintenance procedure manual to more closely reflect code requirements of the Code of Federal Regulations (CFR) Title 49 Parts 192 and the Washington Administrative Code (WAC) Chapter 480-93. Conduct annual reviews of operations and maintenance procedures and revise Buckley's manual accordingly where necessary. Document reviews and amendments made to Buckley's manual. Train key gas department personnel to understand and oversee the requirements of CFR 49 Parts 192 and the WAC 480-93. Staff is suggesting that Buckley hire a supervisor to oversee gas department operations. Provide evidence of compliance to the commission.

2. Part 192.199, Design of Pressure Relief and Limiting Devices

Findings:

Buckley installed a new district regulator off of the 250 psig supply line on Schey St. The station serves a new development within the city limits of Buckley. The regulator is a monitor set up that has been installed without proper design to enable Buckley personnel to properly inspect and conduct maintenance on the station. Following are examples where staff found deficiencies:

- There are no by-pass valves installed that would allow the station to be shut down without interrupting service to the downstream customers.
- The regulators can't be serviced or the set-points properly tested and adjusted without shutting down the station.
- Buckley has no procedures regarding the maintenance and operation of this station.
- Staff could find no inlet valve away from the station that could be used to shut it down in the event of an emergency.
- There is no take-off valve on the control line.
- There is no inlet or outlet valve away from the station that can be utilized in an emergency.

An Example of Compliance:

Have the station designed by a qualified engineer. Include in the design of the station, by-pass valves, inlet and outlet valves and a monitor control line valve. The inlet and outlet valves should be far enough away from the station to ensure accessibility in an emergency condition. Ensure that the design allows for the monitoring of the downstream pressure while the station is shut down and by-passed. Provide written procedures for the operation and maintenance of the regulator station and incorporate them into Buckley's procedures manual. Provide training to Buckley personnel on the proper operation and maintenance of this regulator station. Provide the Commission with evidence of compliance.

3. Part 192.613 Continuing Surveillance

Findings:

Buckley's continuing surveillance procedures do not meet the minimum requirements of Part 192.613. Continuing surveillance is mentioned in Buckley's procedures manual under Section A, but the manual does not provide specific details as to what is required. Monitoring of pressure in the system as required by the manual was not effectively followed. Personnel were unaware that the supply line and distribution pressures were exceeding the established MAOP's of the two systems even though they were continually working on or near the recording gauges.

An Example of Compliance:

Establish procedures for the continuing surveillance of the system. Provide training to gas department personnel on recognizing changing conditions affecting the safe operation of the system. Continually survey the pipeline and ensure that the operating parameters are

within limits. Train personnel on recognizing unsafe operating conditions. Provide the Commission with documentation of compliance.

4. Part 192.625 Odorization

Findings:

Buckley has not followed their written procedures for monitoring odorization. Buckley has not recorded the minimum required odorant tests (sniff tests) that are required during routine operations and maintenance of their system. Buckley has not used an Odorometer or other approved equipment to conduct periodic tests of the odorization as required by their manual and the pipeline safety codes. Buckley has relied on Enumclaw to conduct odorization level checks with instrumentation on Buckleys system. Buckley did have Enumclaw's records, which may confirm Buckleys system to be odorized to the proper levels.

An Example of Compliance:

Conduct periodic odorization level checks with Buckley personnel using an Odorometer or other approved instrumentation. Detail in Buckleys procedures manual the type of equipment to be used, and the manufacturer suggested maintenance and calibration of the equipment. If the equipment is to be borrowed or leased for the survey, obtain maintenance and calibration records from the supplier of the equipment. Ensure the equipment is properly maintained and calibrated and record details of findings in Buckleys inspection book. Provide evidence of compliance to the Commission.

5. Part 192.721 Patrolling

Findings:

Buckley's procedures and the pipeline safety codes require mains or services located in a potentially hazardous area to be patrolled at intervals not to exceed 4 ½ months but at least 4 times per year. Buckley has identified two potential mains to be patrolled. The White River crossing at highway 410 and the Rainier School supply main next to the Puget Power flume. At the time of the inspection Buckley had not patrolled these pipelines and no records were available.

An Example of Compliance:

Conduct patrols on identified pipelines at intervals not to exceed 4 ½ months but at least 4 times per year in the business district and 7 ½ months but at least 2 times per year outside the business district. Revise Buckleys procedures to include details of what hazards such as land movement, encroachment, flooding or other factors which might

potentially cause failure or damage to the pipeline. Train employees conducting patrols on recognizing potential hazards to the pipeline. Record all details including dates, noted conditions and names of personnel conducting the patrols along with any other necessary findings. Provide evidence of compliance to the commission.

6. Part 192.747 Valve Maintenance

Findings:

As of June 1997, Buckley has identified 69 valves to be inspected annually. Buckley has not operated and serviced each valve necessary for the safe operation of their system since July 1997 as noted by the records and statements made to staff by Buckley personnel. Buckley's manual and the code require the annual operation and maintenance of each valve identified.

An Example of Compliance:

Conduct annual inspections not to exceed 15 months but at least each calendar year of all valves identified for the safe operation of the system. Revise Buckley's list of valves to include new valves installed after 1997. Record all details of the inspection including dates, names of personnel conducting the inspection and other compliance items noted during the inspection and servicing of the valves. Provide the commission with evidence of compliance.

7. Part 192.723, WAC 480-93-187 and 480-93-188 Leakage Surveys

Findings:

Buckley has not conducted annual leakage surveys in the business district of all above and below ground piping since August 1998. Buckley has conducted business district meter set leakage surveys on above ground piping and the required residential leakage surveys. Buckley's procedural manual requires that business district surveys be conducted 4 times per year.

An Example of Compliance:

Conduct the required business district leakage surveys and record all details as required. Classify and repair leaks found as required by the WAC 480-93-18601. Revise Buckley's leakage survey procedures to indicate in more detail the type of approved equipment and methods to be used to conduct the surveys. Clearly indicate the business district boundaries and any other areas or buildings requiring that special leakage surveys be conducted such as buildings of public assembly etc., as identified in WAC 480-93-188. Provide evidence of compliance to the commission.

8. WAC 480-93-188(2) Calibration of Leak Detection Equipment

Findings:

Buckley purchased a Combustible Gas Indicator in 1996 for the use of gas department personnel. The instrument has not been tested or calibrated since purchased. At the time of the inspection Buckley did not have records of calibration and maintenance for the Hydrogen Flame Ionization (HFI) unit as required by the code. Buckley uses Enumclaw's HFI unit to conduct surface leak surveys. Enumclaw was unable to provide Buckley with records indicating the proper calibration and maintenance of the instrument had been conducted.

An Example of Compliance:

Obtain and follow manufacturers recommended maintenance and calibration procedures. Revise Buckleys manual to include the required maintenance, calibration schedules, records and reports. Perform and record all required maintenance and calibration tests as required by the code and as suggested by the instrument manufacturer. Equipment leased or borrowed for leak surveys must be in good condition and maintained according to the manufacturers recommendations. Records of maintenance and calibration performed must be maintained. Provide evidence of compliance to the commission.

9. Part 192.739 – 743, Pressure Limiting and Regulating Stations

Findings:

Buckley personnel reported the MAOP of their distribution system is 25 psig and that the parallel regulators are currently set at 23 and 25 psig. Buckleys procedures manual incorrectly states that the set-points for the distribution system regulators are 40 psig and 35 psig. Part 192.741(c) requires inspection and adjustment of regulators where indications of abnormally high or low pressures are found. Recording charts from Buckleys Rainier School regulator station indicated pressure fluctuations above 27 psig. Buckley personnel indicated the MAOP of the supply system is 250 psig. Staff observed gauges in the River Ave regulator station reading 260 psig. At the time of the inspection no adjustments of the regulating equipment had been made to rectify the pressure fluctuations above the established maop's. Staff also found the relief device set-point of the supply system set at 275 psig. The code allows 10% above MAOP for build-up required to activate pressure relieving equipment. A set-point of 275 psig would be at the top of the 10% window and would not allow for pressure build-up without going over the 10% window. This does not meet the minimum requirement of the safety code.

An Example of Compliance:

Establish the appropriate MAOP for each system. Re-vise Buckleys procedures manual to reflect the correct operating parameters established for Buckleys distribution system. Lower the set-points of the regulators to ensure the distribution system does not exceed the established maop of 25 psig during normal operations. Train key operating personnel to recognize abnormal operations such as pressures exceeding the established maop. If capacity of the distribution system is an issue, the code allows for an uprate of Buckleys distribution system to establish a higher MAOP. Adjust all regulators and pressure relieving devices accordingly to ensure they do not exceed the new established MAOP. Contact the City of Enumclaw's gas department and Williams Pipeline if necessary to have the set-point of the pressure relieving device at the Williams point of delivery lowered to ensure that in an emergency condition pressure will not exceed 275 psig (MAOP plus 10%). Provide evidence of compliance to the commission.

10. Part 192.743(b), Relief Capacity

Findings:

Buckley added an additional feed off the Rainier School system into their distribution system in 1999. Buckley's procedures manual and CFR Part 192 require that after any major change to the system a determination will be made to ensure that all regulators, relief valves and all other equipment in the regulator stations are sized correctly. No calculations have been performed to indicate sufficient relief capacity for the system.

An Example of Compliance:

Review the system load and regulator capacity. Conduct relief capacity calculations taking into account the new two way feed into the distribution system. Size the relief devices to meet the capacity requirements necessary in the event of the failure of the largest capacity regulator feeding the system. Staff was informed that Buckley is considering replacing their existing regulators with Mooneys. The station must be designed by a qualified engineer and have sufficient relief capacity to ensure compliance. Provide evidence of compliance to the commission.

11. Part 192.739(c), 192.201, 192.743, Pressure Limiting and regulating Stations, Inspection

Findings:

On July 30th, staff conducted an inspection of Buckleys regulator station at River Ave. The downstream distribution system has an established MAOP of 25 psig. Part 192.201(a)(2)(ii) allows 6 psig above maop for build-up of pressure to operate pressure-relieving devices. The maximum pressure allowed in an emergency condition on this system would be 31 psig. At Staff's request, Buckley personnel conducted a test of the relief valve set-point for the River Ave regulator station. The relief device allowed pressure to build up to 32 psig before the device activated to relieve pressure. Buckley's

procedures manual contains incorrect information as to the correct MAOP and set-points of the regulating/over-pressure protection devices for the distribution system.

An Example of Compliance:

Conduct annual inspections of regulator stations and over-pressure protection devices including testing physical set-point checks of over-pressure protection devices. Ensure that the device will open fully in the event of failure. The downstream pressure must not exceed the MAOP plus the build-up allowed (6 psig if the system is less than 60 psig). Use accurate, maintained and calibrated gauges to conduct these tests. Record all details of this test including set-points as found and any corrective measures required. Provide evidence of compliance to the Commission.

12. Part 192.605(b)(2), 192.463, Corrosion Control Procedures

Findings:

Buckleys cathodic protection procedures do not meet Part 192 Subpart I. Buckleys manual must designate the cathodic protection criteria and provide adequate instructions and training for employees to operate under the criteria.

An Example of Compliance:

Re-vise Buckleys procedures manual to incorporate Subpart I criteria such as a negative voltage of at least 0.85 volts with reference to a saturated copper copper-sulfate half cell. Provide training to key personnel to oversee the cathodic protection program. Provide evidence of compliance to the commission.

13. Part 192.455, External Corrosion Control

Findings:

The Rainier School district regulator provides gas service through a 6-inch steel wrapped pipeline that is not cathodically protected. Buckleys records indicate the pipeline was installed in 1972 but Buckley gas department personnel were not made aware the pipeline was part of Buckleys system. Buckley staff has indicated ownership of this line.

Examples of Compliance:

- a) Inspect the pipeline and examine the condition, checking for active corrosion and the general condition of pipeline. Evaluate the condition of and take remedial action as necessary according to Part 192.483 and 192.487. Insulate the pipeline from the Rainier School inside piping system and apply cathodic protection.

- b) Replace the pipeline with approved pipe that is in good condition such as polyethylene.
-

14. Part 192.453 General, Corrosion

Findings:

At the time of this inspection Buckley could not provide evidence that the gas department employees were qualified to oversee and direct their pipeline corrosion control methods and procedures.

An Example of Compliance:

Identify a person and provide qualified pipeline corrosion control training so that they may oversee and direct the operation of Buckley's corrosion control program. This should include the oversight of any consultants Buckley may hire to assist the corrosion control program. Provide evidence of compliance to the commission.

15. Part 192.465, External Corrosion Control Monitoring

Findings:

The code requires that each rectifier be inspected at least 6 times per year with intervals not to exceed 2 ½ months. Buckley has not conducted the required rectifier reads at intervals of 6 times per year. Buckley has exceeded the maximum time of 2 ½ months between reads.

An Example of Compliance:

Inspect each rectifier at the proper intervals of at least 6 times per calendar year, but with intervals not to exceed 2 ½ months to ensure that it is operating properly. Provide evidence of compliance to the commission.

16. Part 192.463, Cathodic Protection

Findings:

On June 30, staff took cathodic protection voltage readings on three sections of pipeline at the Rainier School regulator station. The pipeline entering the station had a reading of -1.105 volts which meets Part 192, Appendix D criteria. Voltage readings taken by staff on the two inch and the six inch pipeline leaving the station were -0.616 volts and -0.644 volts respectively, which do not meet the requirements of Part 192.

An Example of Compliance:

Adopt the minimum required cathodic protection criteria such as -0.85 volts as outlined in Part 192, Appendix D and re-vise Buckleys procedures manual to reflect the minimum standards. Apply the minimum criteria to all sections of Buckleys pipeline system and monitor the pipeline as required. When deficiencies are found complete any remedial action requirements within 90 days as required by WAC 480-93-110. Provide evidence of compliance to the Commission.

17. Part 192.479, 192.481, Atmospheric Corrosion Control

Findings:

Buckley did not provide records showing that atmospheric corrosion control surveys were conducted other than when the meters were read. Buckleys procedures manual requires that all above ground pipes, meters, regulators and measuring stations be inspected each year for atmospheric corrosion. Buckley does not have a list of above ground piping such as regulator stations that require monitoring for atmospheric corrosion. Staff conducted an inspection of Buckleys main regulator station on June 14th, 2000 and saw signs of general atmospheric corrosion with surface rust on piping which has little or no paint or coating to protect it from additional corrosion. Staff observed heavy rust and general atmospheric corrosion on a section of six and four inch piping fed by the Rainier School regulator station.

An Example of Compliance:

Create a list of piping sections requiring monitoring for atmospheric corrosion. Conduct atmospheric corrosion control surveys at intervals not exceeding 3 years and take remedial action as necessary to maintain protection against atmospheric corrosion. Record all details of survey and maintain records as required by 192.491. Provide evidence of compliance to the commission.

18. Part 192.619, 192.621, Maximum Allowable Operating Pressure

Findings:

Buckley has exceeded the MAOP for both the supply system and the distribution system. On June 14th, 2000 staff observed gauge readings of 260 psig in Buckleys main regulator station. The established MAOP of this system is 250 psig. On June 23rd, 2000 staff reviewed pressure recording charts for the period ending June 23rd, 2000 which indicate the distribution system to be operating at 26 psig with occasional spikes of pressure reaching 27 psig. The established MAOP of the distribution system is 25 psig. Williams Pipeline has subsequently lowered the delivery pressure to the Enumclaw and Buckley supply line to 245 psig. Buckley has also lowered the distribution pressure to below 25

psig. Buckley personnel were under the impression that they could operate into the window above the MAOP that is allowed only for the build-up of pressure to activate pressure-relieving equipment in the event of an emergency. Operating above the established MAOP in a non-emergency condition is a violation of the code.

An Example of Compliance:

Re-vise Buckleys procedures manual to reflect the operating parameters of Buckley's supply and distribution systems. Provide training for employees on what actions to take when the operating parameters are exceeded. Lower the delivery pressure to Buckleys distribution system to a pressure that ensures the MAOP will not be exceeded (except in an emergency condition). Provide for supervision and train key personnel on the operating parameters of Buckleys supply and distribution systems. Train key personnel to closely monitor the operating pressures and what actions to take to ensure the MAOP of either system is not exceeded. Maintain closer contact with Enumclaw Gas personnel to ensure the supply system is operating within the established MAOP of 250 psig. Calibrate all pressure recorders and gauges to ensure accurate pressure monitoring of the systems. Provide evidence of compliance to the commission.

19. Part 192.381, 192.383 Excess Flow Valves

Findings:

Written procedures for the installation or notification to customers of excess flow valves were not available at the time of the inspection. Buckley did not provide documentation regarding performance standards for excess flow valves as required.

An Example of Compliance:

Develop written procedures for the installation, maintenance and testing of excess flow valves (EFV). Develop written procedures regarding customer notification, documentation and performance standard requirements of EFV's. Provide Commission with documentation of compliance.

20. Part 192.321, 192.361, Service Lines: Installation

Findings:

Buckley recently installed gas main and service stubs to a new construction plat off Schey St. On July 7, 2000 staff observed approximately six ft. of pressurized gas piping installed above ground to each lot. The service stubs were left exposed in violation of the code.

An Example of Compliance:

Bury all exposed piping to a minimum cover of 18 inches. Provide a means such as pvc, locate wire or pipeline ribbon etc. to mark all stub ends for future connection. Train Buckley personnel on proper installation requirements for service lines and mains according to Part 192.

21. Part 192.503, 192.507, 192.619(a)(2), Maximum Allowable Operating Pressure

Findings:

- a) Buckley installed a district regulator on Schey St. to provide service to a new development. The regulator station is fed from Buckleys 250 psig MAOP supply line. The pipeline between the supply line and the regulator station was tested to 100 psig. Buckley did not test the pipeline serving the regulator station to the proper levels required to establish an MAOP commensurate with the supply line. This new pipeline required a test of not less than **375 psig**. Without proper pressure testing the MAOP of Buckleys supply line is now **67 psig**.
- b) Buckley has a section of six inch and four inch steel pipeline off of the Rainier School district regulator serving the Rainier School boilers. Buckley personnel could not provide staff with appropriate documentation establishing the MAOP of this pipeline. The pipeline is currently operating at 11 psig with the relief set-point at 16 psig.

Examples of Compliance:

Finding-a:

Establish a written test procedure as required by 192.507. Since test procedures change according to the hoop stress applied to the pipeline during testing, it will be necessary to calculate the potential hoop stress involved prior to testing and create written procedures based on the stress potential. If the hoop stress will be **over** 20 percent of the Specified Minimum Yield Strength (SMYS) a leak test is required for a minimum of 1 hour at a pressure between 100 psig and 20 percent SMYS **or** the line must be walked to check for leaks while the hoop stress is held at approximately 20 percent of the SMYS. For a class 3 location the test factor is 1.5 times the desired MAOP. Isolate the newly installed pipeline from it's tie-in source to the regulator assembly and test the segment to a minimum 375 psig to establish an maop of 250 psig or as required based on hoop stress and any other factors. Once the segment of pipeline is tested and tied back together the **tie-in weld will require a non-destructive test**. Buckley has adopted API 1104 for the testing and inspection of welds. Section 6 criteria for non-destructive testing shall be adhered to for the testing of the tie-in weld.

Finding-b:

1. Provide documentation to the Commission that establishes the maop of the six and four inch pipeline segment fed by the Rainier School district regulator, **or**
2. Isolate and test the segment as required to establish the MAOP, **or**
3. Replace with PE or other approved pipe and test as required.

Staff is recommending that since this section of pipeline has not had cathodic protection applied, and evidence of corrosion is present that it be replaced with PE. See compliance items 13, 16 and 17.

22. WAC 480-93-082, Part 192.287, Qualification of Employees

Findings:

Every gas company is required to have one or more employees that are collectively knowledgeable in all aspects of gas company construction, operation, maintenance and state and federal rules and regulations. Since Buckley lost key supervisory personnel that have not been replaced, staff has found a general lack of understanding and knowledge of federal and state codes and requirements. Buckley has no formal training programs regarding policies and procedures as they relate to the construction and maintenance of the gas facilities. Buckley has not provided outside training to key gas department employees that would provide them with the necessary knowledge of the requirements to comply with state and federal pipeline safety codes. Buckley does not have an employee designated to ensure compliance with procedures and regulations.

An Example of Compliance:

Set up a formal training program for gas department personnel that will provide them with an overall knowledge of all aspects of operating a gas system. Provide training to ensure employees are knowledgeable of, and adhere to, all policies and procedures, and state and federal pipeline safety codes. Staff suggests that Buckley hire a supervisor to oversee the operations of the gas department. This person must schedule and oversee all required surveys, testing of welders, fusion qualifications, cathodic protection and all other requirements of operating a gas system to ensure compliance within the regulations.

23. Part 192.225, Welding – General

Findings:

Welding must be performed by a qualified welder in accordance with welding procedures qualified to produce welds meeting the requirements of Subpart E of Part 192. Buckley has adopted API 1104 for the qualification of their weld procedures. Buckleys weld procedures provided to staff do not meet the requirements of API 1104. Examples of deficiencies are:

- ◆ Buckleys manual states that welders of low stress pipeline (under 20% SMYS) will be qualified under Appendix C, Part 192, Title 49 of the CFR. The welder qualification reports from Northwest Laboratories indicate API 1104 criteria was used for qualification of Buckleys welders.
- ◆ No speed of travel identified. (essential variable)

- ◆ Rolled welding and fixed welding are mentioned in the weld section but no rolled welding procedures were available. (essential variable)
- ◆ Welder qualification tests do not meet either Appendix C or API 1104 criteria.

An Example of Compliance:

Revise Buckleys welding procedures to meet the requirements of Subpart E of 49 CFR, Part 192. Choose the criteria to be used for qualifying welding procedures and for qualifying welders. Qualify the welding procedures by destructive tests. Re-qualify Buckley's welders under the new procedures ensuring adherence to the procedure specifications. Buckleys procedures manual must specify the qualified welding procedures to be used in detail and the procedures to be used to qualify the welders. Record all details of the qualifying tests and maintain the records as long as the procedures are in use. Staff suggests that Buckley provide training to gas department personnel to qualify as a welding inspector(s).

24. Part 192.273, 192.281, 192.283, 192.287, Plastic Pipe; Qualifying Joining Procedures

Findings:

Buckley has adopted Phillips Driscopipe procedures for the fusion qualifications of their personnel. The Phillips Qualification Guide was inserted into Buckley's manual. The manual has no references to what criteria or procedures are to be used for the qualifying of their personnel. The qualifying test results for Phillips fusion procedures were not available as required. Buckley has not specified materials or fittings that are qualified to be used in the construction and maintenance of the system. Buckley has not provided a list of irons or adapters required to be used for various fittings and piping components.

An Example of Compliance:

Identify the materials, fittings and specifications that must be adhered to in the construction and maintenance of the gas system. Identify the procedures to be used for the qualification of fusion procedures and fusion personnel. If Phillips Driscopipe procedures are to be used obtain a copy of the procedure qualification report from Phillips and keep this report in the procedures manual. Qualify the fusion personnel under the qualified procedures and retain records with the details of the test results. Staff suggests that Buckley provide additional training to a designated person that could oversee the testing, inspection and qualification of fusion personnel.

25. Part 192.751, Prevention of Accidental Ignition

Findings:

Buckley has no procedures for the prevention of accidental ignition due to static discharge from polyethylene piping. Gas blowing through polyethylene piping can create a static charge build-up which can be discharged by contacting the piping without proper grounding. This discharge can cause ignition of the blowing gas.

An Example of Compliance:

Revise Buckley's procedures manual to incorporate grounding procedures to be used when gas is blowing through polyethylene piping. These procedures must be used when purging through polyethylene or when repairing damaged and blowing polyethylene piping. Purging should only be conducted through grounded metal piping. When personnel must work on or near blowing polyethylene piping a good method of grounding is the use of a soapy water solution and burlap bags to ground the polyethylene piping to the surrounding ground.



STATE OF WASHINGTON
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

1300 S. Evergreen Park Dr. S.W., P.O. Box 47250 • Olympia, Washington 98504-7250
(360) 664-1160 • TTY (360) 586-8203

Docket No. UG-000576
Ref. No. 4-1219

June 9, 2000

Mr. Steve Secrist, Director
Rates & Regulator Policy
Puget Sound Energy
PO Box 97034 OBC-03W
Bellevue, Washington 98009-9734

Dear Mr. Secrist:

Subject: Puget Sound Energy - South Audit of New Construction Activities

The Washington Utilities and Transportation Commission (Commission) is authorized to enforce the minimum safety regulations pertaining to the construction, maintenance, or operation of pipelines transporting natural gas in the state of Washington (RCW 80.28.210). The Commission has adopted Title 49 Part 192 of the Code of Federal Regulations (CFR), and Chapter 480-93 of the Washington Administrative Code (WAC) as the minimum standards.

On April 10 - 13, 2000, Mr. David Lykken, Pipeline Safety Engineer, conducted an inspection of the Puget Sound Energy's (PSE) southern facilities. Specifically, staff inspected new construction service and main installations. The enclosed non-compliance report identifies eight different locations with four areas of violations of 49 CFR Part 192, Chapter 480-93 WAC or PSE's Gas Operating Standards.

Staff's inspection also found poor quality control by PSE's supervisory staff. PSE managers must become involved by making field inspections at construction installations, to ensure compliance with PSE's Gas Operating Standards. Commission Staff is concerned with its findings of poor construction and inspection practices and the resulting gas safety issues, especially when service lines are inadequately installed adjacent to residential homes. It should not be assumed that this inspection detected all apparent violations at this time. It is incumbent upon the PSE to review its facilities and operation to determine whether other areas of non-compliance exist.

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Mr. Steve Secrist
June 9, 2000
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Staff's review demonstrates a potential penalty up to \$400,000 dollars under WAC 480-93-223.

Please respond to this letter by July 14, 2000, indicating how the items of probable non-compliance will be corrected. Include with your response documentation detailing action taken by PSE to correct all faulty construction and installation practices throughout the company. Please direct all inquiries to the attention of Mr. David Lykken, Pipeline Safety Section, at the address listed above or by telephone at (360) 664-1219.

Sincerely,



Carole J. Washburn
Executive Secretary

Enclosure

Washington Utilities and Transportation Commission
Pipeline Safety New Construction Audit
Non-Compliance Report, Docket UG-000576
Puget Sound Energy

Item 1 - Part 192.361 (a)(b) Service Line: Installation: Each buried service line must be installed with at least 12 inches of cover on private property and at least 18 inches of cover in streets and roads. Each service line must be properly supported on undisturbed or well-compacted soil, with backfill free of materials that could damage the pipe or coating.

Findings:

Puget Sound Energy Gas Operating Standards:

PSE Gas Operating Standards and Construction Standards 6.32 and 6.33 call for:

- A minimum of 12 inches of separation from all other utilities except at crossings, including joint trench locations (6 inches at perpendicular crossings)
- Sealing of conduit ends including cut outs must be done after the carrier pipe has been inserted and centered in the conduit
- Sand shall be used for bedding and shading material before the native material is replaced
- A minimum of 12 inches of cover when back filling
- Backfill shall be free of large rocks and other debris

Staff inspections on April 10-13, 2000, identified seven service lines that were installed in violation of the minimum safety code:

1. **17105 116 Ave E, Puyallup - New construction:**
At the time of the inspection, the polyethylene (PE) service line was shaded with native material that was not suitable for protecting the plastic service pipe. This native material contained rock ranging in size of ½ inch to 8 inches in diameter that can cause point loading cracks and gas leakage. The PVC conduit pipe was not sealed at both ends to prevent the potential migration of gas up to the building. In the event of a gas leak or line break, the gas could travel up the PVC conduit. The service did not have a minimum 12 inches of backfill containing suitable fines to protect it from possible damage. The service was found to be approximately 6 inches deep.
2. **17113 116 Ave E, Puyallup - New construction:**
At the time of the inspection, the polyethylene (PE) service line was shaded with native material that was not suitable for protecting the plastic service pipe. This native material contained rock ranging in size of ½ inch to 6 inches in diameter that can cause point loading cracks and gas leakage.
3. **16802 116 Ave CT E, Puyallup - New construction:**
At the time of the inspection, the PE service line installed in conduit did not have a minimum 12 inches of separation from the adjacent power conduit. The service line was found to have a separation of 2 to 3 inches. Sufficient clearances must be ensured to allow for safe and proper maintenance, and to protect the plastic pipe from potential damages such as sources of heat. The gas service (in conduit) did not have the minimum 12 inches of cover where the service crosses the driveway area. The service was found to only have 1 to-3 inches of cover in this area.

Item 2 - 192.357(a) Meter and Regulator Support:

Each meter and regulator must be installed so as to minimize anticipated stresses on the connecting piping and the meter.

Findings:

4103 Crystal Ln Loop SE Puyallup, New Construction:

The gas meter, regulator, and service riser were not properly supported to prevent anticipated stresses on the connecting pipe and meter. The plastic service line at the meter set assembly was not properly backfilled and supported with compacted bedding soil.

An example of compliance:

- a. Monitor the construction around the pipeline to prevent builders or their employees from pulling gas service pipelines out of the utility trench.
- b. Insure that service risers are properly backfilled.
- c. Communicate to builders, their employees, and sub-contractors, the importance of proper gas service installation requirements and potential dangers caused by exposed gas pipe.
- d. Provide the Commission with documentation of compliance.

Item 3 - 192.463 (a) External Corrosion Control: Cathodic Protection/Appendix D: Criteria for Cathodic Protection, WAC 480-93-110: Corrosion Control.

Each cathodic protection system must provide as a level of protection a negative cathodic voltage of at least -0.85 volts or other level as listed in Appendix D.

Findings:

At 128 St E & 105 Ave Ct E, Puyallup, a pipe-to-soil potential of -0.80 volts was found using a copper-copper sulfate half-cell. The reading did not meet the minimum of -0.85 volts. The reading was taken on a 4-inch steel wrap main at the tie-in point of a new 2-inch plastic gas main being installed by PSE sub-contractor, Loy Clark.

On Friday, April 14, 2000, Commission staff talked with Mr. Larry O'Neal, Corrosion Technician responsible for the area in question to make him aware of the low pipe to soil read. Mr. O'Neal stated that he was aware of the situation and that he was working to correct the problem. On Monday, April 17, staff requested documentation showing the history of pipe-to-soil test readings for the area encompassing this intersection from Mr. David Lagerquist, Corrosion Control Supervisor for South Region. A voicemail message was left indicating this request. There has been no reply to this request as of Tuesday, May 30. WAC 480-93-110 states that it is the responsibility of every gas company to insure that all metallic gas pipelines are protected by recognized methods of cathodic protection.

An example of compliance:

- a. Ensure that pipeline facilities are cathodically protected in accordance with federal and state regulations and company operating standards.
- b. Ensure that cathodically protected systems are inspected at the required frequency. c. Respond to the request from Commission Staff and provide documentation of the current and the last two annual pipe-to-soil test readings for the area encompassing and including 128 St E and 105 Ave Ct E, Puyallup.
- d. Complete remedial action within 90 days, as required, and correct the deficiencies. Provide to the Commission written documentation indicating corrective measures taken and the resulting pipe to soil readings.

Item 4 - 192.13 General:

No person may operate a segment of pipeline that is ready for service unless the pipeline has been designed, installed, constructed, initially inspected and tested. Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish.

Findings:

Company operating standards were not followed with regard to the proper installation and inspections of new construction services at the following seven locations:

1. 17105 116 Ave E, Puyallup
2. 17113 116 Ave E, Puyallup
3. 16802 116 Ave CT E, Puyallup
4. 11622 169 St CT E, Puyallup
5. 4103 Crystal Ln Loop SE, Puyallup
6. 8942 Wakeman Dr SE, Lacey
7. 6209 Rebecca PL SE, Auburn

PSE failed to inspect the pipeline and ensure that the pipeline was constructed in accordance with CFR 192 Subpart H, WAC 480-93-010, and 480-93-110.

An example of compliance:

- a. Review PSE inspection process.
- b. Determine the causes of construction standard installation deficiencies.
- c. Educate PSE employees and contractors and provide training and/or refresher courses.
- d. Ensure PSE's company standards and work practices auditors are knowledgeable with the details of PSE's operating standards, work practices, and are inspecting maintenance and construction projects.
- e. Provide the Commission with documentation addressing corrective measures taken.

4. **11622 169 St CT E, Puyallup - New Construction:**
At the time of the inspection, the polyethylene (PE) service line was shaded with native material that was not suitable for protecting the plastic service pipe. This native material contained rock ranging in size of ½ inch to 6 inches in diameter that can cause point loading cracks and gas leakage. The PVC conduit pipe was not sealed at both ends to prevent the potential migration of gas up to the building. In the event of a gas leak or line break, the gas could travel up the PVC conduit. The service did not have a minimum 12 inches of backfill material containing suitable fines to protect it from possible damage. The service was found to have 1 to 6 inches backfill along the entire length of the service along with various construction materials deposited into the utility trench.
5. **4103 Crystal Ln Loop SE, Puyallup - New Construction:**
At the time of the inspection, the PE service riser and approximately 2.5 feet of plastic pipe were left exposed. Approximately 5 feet of PE service pipe was not covered with a minimum 12 inches of backfill required to protect the pipe from potential damage.
6. **8942 Wakeman Dr SE, Lacey - New Construction:**
At the time of the inspection, the plastic service stub was found exposed. It did not have a minimum 12 inches of backfill containing suitable fines to protect it from possible damage. The potential for damages and injury to the public and utility employees was increased by having energized electric cable exposed in the same ditch.
7. **6209 Rebecca PL SE, Auburn - New Construction:**
At the time of the inspection, the PE gas service was left partially exposed near a power vault. The PVC conduit pipe was not sealed at both ends to prevent the potential migration of gas up to the building. In the event of a gas leak or line break, the gas could travel up the PVC conduit. The service did not have a minimum 12 inches of backfill containing suitable fines to protect it from possible damage. The PE service line installed in conduit did not have minimum 12 inches of separation from the adjacent power conduit. The service line was found to have 4 inches of separation from the conduit. Sufficient clearances must be ensured to allow for safe and proper maintenance, and to protect the plastic pipe from potential damages such as sources of heat and ignition.

An example of compliance:

Each service line must be constructed in accordance with comprehensive written specifications or standards that are consistent with Part 192.361 and PSE's Gas Operating Standards.

- a. Seal all conduits as required by the code and as detailed in PSE Gas Operating Standards.
- b. Replace the native shading soil with sand or sand-like material and provide a minimum 12 inches of cover over all PE service piping.
- c. Communicate the importance of proper gas service installation requirements and potential dangers caused by exposed gas pipe and rock impingement.
- d. Review PSE's company-wide inspection and installation program.
- e. Provide the Commission with documentation detailing actions taken by PSE to correct all deficient inspection and installation practices.
- f. Provide the Commission with documentation of compliance.