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Pipeline Safety Program

August 28, 2014

David Lykken
Pipeline Safety Director
Washington Utilities and Transportation Commission
Pipeline Safety Section
1300 S. Evergreen Park Drive S.W.
PO Box 47250
Olympia, WA 98504-7250

Dear Mr. Lykken:

RE: Natural Gas Standard Inspection- Puget Sound Energy –
Lewis/Thurston Counties Distribution Systems

PSE has received and reviewed your letter dated July 31, 2014 regarding the 2014 Lewis/Thurston Counties Audit, and pursuant to your request is submitting the following written response to the three probable violations and two areas of concern.

PROBABLE VIOLATIONS

1. **§192.739 Pressure limiting and regulating stations: Inspection and testing**
 - (a) *Each pressure limiting station, relief device (except rupture discs), and Pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is-*
 - (1) *In good mechanical condition;*
 - (2) *Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed;*
 - (3) *Except as provided in paragraph (b) of this section, set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a); and*
 - (4) *Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.*

Finding(s):

PSE Regulator Station (RS) 313 Lacey, WA: Records showed this regulator was not inspected and tested in 2013 as an outlet equipment valve was inoperable. Run 1, Stage 2 could not be isolated to perform the required annual maintenance and testing. Annual maintenance was not completed in 2013 as a result.

PSE Response:

PSE reviewed the previous annual inspection records. The full station inspection on the regulator station including lock-up tests was completed on all routine inspections prior to 2013.

A maintenance request for RS-0313 was submitted in March 2013 in advance of the regulator station inspection deadline indicating one of the equipment valves was inoperable. Upon review of the request, it was determined that the valve replacement would require a complex shutdown procedure and would have bypassing/cold weather constraints. The valve could not be remediated before the regulator station inspection due date. The inspection was completed in July 2013 without the valve being operated which resulted in an incomplete lock-up test of one of the regulators. The regulator station was then reviewed for other reported maintenance issues and a plan and scope of work was developed. Work was initiated in October 2013 to be completed in 2014.

During the design and development phase in early 2014, it was determined that a new regulator station would be the appropriate long term solution to remediate the inoperable equipment valve and other maintenance issues. Although plans are still underway to replace the station, due to the time needed to acquire property for the new regulator station and the recognition that the valve must be remediated within the next 15-month inspection cycle, a supplemental project was initiated to replace the outlet valve by October 2014. The valve will be replaced by shutting down the regulator station and injecting CNG to maintain the feed to the IP system. The valve replacement is scheduled to be completed by October 3, 2014. Upon completion of the valve replacement, the regulator station will be inspected to ensure the new valve can be operated and the lock-up test can be performed before the 15-month October 13, 2014 inspection deadline.

PSE will review inspection records to determine if any other stations have inoperable equipment that has prevented the completion of inspections. The results of this review will be reported to the Commission by October 15. PSE will also review internal processes related to the documentation of annual inspection results, communication of inspection results to internal stakeholders, and processing of related maintenance activities to determine where improvements are needed. The results of this review and a plan for any necessary process improvements will be communicated to the Commission by October 15.

2. **§192.743 Pressure limiting and regulating stations: Capacity of relief devices**
 - (a) *Pressure relief devices at pressure limiting stations and pressure regulating stations must have sufficient capacity to protect the facilities to which they are connected. Except as provided in §192.739(b), the capacity must be consistent with the pressure limits of §192.201(a). This capacity must be determined at intervals not*

exceeding 15 months, but at least once each calendar year, by testing the devices in place or by review and calculations

(b) If review and calculations are used to determine if a device has sufficient capacity, the calculated capacity must be compared with the rated or experimentally determined relieving capacity of the device for the conditions under which it operates. After the initial calculations, subsequent calculations need not be made if the annual review documents that parameters have not changed to cause the rated or experimentally determined relieving capacity to be insufficient.

(c) If a relief device is of insufficient capacity, a new or additional device must be installed to provide the capacity required by paragraph (a) of this section.

Finding(s):

The records showed the 2012 annual regulator capacity analysis for RS 248 was not sufficient to provide necessary relief capacity--the latest calculation was completed per 49 CFR §192.743(a) in 2011. After further investigation, it was found that PSE discovered this capacity deficiency in 2002. Subsequent capacity analyses have shown it continued to be deficient. PSE did not repair the deficiency within the 12 year timeframe since first discovering the condition. 49 CFR §192.743(c) requires that a *"new or additional device must be installed to provide the capacity."* The code does not state when this needs to occur. There is no federal interpretation on this issue. However, the code language uses the term *"must"* which per Merriam Webster means *"to be required or compelled by law, morality or custom."* Furthermore, PSE's Gas Operating Standard 2575.5.1.3 states, *"If a system valve is found to have insufficient capacity, a work request will be initiated to install a new or additional relief device to provide the required relief capacity."* The language in the code and in PSE's Gas Operating Standards is sufficient to have compelled PSE to repair the deficiency in a much timelier manner. The purpose of the relief is to protect downstream piping from experiencing pressures in excess of MAOP. PSE has knowingly allowed this safety issue to continue for 12 years.

PSE Response:

PSE conducts annual regulator and relief capacity analyses (relief reviews). When parameters have changed, this process includes performing subsequent calculations as required by code to determine if sufficient relieving capacity exists. When a deficiency is identified during this annual review process, a remediation plan is developed. Prior to October 2012, no timeframe or formal process had been established for remediating identified issues. Additionally, relief reviews did not include provisions for ensuring that remedial work was proceeding as scheduled.

To appropriately prioritize remediation of deficiencies identified by relief reviews, and to ensure follow-up action occurs in a timely manner, PSE has taken the following actions:

1. In October of 2012, a revision was made to our Distribution Integrity Management Program (DIMP). The revision requires remediation of regulator stations found to have inadequate relief capacity within two years of identification. At that time, PSE completed a review of all stations, including RS-0248, to identify any requiring remediation. Per the 2012 review of all stations and the DIMP requirement; all deficiencies will be corrected prior to October 2014, within the required two year window. On August 21, 2014, the capacity of the subject relief valve at RS-0248 was remediated by relocating the sensing line for the relief valve.
2. Additionally, PSE has added a step to the annual relief review process. In addition to the review of system parameters to determine if subsequent calculations are required, the annual process will include a review of all previously identified deficiencies to confirm remediation actions have been completed, or are on track for completion within the two year window required by the DIMP. When barriers such as permitting, site conditions or other issues are preventing remediation, such as occurred with RS-0248, this new process will raise the priority level of alternate solutions.

While the relief for RS-0248 did not pass the relief review for a period of 12 years, PSE reviewed the operating history of the system downstream of this station, and confirmed that there were no reports of unsafe operating conditions during this timeframe.

Since 2012, PSE has implemented a requirement to remediate stations within 2 years of identification through the DIMP Program. This requirement along with the additional steps in the relief review process will prevent this type of situation from recurring.

3. §192.481 Atmospheric corrosion control: Monitoring

(a) Each operator must inspect each pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion, as follows:

If the pipeline is located:	Then the frequency of inspection is:
Onshore	At least once every 3 calendar years, but with intervals not exceeding 39 months.
Offshore	At least once every calendar years, but with intervals not exceeding 15 months.

(b) During inspections the operator must give particular attention to pipe at soil-to-air interfaces, under thermal insulation, under disbonded coatings, at pipe supports, in splash zones, at deck penetrations, and in spans over water.

(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by Sec. 192.479.

Finding(s):

During the field inspection, atmospheric corrosion was noted at several industrial/commercial meter sites: Steam Plant meter set on the Capital Campus, Olympia, WA, Sears meter set, Lacey, WA, meter set in alley at 4th and Washington, Olympia, WA, Crown Cork meter set, Olympia, WA. PSE sent crews out to investigate these sites. At the alley site, as soon as the wrap was removed, a leak developed; at the steam plant, crews found corrosion which was mitigated and requested the concrete around the riser be removed and the pipe be properly wrapped (currently it is not wrapped). At the Sears meter set, PSE rated this a 4 SAI (must be repaired in 90 days). Given the level of corrosion found at these sites, it appears PSE did not inspect these facilities as required by the code or if they were inspected, did not grade or provide appropriate mitigation per 49 CFR § 192.481 (c) and PSE procedure 2600.1900. Additionally, there seemed to be some confusion during the inspection as to who is responsible for these facilities, as all of them involve an industrial/commercial meter set. In discussing this issue with PSE, it was stated that in some instances, PSE's leak survey contractor would be responsible, in other locations such as hard to reach locations, PSE personnel are responsible. Additionally, it seems PSE personnel visit some of these sites routinely (i.e. odorant concentration readings) and although on site, did not identify or note the corroded conditions (steam plant and Crown Cork). It seems other PSE departments would be responsible for identifying and remediating atmospheric corrosion issues and leaks (leaks were noted in several valves at the Crown Cork and steam plant industrial meter sets). This is alarming. As such, PSE needs to investigate several aspects of these findings as follows:

- 1) Why did PSE not find the atmospheric corrosion identified during the inspection? One Issue may lie in who is responsible. PSE needs to look at its procedures and standards to clearly identify who is responsible and communicate that to appropriate personnel so functional responsibility is not a problem (i.e. responsibility is either PSE's leak survey contractor or PSE Gas First Response or Industrial Meters).
- 2) Were personnel assigned to find this type of corrosion (all occurred at the soil to air interface) properly OQ qualified? Records indicate personnel qualifications were up to date, and records indicate leak all required maintenance was up to date. Yet these conditions were clearly evident when found as part of this inspection.
- 3) PSE OQ personnel routinely visit these sites as part of their normal activities (odorant concentration readings) however, leaks and atmospheric corrosion were evident and not flagged for repair. Do these personnel have the authority and responsibility to call out these types of conditions? If so, do they know this is part of their duties?

There is potentially several reasons why this condition occurred. The interaction of these conditions are complex enough to require a review of processes and oversight of the atmospheric corrosion monitoring requirements for industrial meter sets. What will be done to correct this gap?

PSE Response:

PSE agrees with the inspector's observation that there may have been several reasons for the conditions that were observed. We are taking the following three steps to address the findings and concerns.

1. All of the AC issues for the four identified locations (Steam Plant at Capitol Campus, Sears, alley at 4th and Washington, Crown Cork) have been evaluated and remedial actions have been taken or are scheduled as follows:
 - a. Crown Cork- remediation was completed August 26, 2014.
 - b. Steam Plant at the Capitol Campus- remediation began August 28, 2014.
 - c. Sears- remediation is anticipated to begin September 15, 2014.
 - d. Alley at 4th and Washington- the project is currently in design and development, and a schedule date for the remediation is anticipated by September 5, 2014.
2. PSE will provide refresher training on AC monitoring responsibilities and AC rating procedures to our Service Provider (Surveys and Analysis) responsible for AC Inspections, with specific attention to non-standard sets and expectations for monitoring atmospheric corrosion. PSE will also provide refresher training for all PSE Gas Operations field personnel and Service Provider (InfraSource) personnel, with specific attention to AC monitoring responsibilities. A plan for this training is being developed and will be provided to the Commission by September 29, 2014.
3. PSE is performing a thorough review of its AC monitoring program - including standards, procedures, processes, and training - to identify gaps and improvement opportunities. A team has been assembled and the planning effort is underway. A plan for the review will be completed and provided to the commission by September 29, 2014. Once the review is completed, the findings will be catalogued and an implementation plan will be developed to address the findings. That implementation plan, with deadlines, will be provided to the commission.

AREAS OF CONCERN

1. Regulator Station (RS) records inspection showed that for 2012, RS 248 and 249 (Centralia, WA) did not have a finalized capacity analysis completed. The engineer believed these stations were to be replaced in 2012. They were not replaced. PSE did the required review in the proper timeframe per their procedures, however, due to the internal notes in PSE's database indicating these stations would be retired in 2012, the records were not completed. It would appear these notes caused confusion which led to record not being finalized. PSE needs to take steps to ensure this does not happen in the future.

PSE Response:

Relief review process improvements addressing Probable Violation 2 also address this Area of Concern. Updated requirements for relief reviews include confirming full documentation is in place upon completion of the review and anticipated follow-up work is confirmed.

2. Crown Cork and Seal meter set /RS 258, Olympia, WA. The risers at the Crown Cork showed some evidence of corrosion, however, not nearly as bad as the two PSE facilities noted above. The 2013 S&A 3-year atmospheric corrosion survey did not note any issue, nor did the annual RS 258 maintenance log. However, given that these risers are not wrapped and are located in an area which appears to be visited by landscapers using "weed eaters" PSE may want to consider ensuring that these high pressure risers are part of the annual regulator maintenance inspection. Currently, it is unclear whether pressure control looks at these gas facilities as they are outside of the fenced compound.

PSE Response:

PSE will address this particular meterset as part of Probable Violation #3 listed above.

We hope the information provided is responsive to the findings. PSE is committed to constructing, operating, and maintaining a safe gas pipeline system.

Sincerely,

A handwritten signature in cursive script, appearing to read "Booga K. Gilbertson".

Booga K. Gilbertson
Vice President, Operations

Cc: Cathy Koch, Director Compliance
Cheryl McGrath, Manager Compliance Programs
Jennifer Tada, Director Planning
Harry Shapiro, Director Gas Operations
Dan Koch, Director of Engineering