

Agenda Date: October 30, 2013
Item Number: A4

Docket: PG-131839
Company Name: Puget Sound Energy

Staff: Joe Subsits, Chief Pipeline Safety Engineer,
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Recommendation

Issue an Order approving Puget Sound Energy's pipeline replacement plan filed on May 31, 2013. Puget Sound Energy's plan is consistent with Commission policy and adequately addresses all known elevated risk pipeline facilities in Washington.

Background

On December 31, 2012, the Washington Utilities and Transportation Commission (Commission) issued a Policy Statement entitled "Commission Policy on Accelerated Replacement of Pipeline Facilities with Elevated Risk"¹ (Policy Statement). Pursuant to the Policy Statement, each investor-owned gas pipeline utility company filed a plan for replacing pipe that represents an elevated risk of failure (plan).

The Commission contemplated that each company's plan would likely be tied to the company's Distribution Integrity Management Plan² (DIMP), its Transmission Integrity Management Plan³ (TIMP), if any, and certain other requirements found throughout Washington Administrative Code⁴ pertaining to pipeline safety.

On October 17, 2013, Puget Sound Energy (PSE or Company) filed an amended plan with the Commission. Below is Commission Staff's review of that plan. Staff finds that the Company's plan meets the requirements of the Policy Statement, with respect to pipeline safety.

¹ "Commission Policy on Accelerated Replacement of Pipeline Facilities with Elevated Risk (December 31, 2012) (Policy Statement) (Docket 120715).

² Title 49 CFR, Part 192, Subpart O.

³ Title 49 CFR, Part 192, Subpart P.

⁴ WAC 480-93.

I. Plan Requirements

Under the Policy Statement, the first plan was to be filed by June 1, 2013,⁵ covering planned pipeline replacement through 2015. The plan has three parts: (1) a Master Plan for replacing all facilities with an elevated risk of failure; (2) a Two-Year Plan that specifically identifies the pipe replacement program goals for the upcoming two year period; and, if applicable, (3) a Pipe Location Plan for identifying the location of pipe or facilities that present an elevated risk of failure.⁶

Each plan must also:

- Target pipe or facilities that pose an elevated risk of failure.
- Be a measured and reasonable response in relation to the elevated risk, and the program must not unduly burden ratepayers.
- Be in the public interest.⁷

II. Commission Staff Review of PSE's Plan

A. Overview

PSE operates the largest natural gas distribution system in Washington. PSE has a large and varied service territory and the Company's gas system uses a variety of different pipeline materials. PSE's plan indicates that several types of facilities exist with an elevated risk of failure and that PSE is addressing these facilities through various replacement plans. Some of these replacement plans are the result of settlement agreements between PSE and the Commission and some are voluntary.

PSE's plan contains a Master Plan⁸, a Two-Year Plan⁹ and a Pipe Location Plan.¹⁰

⁵ Subsequent plan filings are to be filed by June 1 every two years thereafter (*i.e.*, June 1, 2015, 2017, 2019, etc.). "If the gas company makes no changes to its Master Plan, it need file only the Two-Year plan in each filing after June 1, 2013. If the company makes a material change either to its Master Plan, its Two-Year plan or its Pipe Location Plan, it should file plan changes with the commission within 30 days." Policy Statement at 11, ¶ 43.

⁶ Policy Statement at 11, ¶ 42

⁷ Policy Statement at 12-14, ¶¶ 45-56

⁸ Section 1 of PSE's plan

⁹ Section 2 of the plan

¹⁰ Section 3 of the plan

B. Evaluation of the Required Plan Elements

1. Whether the Company's Plan Targets Pipe that Poses an Elevated Risk of Failure

PSE's plan addresses the following types of facilities that have an elevated risk of failure in Washington:

- Larger diameter ($\geq 1-1/4$ " Aldyl "HD" polyethylene pipe.¹¹ PSE estimates it has approximately 400 miles of Aldyl-HD remaining in service.
- Older vintage Steel Wrapped Mains¹²
- Older vintage Steel Wrapped Services¹³
- Bare steel mains¹⁴
- Celcon service tee caps¹⁵
- Older style bolt on service tees¹⁶
- Mechanical couplings¹⁷

In addition to the above facilities that pose an elevated risk of failure, PSE's records indicate that the Company has a limited number of copper services in its service area. Copper pipeline facilities are one type of pipeline facility specifically cited by PHMSA Administrator, Cynthia L. Quarterman, as a high risk type of facility that should be considered for replacement. Although PSE's records indicate that copper services have not posed an elevated risk of failure for PSE, PSE has scheduled all copper services to be replaced by the end of 2013.¹⁸

¹¹ PSE DIMP, Appendix F-3: plan Section 1 - DuPont ALDYL "HD" Plastic Pipe.

¹² PSE DIMP, Section 1, Wrapped Steel Mains. PSE's DIMP identifies an increased risk of leakage on some older steel wrapped mains. The risk is due to a combination of factors, including corrosion, existing third party damage to the pipe coating, welds, and equipment including vintage valves. These mains are replaced based on past leak history and PSE expects to replace approximately 20 miles of steel wrapped main over the next 5 years.

¹³ PSE is addressing these services under a settlement agreement approved by the Commission in Docket PG-041624, the Wrapped Steel Service Assessment Program (WSSAP). PSE has identified and located all services that are targeted under the WSSAP program. Based on current risk knowledge, PSE is targeting to replace approximately 1,100 services over the next 5 years.

¹⁴ PSE plan Addendum refers to the bare steel replacement program as a result of the settlement agreement the Commission approved in Dockets PG-030080 and PG-030128. PSE is scheduled to have all bare steel replaced by the end of 2014.

¹⁵ PSE plan Addendum and PSE DIMP, Appendix B-9

¹⁶ PSE plan Addendum and PSE DIMP Appendix B-11

¹⁷ PSE plan Addendum and PSE DIMP Appendix B-8

¹⁸ PSE plan Addendum (not in DIMP - poses no measurable threat)

In evaluating PSE's plan, Staff reviewed PSE's TIMP and DIMP. PSE has not identified any gas transmission facilities that pose an elevated risk of failure. For this reason, Staff has not incorporated the TIMP into this summary.

PSE's plan classification of facilities that pose an elevated risk of failure is consistent with the analysis in the Company's DIMP.

2. Pipe Location Plan

PSE recently implemented a Pipe Location Plan which is designed to locate older Aldyl "HD" (Aldyl) polyethylene pipe. This pipe is prone to what is called "brittle-like cracking" due to slow crack growth (SCG) and failure, resulting from secondary loads such as rock impingement or squeeze-off.¹⁹ The Pipe Location Plan calls for PSE to identify PE pipe during routine operations and maintenance activities and through approximately 5,000 targeted excavations which PSE plans to complete by the end of 2016.²⁰ While PSE does not know the location and extent of all of this type of facility within its service territory, PSE estimates that it has approximately 400 miles of vintage Aldyl pipeline facilities.

PSE has not implemented Pipe Location Plans for the following facilities that pose an elevated risk of failure:

Celcon service tee caps: PSE has experienced some failures of service tee caps that have resulted in leaks. PSE is currently conducting additional investigations of these caps to determine the root cause of failure and how to identify, prioritize and mitigate the risk of additional failures. PSE replaces these caps when they are found to be leaking. Accordingly, PSE is not implementing a Pipe Location Plan for these facilities. Staff notes that generally, when a Celcon cap experiences failure, the resulting leakage is usually small due to the types of defects experienced and the nature of the design of the caps. These caps are generally at the service to main tie-ins, which are located away from structures intended for human occupancy. Accordingly, this type of facility is less of a concern than a facility that is located closer to buildings or other structures.

Bolt-on service tees: The threat of Bolt-on service tees is minimal, and PSE replaces these facilities when they are found to be leaking. Staff notes that generally, when a Bolt-on service tee experiences failure, the resulting leakage is usually small due to the types of defects experienced and the nature of the design of the tees. These tees are generally at the service to main tie-ins, which are located away from structures intended for human occupancy. Accordingly, this type

¹⁹ PE pipe is designed to be squeezed shut with a mechanical device during operations, maintenance and emergency response.

²⁰ PSE's plan, DuPont Aldyl "HD" Plastic Pipe, Section 3.

of facility is less of a concern than a facility that is located closer to buildings or other structures. PSE's records indicate that these types of failures are generally due to installation practices rather than material failure.

Mechanical/compression couplings: The threat of Mechanical/compression couplings also is minimal. PSE plans to replace or repair these facilities when they are found to be leaking. Because the location of this type of facility is spread throughout PSE's service territory and PSE rarely documented their location on as-built records, Staff is unaware of any reasonable method for determining their location. In addition, the largest threat posed by this type of facility is the use of non-restraint types of compression couplings on PE without internal stiffeners. PSE did not install this type of coupling without internal stiffeners.

3. Whether the Company's Plan is a Measured and Reasonable Response in Relation to the Elevated Risk

Based on Staff's review, PSE's plan, analyzed in conjunction with PSE's DIMP, is a measured and reasonable response in relation to the elevated risks identified. PSE's plan adequately addresses facilities with an elevated risk of failure. Staff has audited PSE's DIMP²¹ and found that it addresses all known threats and implements accelerated actions that adequately address those threats. As indicated earlier, PSE is scheduled to have all Bare Steel replaced by the end of 2014 and all copper services replaced by the end of 2013.

In order to comply with paragraph 55 of the Commission's policy statement, relating to rate impacts, PSE supplemented its filing to address the potential rate impact of its plan.

In its supplemental filing, the Company estimates the plan could result in an average annual increase of 0.75 percent in customer rates throughout the life of the plan.

Staff viewed the work papers associated with this estimate. PSE's analysis included an incremental revenue requirement based on PSE's best estimate of program spending at the time. PSE then converted the corresponding incremental revenue requirement increase to an estimated percent increase in overall customer rates. The resulting analysis shows between 2014 and 2032, the average annual increase in revenue requirement ranged from a low of \$3 million (0.16 percent) to a high of \$8.5 million (0.78 percent), with the higher range increases taking place in the early years. These numbers assume PSE makes the necessary filings to implement a rate change. The rate impact estimate likely will change once newer information becomes available.

Staff is satisfied that the analysis presented by the Company complies with the requirements of paragraph 55 of the Commission's Policy Statement.

For the above reasons, Staff recommends the Commission approve PSE's plan.

²¹ Inspection number 2609, October 2012.