

Agenda Date: July 30, 2015  
Item Number: A1

**Docket:** PG-141535  
Company: Puget Sound Energy

Staff: Lex Vinsel, Pipeline Safety Engineer

### **Recommendation**

Issue an order granting Puget Sound Energy's (PSE) request to increase the Maximum Allowable Operating Pressure (MAOP) for the South Tacoma Supply #2 from 250 to 490 pounds per square inch gauge (psig) subject to the conditions in the order.

### **Discussion**

A gas pipeline company must have permission from the Washington Utilities and Transportation Commission (commission) to operate a gas pipeline at greater than 250 pounds per square inch gauge (psig) up to 500 psig within 100 hundred feet of certain buildings described in WAC 480-93-020. The commission has adopted the Code of Federal Regulation, Title 49, Part 192 and 480-93 of the Washington Administrative Code as minimum standards for natural gas pipeline construction.

Puget Sound Energy (PSE or company) proposes to operate the existing South Tacoma Supply #2 pipeline at a pressure of 490 psig. The increase in pipeline MAOP from 250 to 490 psig would increase gas supply to the Tacoma and JBLM areas without requiring the installation of miles of new high pressure pipeline and ensuring reliability as growth increases.

The existing 12-inch South Tacoma Supply #2 was built in 1995 for a MAOP of 500 psig. The pipeline is 5.2 miles long and is located in Pierce County. The pipeline currently operates at a MAOP of 250 psig. All construction was performed in accordance with Class 4 construction standards, although the pipeline route is classified as Class 3.

The pipeline extends from the Clover Creek Limit Station (128 St. E. and Waller Road. west along 128 St. E., northwest along Aqueduct Dr. and west along 112 St. S. to the intersection of 112 St. S. and I-5. (See exhibit B Project Map)

PSE will provide notice of the open meeting on July 30, 2015, for the MAOP increase to 490 psig to the property owners along the pipeline corridor.

Pipeline pressure for the South Tacoma Supply #2 cannot be increased from the current 250 psig until the following pipeline facilities are designed, constructed, installed and tested to a MAOP of 500 psig.

- a) PSE will construct 2 new pipeline segments of 12-inch and 16-inch pipeline to tie over the existing Frederick Supply Main to the South Tacoma Supply #2 at the Clover Creek

Limit Station (RS-2733) and upgrade the Clover Creek Limit Station to an MAOP of 500 psig, currently in design phase.

- b) PSE will upgrade the RS-2619 for operation with MAOP of 500 psig, currently in design phase.
- c) PSE will design and install a new I-5 Limit Station near the end of the South Tacoma Supply #2 for operation with an MAOP of 500 psig, currently in design phase.
- d) PSE will replace a 12-inch by 8-inch Tee fitting just north of RS-2619 with a pretested section of 12-inch pipe.

Justification for approval of this proximity request is based on the following reasons:

- a) The 12-inch pipeline was designed and constructed in 1995 for a MAOP of 500 psig.
- b) PSE requested a MAOP of 490 psig for of the South Tacoma Supply #2 to prevent the hoop stress for any portion of the pipeline from exceeding 20 percent of the Specified Minimum Yield Strength (SMYS) of the pipeline material. Most of the pipeline was constructed with 12-inch API 5L X-52 pipe. A small portion of the pipeline was constructed with 12-inch API 5L X-42 pipe and this portion would exceed 20 percent SMYS if the MAOP was 500 psig. This is less than half of the hoop stress allowed in highly populated areas. (For Class 4 – 40 percent SMYS, pipeline is in Class 3 location).
- c) The 12-inch pipe has had two leaks, both from leaking fittings attached to the pipe, one a leaking save-a-valve, the other a leaking flange gasket. These were minor leaks. Line history does not show indicators of poor performing pipe such as corrosion, leaking welds or manufacturing defects.
- d) Company records demonstrate that PSE has maintained adequate Cathodic protection levels for the life of the pipeline.
- e) The pipeline is located in a suburban area of single family houses and apartments. (Class 3 location)
- f) The uprate is necessary for the company to meet peak demand supply into the South Tacoma area.
- g) Other alternatives would be to build another high pressure line that would parallel the existing line. Staff has identified additional safety measures and conditions the company must follow during the construction and uprating of the South Tacoma Supply #2 to a MAOP of 490 psig. (See conditions below)

## **Conclusion**

Commission staff reviewed the request and recommend the commission grant the petition subject to the following conditions:

- a) PSE will design and construct the new 12-inch and 16-inch segments to transmission standards including the use of full radius bends and full open valves to provide for the use of in-line inspection equipment.
- b) PSE will design, modify and test Clover Creek Limit Station (RS-2733) to a new MAOP of 500 psig. (Currently in the design phase)
- c) PSE will design, modify and test the Regulator Station (RS-2619) to a new MAOP of 500 psig. (Currently in the design phase)
- d) PSE will design, construct and test a New Limit Station that will be located near the intersection of 112 Street South and I-5. (Currently in the design phase)
- e) PSE will replace a 12-inch by 8-inch Tee fitting just north of RS-2619 with a pretested section of 12-inch pipe.
- f) All circumferential welds (100 percent) on the new segments will be nondestructively tested (NDT) by radiograph. All other welds (100 percent) on new sections and in Regulator Stations will nondestructively tested according to Title 49, CFR, Part 192.243 and shall meet the standards set forth in Section 9 of API Standard 1104. (Incorporated by reference, see Title 49, Part 192.7)
- g) PSE will leak survey the pipeline prior to the uprate and repair any leaks found prior to raising the pressure in incremental steps.
- h) Any leaks found during leak surveys conducted between incremental pressure increases will be repaired prior to proceeding to the next incremental pressure increase.
- i) An additional leak survey will be conducted one week after the pressure uprate.
- j) PSE will conduct a coating survey using electronic holiday detection equipment for the new segments of 12-inch and 16-inch pipeline.
- k) PSE will survey the right-of-way along the pipeline and replace any required pipeline markers.
- l) PSE will have all required procedures on site during construction and uprating.

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- m) PSE will notify commission pipeline safety staff 48 hours before commencing construction and 48 hours before commencing the actual uprate.