

Agenda Date: August 31, 2017

Item Number: A1

Docket: PG-170423

Company Name: Puget Sound Energy

Staff: Scott Anderson, Pipeline Safety Engineer

Recommendation

Issue an order granting Puget Sound Energy's (PSE) request to construct and operate 1.75 miles of a new 12-inch high pressure (HP) Bonney Lake pipeline at a pressure of 500 psig. This system will provide additional natural gas supply to Bonney Lake and the surrounding communities as growth increases. The construction of this new pipeline will be within 100 feet of approximately 54 commercial and residential dwellings not owned by PSE.

Discussion

A gas pipeline company must have permission from the Washington Utilities and Transportation Commission (commission) to operate a pipeline at greater than 250 psig, up to and including 500 psig, within 100 feet of an existing building not owned by the gas pipeline company, as 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 (WAC) as minimum standards for natural gas pipeline construction.

This project, identified as Bonney Lake HP Natural Gas Project, will begin by tying into an existing 6-inch HP pipeline at the intersection of 190th Ave. E. and Edwards Rd. in Bonney Lake. The new 1.75 mile long pipeline (see attached map) will travel east and south along Edwards Rd to 210th Ave. NE in Lake Tapps where it will tie back in with the 6-inch HP pipeline. This new pipeline will be designed, constructed, and tested for a maximum allowable operating pressure (MAOP) of 500 psig with a specified minimum yield strength (SMYS) of 19.65 percent. Initially the new line will operate along with the 6-inch HP line at no more than 250 psig.

In the future, as growth in this area increases and the system requires reinforcement, additional phases will be completed. Eventually, the long range plan is to add additional 12-inch HP phases paralleling the existing 6-inch HP pipeline and install a gate station and limit station as needed.

Staff reviewed the proposed proximity request and calculations. As the facility will be new, there are no existing records. Staff notes the following facts:

- (a) The proposed pipe and pipeline materials are commensurate with the proposed MAOP.
- (b) There are currently 54 buildings within 100 feet of new facilities operating at a pressure at 500 psig.

- (c) At the proposed MAOP of 500 psig, the maximum stress level of the pipe and pipeline fittings would be below 20 percent of specified minimum yield strength (SMYS) for pipeline and pipeline fittings.
- (d) The proposed new pipeline will be located in a class 4 location (where code requires a 0.40 design factor), but is being designed with a design factor of 0.20. This is more stringent than what the code requires.
- (e) The proposed new pipeline will have valves installed at a spacing of less than one mile apart; this spacing is more stringent than code requirements (minimum of 2.5 miles apart).
- (f) The new pipeline and the tie-in segments at both ends of the pipeline will be pressure tested to 750 psig, which is 1.5 times the MAOP of the new pipeline.
- (g) At least one (potentially three) of the sections of the proposed pipe will be installed via directional drill. All pipe installed via directional drill will have abrasion resistant overlay (ARO) coating applied to guard against abrasive damage that could occur as part of the installation process.

Conclusion

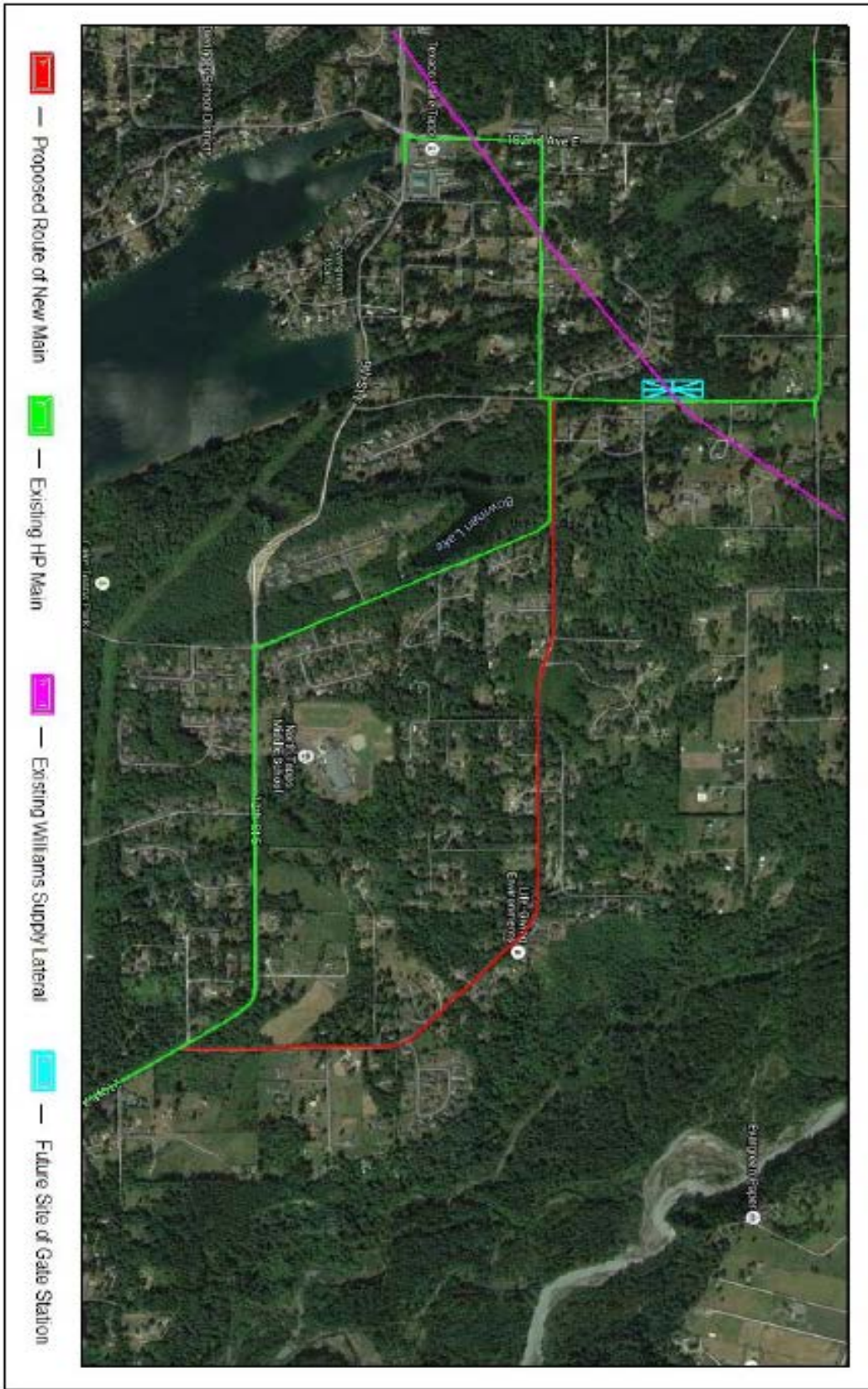
A review of PSE's proposed construction plans indicate that it meets all of the pertinent requirements of the Code of Federal Regulation, Title 49, Part 192 and 480-93 of the Washington Administrative Code and that the selected location of the new pipeline has the least impact on surrounding population densities.

The commission's proximity rule, WAC 480-93-020, is one such rule and allows pipeline staff the opportunity to review construction plans of high pressure pipelines in close proximity to structures to address safety considerations. Staff's recommended conditions described below appropriately minimize the public safety risk associated with the proposed pipeline.

For these reasons, staff recommend that the commission issue an Order approving PSE's request to install and operate a 12-inch pipeline, with a MAOP of 500 psig subject to the following conditions:

- a) For underground installations, PSE must electrically inspect (jeep) the pipe coating and repair any coating defects in accordance with PSE's operating standard prior to backfilling.

- b) PSE must submit “as-built” ESRI GIS Shapefiles of the pipeline location with final construction specifications to the commission within six months of completing the project.
- c) For underground installations, PSE must apply backfill material around the pipe to protect the pipe and coating. The material around the pipe must be free of any sharp rocks or other objects with a maximum particle size of one half inch and must contain a large percentage of fines, such as, sand, native soil, or soil-based select materials.
- d) PSE must perform non-destructive testing (NTD) of 100 percent of all welds. PSE must remedy defects in the welds in accordance with PSE’s operating standards and procedures. PSE must NDT all repaired welds to ensure pipeline integrity and compliance with existing standard.
- e) PSE must install cathodic protection within 90 days after the pipeline is installed.
- f) PSE must provide telephonic notice to the Commission Pipeline Safety Program followed by an email confirmation at least two business days prior to the beginning of project construction.
- g) PSE must contact residents within 100 feet of the new pipeline prior to the Commissions open meeting and inform them of the project construction and any additional information consistent with the public awareness requirements in Title 49 CFR, Part 192.616.
- h) PSE must test the pipeline to a minimum of 750 psig in all locations along the pipeline route. This test pressure is at least 1.5 times the intended MAOP of 500 psig. The test will be held in accordance with PSE procedures without pressure loss unless the loss can be justified by a corresponding change in temperature. If PSE identifies any leaks, PSE will stop the pressure test, repair the leak, and start the pressure test anew.
- i) Where physically practicable, PSE will bury the pipeline with a minimum of 48 inches of cover. Where 48 inches of cover is not practicable, PSE will bury the pipeline with a minimum of 36 inches of cover.



Bonney Lake HP Supply Main - Route Map