Agenda Date: July 28, 2011
Item Number: A4

Docket: **PG-111061**
Company Name: Cascade Natural Gas Corporation

Staff: Al Jones, Pipeline Safety Engineer

Recommendation

Issue an order granting Cascade's request to operate a pipeline at pressures up to 500 pounds per square inch gauge (psig) subject to the conditions recommended by staff.

Background

Cascade Natural Gas Corporation (Cascade) provides natural gas service to Sedro-Woolley, Mt. Vernon, and Anacortes, in Skagit County from an existing high pressure 8-inch pipelines. Cascade has identified a segment of the pipeline that will be replaced in a residential neighborhood in the town of Sedro-Woolley, Washington.

Cascade proposes to replace an 8,000 foot segment of the 8-inch pipe with a new segment of 12-inch diameter pipe of greater wall thickness and stronger grade of material utilizing current construction practices. The proposed project is located inside the city limits of Sedro-Woolley that will begin at Cascade's Sedro-Woolley Gate Station (R-138) at Fruitdale Road just north of McGarigle Road and will end at Sapp Road just west of the Burlington Northern Santa Fe Railway right-of-way.

On June 13, 2011, Cascade requested approval to construct an 8,000 foot section of 12-inch high pressure pipeline and downrate the existing 8-inch pipeline from a maximum operating pressure (MAOP) of 400 pound per square inch gauge (psig) to a MAOP of 60 psig.

Discussion

A gas pipeline company must have permission from the Commission to operate a pipeline at greater than 250 psig, up to and including 500 psig, within one 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.

The proposed pipeline will pass within 100 feet of approximately 65 residential homes and the existing 8-inch line which operates within 100 feet of the same homes will be downrated from a MAOP of 400 psig to a MAOP of 60 psig. (The existing 8-inch line cannot accommodate internal inspection devices). The approximate 8,000 feet segment will be designed and tested for a MAOP of 500 psig, will be radiographically examined at

100 percent of all girth welds, and tested to a minimum of one and one-half times the MAOP.

The most restrictive natural gas pipeline safety rules specify that pipelines in a highly populated area (Class 4 Location) be operated at pressures producing a hoop stress of no greater than 40 percent of the specified minimum yield strength (SMYS) of the pipe. Cascade proposed pipeline route (Class 3 Location) for 46 or more building intended for human occupancy or well-defined outside public area that is limited to a hoop stress no greater than 50 percent of the SMYS of the pipe. The pipeline will be constructed for a MAOP of 500 psig or a hoop stress of 16.4 percent of SMYS, less than 50 percent SMYS for Class 3 Location. The pipeline will be pressured tested at a minimum of one and one-half times the MAOP or 750 psig or a hoop stress of 24.5 percent of SMYS.

Recommendation

After examination of the request and giving consideration to all relevant matters, staff recommends the Commission issue an Order granting Cascade's request to operate above 250 psig and subject to the conditions in the Order.