

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION
COMMISSION

In the Matter of the Request of)	
)	DOCKET NO. UG-020156
Cascade Natural Gas Corporation)	
)	
For Authorization to Operate the)	ORDER GRANTING REQUESTED
Proposed Transmission Pipeline At)	AUTHORIZATION
Pressures Exceeding 500 psig)	
(WAC 480-93-020).)	
.....)	

BACKGROUND

- 1 On February 8, 2002, Cascade Natural Gas Corporation (Cascade) filed a petition in Docket UG-020156 seeking authorization to operate 2.6 miles of 12-inch diameter natural gas transmission pipeline at pressures exceeding 500 pounds per square inch gauge (psig), pursuant to WAC 480-93-020, **Proximity Considerations**. The proposed pipeline is located in Mason County and passes through the City of Shelton.
- 2 This request was brought before the Commission at its regularly scheduled open public meeting on April 24, 2002. The Commissioners, having determined the following order to be consistent with the public interest, and have directed the Secretary to enter the following order and related provisions.

DISCUSSION

- 3 Cascade operates an existing 35 mile, 8-inch diameter gas transmission pipeline that begins at the interstate pipeline in Mason County and continues through Shelton to Bremerton. Cascade reinforced the pipeline in 1995 and 1996 by adding two segments of 12-inch diameter pipeline, of 7 and 15 miles in length, respectively. The recent segments are looped with the existing pipe to increase pipeline capacity.
- 4 Cascade's petition before the Commission is for authority to build a third segment of pipeline, to loop the Shelton segment of the existing 8-inch pipeline. The primary purpose of the proposed transmission pipeline is to provide reinforcement to the Kitsap County service area. The pipeline will be buried and bored underground for a length of approximately 2.6 miles. The proposed route includes construction within the rights-of-way of U S Highway 101 and Bonneville Power Administration electric transmission lines. Construction within the electric power transmission lines are a cause of concern because the electrical fields of the power lines have the potential to accelerate corrosion of the pipeline over time.

5 The Commission has adopted the Code of Federal Regulations, Title 49 Part 192, and Chapter 480-93 of the Washington Administrative Code as minimum standards for natural gas pipeline construction. The most restrictive natural gas pipeline safety rules specify that pipelines in a highly populated area be operated at pressures producing a hoop stress of no greater than 40% of specified minimum yield strength of the pipe. Cascade will construct the proposed pipeline to provide a higher margin of safety, a hoop stress of approximately 19.8% of the pipe's specified minimum yield strength.

6 In addition, Cascade has agreed to conduct a close-interval survey or another equivalent or better survey as agreed to with Commission Staff within two years after the pipeline is constructed to verify the integrity of the pipeline coating. Cascade has further agreed to conduct an assessment of the pipeline system within 5 years of construction using technologies or techniques consistent with the proposed federal gas pipeline integrity management rule that may include but not limited to internal inspection devices, hydro testing, or direct assessment, or other accepted methods that will be equal to or exceed the above methods.

7 The Commission believes that the Company's commitment to provide additional design strength and to provide additional inspections offset any concerns of pipeline safety caused by construction in a populated area and by sharing the right-of-way of an electric power line. The installation of the proposed facility should not have a significant impact on public safety if those conditions are met.

FINDINGS OF FACT

8 The Washington Utilities and Transportation Commission (Commission) has authority to enforce safety regulations concerning the construction, maintenance and operation of pipelines transporting natural gas in the state of Washington (RCW 80.28.210). The Commission has adopted the Code of Federal Regulations Title 49, Part 192 and Chapter 480-93 of the Washington Administrative Code as the minimum standard for natural gas pipeline construction.

9 Cascade Natural Gas Corporation is a corporation having as one or more of its principal purposes the construction, maintenance or operation of a pipeline for transporting natural gas in this State.

10 Cascade proposes to construct a 2.6-mile segment of 12-inch diameter natural gas pipeline, in part through populated areas of the city of Shelton, Washington and in part within the right-of-way of an electric power transmission line.

CONCLUSIONS OF LAW

11 The Commission has jurisdiction over this matter and all parties to this proceeding.

- 12 The Commission retains jurisdiction over this matter to effectuate the provisions of this order and is authorized to modify or waive a rule in accordance with WAC 480-93-020.
- 13 The Company's agreement to exceed minimum regulatory requirements by increasing the design strength of the pipe and to provide inspections satisfy the additional safety concerns caused by the location of the pipeline route.
- 14 It is consistent with the public interest that the Commission grant the Company's request for authorization to operate the proposed pipeline at pressures not exceeding 700 psig, conditioned upon Cascade's meeting the commitments it has made regarding structural strength of the pipeline and the conduct of inspections.

O R D E R

15 THE COMMISSION ORDERS:

- 16 Effective on the date of this Order and conditioned upon meeting the commitments imposed in Appendix A, the Commission approves the request of Cascade Natural Gas Corporation to operate the proposed 2.6 mile of 12-inch diameter transmission pipeline between Cascade Valve Station (V-63) at Goldsborough Creek located southwest of the town of Shelton and extending to the existing regulator facility (Regulator R-30) on John's Prairie Road in the northwest edge of Shelton at pressures not exceeding 700 pounds per square inch gauge but exceeding 500 pounds per square inch gauge within 500 feet of buildings intended for human occupancy, pursuant to the requirements of WAC 480-93-020.
- 17 Cascade Natural Gas Corporation must comply, as specified, with the proximity considerations and safeguards contained in Appendix A.

DATED at Olympia, Washington and effective this 24th day of April, 2002.

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

MARILYN SHOWALTER, Chairwoman

RICHARD HEMSTAD, Commissioner

PATRICK J. OSHIE, Commissioner

**Cascade Natural Gas Corporation
Kitsap Transmission Pipeline – Phase 3
Proximity Considerations and Safeguards**

Filing and Notices:

1. File comprehensive written design and construction specifications with the Commission sixty days prior to the commencement of construction;
2. File comprehensive written Company standards applicable to this project with the Commission sixty days prior to the commencement of construction;
3. File biweekly progress reports with the Commission to assist staff with compliance monitoring and the scheduling of construction inspections and;
4. Notify the Commission a minimum of thirty days in advance of initial groundbreaking.

Design and Construction:

1. The 12-inch diameter pipe will be API 5L Grade X-60 with nominal wall thickness of 0.375 inch;
2. Provide a 24-hour Supervisory Control and Data Acquisition system to monitor operating flow and pressure conditions;
3. At least annually offer to meet with emergency response personnel in areas along the pipeline route to coordinate response capabilities, drill cooperatively and provide maps if requested to improve the protection of life and property;
4. Install two mainline valves on the 12-inch pipeline and two 6-inch diameter blowdown valves for controlled shut down and emergency response. One mainline and blowdown valve set shall be located at the Goldsborough Creek Crossing and the other mainline and blowdown valve set shall be located north of Shelton on John's Prairie Road near the Hiawatha Industrial Park. The valve installations will meet or exceed the requirements of 49 CFR 192.179;
5. Radiographically examine 100% of the girth welds on the 12-inch diameter pipeline except welds that can not be radiographed. Cascade will provide written evidence where radiographs are impractical including the certified radiographer's

statement. All welds will be inspected and defects will be replaced or repaired in accordance with the American Petroleum Institute Standard 1104 specification. All repaired welds will be radiographed to ensure pipeline integrity and compliance with standards;

6. For piping that is outside the Cascade's controlled fenced areas, provide cover of not less than 4 feet above the top of the pipe. Where it helps facilitate crossing utilities, provide a cover of not less than 3 feet. Such locations with less than four foot cover shall be documented and Commission Staff will be notified as soon as possible;
7. At water crossings provide a minimum cover of 4 feet below the natural bottom;
8. The entire coating will be "jeeped" (electrically tested for flaws) to insure integrity. Any flaws detected will be repaired;
9. Cascade will have cathodic protection test locations at intervals sufficient to determine the adequate protection of the pipeline during surveys. Each location will have an appropriate test method that indicates accurate cathodic protection data. The overall test point location plan shall be reviewed by Cascade to ensure that the protection of the entire pipeline may be assessed by the test locations chosen. Prior to construction, Staff will review the cathodic protection system design. Cascade will provide a test location selection summary that will describe the reason for picking the test locations, such as these locations of concern:
 - a. Where the pipeline is under concrete or paved surfaces,
 - b. Where the pipeline crosses cathodically protected foreign facilities and,
 - c. Where the pipeline is parallel with overhead high voltage electric transmission lines;
10. Six inches of shading and backfill material will be used around the pipe to protect the pipe and coating. The material around the pipe will be free of sharp rocks with a maximum particle size of 1/2" and containing a large percentage of fines. Rock shield material will be allowed in places where sand is not available and the backfill material shall be free from sharp objects and large clods that could damage the pipe and coating. If the trench bottom is not free from sharp or unusually rough surfaces, the trench shall be over-excavated 6 inches and refilled with select fill material free of sharp rocks with a maximum particle size of 1/2" and containing a large percentage of fines;
11. The pipe placed as part of this project, which spans from north of Goldsborough Creek to the Hiawatha Industrial Park, shall be designed with a pipe hoop stress of less than 20% of specified minimum yield strength;
12. Pipe placed in a directionally drilled tunnel shall be inspected for damage. Cascade will utilize pipe with an additional protective coating around the pipe to

protect the essential cathodic protection coating from damage during pulls. These criteria will be met:

- a. Sufficient pipe shall be pulled through until it is confirmed no significant damage exists on the protective coating. This assures that no damage occurred to the pipe or the cathodic protection coating.
- b. A weld joint, or an area prepared to simulate the profile of a weld joint, will be pulled through the entire bore and inspected. If the joint's protective shrink sleeve exhibits significant damage, additional "joints" will be pulled through the entire bore and examined until it is confirmed no significant damage exists on the joint shrink sleeve.
- c. A back reaming device of minimum 16" diameter will be utilized to minimize the risk of coating damage by shearing action against the inside of the bore.

Testing:

Pressure test the 12-inch transmission pipeline at a minimum of 1,080 psig for a period of at least 24 hours. All leaks or defects noted will be repaired or replaced and retested. All 6-inch diameter and larger piping will be hydrostatically tested. Smaller lines and appurtenances may either be hydrostatically or pneumatically tested.

Operations and Maintenance:

1. Perform quarterly patrols along the pipeline right-of-way to observe surface conditions on and adjacent to the pipeline for indications of leaks, construction activity, and other factors affecting safety and operation. Perform annual leak surveys on the pipeline using leak detection instruments that are capable of detecting methane gas of at least 50 parts per million;
2. Install gas pipeline marker signs at each road, rail, water crossing and at line-of-sight distance in all class locations to minimize the risk of third-party excavation damage;
3. The operating pressure of the pipeline will not exceed 700 psig without approval from the Commission;
4. The pressure regulator stations will be designed with an overpressure protection device to prevent the line pressure from exceeding the maximum pressure specified in 49 CFR 192.201;
5. Provide an emergency valve at the inlet piping at a distance from the regulator station sufficient to allow valve operation during an emergency that might preclude access to the station;

6. Install cathodic protection within 90 days after the pipeline is installed;
7. Install fault current protection including magnesium anode or other means of protection where the pipeline is adjacent to electrical transmission tower footings in accordance with 49 CFR 192.467;
8. The pipeline will be constructed with the proper radius elbows, bends, and full aperture valves to facilitate in-line inspection; and
9. Cascade will conduct a close interval survey or another equivalent or better survey within two years after the pipeline is constructed, to verify the integrity of the coating and conduct an assessment of the pipeline system within five years of construction using technology or techniques consistent with the proposed gas integrity management rule that includes internal inspection devices, hydrostatic testing, direct assessment, or other accepted methods that will be equal or exceed the above methods. Direct assessment techniques may include the combination of historical data with direct examination from excavations of the pipeline to establish a predictive basis for future pipeline inspection and repair. Possible direct assessment technologies include close interval survey, direct current voltage gradient, or other technologies. Based on the results, the Company and Commission Staff will determine an appropriate schedule for conducting future inspections.