

PG-111454



August 9, 2011

Dave Danner, Executive Director/Secretary
Washington Utilities and Transportation Commission
PO Box 47250
Olympia, WA 98504-7250

RECEIVED

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State of Washington
UTC
Pipeline Safety Program

Attn: Dave Lykken, Pipeline Safety Director

RE: Little Rock Gate Station Pressure Authorization Request

Dear Mr. Lykken:

Pursuant to WAC 480-93-020, Puget Sound Energy (PSE) requests approval to operate the inlet piping of the Little Rock Gate Station (RS-0991) at a pressure in excess of 250 psig. The increased inlet pressure to the gate station will allow the downstream IP system (IP-306, 55 psig MAOP) to maintain reliable service during peak loading and will allow the installation of a new natural gas service to Granite Construction, an asphalt plant fed by IP-306.

The rebuild project replaces several elements of the existing PSE facility in order to facilitate an increase in operating pressure and an increase in the peak flow volume that this facility can support. The gate station improvement project has two parts: A) replace an existing odorizer with a larger odorizer capable of supporting increased station flows and B) increase the operating pressure and MAOP of the PSE inlet piping to facilitate a higher delivery pressure from Williams Pipeline Northwest (Williams). In order to accomplish these goals, the inlet side of the regulator station will be rebuilt, including the replacement of all existing piping. Some existing, rated components will remain in service, as shown in Exhibit B.

PSE requests the authorization to operate the inlet side of RS-0991 at a maximum pressure of 350 psig. The minimum component rating will be 400 psig (ANSI 300) and the piping being installed as part of this job will be strength tested to a least 525 psig. The MAOP will be 350 psig.

Construction is planned to begin as early as September 1st, 2011 in order to meet Granite Construction service date.

Exhibits A & B provide additional information regarding the proposed and existing facilities. Exhibit C provides information regarding the one structure located within the 100 feet proximity of the proposed project.

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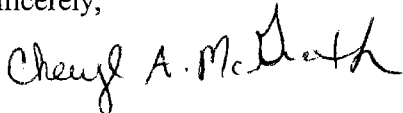
The facility exceeds the minimum federal safety regulations in the following design, operation, and maintenance areas:

- **Class Location** – Even though the RS-0991 is located in a rural area, the design and construction specifications meet or exceed the requirements for a Class 4 location (192.5).
- **Design Factor** – PSE's design factor of 0.20 exceeds the 0.40 factor for Class 4 locations (192.111).

The proposed 2" and 3/4" station piping will operate at maximum stress level of 7.72% SMYS at 350 psig.

If you require any additional information, please call me at (425) 462-3207.

Sincerely,



Cheryl McGrath
Manager, Gas Compliance and Regulatory Audits - Gas

Enclosures

cc: Catherine Koch
Duane Henderson
Carol Wallace
Greg Zeller

Exhibit A - GENERAL INFORMATION

Facility Background:

The Little Rock Gate Station is located south of Olympia and feeds IP-306 at 55 psig. The Williams facility, co-located on the same property as RS-0991 has metering, heating and telemetry equipment along with single stage, 2 run regulation and a relief valve. Williams currently supplies gas to PSE at a pressure of 150 psig. The original PSE station was built in 1967, although none of the original pipe or equipment from the 1967 installation is still in service. RS-0991 underwent a major rebuild in 1977 and was revised again in 1988, 1994 and 1999. The facility reduces the supply pressure to 55 psig via a single 2" regulator. Overpressure protection for the downstream system is provided by a relief valve.

Most of the PSE piping within the facility is downstream of the PSE regulator, and operates at intermediate pressure. The only piping which is subjected to the Williams supply pressure is the odorizer piping and approximately 6 feet of 2" pipe and fittings between the PSE regulator body and the Williams line of demarcation. It is this piping that PSE is requesting authorization to operate at a maximum of 350 psig.

Proposed replacement job:

PSE will be replacing the existing buried, 6 gallon odorizer with a buried 57 gallon odorizer (odorizer rating = 500 psig). The odorizer piping and valves will also be replaced. A new 2" orifice fitting will be installed to replace the existing odorizer differential valve, and the 2" pipe spools on either side of the orifice will be replaced with new pipe segments. Two existing 2" valves, the existing strainer and the existing regulator assembly will stay in service. After the PSE installation is complete and the Williams Supply pressure has been increased, PSE will leak survey all station piping at the new operating pressure.

MAOP:

All new piping will be strength tested to a minimum of 525 psig. All existing piping upstream of the regulators will be replaced. The minimum part rating will be 400 psig (see "table 2" for details). The proposed MAOP of the rebuilt gate station inlet will be 350 psig.

Pipe and Fitting Specifications:

The rebuilt station piping will be constructed from 2" x 0.154" and 0.75" x 0.113" API 5L-Grade B steel pipe. All above ground station piping will be painted and any below ground portions of the 3/4" odorizer piping will be wrapped per PSE Gas Operating Standards (GOS) 2600.1100. The pipe specifications with the corresponding percentage of specified minimum yield strength at MAOP and normal operating pressure for the supply main are shown in the table below.

Table 1

| Pipe Specification | % SMYS @ MAOP (350 psig) | % SMYS @ Normal Operating Pressure (275 psig) |
|--|-----------------------------|--|
| 2" x 0.154" wall API 5L Grade B pipe | 7.72 | 6.06 |
| 3/4" x 0.113" wall API 5L Grade B pipe | 4.65 | 3.66 |

Table 2

| | Rated Fitting Description | Rated Pressure (psig) | Installation Year |
|---|--|-----------------------|-------------------|
| 1 | 2" Nordstrom Fig. 2245 1/4 Valve | 1480 | 1977 |
| 2 | 2" Nordstrom Fig. 305 Valve | 400 | 1977 |
| 3 | 2" Brooks D2-600 Strainer, Class 300 | 740 | 1994 |
| 4 | 2" American Axial Flow Regulator, Class 300 | 740 | 1994 |
| 5 | 2" Daniels Senior Orifice Fitting, Class 300 | 740 | 2011 |
| 6 | Peerless 57 Gal bypass Odorizer | 500 | 2011 |

All other pipeline components will have a working pressure rating of at least 720 psig.

Cathodic Protection:

Coating:

As outlined in GOS 2600.1100, an external protective coating shall be applied to any buried piping at installed as part of the station rebuild. Any field joints and fittings not supplied with protective coatings will have field-applied coatings. All aboveground piping will be painted in accordance with written specifications. Field-applied coatings will meet the requirements of GOS 2600.1100, Field Coatings for Pipe and Fittings. The odorizer will be coated per approved specifications prior to installation.

Cathodic Protection System:

All buried piping will be protected by existing impressed current CP system that protects the downstream STW IP main (IC-037034). The rectifier that protects this CP system was last inspected on 6/1/11.

Testing:

The test medium will be nitrogen and the test pressure will be at least 525 psig. As much as feasible, piping sections will be prebuilt and pretested prior to installing at the station. All testing will be done in accordance with PSE Gas Operating Standard 2525.3300 and in accordance with an approved procedure.

Welding:

All welding and welding inspection will conform to the following PSE Gas Operating Standards:

- 2525.2700 Installation Requirements for Steel Pipe and Fittings
- 2700.1100 Welder Qualification Requirements
- 2700.1200 Weld Inspection and Repair
- 2700.1300 Weld Inspector Qualification Requirements
- 2700.1400 Welder Qualification Test Requirements

In addition, PSE has a comprehensive set of welding procedures that are included in the Gas Field Procedures Manual. All welding to be done on this project will be governed by these procedures.

Pressure Monitoring:

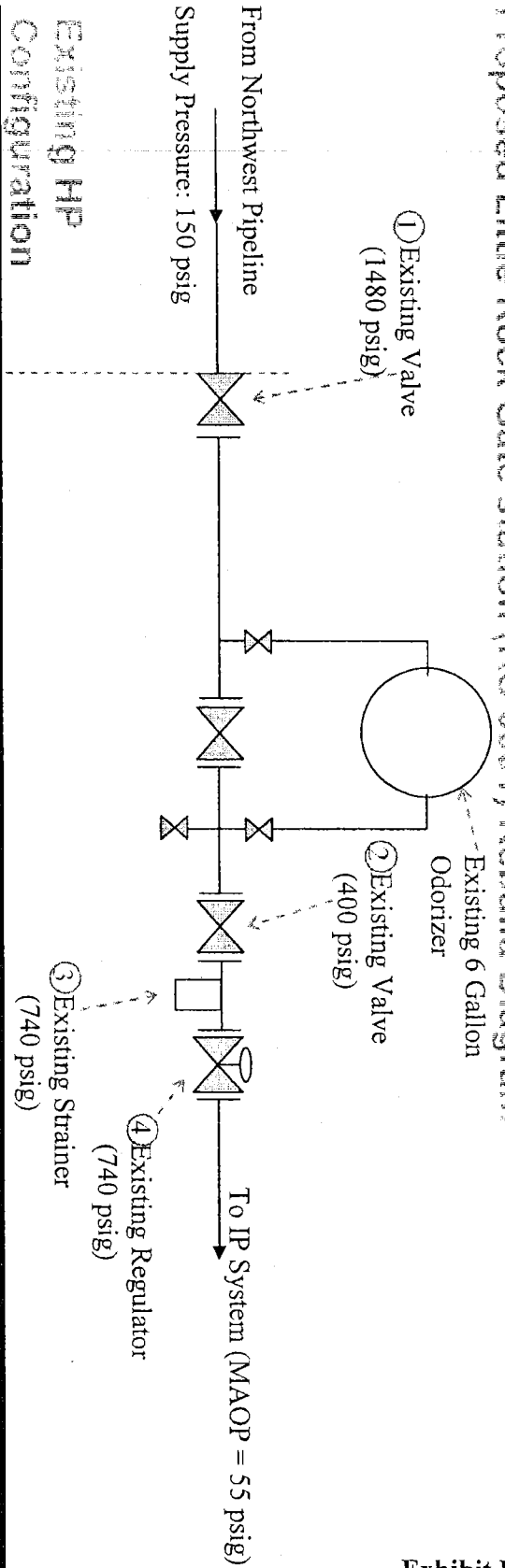
The pressure in this system will be monitored by an existing remote telemetry unit (RTU). The RTU will poll system pressure every 3 seconds. These pressures will be monitored 24 hours a day in PSE's 24-Hour Operations Center.

Leakage Surveys:

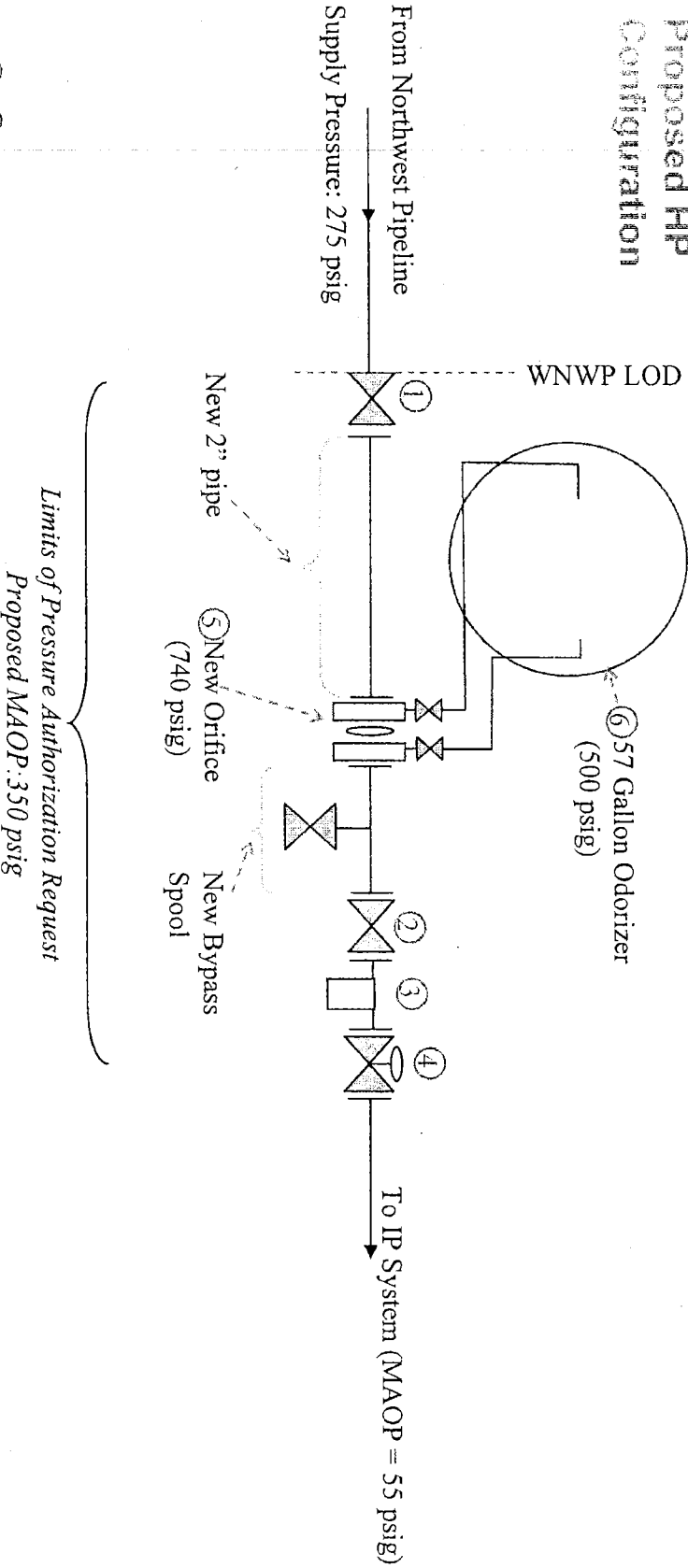
Leakage surveys will be conducted in accordance with PSE Gas Operating Standard 2625.1100, Leakage Survey Program. This Operating Standard requires leak surveys to be conducted annually but not to exceed fifteen months for supply mains operating at or above 250 psig. Leak survey for fenced regulator station piping is conducted as part of the annual maintenance activities performed by Pressure Control technicians (last station inspection completed on 6/15/11).

Proposed Little Rock Gate station (RS-0991) Rebuild Diagram

Exhibit B



Proposed HP Configuration



①-⑥ See Exhibit A, Table 2

Exhibit C

| PUGET SOUND ENERGY Little Rock Gate Station Structure within 100 feet Proximity of the Pipeline | | | |
|--|--------------------------------------|-------------|------------------------------------|
| Distance (feet) of Structure From Proposed Gas Pipeline | Owner Address | Land Use | Land Owner |
| 80 | 2616 W Bertona St, Seattle, WA 98119 | Mobile Home | Hendricks, Alvin C. and Narcisa A. |