PG-080793-P

PUGET SOUND ENERGY
The Energy To Do Great Things

April 30, 2008

Carole J. Washburn, Secretary
Washington Utilities and Transportation Commission
PO Box 47250
Olympia, WA 98504-7250

Attn: Anne F. Soiza, Pipeline Safety Director

RE: Union Hill at Avondale Road Pressure Authorization

Dear Ms. Soiza:

Pursuant to WAC 480-93-020, Puget Sound Energy (PSE) requests approval to operate an additional segment of the Union Hill supply main at a pressure in excess of 250 psig. This 16-inch pipeline will replace a section of 8-inch main and provide additional gas supply to the Redmond, Kirkland, and Bellevue areas ensuring reliability as growth increases.

The proposed pipeline is one of two locations where 8-inch pipe remains following multi-phase projects constructed along the same general route as the original 8-inch Redmond Supply. The main connects the Redmond Gate Station #1342 to the Redmond Limit Station #2387. It currently operates at a pressure of 300 psig in accordance with a 1996 waiver granted to Washington Natural Gas Company (UG-951278). Phase 1 was completed on December 17, 2002 (PG-020978), Phase 2 completion on September 4, 2003 (PG-030484) and Phase 3 was completed October 26, 2007. Union Hill at Avondale is Phase 4, and Phase 5 will be coordinated with future King County road improvements.

The Union Hill at Avondale Road Supply Main is scheduled to be installed as early as July, 2008 and will be tested at a minimum of 750 psig. The minimum component rating will be 720 psig (ANSI 300) and the MAOP will be 500 psig. The attached exhibits provide additional information regarding the proposed facilities.

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

- **Class Location** – 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).
- **Valve Spacing** – An additional valve will be installed keeping spacing much less than 1 mile apart in accordance with PSE's standards. This spacing exceeds the 2-1/2 mile

requirement for transmission line valves in Class 4 locations. (192.179). There are no specific valve spacing requirements for high-pressure distribution systems. (192.181)

- **Nondestructive Testing** – PSE's radiographic inspection plan is identical to the Class 3 and Class 4 requirements for transmission lines. Thus PSE's plan far exceed the minimum federal safety regulations which do not require nondestructive testing of pipelines operating below 20% SMYS. (192.241 and 192.243)
- **Cover** – PSE's standards require a minimum cover of 36" over high-pressure distribution mains, this exceeds the minimum federal requirements of 24". (192.327(b)) For the Union Hill Road project the main is proposed to have a minimum cover of 48" wherever possible.
- **Leakage Survey** – In accordance with PSE standards, portions of the proposed 16" main near high occupancy structures (HOS) will be leak surveyed on an annual basis. The remainder will be leak surveyed once every 3 years which exceeds the federal and state requirement of 5 years for mains outside of business districts and places of public assembly. (192.723 and WAC 480-93-188)

The proposed 16" main will operate at a lower stress level (11.4% SMYS @ 300 psig) than the existing 8" main (19.7% SMYS @ 300 psig).

PSE is planning on providing notification to the identified property owners in advance of any scheduled open hearing with regard to this request. If you require any additional information, please call me at (425) 462-3974.

Sincerely,

Duane A. Henderson, PE
Director, Operations Services

Enclosures

cc: Eric Markell
Mike Hobbs
Bert Valdman
Karl Karzmar
Shamish Patel

Exhibit A - GENERAL INFORMATION

Background:
The existing Redmond Supply extends approximately 20,000 feet between the Redmond Gate Station #1342 (227 NE AV & Union Hill Rd) to the Redmond Limit Station #2387 (Avondale Way & Union Hill Rd). For several years, PSE's long-range plan has included upsizing the existing 8-inch Redmond Supply main. This pipeline will provide additional gas supply to the Redmond, Kirkland, and Bellevue areas ensuring reliability as growth increases. By providing needed supply to these areas of significant growth, this new pipeline will shift demand away from the southern part of the system, enabling the existing Issaquah lateral to supply the growing system demand further south.

Phase 1 was 5500' extending east from the Redmond Limit station (#2387) and was installed in 2002. Phase 2 was 6600' extending west from the existing Redmond Gate Station (#1342) and was completed in 2003. Phase 3 was an 8250' section that covered the vast majority of space between the two preceding phases. A fifth phase will be coordinated with future King County road improvements and system demand. When the final phase (Phase 5) is completed, the new 16" supply main will connect the Redmond Gate Station (#1342) and the Redmond Limit Station (#2387). When the entire route is completed, the 16" supply main will replace the existing 8-inch supply main.

Pipeline Route:
The 16" Redmond Supply main will parallel the existing 8-inch Redmond Supply main that begins at the Redmond Gate Station (#1342) and extends west approximately 20,000 feet along Union Hill Road to the Redmond Limit Station (#2387). This particular phase of the project is approximately 600 feet in length and will run parallel to the existing 8" main.

The attached map (Exhibit B) illustrates the proposed route and location for these facilities.

MAOP:
The Union Hill Supply will be designed and tested for an MAOP of 500 psig.

Pipe and Fitting Specifications:
The proposed pipeline will be constructed from 16" x 0.375" API 5L-X56 steel pipe with a fusion bonded epoxy (FBE) coating. The pipe and fitting 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.

Supply Main:

Material Specification	% SMYS @ MAOP (500 psig)	% SMYS @ Normal Operating Pressure (300 psig)
16" x 0.375" w.t. API 5L-X56 wrapped pipe	19.05	11.43
16" x 0.375" w.t. WPHY-56 fittings	19.05	11.43

All other pipeline components will have a working pressure rating of at least 500 psig.

Damage Prevention:
Pipeline markers will be installed and monitored in accordance with PSE Gas Operating Standard 2525.2500 and 2575.1100. PSE is an active member in the local One-Call System and works closely with the local municipalities and permitting agencies prior to any construction starting in the vicinity of its facilities. Additionally, it is PSE standard practice to monitor construction work taking place in the vicinity of its high pressure systems.

Construction Details:
All construction shall conform to Class 4 Standards.

Cover -All buried mains will be installed with a minimum of 3 feet of cover. Four feet of cover will be achieved wherever possible.

Backfill - All shading and bedding material will be free of sharp rocks with a maximum particle size of ½" unless an approved rock shield material is utilized. When rock shield material is used, the backfill material shall be free from sharp objects and large clods that could damage the pipe.

Clearance - At least 12 inches of separation will be maintained between the pipeline and other underground facilities. If 12 inches separation is not possible, the pipeline will be protected from damage caused by proximity to the other structure, by using a bare steel casing, a split PVC or PE pipe, or a fiberglass shield.

Cathodic Protection:
The corrosion control program will be designed and installed in accordance with the requirements of section 2600 of the PSE Gas Operating Standards. The following standards are applicable to the supply main:

2600.1000	Cathodic Protection Requirements
2600.1100	Field Coatings for Pipe and Fittings
2600.1200	Test Station Requirements
2600.1300	Designing and Installing Cathodic Protection Systems
2600.1400	Electrical Isolation and Grounding Requirements
2600.1500	Monitoring Cathodic Protection
2600.1700	Monitoring and Remedial Measures for Internal Corrosion
2600.1900	Remedial Measures for Corrosion Control
2600.2000	Galvanic Anode Installation Requirements

Coating:
As outlined in Operating Standard 2600.1100, an external protective coating shall be applied to the pipeline. 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 Operating Standard 2600.1100, Field Coatings for Pipe and Fittings.

All coating specifications will be included in the notice of proposed construction.

Testing:
The test medium will be water and the test pressure will be at least 750 psig. Elevation changes approximately 10 feet through this section of the supply main. Therefore, the test pressure at the lowest elevation will be at least 760 psig to ensure 750 psig is obtained at the highest point on the pipeline. 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. If any new procedures are required for the welding on this project, they will be qualified in accordance with PSE Operating Standards and added to the Gas Field Procedures Manual. The 16" supply main welds will be performed using Gas Field Procedure 4900.1330.

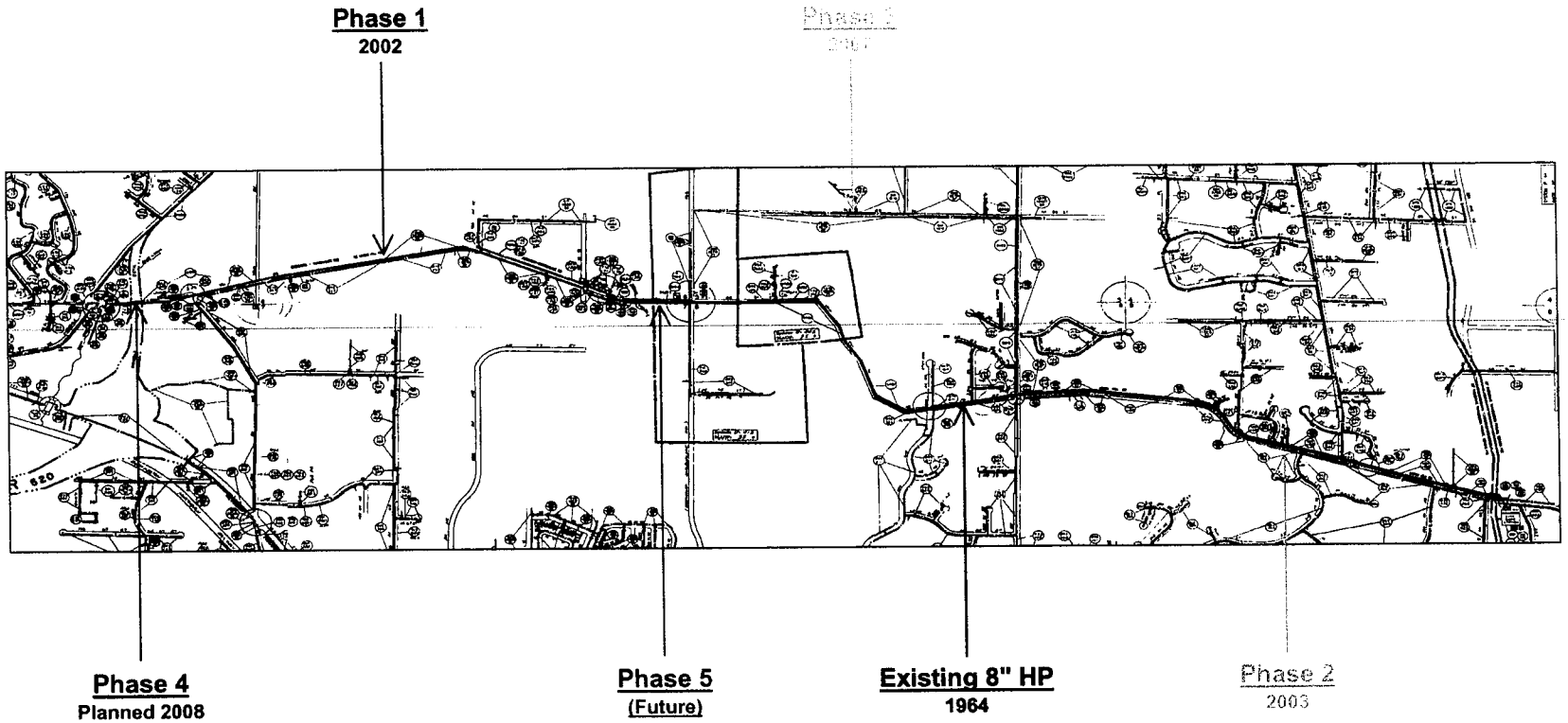
A minimum of 90 percent of the welds will be x-rayed.

Pressure Monitoring:
The pressure in this system will be monitored by remote telemetry units (RTUs). The RTUs 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 every 3 years for supply mains (supply mains are all high pressure mains other than transmission mains). This provides more frequent surveying than required by state and federal regulations.

Exhibit B - Pipeline Route

PSE Union Hill Road 16" High Pressure Gas Project Phases



JRW 4/28/08

Exhibit C- Structures in Proximity of Pipeline

Puget Sound Energy
Union Hill Road at Avondale

Distance (feet) of Structure Stationing from Preliminary Alignment	Side of the Route	Route	Address	Land Use	Land Owner
42	LT	(0+00)	17530 NE Union Hill Rd Redmond, Wa 98053	Office Building	Hanna Properties Limited Partnership
60	LT	(1+50)	17602 NE Union Hill Rd Redmond, Wa 98053	Office Building	Nokina Avondale LLC