PUGET SOUND ENERGY

Date: June 28th, 2012

To: Job 887024719

From: Don Frieze, Project Engineer

Subject: Salishan Supply Uprate and Pierce Transit Supply Pressure Increase – UPDATE*

A. Purpose

*Updated to incorporate updates to the Preliminary Field Work form and changes to the procedure regarding the source of gas for the final pressure increment.

The Salishan Supply uprate and the Pierce Transit Supply pressure increase are driven by increased growth in the Tacoma area and are related to the I-5 Tacoma H.O.V. project. The uprate will increase the MAOP of the Salishan Supply from 150 psig to 250 psig and fulfill all uprate requirements in accordance with GOS 2575.2500. The uprate will be conducted by increasing the system pressure in four 25 psig increments. In conjunction with the uprate, the Pierce Transit Supply, which already has an MAOP of 250 psig, will be pressure increased from the current operating pressure of 150 psig to 250 psig.

The Salishan Supply and the Pierce Transit Supply are currently fed by the North Tacoma Limit Station (LS-2661). Upon completion of the uprate, the North Tacoma Gate Station (GS-1349) will supply and regulate gas directly to the Salishan Supply and the Pierce Transit Supply. The North Tacoma Limit Station will continue to supply and regulate the gas pressure to the Tacoma Limited Supply. See Schematic A.

The facilities affected by the Salishan Supply uprate include six district regulators, 18 retired district regulators, and approximately 6.1 miles of HP main. The facilities affected by the Pierce Transit Supply pressure increase include one active regulator, 3.5 miles of HP main, one HP Meter set, and 50 service tees for retired services.

The following Preliminary Field Work shall be completed prior to the system uprate. The field work is scheduled to be completed by August 2012:

- Retirement of a pair of weld plugs on the Pierce Transit Supply
- Fabrication of CNG injection assemblies for RS-2697 and RS-2723
- Installation of pressure monitoring points at LS-2661
- Installation of a pressure monitoring point at valve VA-01943
- Change out a service tee completion cap at RS-2698
- Review of possible coating damage at E 40th St. and E M St.

- Review of a possible underrated valve at the Pierce Transit MSA

Project Manger, Project Engineer, System Planning, and Major Accounts shall determine the time, the date, and the number of increments attempted at one time based on weather forecasts and Pressure Control staffing.

During the first three pressure increments (175 psig, 200 psig, and 225 psig), Major Accounts and System Planning shall work with Pierce Transit to attempt to manage flow to prevent pressure fluctuations during the leak surveys.

During the third pressure increment (225 psig), the following steps shall be followed:

- If deemed necessary by Gas System Planning, selected interruptible customers shall be curtailed. Gas System Planning shall be notified as early as possible when the third increment date and time are known. At that time, Gas System Planning will assess temperature forecasts, time of year, and predicted industrial customer loads to determine what curtailments will be required.
- The running pressure of the North Tacoma Gate Station shall be increased to 245 psig.

During the final pressure increment (250 psig), the following steps shall be followed:

- CNG will be injected at two locations (between 250 psig and 268 psig).
- Pierce Transit shall be curtailed.
- The running pressure of the North Tacoma Gate Station shall be increased to 245 psig.
- The one regulator station that does not have adequate overpressure protection with a 268 psig inlet pressure will be monitored by Pressure Control.
- If 250 psig is not achieved at the end of the Salishan Supply, the Project Engineer may postpone the survey during the last increment until a more favorable time period.

B. Records Review Summary

Requirements:

Gas System Engineering conducted a review and evaluation of the design, operation, and maintenance records of the system being uprated including the Salishan Supply and the Pierce Transit Supply in accordance with PSE Gas Operating Standard 2575.2500 to ensure that the proposed pressure increase is safe and complies with relevant sections in Subpart K of DOT Part 192 and WAC 480-93-155.

The following information is documented on the applicable System Review Forms (see F-6 in this document for a complete list):

- Design and construction records of affected gas mains including pipe, fittings, and valves.
- Design and construction records of affected downstream industrial meter sets and upstream and downstream regulating stations including an evaluation of the overpressure protection at the uprated operating pressure.
- Previous operating pressures and operation date ranges.
- Current leakage and leak repair history.

- The MAOP and MOP of each segment connected to the system being uprated.
- The condition and depth of the pipe from the Exposed Pipe Condition Reports (EPCRs).
- Cathodic protection readings and records for the past three years for steel mains and services.

All System Review Forms shall be approved before the commencement of the uprate field procedure. All work that is required to be completed prior to proceeding with the uprate is detailed on the Preliminary Field Work (PFW) form.

Summary of Findings:

A summary of the findings based on the records review is given below:

- The Salishan Supply has an MAOP of 150 psig which is based upon the highest operating pressure during the 5 year window. The supply was originally tested for a 321.4 psig MAOP. However, the records review as part of the proposed uprate revealed active stubs to 11 retired stations that were either under-tested or test records were not found. The stubs will be retested to at least 450 psig or "pumpkined" in save-a-valves prior to raising the system pressure. (See Preliminary Field Work Form).
- The lowest rated component on the Salishan Supply is rated for 400 psig (after the completion cap is changed out on RS-2698).
- The Pierce Transit Supply has an MAOP of 250 psig which is based upon an uprate performed in November 1999. The entire Pierce Transit Supply was tested to 403.3 psig on 11/21/1999. The current MAOP is based upon components that are rated for 250 psig. As a result of the previously established MAOP, the operating pressure of the Pierce Transit Supply can be increased from 150 psig to 250 psig without undergoing an uprate. A valve will be throttled upstream of the 250 psig rated components during the final increment to ensure the uprate pressure does not exceed the pressure rating. Also, prior to the pressure increase of the Pierce Transit Supply, a pair of non-standard weld-plugs which were installed prior to the 1999 uprate will be removed. (See Preliminary Field Work Form).
- There are no active bare steel main or services in either the Salishan Supply or the Pierce Transit Supply.
- The regulator stations that are fed by the Salishan Supply and Pierce Transit Supply have been inspected in accordance with Gas Operating Standard 2575.1000.

Regulator Station	Last Inspection Date	Comments
RS-2661	8/4/2011	Must be re-inspected prior to the uprate
RS-2723	6/30/2011	Must be re-inspected prior to the uprate
RS-2698	3/21/2012	
RS-2697	6/30/2011	Must be re-inspected prior to the uprate
RS-2696	5/4/2011	Must be re-inspected prior to the uprate
RS-2695	5/3/2011	Must be re-inspected prior to the uprate
RS-2311	7/30/2011	Must be re-inspected prior to the uprate
RS-2558	7/30/2011	Must be re-inspected prior to the uprate

Regulator Station Table

- Overpressure protection at all regulating stations and industrial meter sets is sufficient for the proposed MAOP. A separate relief review was completed for all regulating stations that will temporarily be subjected to an inlet pressure of 268 psig. RS-2558 was determined not to have adequate overpressure protection at 268 psig and will be monitored by Pressure Control during the last increment.
- The last leak survey of the Salishan Supply and Pierce Transit Supply was conducted on 3/23/2012. Currently, there are no active leaks in the vicinity of the project. The leak history indicates that there have been three historic leaks repaired on this HP system. (See attached leakage report).
- The cathodic protection review indicates current cathodic protection (CP) readings on the two supply systems are within acceptable levels. The piping under review has received satisfactory cathodic protection historically, and is acceptable for uprate from a corrosion perspective based on the CP reads, leak history, and EPCRs. (See attached CP report).
- Maintenance Planning has reviewed the facilities subject to the uprate and pressure increase through records maintained as part of the Continuing Surveillance Program and identified one possible concern with reported coating damage on the Salishan Supply on a 2001 EPCR. A field confirmation to reassess the pipeline will be conducted prior to the uprate.

C. Preliminary Field Work

Requirements:

1. The Maintenance Program Coordinator shall verify that a leak survey has been performed on the Salishan Supply and the Pierce Transit Supply within the last 12 months of the uprate. If no leak survey has been performed within the last 12 months on any section of the two supplies, the Maintenance Program Coordinator shall schedule a leak survey on that particular section. Leaks found shall be classified and recorded in accordance with PSE Gas Operating Standard 2625.1300. **All Grade A and B(A) leaks shall be repaired before the start of the uprate. Gas First Response shall also assess Grade B(1), B(2), and C leaks for the likelihood of an upgrade in leak classification as the result of increased system pressure and have such leaks repaired before the start of the uprate.**

2. If it has been more than one year since the last inspection on any active regulator station listed on the Regulator Station Review Form, Pressure Control shall inspect the station. A maintenance work order shall be generated for any required repairs.

3. Pressure Control shall verify all work on pressure regulator stations (e.g. spring/orifice change outs, relief upgrades) listed on the Preliminary Field Work Form and the Regulator Station Operational Component Summary has been completed.

4. Industrial Meter Operations shall verify all work on industrial or pressure delivery meter sets (e.g. spring/orifice change outs) listed on the Preliminary Field Work Form has been completed.

5. Required pressure tests for segments of pipe which must be retested shall be identified on the Preliminary Field Work Form and the PM shall ensure this work is completed prior to the uprate.

6. Pressure Control shall access, grease, and operate the following valves and be prepared to operate them during the uprate. A work order shall be initiated in SAP for any valve that cannot be accessed or operated. The Project Manager shall add the work orders to the Preliminary Field Work Form.

Valve	Location	Plat Map
VA-01030	E L St. & E 25th St. (LS-2661)	242.062
VA-01031	E L St. & E 25th St. (LS-2661)	242.062
VA-01032	E L St. & E 25th St. (LS-2661)	242.062
VA-01943	E 96th St. & Golden Givens Rd.	248.063

Valve Table

7. Copies of any Exposed Pipe Condition Reports that are generated during the process of completing Preliminary Field Work shall be sent to the Project Engineer for review prior to the uprate, and the originals shall be sent to the Supervisor, Corrosion Control.

D. Notifications and Responsibilities

The Project Manager shall be responsible for notifying the following parties two weeks prior to beginning the uprate/pressure increase.

PSE Gas Control: Gas Control shall monitor system pressure at the following RTUs (see below table) and report any abnormalities to the Project Manager during the uprate.

RTU Tag	Location	Plat Map	Description
IN_96GLDDR1_R2311	1011 E 96 ST (RS-2311)	251.062	End of Salishan Supply
IN_PIERCCU1_LSSYS	9401 9th St. SW (Pierce Transit MSA)	251.055	End of Pierce Transit Supply
IN_69PRTDR1_R2697	E 72nd St. & Portland Ave. SE (RS-2697)	248.063	CNG Injection Point
IN_72PRTDR1_R2723	E 72nd St. & Portland Ave. SE (RS-2723)	249.063	CNG Injection Point
OT_25THLLS1	E L St. & E 25th St. (LS-2661)	242.062	Tacoma Limited Supply
IN_25THLLS1_R2661	E L St. & E 25th St. (LS-2661)	242.062	Inlet to LS-2661
OT_NTACOGS1_LSXXX	24th St. E & E Valley Highway (GS-1349)	242.080	North Tacoma Supply Pressure

RTU Table

Maintenance Program Coordinator: The Maintenance Program Coordinator shall schedule the leak survey contractor (HEATH) to perform the leak survey. In addition, Maintenance Programs shall provide a list of Hard to Reach Location program items which are within the area being uprated and shall update the list based on field conditions.

Gas System Integrity - System Planning: The Planning Engineer shall provide information about any other construction projects that they know of and inform the Project Manager of the potential impacts of those projects on the uprate or ways in which the uprate may affect other projects. The Planning Engineer shall provide information regarding the timing or temperature constraints that may need to be taken into account while performing the uprate procedure. The Planning Engineer shall also determine whether customer curtailment is required for the last pressure increase increment and whether or not management of customer load is required for the other three increments.

Gas First Response: First Response Supervisor shall review the active leak list prior to the uprate. Gas First Response shall also review all leaks classified during the uprate and plan resources to handle leak repairs and classification upgrades when the pressure is increased.

System Control & Protection - Pressure Control: Pressure Control shall inject CNG, operate valves, monitor relief valves (as needed), control and monitor system pressures, and administer the uprate procedure. Pressure Control shall record system pressure at the following gauge locations (see below table) during the uprate.

Chart	Location	Plat Map	Description
Temporary Gauge 1	E L St. & E 25th St. (LS-2661)	242.062	Beginning of the Salishan Supply
Chart 0342	1011 E 96 ST (RS-2311)	251.062	End of the Salishan Supply

Chart Table

Instrumentation: Instrumentation shall be responsible for ensuring that all RTU and recording gauges are properly calibrated prior to the uprate field procedure. Instrumentation may also be called upon to aid Pressure Control with monitoring and recording of system pressures during the uprate.

Gas System Engineering: Gas System Engineering shall write and approve the uprate plan document. Gas System Engineering shall also research, complete, and evaluate the system review forms.

Gas Compliance & Regulatory Audits: Gas Compliance & Regulatory Audits shall be responsible for submitting the uprate package to the WUTC.

Major Accounts: Major Accounts shall be responsible for notifying customers who will be curtailed during the last increment, if the Planning Engineer deems necessary to curtail customers. The Project Engineer, the Planning Engineer, and the Major Accounts representative shall coordinate all curtailments. The above team shall also manage interruptible load as needed during all pressure increments.

E. Uprate Procedure

General:

1. The Project Manager shall:
   - Schedule and conduct a review of the uprate procedure with Pressure Control, Gas Control, Gas System Planning, HEATH, and First Response one week prior to the start of the uprate.

- Notify all parties listed in Section D if the uprate is interrupted or if any significant impacts occur during the uprate process.
- Direct the completion of all the work listed on the Preliminary Field Work Form for the system uprate.
- Verify the appropriate personnel, prior to beginning the uprate, have signed off all applicable System Review Forms (See Section F-6 for a list of forms needed).
- Direct that no pressures are raised until all forms have been certified. Once all work listed on the Preliminary Field Work Form has been completed, the Project Manager will sign off the Preliminary Field Work Form and continue with the procedure.

2. The uprate will increase the MAOP from 150 to 250 psig. The increase in pressure will occur in four increments of 25 psig each.

Pressure Increment	Pressure
1	175 psig
2	200 psig
3	225 psig
4	250 psig

Pressure Increment Table

Note: If for any reason the uprate is interrupted, the pressure in the system affected by the uprate shall either be lowered to (a) the last successfully completed pressure increment or (b) the original operating pressure prior to the uprate, whichever is deemed appropriate by the Project Engineer under the circumstances.

3. Work that affects system supply and pressure must begin and finish outside of peak hours (5 a.m. to 9 a.m. & 5 p.m. to 7 p.m.). Night work may be required for the final increment. Contact System Planning for recommendations.

Pressure Increments 1-2:

1. Coordinate with System Planning and Major Accounts to determine how best to manage the flow at Pierce Transit to prevent excessive pressure fluctuations.

2. Confirm that valve VA-01031 is open (valve VA-01031 is to remain open until Pressure Increment 4 is complete). Close valve VA-01030 and immediately begin to throttle valve VA-01032 to maintain 140 psig downstream of VA-01032 to feed the Salishan Supply and the Pierce Transit Supply.

3. Throttle valve VA-01032 to maintain 175 psig downstream of VA-01032 for Pressure Increment 1.

4. Monitor system pressures at all charts listed in the Chart Table and coordinate with Gas Control to monitor system pressures at all RTUs listed in the RTU Table. Once the system pressures stabilize, notify the Project Manager. The Project Manager shall notify HEATH and Pressure Control to perform steps 5 and 6, respectively. Steps 5 and 6 can be performed simultaneously.

5. Heath shall conduct a leak survey on all facilities (mains, regulator station inlet piping, and high-pressure services) from the North Tacoma Limit Station (LS-2661) to the end of the Salishan Supply (inlet to RS-2311). Leaks found shall be classified and recorded in accordance with PSE Gas Operating Standard 2625.1300. PSE shall repair all Grade A and B(A) leaks before continuing with step 7. First Response shall assess Grade B(1), B(2), and C leaks for the likelihood of an upgrade in leak classification as the result of increased system pressure and have any applicable leaks repaired prior to the next pressure increment.

   IMPORTANT: The Pierce Transit Supply already has an MAOP of 250 psig. As a result, a leak survey for the first three increments is not required on the Pierce Transit Supply.

6. Check and record the interstage (where appropriate), and outlet pressures at each active regulator station listed in the Pressure Recording Form and adjust, if necessary, to the proper pressure setting.

7. Repeat steps 3 through 6 for Pressure Increment 2 (200 psig).

8. If Pressure Increment 3 and/or 4 is to be performed on a different day, throttle (or close) valve VA-01032 to achieve 140 psig downstream of VA-01032. Slowly open valve VA-01030 after the pressure has fallen below 150 psig and then close valve VA-01032. Adjust the interstage (where appropriate) and the outlet pressure at each active regulator, if necessary, to accommodate for the lower inlet pressure.

9. Contact Pierce Transit as needed to ensure they know they can resume normal flow from managed flow.

Pressure Increment 3:

1. Increase the running pressure at the North Tacoma Gate Station (GS-1349) from approximately 239 psig to 245 psig. A Pressure Control technician should remain on site to monitor the pressure and ensure the downstream system does not exceed the 250 psig MAOP.

2. If Pressure Increment 3 is performed on a different day than Pressure Increment 2, close valve VA-01030 and immediately begin to throttle VA-01032 to maintain 200 psig downstream of VA-01032 to feed the Salishan Supply and the Pierce Transit Supply.

3. Coordinate with System Planning and Major Accounts to determine how best to manage the flow at Pierce Transit to prevent excessive pressure fluctuations.

4. Throttle valve VA-01032 to maintain 225 psig downstream of VA-01032 for Pressure Increment 3.

5. Monitor system pressures at all charts listed in the Chart Table and coordinate with Gas Control to monitor system pressures at all RTUs listed in the RTU Table. Once the system pressures stabilize, notify the Project Manager. The Project Manager shall notify HEATH and Pressure Control to perform steps 6 and 7, respectively. Steps 6 and 7 can be performed simultaneously.

6. Heath shall conduct a leak survey on all facilities (mains, regulator station inlet piping, and high-pressure services) from the North Tacoma Limit Station (LS-2661) to the end of the Salishan Supply (inlet to RS-2311). Leaks found shall be classified and recorded in accordance with PSE Gas Operating Standard 2625.1300. PSE shall repair all Grade A and B(A) leaks before continuing with step 8. First Response shall assess Grade B(1), B(2), and C leaks for the likelihood of an upgrade in

leak classification as the result of increased system pressure and have any applicable leaks repaired prior to the next pressure increment.

IMPORTANT: The Pierce Transit Supply already has an MAOP of 250 psig. As a result, a leak survey for the first three increments is not required on the Pierce Transit Supply.

7. Check and record the interstage (where appropriate) and outlet pressures at each active regulator station listed in the Pressure Recording Form and adjust, if necessary, to the proper pressure setting.

8. If Pressure Increment 4 is to be performed on a different day, throttle (or close) valve VA-01032 to achieve 140 psig downstream of VA-01032. Slowly open valve VA-01030 after the pressure has fallen below 150 psig and then close valve VA-01032. Decrease the pressure at the North Tacoma Gate Station (GS-1349) and set the lockup pressure at approximately 245 psig. Adjust the interstage (where appropriate) and the outlet pressure at each active regulator, if necessary, to accommodate for the lower inlet pressure.

9. Contact Pierce Transit as needed to ensure they know they can resume normal flow from managed flow.

Pressure Increment 4:

1. At least two days prior to Pressure Increment 4, coordinate with System Planning regarding the preferred time of day to perform the final increment and the required curtailment of interruptible customers (if any) to obtain 250 psig at the inlet of RS-2311.

   NOTE: At a minimum, Pierce Transit shall be curtailed.

2. Arrange to have the following CNG injection equipment available:

Regulator Station	Location	Tube Trailer	Ambient Trailer
RS-2697	E 72nd St. & Portland Ave. SE (Champions Center Parking Lot)	12-8020 12-8021	12-1382
RS-2723	E 72nd St. & Portland Ave. SE (Kmart Parking Lot)	12-8027 12-8028	12-1383

CNG Injection Table

3. Prepare RS-2697 and RS-2723 for CNG injection. At each station:
   - Install a pressure gauge on the inlet RTU riser to monitor the CNG injection pressure.
   - Select one of the regulator runs and close the inlet and outlet header valves.
   - Blow down the regulator run to atmosphere.
   - Remove the strainer at RS-2697 and remove the regulator and the strainer basket at RS-2723.
   - Install the prefabricated injection assembly on the upstream flange.
   - Connect a 2" diameter hose (rated to at least 350 psig) to the injection assembly.
   - Purge everything to 100% gas.

- Prepare the tube trailers and ambient trailer for injection. The tube trailers should be connected in parallel such that both trailers can supply gas simultaneously.
- Refer to GFP 4525.1000 Operating the CNG Cylinder Truck and Trailer

4. If Pressure Increment 4 is performed on a different day, increase the running pressure at the North Tacoma Gate Station (GS-1349) from approximately 239 psig to 245 psig. A Pressure Control technician should remain on site to monitor the pressure and ensure the downstream system does not exceed the 250 psig MAOP. Close valve VA-01030 and immediately begin to throttle VA-01032 to maintain 225 psig downstream of VA-01032 to feed the Salishan Supply and the Pierce Transit Supply.

5. Gas Control shall monitor the SCADA flow of the Pierce Transit customer to verify that the flow is 0.0 scfh. If otherwise, immediately contact the Project Manager.

6. Continuously monitor the overpressure protection on site at RS-2558 until the conclusion of the uprate.

   NOTE: The overpressure protection for all regulating stations that will be exposed to a pressure above 250 psig but below 268 psig has been reviewed and found adequate with the exception of the outlet pressure of RS-2558. Pressure Control shall continuously monitor the station to ensure proper protection of the downstream system in the event of an abnormal operating condition.

Regulator Station	Location	Plat Map
RS-2558	S 96th St. & S Hosmer St.	251.057

On Site Overpressure Protection Monitoring

7. Fully open valve VA-01032.

8. Once the system pressures have stabilized, open the inlet header valve at RS-2697 and RS-2723 and begin CNG injection up to 240 psig.

9. Once CNG is flowing at both stations, close valve VA-01032 to isolate the Salishan Supply from the North Tacoma Supply.

10. Decrease the pressure at the North Tacoma Gate Station (GS-1349) and set the lockup pressure at approximately 245 psig. Continue to the next step before this step is concluded.

11. Increase the injection pressure to a maximum of 268 psig at each station in order to reach 250 psig at the inlet to RS-2311 (end of the Salishan Supply). Contact the Project Engineer if 250 psig cannot be reached. Do not immediately inject to 268 psig, attempt to use the minimum pressure above 250 psig required to obtain 250 psig at the inlet to RS-2311.

12. Throttle valve VA-01943 to ensure the pressure in the Pierce Transit Supply does not exceed 250 psig. Monitor downstream pressure at the new pressure tap south of VA-01943.

13. Monitor system pressures at all charts listed in the Chart Table and coordinate with Gas Control to monitor system pressures at all RTUs listed in the RTU Table. Once the system pressures stabilize, notify the Project Manager. The Project Manager shall notify HEATH and Pressure Control to perform steps 13 and 14, respectively. Steps 13 and 14 can be performed simultaneously.

14. Heath shall conduct a leak survey on all facilities (mains, regulator station inlet piping, and high-pressure services) from the North Tacoma Limit Station (LS-2661) to the end of the Pierce Transit Supply (Pierce Transit MSA). Leaks found shall be classified and recorded in accordance with PSE Gas Operating Standard 2625.1300. Any discovered leaks will have a remediation schedule based on the respective classification. Pressure Increment 4 will be considered complete once the leak survey is finished, however, PSE shall repair Grade A and B(A) leaks before the overall uprate is considered complete.

    IMPORTANT: The leak survey for the final increment shall include the Pierce Transit Supply in addition to the Salishan Supply. The leak survey is anticipated to take less than 3 hours to complete both supplies.

15. After the leak survey is complete, stop injecting CNG, but leave the equipment connected.

16. Allow the pressure in the Salishan Supply to reduce to 250 psig. Once 250 psig is achieved at LS-2661, open valve VA-01032. Close valve VA-01031. Valve VA-01030 is to remain closed. Mark valves VA-01030 and VA-01031 as bypass valves (install tags: "Bypass valve; do not open").

17. Discontinue the on site overpressure protection monitoring of RS-2558.

18. Restore RS-2697 and RS-2723 to normal operation. At each station:
    - Close the inlet header valve while leaving the remaining run to continue operating.
    - Blow down the CNG equipment including the hose and injection assembly.
    - Disconnect the 2" hose.
    - Remove the CNG injection assembly
    - Reinstall the strainer at RS-2697 and the regulator and strainer basket at RS-2723.
    - Purge the regulator run back to 100% gas.
    - Restore the regulator run back to normal operation and open the inlet and outlet header valves.

19. The Project Manager shall notify Major Account to end the curtailment plan.

20. Check and record lock up on all active regulator stations listed in the Pressure Recording Form and reset regulators, if necessary, to lock up at a minimum of 2 psig below the downstream system MAOP.

21. Coordinate with Industrial Meter Operations to check lock up of regulators on commercial/industrial customer MSAs listed in the HP Service Review Form and verify delivery pressure to the customer.

F. Uprate Completion

1. The Project Manager shall notify Gas Control upon completion of the uprate and pressure increase.

2. Pressure Control shall send all pressure charts and the Pressure Recording Form, Gas Control shall send all RTU data, HEATH shall send all survey records, and the Construction Foreman shall send as-builts to the PSE Project Manager.

3. Based on the results of the final leak survey and the specifics of the system that was uprated, the Project Manager shall consult with the Project Engineer to consider scheduling a leak survey of the system for 30 days after the date of completion of the uprate.

4. The Project Manager shall submit the Uprate Approval Form for final approval and validation of the new MAOP to the Manager Gas System Engineering and Manager Gas System Integrity.

5. The Project Manager and Project Engineer shall verify all work on the Post Uprate Work Form is completed and the form is signed before closing out the project.

6. The Project Manager shall ensure all signed System Review Forms listed below are included in the original job packet.

Preliminary Field Work Form	HP Main MAOP Summary Form
Post Uprate Form	HP Service MAOP Summary Form
Uprate Approval Form	Regulator Station MAOP Summary Form
Pressure Recording Form	Regulator Station Operational Component Summary Form
CP Report	Instrumentation Operational Component Summary Form
EPCR History	Design Pressure Calculations (per facility)
Leak History	Test Records (per facility)
Uprate Procedure	Regulator Station Overpressure Protection Review (per facility)

System Review Forms

Prepared by:	Checked by:	Approved by:
June 28, 2012 (Date)	6/28/12 (Date)	6-28-2012 (Date)
Don Frieze Senior Engineer Gas System Engineering	Dana Kaul Consulting Engineer System Planning	Joe Ewing Consulting Engineer Gas System Engineering

Cc: Project Management
Gas Control
System Control & Protection – Pressure Control
Industrial Meter Operations
Gas First Response
Maintenance Program
Instrumentation

Attachments:

- A – Schematics
  - Schematic A – System Overview / Uprate Schematic
  - Schematic B – OP Maps of Mains to be Leak Surveyed
  - Schematic C – Salishan Supply – Facilities Map
  - Schematic D – Pierce Transit Supply – Facilities Map
- B – Leakage and Corrosion Report
- C – System Review Forms
  - Instrumentation Operational Component Summary Form
  - Main MAOP Summary
  - HP Service MAOP Summary
  - Regulator Station MAOP Summary
  - Regulator Station Operational Component Summary
- D – Preliminary Field Work Form

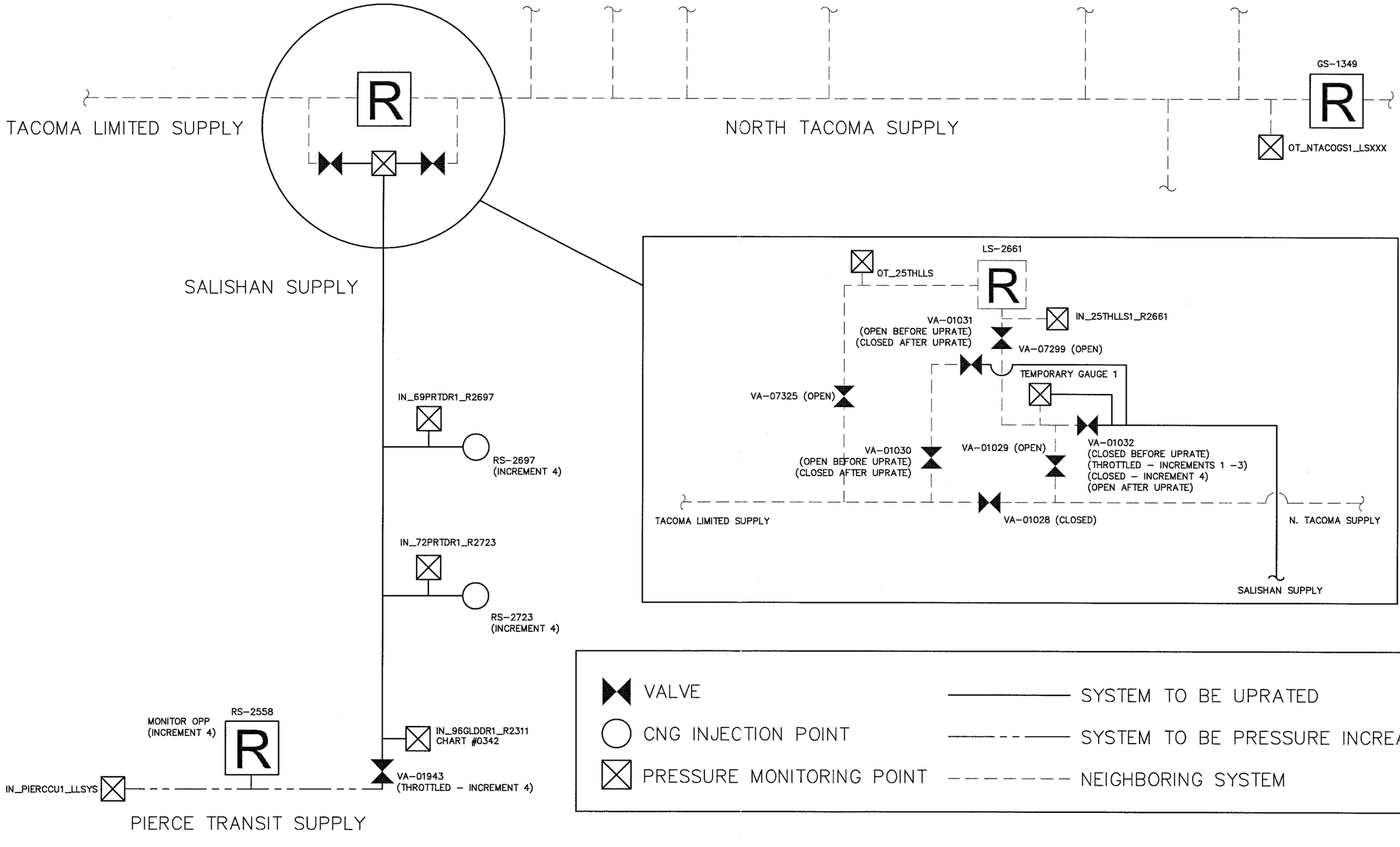
Name	Title	Office	Mobile
Don Frieze	Project Engineer	425-462-3862	206-604-3946
Molly Reed	Project Manager	425-462-3933	425-214-6684
Dana Kaul	Planning Engineer	425-462-3994	206-396-1084
Gas Control	Gas Control	425-882-4622	N/A
Jim Chartrey	Pressure Control Supervisor	N/A	206-571-2476
Paul Bench	Pressure Control	N/A	253-405-1620
Bill Molden	Pressure Control	N/A	206-571-2545
Gary Swanson	Maintenance Programs Coordinator	206-766-6811	N/A
Jerry Halsen	QA&I Lead Inspector	425-356-7547	425-471-5297
Dave Moffett	Corrosion Control Supervisor	253-476-6216	253-476-6216
Loretta Baggenstos	Instrumentation Supervisor	206-766-6841	425-754-5716
John Hander	Gas First Response Supervisor	253-476-6326	253-405-7194
Robert Morse	Gas First Response Supervisor	253-476-6120	

Project Phone List

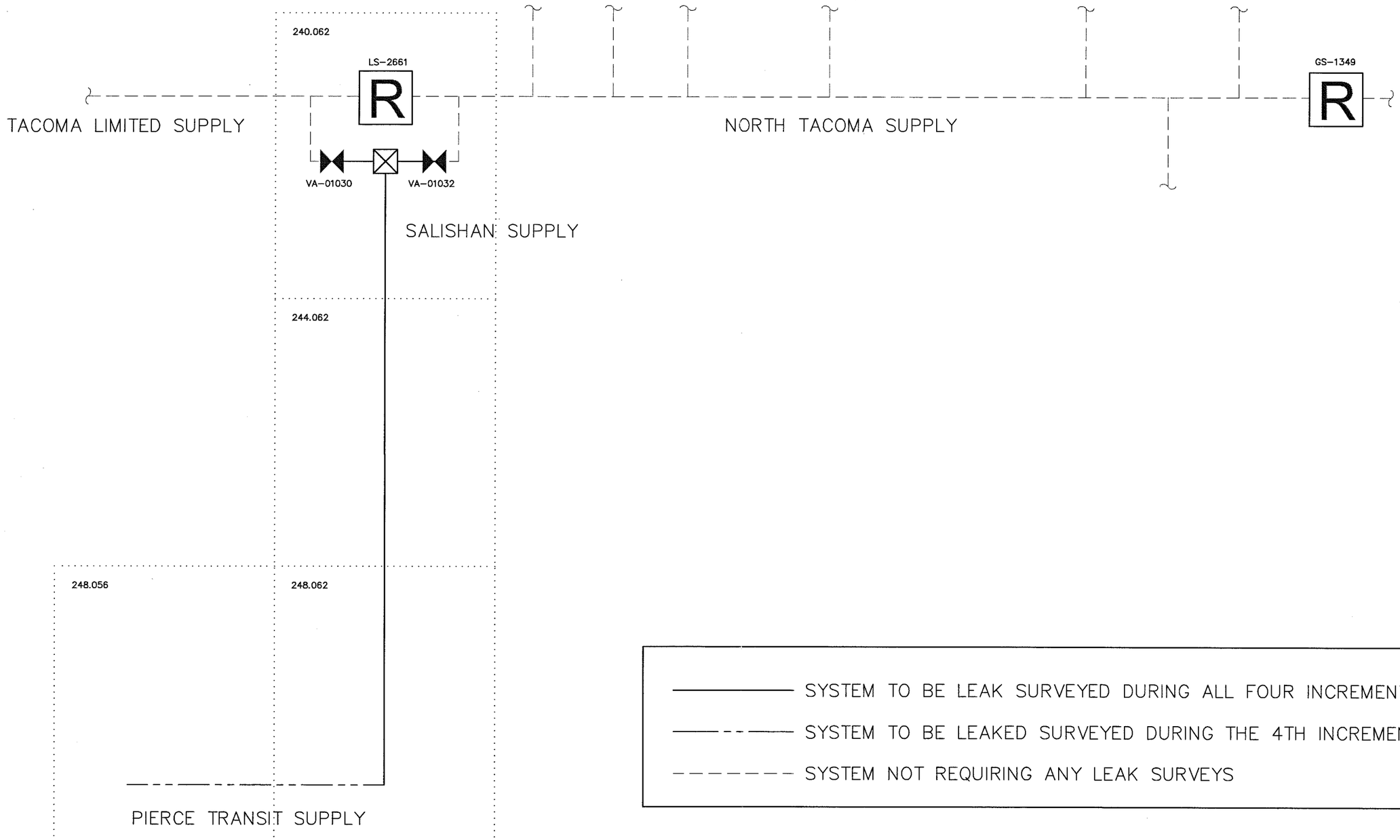
APPENDIX A

Schematics

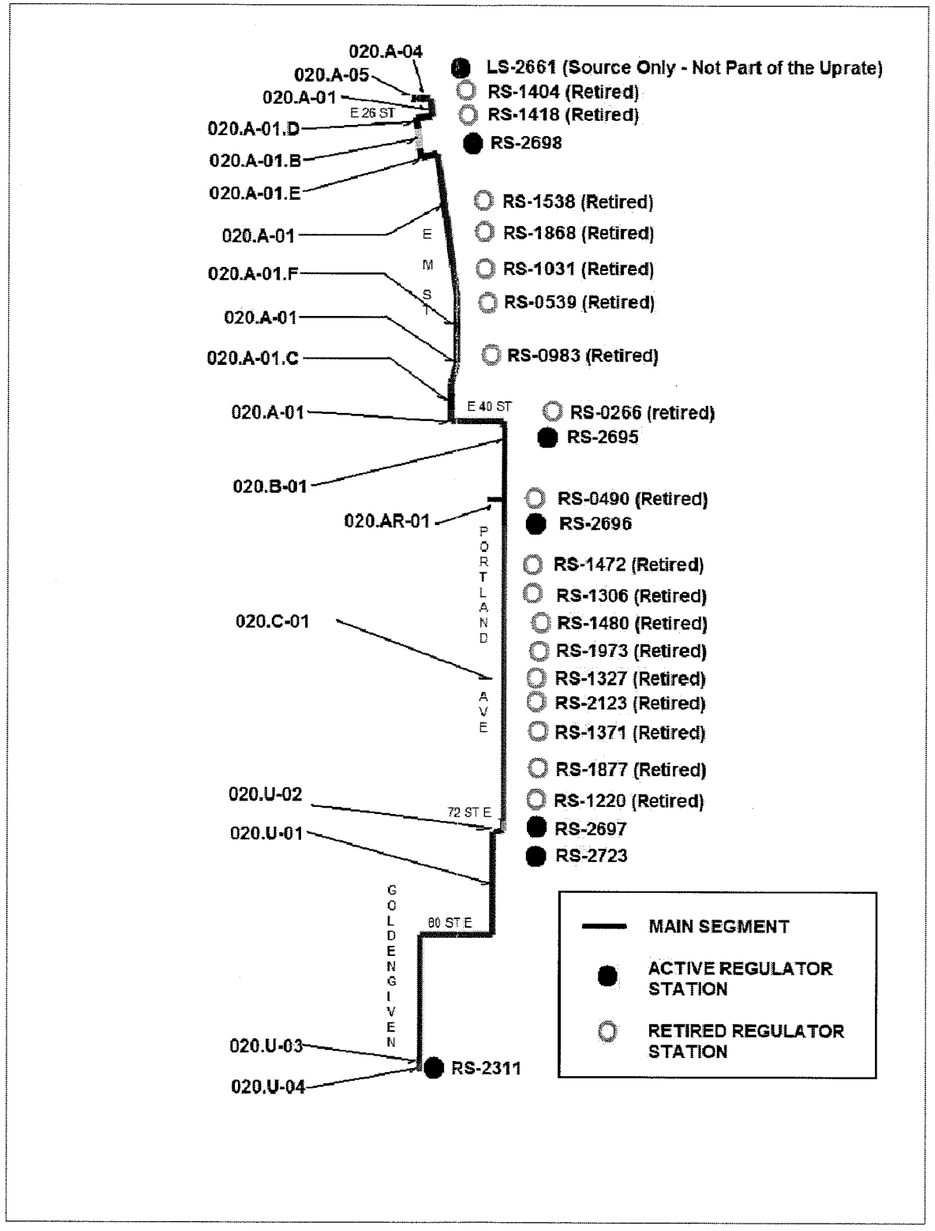
SCHEMATIC A – SYSTEM OVERVIEW / UPRATE SCHEMATIC



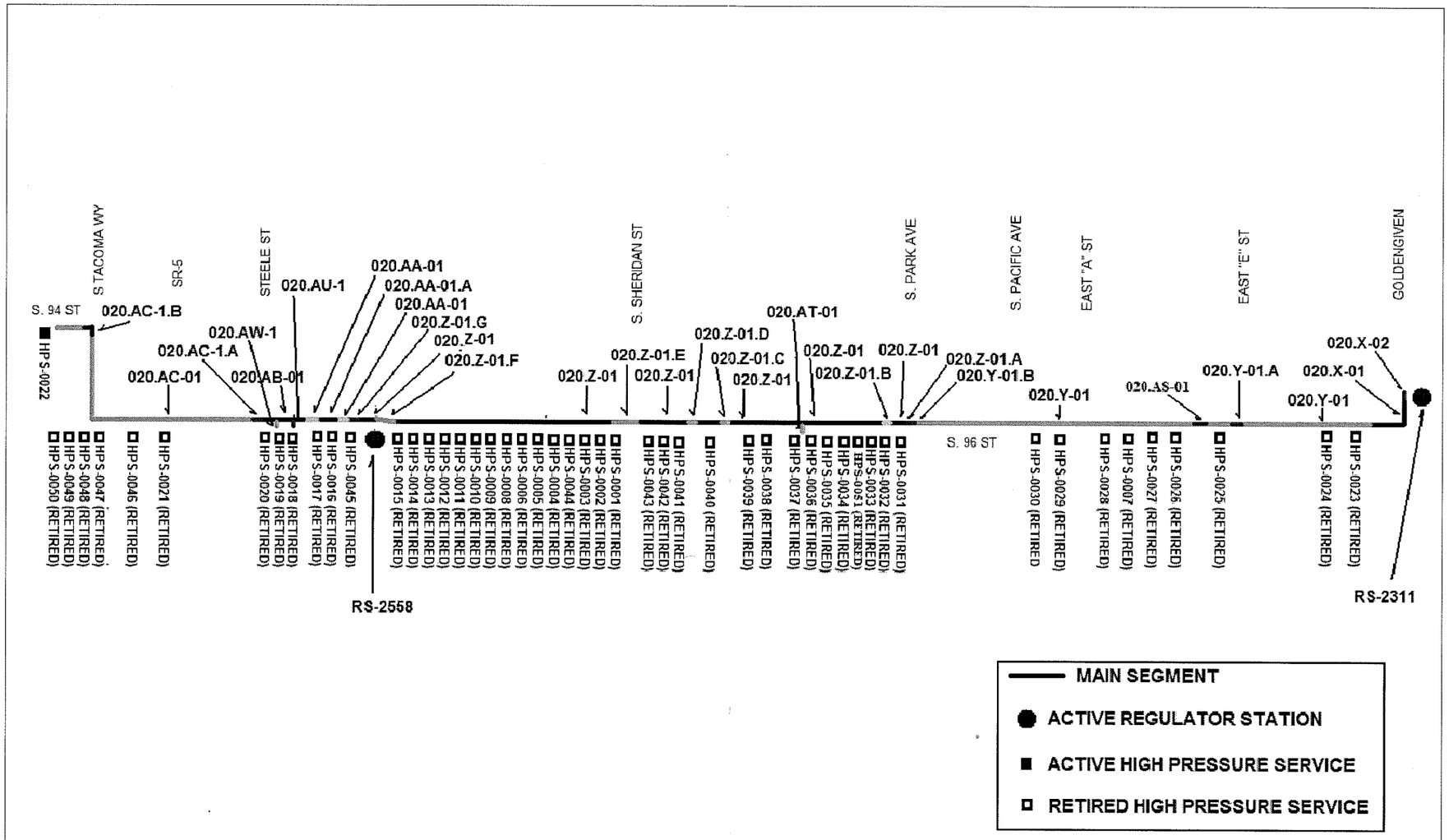
SCHEMATIC B – OP MAPS OF MAINS TO BE LEAK SURVEYED



SCHEMATIC C – SALISHAN SUPPLY – FACILITIES MAP



SCHEMATIC D – PIERCE TRANSIT SUPPLY – FACILITIES MAP



APPENDIX B

Leakage and Corrosion Report

April 27, 2012 update
July 5, 2011 (Revision)
May 25, 2007 (Revision)
November 18, 2005
J# 109020820
Job Title: Salishan HP Uprate
Reviewer: Steve Dickison, Michelle Gallardo MG

SYSTEM RECORDS REVIEW-Cathodic Protection

November 18, 2005: There are 5 impressed current systems and 2 galvanic systems providing cathodic protection for the high-pressure gas main proposed for uprate. They are listed in the table below. There are no separately protected main or services affected by the proposed uprate.
May 25, 2007 revision: There are currently 3 impressed systems and 1 galvanic system providing the cathodic protection for the main proposed for uprate.
July 5, 2011 revision: There are currently 2 impressed systems providing the cathodic protection for the main proposed for uprate. There are no separately protected main or services affected by the proposed uprate.
April 27, 2012 update: No revision necessary in this section from July 5, 2011 review.

The data attached reflects current cathodic protection results. The following table summarizes the data.

system	Type (Note 1)	# of TS	# of PSP's	# of unacceptable PSP's	longest remediation time, days	average remediation time, days
037036	IC	3	9	0	NA	NA
037895	IC	9	27	0	NA	NA
total		12	36	0		

Notes: 1) IC = impressed current system
G = galvanic system
TS(Ind) = separately protected service or main

The percentage of cathodic protection (CP) readings outside of acceptable criteria, during the past three years, is 0% (0 out of 33), measured on the main proposed for uprate. The average time to restore low CP reads to acceptable CP levels was NA.

November 18, 2005: There are currently 3 active leaks in the vicinity of this project that are near both the HP main and a steel bare IP main.
May 25, 2007 Revision: The 3 active leaks noted above were repaired and all were associated with the steel bare IP main.
July 5, 2011 Revision: There are currently 2 active "C" leaks in the vicinity of this project that are near the HP main, a STW IP

main, and a PE IP main. The leaks are to be monitored as per GOS 2575.2500. There are 0 repaired leaks on the high pressure main that are associated with corrosion.

There are 45 Exposed Pipe Condition Reports associated with HP STW, for the pipe being studied. Four EPCR's report unacceptable low PSP reads on HP piping in the area of the uprate, the most recent low read occurred in 2007 and lasted 55 days according to notification # 10753121. The 2005 low read on EPCR ID 87632 was follow by EPCR ID's 87609 and 87610 which had acceptable PSP reads 4 days later. The other two EPCR reports occurred in 1998 and records are unavailable on how long the PSPs were low but annual reads in the area were acceptable during this time period. All reports indicate the pipe is in good condition and the coating bonded and in fair to good condition.
April 27, 2012 update: There are currently no active leaks associated with piping to be uprated. The leaks previously mentioned on the July 5, 2011 revision were on the IP system and have been repaired, neither leak was due to corrosion. An additional 24 Exposed Pipe Condition Reports were performed since July 5, 2011, they all report adequate CP on the piping with the coating in good condition and bonded.

Current cathodic protection (CP) readings on the entire system are within acceptable levels. The piping under review has received satisfactory cathodic protection historically, and is acceptable for uprate from a corrosion perspective.

Test site #	Test Site description	Plat #	Address	CP System	Date	PSP ON
TS-054321	Test Site (Iso.) 054321 of IC-037895	242.062	E M St & E 25 St	IC-037895		
					5/10/2011	-1250 mV
					5/11/2010	1225 mV
					5/18/2009	1136 mV
TS-054324	Test Site (Iso.) 054324 of IC-037895	242.062	E 28 St & E L St	IC-037895		
					5/12/2011	-1450 mV
					5/11/2010	1250 mV
					5/18/2009	1239 mV
TS-054338	Test Site 054338 of IC-037895	244.062	E 40 St & E M St	IC-037895		
					5/12/2011	-1400 mV
					5/11/2010	1300 mV
					5/19/2009	1400 mV
TS-049722	Test Site 049722 of IC-037895	246.063	E 48 St & Portland Ave E	IC-037895		
					5/12/2011	-1350 mV
					5/11/2010	1180 mV
					5/19/2009	1300 mV
TS-050992	Test Site (Iso.) 050992 of IC-037895	249.062	Golden-Givens Rd E & 80 St E	IC-037895		
					5/12/2011	-1280 mV
					5/11/2010	1023 mV
					5/19/2009	1100 mV
TS-054339	Test Site (Iso.) 054339 of IC-037895	250.062	85 St E & Golden Givens Ave E	IC-037895		
					5/12/2011	-1150 mV
					5/11/2010	1111 mV
					5/19/2009	1170 mV
TS-053011	Test Site (Iso.) 053011 of IC-037895	251.062	Golden-Givens Rd E & 90 St E	IC-037895		
					5/12/2011	-1250 mV
					5/11/2010	1140 mV
					5/19/2009	1070 mV
TS-052828	Test Site 052828 of IC-037895	251.062	E 96 St & Golden-Givens Rd E	IC-037895		
					5/12/2011	-1219 mV
					5/11/2010	1125 mV
					5/19/2009	1195 mV
TS-054320	Test Site 054320 of IC-037895	252.061	E E St & E 96 St	IC-037895		
					5/12/2011	-1040 mV
					5/11/2010	950 mV
					5/19/2009	1066 mV
TS-038430	Test Site (Iso.) 38430 of IC-037036	252.06	S 96 ST & PACIFIC AVE	IC-037036		
					10/24/2011	-1240 mV
					10/13/2010	1090 mV
					9/24/2009	1400 mV
TS-050088	Test Site 050088 of IC-037036	252.058	S 96 St & S Hosmer St (DR-2558)	IC-037036		
					10/18/2011	-1070 mV
					10/15/2010	960 mV
					9/24/2009	1050 mV
TS-052810	Test Site 052810 of IC-037036	251.055	3819 94 St SW	IC-037036		
					10/18/2011	-1470 mV
					10/20/2010	1260 mV
					9/24/2009	1600 mV

After 1/1/2011 PSP reads are recorded with normal negative values, before this PSP reads were recorded as positive values.

Salishan HP Uprate - 887024719 - Leak Report

Repaired Projects	Plat	Area	Completion Date	Reported Date	House	Street	Orig. Grade	Current Grade	Main or Service	Status	Repair Code	Comments
L9307904	246063	315	6/10/1996	10/6/1993	1426	E 52nd St	C	0		COMPL	Tighten	0% GAS REMAINS TIGHTENED FITTING IN FARM TAP PALMER 6-10-96
L9407087	244062	315	2/23/1996	11/17/1994	1301	40 St E	C	0		COMPL	Tighten	0% GAS REMAINS ,GREASED VALVE AND TIGHTENED BOLTS, T PALMER 2-23-96
L9501438	251062	315	5/23/1996	3/3/1995	9600	Golden Givens Rd	C	0		COMPL	Tighten	NO READS REMAIN TIGHTENED FITTING TO ELIMINATE LEAK, STEWART 5/23/96

Salishan HP Uprate - 887024719 - Leak Report

Active Projects	Plat	Area	Completion Date	Reported Date	House	Street	Orig. Grade	Current Grade	Main or Service	Status	Repair Code	Comments
N0028736	251061	315	11/9/2011	1/30/2008 14:30	101	96th St E	C	0	M	COMPL	Grease	GREASED & OPERATED IP VALVE, NO RESIDUAL READS REMAINING
N0028388	252059	315	10/28/2011	12/18/2007 15:00	1002	S 96th St	C	0	M	COMPL	Tighten	REMOVED. DOPED & TIGHTENED CAP ON 2" STW IP TEE, NO RESIDUAL READS REMAINING

Salishan Supply
Pierce Transit

APPENDIX C

System Review Forms

Salishan HP Uprate - Regulator Station MAOP Summary
Uprate Job Number: 887024719
Uprate from 150 psig to 250 psig

PUGET SOUND ENERGY

	DR Number	Address	Plat	Installation Date	Job #	Drawing #	Associated Main ID	Upstream Tie-in Fitting	Historical Operating Pressure	Operating History From	Operating History To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Year Window Operating Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established Facility MAOP	% SYMS @ New System MAOP	Overpressure Protection Method	Relief Review Pass?	Retirement Method	Comments
SALISHAN SUPPLY																								
1	1404	E M St & E 25 St	242.062	February-71	71S-071	Std 3D-193	020.A-1	3/4" Serv Tee H18101	150	February-71	Present	459.5	1.5	306.3	1200	N/A	N/A	N/A	306.3	4.6%	N/A	N/A	C&C	- Retired per 108522516/109019080. - Tie-in to be confirmed and to be retested to 450 psig per 887026099 - Per 887026099 (1) Pressure Test was conducted on 9/27/2011 to 459.5 psig and (2) it is a 3/4" Punch-it Tee
2	1418	E M St & E 26 St	242.062	June-71	71S-274	71D-305	020.A-1A	2" Nipple with Reinforcement Pad	150	June-71	Present	470	1.5	313.3	400	N/A	N/A	N/A	313.3	7.7%	N/A	N/A	C&C	Retired per 108527262, replaced by RS 2698.
3	1538	E M St & E 32 St	243.062	September-72	72S-500	Std 3D-193	020.A-1B	3/4" Serv Tee H18101	150	September-72	Present	475.5	1.5	317.0	1200	N/A	N/A	N/A	317.0	4.6%	N/A	N/A	C&C	- Retired per 108526090. - Tie-in to be retested to 450 psig per 887026100 - Per 887026100 (1) Pressure test was conducted on 9/21/2011 to 475.5 psig and (2) it is a 3/4" punch it tee
4	1868	3417 E M St	243.062	June-62	D-4	D-4	020.A-1	1" Valve Tee H-17656	150	June-62	Present	N/A	N/A	N/A	1440	150	N/A	N/A	150.0	N/A	N/A	N/A	C&C	- Retired per 108526091. - Tie-in confirmed per 887025763
5	1031	1320 Harison St	243.062	September-67	67S-355	Std 3D-193	020.A-1	3/4" Serv Tee H18102	150	September-67	Present	462	1.5	308.0	1200	N/A	N/A	N/A	308.0	4.6%	N/A	N/A	C&C	- Retired per 108522397. - Tie-in to be confirmed and to be retested to 450 psig per 887025762 - Per 887025762 (1) Pressure Test was conductde on 9/21/2011 to 462 psig and (2) it is a 3/4" Punch-it Tee
6	539	3568 E M St	244.062	November-62	D-4	D-4	020. A-1	N/A	150	November-62	Present	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Main Replacement	Retired on job 805-480 per main card. Main relocated per 109017759, no need to verify tie-in.
7	983	3630 E M St	244.062	January-67	66-1019	66-1019	020.A-1	3/4" Serv Tee H18102	150	January-67	Present	471.5	1.5	314.3	1200	N/A	N/A	N/A	314.3	4.6%	N/A	N/A	C&C	- Retired per 108526094. - Tie-in to be retested to 450 psig per 887026101 - Per 887026101 (1) Pressure Test was conducted on 9/21/2011 to 471.5 psig and (2) it is a 3/4" punch it tee
8	266	E 40 St & E M St	244.062	October-60	Unknown	3D2-584	020.A-1	Weld-O-Let	150	October-60	Present	491.8	1.4	351.2857143	610	Unknown	NA	N/A	351.3	8.50%	N/A	N/A	C&C	Retired per 108527261, replaced by RS 2695.
9	490	E 48 St & Portland Ave	246.063	September-65	62-327	62D-109	020.B-1	Weld Tee	150	September-65	Present	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C&C	- Retired per 108528829, replaced by RS 2696. - Original station piping is now main, see Main ID 020-AR.01
10	1472	5002 Portland Ave	246.063	October-71	71S-697	71S-697	020. C-1	3/4" Serv Tee H18101	150	October-71	Present	471.5	1.5	314.3	1200	N/A	N/A	N/A	314.3	4.9%	N/A	N/A	C&C	- Retired per 108526095. - Tie-in retested to 480.5 psig per 887026102
11	1306	E 52 St & Portland Ave	246.063	June-70	70S-411	70S-411	020.C-1	3/4" Serv Tee H18101	150	June-70	Present	474	1.5	316.0	1200	N/A	N/A	N/A	316.0	4.6%	N/A	N/A	C&C	- Retired per 108526096. - Tie-in retested to 474 psig per 887026103
12	1480	5314 Portland Ave	246.063	November-71	71S-792	71S-792	020.C-1	3/4" Serv Tee H18101	150	November-71	Present	468.5	1.5	312.3	1200	N/A	N/A	N/A	462	4.60%	N/A	N/A	C&C	- Retired per 108526097. - Tie-in to be confirmed per 887025761 stubby retested to 468.5 psig
13	1973	1423 E 56 St	246.063	November-79	795-676	795-676	020.C-1	3/4" Serv Tee H18101	150	November-79	Present	476	1.5	317.3	1200	N/A	N/A	N/A	462	4.6%	N/A	N/A	C&C	- Retired per 108526098. - Tie-in retested to 476 psig per 887026104
14	1327	5604 Portland Ave	247.063	September-70	705-620	705-620	020.C-1	3/4" Serv Tee H18101	150	September-70	Present	443.0	1.5	295.3	1200	N/A	N/A	N/A	295.3	4.6%	N/A	N/A	C&C	- Retired per 108526099. - Tie-in confirmed per 887025760. Retested on 4/4/2012.
15	2123	1409 E 59 St	247.063	July-84	845-282	845-282	020.C-1	3/4" x 1" Serv Tee H18101	150	July-84	Present	462	1.5	308	500	N/A	N/A	N/A	462	4.9%	N/A	N/A	C&C	Retired per 108526114.
16	1371	E 63 St & Portland Ave	247.063	November-70	70S-803	70S-803	020.C-1	3/4" Serv Tee H18101	150	November-70	Present	465.5	1.5	310.3333333	1200	N/A	N/A	N/A	310.3	4.6%	N/A	N/A	C&C	- Retired per 108526115 - Tie-in to be retested to 450 psig per 887026105 - Per 887026105 (1) Pressure Test was conducted on 9/27/2011 to 465.5 psig and (2) it is a punch it tee
17	1877	7001 Portland Ave	248.063	March-78	77S-256	77S-256	020.C-1	3/4" Serv Tee H18101	150	March-78	Present	473	1.5	315.3333333	1200	N/A	N/A	N/A	315.3	4.9%	N/A	N/A	C&C	- Retired per 108526116 - Tie-in to be retested to 450 psig per 887026106 - Per 887026106 (1) Pressure Test was conduced on 9/27/2011 to 473 psig and (2) it is a punch it tee
18	1220	E 72 St & Portland Ave	248.063	August-70	69S-528	70D-308	020.C-1	8" X 4" Weld-O-Let	150	August-70	Present	442	1.4	315.7	400	N/A	N/A	N/A	315.7	N/A	N/A	N/A	C&C	- Retired per 108528830, replaced by RS-2698 - No pipe was left behind, only rated fitting, therefore no % SMYS was calculated
19	2511	E 96 St & Golden-Given Rd	251.062	September-91	905-504	3D8-571	020.U-01	Weld Tee	150	September-91	Present	481.8	1.5	321.2	400	N/A	N/A	N/A	321.2	7.13%	Monitor	N/A	Active	

Salishan HP Uprate - Regulator Station MAOP Summary
Uprate Job Number: 887024719
Uprate from 150 psig to 250 psig

PUGET SOUND ENERGY

	DR Number	Address	Plat	Installation Date	Job #	Drawing #	Associated Main ID	Upstream Tie-in Fitting	Historical Operating Pressure	Operating History From	Operating History To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Year Window Operating Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established Facility MAOP	% SYMS @ New System MAOP	Overpressure Protection Method	Relief Review Pass?	Retirement Method	Comments
20	2695	E M St & E 40 St	244.062	January-06	109023562	3D11-538	020. B-1	8" B/O Stopper H-17281	150	January-06	Present	477.2	1.5	318.1	720	N/A	N/A	N/A	318.1	9.6%	Relief	Pass	Active	Replaces RS-0266
21	2696	E 48 St & Portland Ave	246.063	December-06	109025042	3D11-539	020. B-1	4" B/O Stopper H-17261	150	December-06	Present	487.1	1.5	324.7	720	N/A	N/A	N/A	324.7	5.7%	Relief	Pass	Active	Replaces RS-0490
22	2697	E 72 St & Portland Ave	248.063	March-07	109025043	3D11-540	020. C-1	4" Flanged Tee H-17506	150	March-07	Present	476.4	1.5	317.6	720	N/A	N/A	N/A	317.6	5.7%	Relief	Pass	Active	Replaces RS-1220 & RS-1887.
23	2698	E 26 St & E M St	242.062	January-06	109023568	3D11-560	020. A-1	2" Valve Tee H-17650	150	January-06	Present	480.9	1.5	320.6	740	N/A	N/A	N/A	320.6	5.5%	Relief	Pass	Active	Tie-in to be upgrade per Job # 887029022
24	2723	E 72 ST & Portland Ave E	249.063	July-07	109031159	3D11-589	020. U-1	8" B/O Stopper H-17281	150	July-07	Present	464.3	1.5	309.5	720	N/A	N/A	N/A	309.5	11.0%	Relief	Pass	Active	N/A
PIERCE TRANSIT SUPPLY																								
25	2558	S 96 ST & Hosmer	252.058	August-98	9705121	3D9-604	020. Z-1	6" B/P Stopper H-17281	150	August-98	Present	521.0	1.5	347.3	500	N/A	N/A	N/A	347.3	7.10%	Relief	Pass	Active	N/A
26																								
27																								
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Notes:

1. Do not leave any fields blank. If a field does not apply enter "N/A."
2. If an assumption was made during the research process, document the assumption in the comments area.
3. The Design Pressure and Pressure Rating for each facility and its associated fittings are calculated and evaluated in a separate document.
4. Design Pressures for each facility were calculated using F = 0.4, assuming Class 4 locations.
5. Do not sort the above table. Copy the table to a new tab if sorting is required.
6. Only include the operating history for the side of the station that will be uprated.
7. Highlight fields will be finalized after preliminary field work (field confirmation or retest) is completed

I certify that the research of this information was performed according to company standards;
Researched by: Roy Nakano/Derek Koo/Don Frieze

Signatures: for Roy Nakano / I

Approval Date: June 28, 2012

I certify that the system can be uprated to the proposed MAOP, provided the modifications identified on Preliminary Field Work Form are completed;
Approved by: Derek Koo/Don Frieze

Signatures: /

Approval Date: June 28, 2012

Salishan HP Uprate - HP Service MAOP Summary
Uprate Job Number: 887024719
Uprate from 150 psig to 250 psig

PUGET SOUND ENERGY

														Operating History					MAOP Factors									
	Service ID	Customer ID	Stub Size	Extension Size	Meter Type	Address	Plat	Associated Main ID	Installation Date	Job #	Drawing # or D4 Card	Retirement Method	Upstream Tie-in Fitting	Operating Pressure	From	To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Yr Op Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established MAOP	% SYMS @ New MAOP	Overpressure Protection Method	Relief Pass?	Comments
SALISHAN SUPPLY																												
N/A																												
PIERCE TRANSIT SUPPLY																												
1	HPS-0001	N/A	N/A	N/A	N/A	1406 S 96th ST, Tacoma	252.058	020. Z-1	Jan-95	N/A	D-4	Save-A-Valve	N/A	150	Nov-99	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
2	HPS-0002	N/A	3/4"	N/A	N/A	1410 S 96th ST, Tacoma	252.058	020. Z-1	Aug-66	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Aug-66 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	
3	HPS-0003	N/A	1/2"	N/A	N/A	1415 S 96th ST, Tacoma	252.058	020. Z-1	Jun-71	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Jun-71 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
4	HPS-0004	N/A	1/2"	N/A	N/A	1425 S 96th ST, Tacoma	252.058	020. Z-1	Oct-69	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Oct-69 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
5	HPS-0005	N/A	N/A	N/A	N/A	1438 S 96th ST, Tacoma	252.058	020. Z-1	Jan-95	N/A	D-4	Save-A-Valve	N/A	150	Nov-99	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
6	HPS-0006	N/A	1/2"	N/A	N/A	1433 S 96th ST, Tacoma	252.058	020. Z-1	Aug-68	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Aug-68 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
7	HPS-0007	N/A	1-1/4"	N/A	N/A	125 E 96th ST, Tacoma	252.061	020. Y-1	Nov-92	N/A	D-4	Cut & Cap	H17501 Tee	IP 150	Nov-92 Nov-99	Nov-99 Present	403.2	1.5	268.8	1012	N/A	N/A	268.8	268.8	5.90%	N/A	N/A	
8	HPS-0008	N/A	3/4"/5/8"	N/A	N/A	1442 S 96th ST, Tacoma	252.058	020. Z-1	Nov-80	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Nov-80 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	Field confirmation on the tie-in fitting per 887025940
9	HPS-0009	N/A	3/4"	N/A	N/A	1443 S 96th ST, Tacoma	252.058	020. Z-1	Aug-66	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Aug-66 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	
10	HPS-0010	N/A	3/4"	N/A	N/A	1627 S 96th ST, Tacoma	252.058	020. Z-1	Mar-64	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Mar-64 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	4.60%	N/A	N/A	
11	HPS-0011	N/A	3/4"/5/8"	N/A	N/A	1639 S 96th ST, Tacoma	252.058	020. Z-1	Dec-80	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Dec-80 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	Field confirmation on the tie-in fitting per 887025941
12	HPS-0012	N/A	N/A	N/A	N/A	1705 S 96th ST, Tacoma	252.058	020. Z-1	Nov-74	N/A	D-4	Save-A-Valve	N/A	150	Nov-99	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
13	HPS-0013	N/A	3/4"	N/A	N/A	1720 S 96th ST, Tacoma	252.058	020. Z-1	Nov-64	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Nov-64 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	4.60%	N/A	N/A	
14	HPS-0014	N/A	N/A	N/A	N/A	1751 S 96th ST, Tacoma	252.058	020.Z-1	Jan-78	N/A	D-4	Save-A-Valve	N/A	150	Nov-99	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
15	HPS-0015	N/A	N/A	N/A	N/A	1765 S 96th ST, Tacoma	252.058	020.Z-1	Jul-88	N/A	D-4	Save-A-Valve	N/A	150	Nov-99	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
16	HPS-0016	N/A	1" /1-1/8"	N/A	N/A	2015 S 96th ST, Tacoma	252.057	020.AA-1.A	Jul-85	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Jul-85 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.90%	N/A	N/A	Field confirmation on the tie-in fitting per 887025942
17	HPS-0017	N/A	1-1/4"	N/A	N/A	2102 S 96 ST, Tacoma	252.057	020.AA-1.A	Jun-69	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Jun-69 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	5.90%	N/A	N/A	Field confirmation on the tie-in fitting per 887025944
18	HPS-0018	N/A	1-1/4"	N/A	N/A	9604 22rd Av S, Tacoma	252.057	020.AB-1	Jun-79	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Jun-79 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	5.90%	N/A	N/A	
19	HPS-0019	N/A	1-1/4"	N/A	N/A	2426 S 96th ST, Tacoma	252.057	020.AB-1	Jun-74	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Jun-74 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	5.90%	N/A	N/A	
20	HPS-0020	N/A	1-1/4"	N/A	N/A	2425 S 96th ST, Tacoma	252.057	020.AB-1	Jul-74	N/A	D-4	Cut & Cap	H17500 Tee	IP 150	Jul-74 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	5.90%	N/A	N/A	Field confirmation on the tie-in fitting per 887025943
21	HPS-0021	N/A	1-1/4"	N/A	N/A	3119 S 96th ST, Tacoma	252.057	020.AC-1	Feb-94	N/A	D-4	Cut & Cap	H17501 Tee	IP 150	Feb-94 Nov-99	Nov-99 Present	403.2	1.5	268.8	1012	N/A	N/A	268.8	268.8	5.90%	N/A	N/A	
22	HPS-022	677	6"	6"	8" Turbine	3701 96th St SW, Tacoma	251.055	020.Y-1	11/21/1999	107007682	4D28-371	n/a	6" B/O LS H17281	150	11/21/1999	present	446.5	1.5	297.7	400 psig	N/A	N/A	N/A	297.7	10.49%	4" Axial Flow set @ 30 psig	Yes	
23	HPS-0023	N/A	N/A	N/A	N/A	917 S 96th ST, Tacoma	252.061	020.Y-1	May-93	N/A	D-4	Save-A-Valve	N/A	150	May-93	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
24	HPS-0024	N/A	N/A	N/A	N/A	810 S 96th ST, Tacoma	252.061	020.Y-1	Jul-96	N/A	D-4	Save-A-Valve	N/A	150	Jul-96	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
25	HPS-0025	N/A	N/A	N/A	N/A	416 S 96th ST, Tacoma	252.051	020.Y-1	Jul-91	N/A	D-4	Save-A-Valve	N/A	150	Jul-91	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
26	HPS-0026	N/A	N/A	N/A	N/A	208 E 96th ST, Tacoma	252.061	020.Y-1	Jul-97	N/A	D-4	Save-A-Valve	N/A	150	Jul-97	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
27	HPS-0027	N/A	N/A	N/A	N/A	9610 E B St, Tacoma	252.061	020.Y-1	Sep-91	N/A	D-4	Save-A-Valve	N/A	150	Sep-91	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
28	HPS-0028	N/A	N/A	N/A	N/A	124 S 96th St, Tacoma	252.061	020.Y-1	Jan-92	N/A	D-4	Save-A-Valve	N/A	150	Jan-92	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
29	HPS-0029	N/A	N/A	N/A	N/A	104 S 96th ST, Tacoma	252.06	020.Y-1	Apr-95	N/A	D-4	Save-A-Valve	N/A	150	Apr-95	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
30	HPS-0030	N/A	N/A	N/A	N/A	9601 Pacific Av S, Tacoma	252.061	020.Y-1	Dec-94	N/A	D-4	Save-A-Valve	N/A	150	Dec-94	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
31	HPS-0031	N/A	N/A	N/A	N/A	9602 S Park Ave, Tacoma	252.06	020.Z-1	Sep-88	N/A	D-4	Save-A-Valve	N/A	150	Sep-88	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
32	HPS-0032	N/A	N/A	N/A	N/A	9448 S Park Ave, Tacoma	251.059	020.Z-1	Jun-80	N/A	D-4	Save-A-Valve	N/A	150	Jun-80	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
33	HPS-0033	N/A	N/A	N/A	N/A	816 S 96th ST, Tacoma	252.059	020.Z-1	Feb-98	N/A	D-4	Save-A-Valve	N/A	150	Feb-98	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
34	HPS-0034	N/A	5/8"	N/A	N/A	843 S 96th ST, Tacoma	252.059	020.Z-1	Feb-87	N/A	D-4	Cut & Cap	H18101 Tee	IP 150	Feb-87 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	Field confirmation on the tie-in fitting per 887026259
35	HPS-0035	N/A	1/2"	N/A	N/A	851. S 96th ST, Tacoma	252.059	020.Z-1	Jul-67	N/A	D-4	C&C	H18101 Tee	IP 150	Jul-67 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
36	HPS-0036	N/A	1/2"	N/A	N/A	918. S 96th ST, Tacoma	252.059	020.Z-1	Oct-69	N/A	D-4	C&C	H18101 Tee	IP 150	Oct-69 Nov-99	Nov-99 Present	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	

Salishan HP Uprate - HP Service MAOP Summary
Uprate Job Number: 887024719
Uprate from 150 psig to 250 psig

PUGET SOUND ENERGY

														Operating History					MAOP Factors									
	Service ID	Customer ID	Stub Size	Extension Size	Meter Type	Address	Plat	Associated Main ID	Installation Date	Job #	Drawing # or D4 Card	Retirement Method	Upstream Tie-in Fitting	Operating Pressure	From	To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Yr Op Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established MAOP	% SYMS @ New MAOP	Overpressure Protection Method	Relief Pass?	Comments
37	HPS-0037	N/A	3/4"	N/A	N/A	918. S 96th ST (2nd service) , Tacoma	252.059	020.Z-1	Nov-64	N/A	D-4	C&C	H18101 Tee	IP	Nov-64	Nov-99	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	4.60%	N/A	N/A	
														150	Nov-99	Present												
38	HPS-0038	N/A	1/2"	N/A	N/A	1011 S 96th St, Tacoma	252.059	020.Z-1	Feb-67	N/A	D-4	C&C	H18101 Tee	IP	Feb-67	Nov-99	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
														150	Nov-99	Present												
39	HPS-0039	N/A	1/2"	N/A	N/A	1002 S 96th St, Tacoma	252.059	020.Z-1	Jun-73	N/A	D-4	C&C	H18101 Tee	IP	Jun-73	Nov-99	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
														150	Nov-99	Present												
40	HPS-0040	N/A	1/2"	N/A	N/A	1106 S 96th St, Tacoma	252.059	020.Z-1	Sep-69	N/A	D-4	C&C	H18101 Tee	IP	Sep-69	Nov-99	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
														150	Nov-99	Present												
41	HPS-0041	N/A	1-1/4"	N/A	N/A	1220 S 96th ST, Tacoma	252.059	020.Z-1	Oct-95	N/A	D-4	C&C	H17501 Tee	IP	Oct-95	Nov-99	403.2	1.5	268.8	1012	N/A	N/A	268.8	268.8	5.90%	N/A	N/A	
														150	Nov-99	Present												
42	HPS-0042	N/A	N/A	N/A	N/A	1317 S 96th ST, Tacoma	252.059	020.Z-1	Sep-96	N/A	D-4	Save-A-Valve	N/A	150	Sep-96	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
43	HPS-0043	N/A	N/A	N/A	N/A	9604 13th Ave, Tacoma	252.059	020.Z-1	Aug-93	N/A	D-4	Save-A-Valve	N/A	150	Aug-93	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
44	HPS-0044	N/A	1/2"	N/A	N/A	1220 S 96th ST, Tacoma	252.059	020.Z-1	Oct-69	N/A	D-4	C&C	H18101 Tee	IP	Oct-69	Nov-99	403.2	1.5	268.8	1200	N/A	N/A	268.8	268.8	3.90%	N/A	N/A	
														150	Nov-99	Present												
45	HPS-0045	N/A	1-1/4"	N/A	N/A	1902 S96th ST, Tacoma	252.059	020.AA-1	Sep-92	N/A	D-4	C&C	H17501 Tee	IP	Sep-92	Nov-99	403.2	1.5	268.8	1012	N/A	N/A	268.8	268.8	5.90%	N/A	N/A	
														150	Nov-99	Present												
46	HPS-0046	N/A	N/A	N/A	N/A	3265 S 96th ST, Tacoma	252.056	020.AC-1	Mar-66	N/A	D-4	Save-A-Valve	N/A	150	Mar-66	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
47	HPS-0047	N/A	N/A	N/A	N/A	9324 S Tacoma Way (1), Tacoma	252.056	020.AC-1	Sep-90	N/A	D-4	Save-A-Valve	N/A	150	Sep-90	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
48	HPS-0048	N/A	N/A	N/A	N/A	9324 S Tacoma Way (2), Tacoma	252.056	020.AC-1	Sep-90	N/A	D-4	Save-A-Valve	N/A	150	Sep-90	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
49	HPS-0049	N/A	N/A	N/A	N/A	3619 94th ST SW, Tacoma	252.056	020.AC-1	Sep-90	N/A	D-4	Save-A-Valve	N/A	150	Sep-90	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
50	HPS-0050	N/A	N/A	N/A	N/A	3711 94th ST SW, Tacoma	252.056	020.AC-1	Aug-98	N/A	D-4	Save-A-Valve	N/A	150	Aug-98	Present	403.2	1.5	268.8	1440	N/A	N/A	N/A	268.8	N/A	N/A	N/A	
51	HPS-0051	N/A	N/A	N/A	N/A	827 S 96th ST, Tacoma	251.059	020.Z-1	Jul-66	N/A	D-4	C&C	H17500 Tee	IP	Jul-66	Nov-99	403.2	1.5	268.8	250	N/A	N/A	250	250	4.60%	N/A	N/A	Field confirmation on the tie-in fitting per 887026265
														150	Nov-99	Present												

Notes:
1. Do not leave any fields blank. If a field does not apply then enter "N/A"
2. If an assumption was made during the research process, document the assumption in the comments area
3. The Design Pressure and Pressure Rating for each main and its associated fittings are calculated and evaluated in a separate document
4. Design Pressures for each facility were calculated using F = 0.4, assuming Class 4 locations
5. Do not sort the above table. Copy the table to a new tab if sorting is required.
6. Only include the operating history for the side of the service that will be uprate.
7. Highlight fields will be finalized after preliminary field work (field confirmation) is completed
8. IP pressure is less than or equal to 60 psig

I certify that the research of this information was performed according to company standards;
Researched by: Srini Pendikatla (HPS-0022 only)/Roy Nakano/Derek Koo/Jeff Anderson/Don Frieze

Signatures: for Srini Pendikatla / for Roy Nakano / / for Jeff Anderson /

Approval Date: June 28, 2012

I certify that the system can be uprated to the proposed MAOP, provided the modifications identified on Preliminary Field Work Form are completed;
Approved by: Derek Koo/Don Frieze

Signatures: /

Approval Date: June 28, 2012

Salishan HP Uprate - Main MAOP Summary

Uprate Job Number: 887024719 (Salishan Uprate)

Uprate from 150 psig to 250 psig

PUGET SOUND ENERGY

					Pipe Properties			Operating History					MAOP Factors							
	Main ID	Installation Date	Job #	Drawing #	Pipe Size	Wall Thickness	Grade	Operating Pressure	From	To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Yr Op Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established Segment MAOP	% SYMS @ New System MAOP	Comments
SALISHAN SUPPLY																				
1	020.A-1	Oct-60	60S-323	3D5-321	8	0.188	Gr. B	150	Oct-60	Present	491.8	1.4	351.3	531	150	N/A	N/A	150.0	16.4%	
2	020.A-1.B	Feb-63	61S-139	7D-230	8	0.188	Gr. B	150	Feb-63	Present	458.3	1.4	327.4	610.3	150	N/A	N/A	150.0	16.4%	
3	020.A-1.C	May-01	109008729 109008726	3D7-400	8	0.322	X42	150	May-01	Present	496.5	1.5	331.0	720	N/A	N/A	N/A	331.0	8.0%	
4	020.A-1.D	Jun-63	63S-180	Unknown	8	0.188	Gr. B	150	Jun-63	Present	458.3	1.4	327.4	610.0	150	N/A	N/A	150.0	16.4%	
5	020.A-1.E	Jun-63	63S-180	Unknown	8	0.188	Gr. B	150	Jun-63	Present	458.3	1.4	327.4	610.0	150	N/A	N/A	150.0	16.4%	
6	020.A-1.F	Apr-05	109017759	3D5-321	8	0.322	X42	150	Apr-05	Present	484.7	1.5	323.1	627.0	N/A	N/A	N/A	323.1	9.6%	
7	020.A-4	Oct-60	60S-323	3D5-321	8	0.250	Gr. B	150	Oct-60	Present	491.8	1.4	351.3	812.0	150	N/A	N/A	150.0	12.3%	
8	020.A-5	Oct-60	60S-323	3D5-321	12	0.250	Gr. B	150	Oct-60	Present	491.8	1.4	351.3	549.0	150	N/A	N/A	150.0	18.2%	
9	020.AR-1	Jan-63	120	EXS62-300	4	0.237	Gr.B	150	Jan-63	Present	450	1.4	321.4	610.0	150	N/A	N/A	150.0	16.4%	
10	020.B-1	Jan-63	120	EXS62-300	8	0.188	Gr. B	150	Jan-63	Present	450	1.4	321.4	610.0	150	N/A	N/A	150.0	16.4%	
11	020.C-1	Jun-70	69S-528	70D-102	8	0.188	Gr. B	150	Jun-70	Present	450	1.4	321.4	502	N/A	N/A	N/A	321.4	16.4%	
12	020.U-1	Jul-91	905-504	3D7-312	8	0.188	X42	150	Jul-91	Present	498	1.5	332.0	604	N/A	N/A	N/A	332.0	13.7%	
13	020.U-2	Jul-91	905-504	3D7-312	8	0.322	Gr. B	150	Jul-91	Present	498	1.5	332.0	740.0	N/A	N/A	N/A	332.0	9.6%	
14	020.U-3	Jul-91	905-504	3D7-312	8	0.322	Gr. B	150	Jul-91	Present	498	1.5	332.0	1045	N/A	N/A	N/A	332.0	9.6%	
15	020.U-4	Jul-91	905-504	3D7-312	8	0.322	Gr. B	150	Jul-91	Present	498	1.5	332.0	771	N/A	N/A	N/A	332.0	9.6%	
PIERCE TRANSIT SUPPLY																				
15	020.X-1	May-98	9705121	9705121	6	0.188	X42	150	May-98	Present	532.8	1.5	355.2	720	N/A	N/A	N/A	355.2	10.5%	Pressure Taps confirmed per 887025759
16	020.X-2	May-98	9705121	9705121	8	0.188	X42	150	May-98	Present	532.8	1.5	355.2	604	N/A	N/A	N/A	355.2	13.7%	
17	020.Y.1	Jul-91	905-504B	-504(B)□9705	6	0.188	X42	150	Jul-91 Nov-99 Nov-99	Present	403.2	1.5	268.8	720	N/A	N/A	268.8	268.8	10.5%	Pressure Taps confirmed per 887025759
18	020.Y-1.A	Jun-98	9705121	9705121	6	0.188	X42	150	Jun-98	Present	530.8	1.5	353.9	720	N/A	N/A	N/A	353.9	10.5%	
19	020.Y-1.B	Aug-98	9705121	9705121	6	0.188	X42	150	Aug-98	Present	532.1	1.5	354.7	720	N/A	N/A	N/A	354.7	10.5%	
20	020.Z-1	Feb-64	64S-006	EXS64-006	6	0.280	Gr. B	60 150	Feb-64 Nov-99	Nov-99 Presenet	403.2	1.5	268.8	250	N/A	N/A	268.8	250.0	8.5%	
21	020.Z-1.A	Jul-87	875-664	Main Card	6	0.188	X42	60 150	Jul-87 Nov-99	Nov-99 Presenet	403.2	1.5	268.8	275	N/A	N/A	N/A	268.8	12.6%	
22	020.Z-1.B	Nov-99	9705121	9705121	6	0.188	X42	150	Nov-99	Present	403.2	1.5	268.8	720	N/A	N/A	N/A	268.8	10.5%	
23	020.Z-1.C	Nov-99	9705121	9705121	6	0.188	X42	150	Nov-99	Present	403.2	1.5	268.8	720	N/A	N/A	N/A	268.8	10.5%	
24	020.Z-1.D	Nov-99	9705121	9705121	6	0.188	X42	150	Nov-99	Present	403.2	1.5	268.8	720	N/A	N/A	N/A	268.8	10.5%	
25	020.Z-1.E	Aug-98	9705121	9705121	6	0.188	X42	150	Aug-98	Present	536	1.5	357.3	720	N/A	N/A	N/A	357.3	10.5%	
26	020.Z-1.F	Jul-98	9705121	9705121	6	0.188	X42	150	Jul-98	Present	526	1.5	350.7	720	N/A	N/A	N/A	350.7	10.5%	
27	020.Z-1.G	Nov-99	9705121	9705121	6	0.188	X42	150	Nov-99	Present	403.2	1.5	268.8	720	N/A	N/A	N/A	268.8	10.5%	
28	020.AA-1	Jul-69	69S-515	69-515	6	0.188	Gr. B	60 150	Jul-69 Nov-99	Nov-99 Present	403.2	1.5	268.8	275	N/A	N/A	268.8	268.8	12.6%	Weld-Plug to be confirmed and retired per 887025764
29	020.AA-1.A	Jun-79	795-373	795-373	6	0.188	Gr. B	60 150	Jun-79 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	N/A	250.0	12.6%	
30	020.AB-1	Jul-74	74S-221	74S-221	6	0.188	Gr. B	60 150	Jul-74 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	N/A	250.0	12.6%	
31	020.AC-1	Oct-90	905-504B	905-504B	6	0.188	X42	60 150	Oct-90 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	N/A	250.0	10.5%	
32	020.AC-1.A	Aug-98	9705121	9705121	6	0.188	X42	150	Aug-98	Present	533.1	1.5	355.4	720	N/A	N/A	N/A	355.4	10.5%	
33	020.AC-1.B	Aug-98	9705121	9705121	6	0.188	X42	150	Aug-98	Present	522.7	1.5	348.5	720	N/A	N/A	N/A	348.5	10.5%	
34	020.AS-1	Jan-92	915-876	915-876	2	0.154	Gr.B	60 150	Jan-92 Nov-99	Nov-99 Present	403.2	1.5	268.8	1440	N/A	N/A	268.8	268.8	5.5%	
35	020.AT-1	Apr-93	9309077	9309077	2	0.154	Gr.B	60 150	Apr-93 Nov-99	Nov-99 Present	403.2	1.5	268.8	1440	N/A	N/A	268.8	268.8	5.5%	
36	020.AU-1	Jun-80	804-405	Main Card	2	0.125	A-25	60 150	Jun-80 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	268.8	250	9.5%	

Salishan HP Uprate - Main MAOP Summary

Uprate Job Number: 887024719 (Salishan Uprate)

Uprate from 150 psig to 250 psig

					Pipe Properties			Operating History					MAOP Factors							
	Main ID	Installation Date	Job #	Drawing #	Pipe Size	Wall Thickness	Grade	Operating Pressure	From	To	Test Pressure	Test Pressure Factor	Test Pressure Limitation	Design Pressure	5 Yr Op Pressure	Safe Operating Pressure	Previous Uprate Pressure	Established Segment MAOP	% SYMS @ New System MAOP	Comments
37	020.AV-1	Aug-12	887024719	795-373	6	0.188	X-42	150	Aug-12	Present	450	1.5	300.0	740	N/A	N/A	N/A	300.0	10.0%	Replace existing bottom-outs per Job # 109068555
38	020.AW-1	Dec-80	815-178	815-178	2	0.154	Gr.B	60 150	Dec-80 Nov-99	Nov-99 Present	403.2	1.5	268.8	250	N/A	N/A	250	250	5.5%	

Notes:

1. Do not leave any fields blank. If a field does not apply then enter "N/A"
2. If an assumption was made during the research process, document the assumption in the comments area
3. The Design Pressure and Pressure Rating for each main and its associated fittings are calculated and evaluated in a separate document
4. Design Pressures for each facility were calculated using F = 0.4, assuming Class 4 locations
5. Do not sort the above table. Copy the table to a new tab if sorting is required.
6. Highlight cell is depending for field confirmation or construction that will be completed prior to the uprate

I certify that the research of this information was performed according to company standards;

Researched by: Roy Nakano/Derek Koo/Don Frieze

Signatures: for Roy Nakano /

Approval Date: June 28, 2012

I certify that the system can be uprated to the proposed MAOP, provided the modifications identified on Preliminary Field Work Form are completed;

Approved by: Derek Koo/Don Frieze

Signatures: /

Approval Date: June 28, 2012

APPENDIX D

Preliminary Field Work Form

Preliminary Field Work

PSE PUGET SOUND ENERGY

Uprate Job Number: 887024719
Uprate from 150 psig to 250 psig

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
1	887025759	Pierce Transit	Pressure Tap Golden Given Road and S 96th ST (96th St. E) DF	Field confirmation is required on a branch fitting. Per drawing, pressure taps were installed on both sides of the Bottom-out fitting 15' SCL & 114 to 117' WCL. However there is no fitting information on these 2 taps. These pressure taps should be located at 15' SCL & 114'WCL and 119' WCL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	251062	8/29/2011	Field Work Complete 2 1" Mueller Service Tees were found (Rated to 1440 psig)
2	887025760	Salishan	RS-1327 Tie-in (retired) 5604 Portland Ave	Field confirmation is required on a retired DR tie-in fitting. Per drawing, tie-in fitting should be located around 105' SCL & 17' ECL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	247063	4/4/2011	3/4" Service Tee Found. Tested to 471 psig
3	887025761	Salishan	RS-1480 Tie-in (retired) 5314 Portland Ave	Field confirmation is required on a retired DR tie-in fitting. If a dressor fitting is found, retire dresser fitting per procedure provided by Engineering. Confirm if any original piping left behind from the retired station. If so, re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 138 NCL & 17' ECL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	246063	4/4/2011	3/4" Service Tee Found. Tested to 468.5 psig
4	887025762	Salishan	RS-1031 Tie-in (retired) E M St & Harrison	Field confirmation is required on a retired DR tie-in fitting. Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 21' SCL & 14'ECL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	243062	9/21/2011	3/4" Mueller Autoperf Tee Found. Retested to 462 psig 9/21/2011

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
5	887025763	Salishan	RS-1868 Tie-in (retired) 3417 E M St	Field confirmation is required on a retired DR tie-in fitting. If a dressor fitting is found, retire dresser fitting per procedure provided by Engineering. Confirm if any original piping left behind from the retired station. If so, re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 86' NCL & 19' ECL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	243062	10/3/2011	1" Mueller service tee found. 3/4" socket weld cap installed. Retest not required because no piping remains.
6	109068555	Pierce Transit	S 96th ST, Between Steele St and Hosmer ST	Field confirm retirement method for a HP relocation that was installed in 1979. Per avaiable drawing, cut and plug was used as the retirement method at the time when the supply was operated at IP pressure. There is no record indicates whether the plug was replaced with the proper weld cap. Gas System Engieering will generate a retirement design drawing and procedure This is in case if the plugs are still in the system. Per drawing, the 6" plugs are located at 192' WCL & 20' SCL and 194' ECL & 30' SCL	252057	**NOT COMPLETE**	**WAITING FOR DOUBLE BOTTOM OUT RELOCATION**
7	CANCELLED	N/A	~~Service (Retired)~~ ~~1627 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
8	CANCELLED	N/A	~~Service (Retired)~~ ~~1443 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
9	887025940	Pierce Transit	Service (Retired) HPS-0008 1442 S 96 ST	Field confirmation is required. A PE service was original tie to this 6" HP main. Per historical standards drawing, the 2 methods for PE installation off of a steel main were (1) weld on a service tee with a mechanical coupling for the PE connection and (2) weld on a weld by weld service tee with a transition fitting that has a mechanical coupling for the PSE connection. Fittings that have these mechanical coupling are only good for 125 psig per the manufacturer literature. Per retirement record, a pre-tested weld cap was installed. However it is not clear whether the 125 rated fitting was entirely removed. Field personnel shall confirm the retired assembly and take the following corrective actions as necessary (1) If there a pub between the service tee and the pre-tested cap, take measurement of the wall thickness of the pup. If the measured value exceeds the specified thickness provided by Engineering, it implies it was an altered transit fitting. Field personnel shall close off the tee, cut out the pup (the altered transition fitting) entirely, and weld on a pre-tested cap. (2) If there is no pup between the cap and the service tee, visually inspect the service tee and determine whether it was a conti (3) If it is uncertain, contact the project engineering for further instructions.	252.058	9/6/2011	Field Work Complete. 3/4" Mueller Autoperf tee found.

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
10	CANCELLED	N/A	~~Service (Retired)~~ ~~1433 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
11	CANCELLED	N/A	~~Service (Retired)~~ ~~1425 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
12	CANCELLED	N/A	~~Service (Retired)~~ ~~1415 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
13	CANCELLED	N/A	~~Service (Retired)~~ ~~1410 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
14	CANCELLED	N/A	~~Service (Retired)~~ ~~125 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
15	887025941	Pierce Transit	Service (Retired) HPS-0011 1639 S 96 ST	Field confirmation is required. A PE service was original tie to this 6" HP main. Per historical standards drawing, the 2 methods for PE installation off of a steel main were (1) weld on a service tee with a mechanical coupling for the PE connection and (2) weld on a weld by weld service tee with a transition fitting that has a mechanical coupling for the PSE connection. Fittings that have these mechanical coupling are only good for 125 psig per the manufacturer literature. Per retirement record, a pre-tested weld cap was installed. However it is not clear whether the 125 rated fitting was entirely removed. Field personnel shall confirm the retired assembly and take the following corrective actions as necessary (1) If there a pub between the service tee and the pre-tested cap, take measurement of the wall thickness of the pup. If the measured value exceeds the specified thickness provided by Engineering, it implies it was an altered transit fitting. Field personnel shall close off the tee, cut out the pup (the altered transition fitting) entirely, and weld on a pre-tested cap. (2) If there is no pup between the cap and the service tee, visually inspect the service tee and determine whether it was a conti (3) If it is uncertain, contact the project engineering for further instructions.	251.058	9/16/2011	Field Work Complete. 3/4" Mueller Autoperf tee found.
16	CANCELLED	N/A	~~Service (Retired)~~ ~~1720 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
17	887025942	Pierce Transit	Service (Retired) HPS-0016 2015 S 96 ST	Field confirmation is required. A PE service was original tie to this 6" HP main. Per historical standards drawing, the 2 methods for PE installation off of a steel main were (1) weld on a service tee with a mechanical coupling for the PE connection and (2) weld on a weld by weld service tee with a transition fitting that has a mechanical coupling for the PSE connection. Fittings that have these mechanical coupling are only good for 125 psig per the manufacturer literature. Per retirement record, a pre-tested weld cap was installed. However it is not clear whether the 125 rated fitting was entirely removed. Field personnel shall confirm the retired assembly and take the following corrective actions as necessary (1) If there a pub between the service tee and the pre-tested cap, take measurement of the wall thickness of the pup. If the measured value exceeds the specified thickness provided by Engineering, it implies it was an altered transit fitting. Field personnel shall close off the tee, cut out the pup (the altered transition fitting) entirely, and weld on a pre-tested cap. (2) If there is no pup between the cap and the service tee, visually inspect the service tee and determine whether it was a conti (3) If it is uncertain, contact the project engineering for further instructions.	252.057	9/3/2011	Field work complete. 3/4" Mueller Autoperf tee found.
18	CANCELLED	N/A	~~Service (Retired)~~ ~~2102 S 96 ST~~	~~Field confirmation is required on the tie-in fitting between the main and the stub.~~ ~~Per 1997 uprate record, this retired service was cut and cap. While the main was re-tested entirely to 400 psig, there is no information on this rate component. Field confirmation is necessary to record the size, the manufacturer, and the model number of this tie-in-fitting. In addition, field personnel shall confirm whether the cut and cap was installed downstream of the service valve. If the service is still active, record the size, the manufacturer, and the model number of the service valve.~~			Cancel work for line item. This field work is no longer needed because Standards were able to determine what tie-fittings were used for these location based on historical standards and standard drawings
19	887025943	Pierce Transit	Service (Retired) HPS-0020 2425 S 96th ST	Field confirmation is required to document the original retirement method This service was tie-over to the IP system in 1998, however, the retirement method was not recorded on the As-built. Field personnel shall confirm whether the original service was retired either using method (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.057	9/15/2011	Field Work complete. 1 1/4" tee found with cap.
20		Pierce Transit / Salishan		Pre Uprate survey scheduled for 6/10/11		6/10/2011	Preliminary survey complete. No Leakage found.
21	887025944	Pierce Transit	Service (Retired) HPS-0017 2102 S 96 St	Field confirmation is required to document the original retirement method This service was tie-over to the IP system in 1998, however, the retirement method was not recorded on the As-built. Field personnel shall confirm whether the original service was retired either using method (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.057	10/4/2011	1 1/4" Mueller Service Tee Found

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
22	887026099	Salishan	RS-1404 Tie-in (retired) E M St & E 25 ST	Field confirmation is required on a retired DR tie-in fitting. Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 17' N CL & 48' W CL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	242.062	9/27/2011	Field work complete 3/4" Meuller Autoperf tee found, 6.5" between the tee and the cap. Retest 459.5 psig 9/27/2011
23	887026100	Salishan	RS-1538 Tie-in (retired) E M St & E 32 ST	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 17' S CL & 15' E CL	243.062	9/21/2011	3/4" Mueller Autoperf Tee Found. Retested to 475.5 psig 9/21/2011
24	887026101	Salishan	RS-0983 Tie-in (retired) 3630 E M ST	Field confirmation is required on a retired DR tie-in fitting. Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 417' S CL & 12' E CL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	244.062	9/21/2011	Field Work Complete 3/4" Mueller Autoperf Tee Found, 6" between the tee and the cap, tee retested 471.5 psig on 9/21/2011
25	887026102	Salishan	RS-1472 Tie-in (retired) 5002 Portland Ave	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 41' N CL & 17' E CL	246.063	9/21/2011	Retested to 480.5 psig - 9/21/2011
26	887026103	Salishan	RS-1306 Tie-in (retired) E 52 ST & Portland Ave	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 23' S CL & 17' E CL	246.063	12/14/2011	Retested to 474 psig - 12/14/2011
27	887026104	Salishan	RS-1973 Tie-in (retired) 1423 E 56 ST	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 158' N CL & 17' E CL	246.063	12/14/2011	Test Pressure 476 psig 12/14/2011
28	887026105	Salishan	RS-1371 Tie-in (retired) E 63 ST & Portland Ave	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 19' S CL & 21' E CL Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	247.063	9/28/2011	Field Work Complete 9/28/2011 3/4" Mueller Autoperf Tee Found, 4 3/4" pipe between the cap and the tee. Retested to 465.5 psig.
29	887026106	Salishan	RS-1877 Tie-in (retired) 7001 Portland Ave	Re-test the tee, stub, and the weld cap per procedure provided by Engineering Per drawing, tie-in fitting should be located around 641' N CL & 26' E CL	248.063	9/28/2011	Pad Found 5 1/2 in. OD. 3/4" Mueller Autoperf Tee 9/28/2011. Retest 473 psig - 9/27/2011
30	CANCELLED	N/A	~~RS-1717 Outlet Pressure Lowering~~	~~RS-1717 is located on the North Tacoma Supply. During the last pressure increase inorement, the North Tacoma Supply will experience a pressure of 275 psig. At 275 psig , the station relief valve will not have adequate capacity to protect the downstream system from overpressure. To ensure the system is adequately protected, the station outlet setting needs to be lowered by 3 psig.~~ ~~Engineering shall notify Pressure Control to lower the station setting prior to the uprate.~~			Cancelled - North Tacoma will not longer see pressure higher than 250 psig.

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
31	887026259	Pierce Transit	Service (Retired) HPS-0034 843 S 96th ST	Field confirmation is required. A PE service was original tie to this 6" HP main. Per historical standards drawing, the 2 methods for PE installation off of a steel main were (1) weld on a service tee with a mechanical coupling for the PE connection and (2) weld on a weld by weld service tee with a transition fitting that has a mechanical coupling for the PSE connection. Fittings that have these mechanical coupling are only good for 125 psig per the manufacturer literature. Per retirement record, a pre-tested weld cap was installed. However it is not clear whether the 125 rated fitting was entirely removed. Field personnel shall confirm the retired assembly and take the following corrective actions as necessary (1) If there a pub between the service tee and the pre-tested cap, take measurement of the wall thickness of the pup. If the measured value exceeds the specified thickness provided by Engineering, it implies it was an altered transit fitting. Field personnel shall close off the tee, cut out the pup (the altered transition fitting) entirely, and weld on a pre-tested cap. (2) If there is no pup between the cap and the service tee, visually inspect the service tee and determine whether it was a conti (3) If it is uncertain, contact the project engineering for further instructions.	252.059	9/8/2011	Field Work Complete Found 3/4" Autoperf Tee (1200 psig rating) with a 3/4" cap. Added weld reinforcement.
32	887026260	Pierce Transit	Service (Retired) 1645 S 96th ST	Field confirmation is required to document the original retirement method. Note, there is no record on which main was this service intially installed on, GSE could only find a reference of 6" main on the field sketch. There may or may not been a service tee installed at this location. This service was tie-over to the IP system in 1998, however, the retirement method was not recorded on the As-built. Field personnel shall confirm whether the original service was retired either using method (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.058	8/31/2011	No fitting found 8/31/11
33	887026261	Pierce Transit	Serivce (Retired) 803 S 96th ST	Field confirmation is required to document the original retirement method This service was tie-over to the IP system in 1998, however, the retirement method was not recorded on the As-built. Field personnel shall confirm whether the original service was retired either using method (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.059	9/8/2011	Field Work Complete 2" Save-a-valve found (1440 psig) with no additional weld reinforcement

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
34	887026265	Pierce Transit	Serivce (Retired) 827 S 96th ST	Field confirmation is required. A PE service was original tie to this 6" HP main. Per historical standards drawing, the 2 methods for PE installation off of a steel main were (1) weld on a service tee with a mechanical coupling for the PE connection and (2) weld on a weld by weld service tee with a transition fitting that has a mechanical coupling for the PSE connection. Fittings that have these mechanical coupling are only good for 125 psig per the manufacturer literature. Per retirement record, a pre-tested weld cap was installed. However it is not clear whether the 125 rated fitting was entirely removed. Field personnel shall confirm the retired assembly and take the following corrective actions as necessary (1) If there a pub between the service tee and the pre-tested cap, take measurement of the wall thickness of the pup. If the measured value exceeds the specified thickness provided by Engineering, it implies it was an altered transit fitting. Field personnel shall close off the tee, cut out the pup (the altered transition fitting) entirely, and weld on a pre-tested cap. (2) If there is no pup between the cap and the service tee, visually inspect the service tee and determine whether it was a conti (3) If it is uncertain, contact the project engineering for further instructions.	251.059	9/16/2011	Field Work Complete 3/4" socket weld cap installed @ main
35	887026424	Pierce Transit	101 96th St E	Per Michelle's review, we have 2 grade "C" leak at the following addresses. It is unclear whether they are a HP leak or a IP leak. Could we have some one go out there, pinpoint, and confirm these are IP or HP leaks?	251.061	11/9/2011	IP Leak
36	887026425	Pierce Transit	1002 S 96th St	Per Michelle's review, we have 2 grade "C" leak at the following addresses. It is unclear whether they are a HP leak or a IP leak. Could we have some one go out there, pinpoint, and confirm these are IP or HP leaks?	252.059	10/28/2011	IP Leak
37	887026426	Pierce Transit	620 S 96th St	If the service was tie to the 6" at one point of time, then this service was most likely tie-over to the IP system in 1998-1999, but there is no record on retirement method used. Field personnel shall confirm whether the original service tee was installed on the 6" HP main, if it was, field personnel shall confirm and document the retirement method of the service tee, i.e. (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.060	10/26/2011	No Fitting Found 10/26/11
38	887026427	Pierce Transit	244 S 96th St	If the service was tie to the 6" at one point of time, then this service was most likely tie-over to the IP system in 1998-1999, but there is no record on retirement method used. Field personnel shall confirm whether the original service tee was installed on the 6" HP main, if it was, field personnel shall confirm and document the retirement method of the service tee, i.e. (1) cut and cap or (2) a Save-A-Valve installed over it. If other retirement method was used rather the the 2 specified one, contact Engineering immediately. Field personnel shall field verify and collect the following information: - the type of fitting - the size, manufacturer name, model number, and pressure rating of the fitting - whether a weld-olet or pad was installed at the tap location - if a pad was installed, what is the dimension of the pad	252.060	11/3/2011	2" Save-a-valve found
39	887026428	Pierce Transit	112 ~~E 96th St~~ (S 96th St.) DF	Per D-4 record, this service is tied to the 6" IP main which is parallel to the 6" HP Main. Gas First Response shall check the service operation pressure and see of the record pressure is IP or HP pressure. Field check could be conducted on the upstream side of the customer service regulator.	252.060	6/11/2011	Service was connected to IP

	SAP Number	Supply	Address	Description	Map Number	Completion Date	Comments
40	CANCELLED	N/A	~~2214 92nd Ave E~~	~~Per Michelle's review, we have 2 grade "C" leak at the following addresses. It is unclear whether they are a HP leak or a IP leak. Could we have some one go out there, pinpoint, and confirm these are IP or HP leaks?~~	~~242.072~~		
41	CANCELLED	N/A	~~4000 142nd Ave E #B~~	~~Per Michelle's review, we have 2 grade "C" leak at the following addresses. It is unclear whether they are a HP leak or a IP leak. Could we have some one go out there, pinpoint, and confirm these are IP or HP leaks?~~	~~245.078~~		
42	CANCELLED	N/A	~~1616 Fryar Ave~~	~~Per Michelle's review, we have 2 grade "C" leak at the following addresses. It is unclear whether they are a HP leak or a IP leak. Could we have some one go out there, pinpoint, and confirm these are IP or HP leaks?~~	~~246.078~~		
43	887026761	Pierce Transit	670' W CL S Steele St on S 96th St	Per construction records, a CLASS 150 bottom-out fitting was installed as part of the main extension in 1990 under the job number of 905-504(B). Field confirmation is required to see if there is any underrated or non-standard component installed as a purge or pressure ague fitting in close prolixity to the bottom-out fitting. NOTE: there are 2 additional CLASS 300 bottom-out fittings in close proximity of this site which were installed in 1999 (job 9705121).	252.057	11/10/2011	3/4" Autoperf Tee Found. 1200 psig
44	887026762	Pierce Transit	91' W CL Park Ave on S 96th St	Per construction records, a CLASS 150 bottom-out fitting was installed as part of the main relocation in 1987 under the job number of 875-664. Field confirmation is required to see if there is any underrated or non-standard component installed as a purge or pressure gauge fitting in close prolixity to the bottom-out fitting. NOTE: there is 1 additional CLASS 300 bottom-out fittings in close proximity of this site which was installed in 1999 (job 9705121) Potential Excavation Site (in case repair is required based on the field confirmation result at Park Ave 11.6 w of CL S Yakima Ave on S 96 ST In the case when retirement of underrated or non standards fitting at the Park Ave site, additional excavation may required for shutting the gas flow of the supply. PSE will need to utilize an existing bottom out fitting to shut the gas flow for fitting retirement.	251.059	4/16/2012	2" save-a-valve and 4" save-a-valve tested to 471 psig.
45	887028747	Salishan	E 25th St & E L St	Install a pressure tap for monitoring during the uprate at LS2661	242.062	**NOT COMPLETE**	Not released to IFS
46	887028745	Salishan	E 68th St & E Portland Ave	Fabricate two CNG injection assemblies for DR2697	248.063	**NOT COMPLETE**	
47	887028746	Salishan	E 72nd St & E Portland Ave	Fabricate two CNG injection assemblies for DR2723	249.063	**NOT COMPLETE**	
48		Pierce Transit		Field inspect the Pierce Transit MSA to determine the location of a Fig. 143 valve		**NOT COMPLETE**	
49		Pierce Transit / Salishan		2012 Leak Survey		3/23/2012	Preliminary survey complete. No Leakage found.
50	887028963	Salishan	435 ft. N E M St. & E 40th St.	Field confirmation is required to document possible coating and/or piping damage. An EPCR from 2001 indicates that the 8" Salishan Supply did not have sufficient sand backfill at this location and that the coating had dents in it. Excavate near the bottom-out located at 435 ft. N, remove any damaged coating, and assess the condition of the pipe. If any pipe damage is found, contact the Project Engineer. Continue excavating to the North until there is no longer any damage found. Repair removed coating or damaged coating per the GOS and GFP.	244.062	**NOT COMPLETE**	
51	887029022	Salishan	E 26th & E M St.	Dig up the inlet service tee and replace the cast iron completion cap with a steel completion cap.	242.062	**NOT COMPLETE**	Not released to IFS
52	887029023	Pierce Transit	96 St. E & Golden Givens	Instal a pressure tap for monitoring during the uprate on the downstream side of VA-01943. Install the tap at approxmiately 128 ft. N	251.062	**NOT COMPLETE**	

I certify that the modifications required prior to performing the uprate have been completed;

Project Manager_____ Date_____