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May 9, 2008

Ms. Anne Soiza
Pipeline Safety Director
Washington Utilities and Transportation Commission
1300 South Evergreen Park Drive SW
P.O. Box 47250
Olympia, Washington 98504-7250

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WASH. UT. & TP. COMM.

Subject: Status Report of PBV Valve Project for April, 2008
Docket PG-080292

Dear Ms. Soiza:

In accordance with the conditions established by the Washington Utilities and Transportation Commission in the March 13, 2008 Order granting an exemption from WAC 480-93-100 for known and suspected valves manufactured by PBV-USA, NW Natural is providing Staff with a report summarizing the status of the company's investigation and remediation efforts. The company is pleased to report that the project to identify and remediate PBV valves that are susceptible to bolt failures is complete in the State of Washington. NW Natural has completed a comprehensive investigation of all known and suspected valves in Washington. The entire inventory of PBV valves susceptible to bolt failures has either been replaced or remediated. Highlights of the project are summarized as follows;

- 1) Based on NW Natural's investigation of the PBV valve failures, the company has determined that 4" through 24" trunnion supported ball valves manufactured from 1994 through 1998 are potentially susceptible to trunnion bolt failures. Forensic investigations continue to conclude that the bolt failures are the result of a time dependent brittle cracking phenomenon due to excessively hard bolts.
- 2) In accordance with the criteria established above, the company has completed a leakage survey at all known and suspected PBV valve locations on distribution and transmission lines in the State of Washington. Insignificant leakage was detected, and eliminated, at three locations. The leakage was not attributable to PBV valves.
- 3) NW Natural has gathered technical information that allows the company to positively identify susceptible PBV valves from above ground with a minimum amount of surface disruption. Field personnel have completed a physical survey of all known and suspected transmission and distribution valves in Washington to positively determine the inventory of susceptible valves. Since the project was initiated, the company has refined the list of known PBV valves in Washington to include the four valves included in the table below. All of the valves have been remediated by either removal of the valve or replacement of bolts that may be susceptible to failure.
- 4) NW Natural has developed a procedure to allow bolts in susceptible PBV valves to be replaced safely while the valve remains in service (in a closed position). This procedure has significantly improved the efficiency of the remediation process, minimizing the time

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duration and costs associated with the remediation of valves. The procedure also eliminates the necessity to physically remove the susceptible valves from service. NW Natural personnel have used this procedure to successfully replace the susceptible trunnion bolts in three valves in service (see table below). The PBV valve removed from NW Sierra & Lake Rd. in Camas was the only valve in Washington found with broken trunnion bolts.

Location	City	Size	Install Date	Status	Completed
NW Sierra & Lake Rd	Camas	12"	1997	Removed	1/18/08
NE 162 nd Ave, N of 39 th St	Vancouver	12"	1997	Bolts Replaced	4/18/08
NE 162 nd Ave, S of 9 th St	Vancouver	12"	1997	Bolts Replaced	4/24/08
NE 28 th St, E of 119 th Ave	Vancouver	8"	1998	Bolts Replaced	4/28/08

In summary, NW Natural has completed a comprehensive review of all known and suspected PBV valves susceptible to trunnion bolt failures in the State of Washington. The investigation identified a total of four valves that required additional action. One valve was removed from service. The bolts were successfully replaced on three valves while the valves remained in service. As a result, NW Natural has completed the PBV valve investigation and remediation project in the State of Washington, substantially ahead of original estimates. NW Natural intends to resume routine valve inspections in Washington in full compliance with WAC 480-93-100 during the next inspection cycle commencing January, 2009. The company would be pleased to provide a detailed briefing to Staff on the project.

NW Natural wishes to thank the Washington Utilities and Transportation Commission for your support on this important pipeline safety issue.

Sincerely,



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Cc: David Lykken
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