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OVERNIGHT MAIL

August 6, 2012

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**AUG 06 2012**

State of Washington  
UTC  
Pipeline Safety Program

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

Subject: Natural Gas Pipeline Safety Inspection, Operations and Maintenance Manual

Dear Mr. Lykken:

The Washington Utilities and Transportation Commission and the Oregon Public Utility Commission (OPUC) Staff conducted a joint pipeline safety inspection of NW Natural's Operations, Maintenance and Emergency Procedures on April 23 – 27, 2012. Enclosed is a summary of actions taken by NW Natural to address concerns raised by Staff (**Enclosure 1**), along with applicable attachments of referenced documents.

As a result of this inspection, elements of the Operations and Maintenance Manual are still in process of being revised in order to address the specific concerns and remarks from the WUTC. Please note, all revised documents will be available for review in the next Annual Report submittal in 2013. If the Commission requires review prior to the submittal in 2013, please contact me at your convenience.

Sincerely,



Kerry F. Shampine, P.E.  
Manager, Code Compliance

Enclosures

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**Washington Utilities and Transportation Commission Inspection of  
NW Natural's Operations Manuals, April 23 – 26, 2012  
Summary of Issues and Responses by NW Natural**

<b>PROBABLE VIOLATIONS</b>			
#	Code Ref	Description of Issue	Response
1	480-93-080 Welder and plastic joiner identification and qualification	<p>1) NWN did not have a procedure for measuring amperage necessary and voltage when testing welders and qualifying procedures. NWN identified they have a large range so no need for verification testing. However, staff pointed out this "technique" would not ensure welding within the correct ranges, especially when operating on the low and high ends of the range.</p> <p>2) NWN did not have a procedure to record and document all essential variable data for welder and procedure qualification tests. NWN identified they have a large range so no need for verification of the actual measurement. However, staff pointed out this "practice" would not ensure welding within the correct ranges when operating on the low and high ends of the range or that the welding equipment read.</p>	<p>1 &amp; 2) Revising SPW 221 to clarify current procedures and ensure that these requirements are being addressed.</p>

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2	480-93-110 Corrosion Control	NWN did not have a calibration procedure for multi-meters.	NW Natural currently meets this requirement. Calibration procedures for multi-meters are currently addressed in SPW 463, Section 3.6. <b>(Enclosure 2)</b>
3	480-93-124 Pipeline Markers	NWN did not have a procedure describing how pipeline markers reported as missing and damaged will be replaced within 45 days.	Revising SPW 705 to add more procedural detail about how missing or damaged pipeline markers are to be replaced within 45 days.
4	480-93-140 Service Regulators	NWN did not present clear instructions for regulator maintenance repair/replacement. SPW's 361, 383, and 384 do not reference construction requirements of FOM 515 or operator qualifications OP Q 80206.	Regulator maintenance and repair is currently addressed in AOC-Q-02 CFS/ICOM "Inoperability or Failure of any Pipeline Component" <b>(Enclosure 3)</b> which is an attached AOC to OP-Q-802-03 <b>(Enclosure 4)</b> "Inspecting and Maintaining a Meter Set" and OP-Q-802-06 <b>(Enclosure 5)</b> "Installing and Activating a Meter Set."  In addition, NW Natural will add language to AOC-Q-02 in order to clarify when a component is repaired rather than replaced.
5	49 CFR §192.7 What documents are incorporated by reference partly or wholly in this part?	NW Natural procedure SPW 221-8 did not identify the current edition of:  a) API Standard 1104, "Welding of Pipelines and Related Facilities" (20th edition, October 2005). b) 2007 ASME Boiler & Pressure Vessel Code, Section IX, "Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators." c)	Revising SPW 221-8, Reference Codes and Standards section to reference 1) the 20th edition, 2005 of API Standard 1104 and 2) 2007 ASME Boiler & Pressure Vessel Code, Section IX.

**PROBABLE VIOLATIONS**

#	Code Ref	Description of Issue	Response
6	49 CFR §192.153 Components fabricated by welding	<ul style="list-style-type: none"> <li>• NWN O&amp;M manual SPW 221-4.1 states that NWN "utilizes materials whose strength cannot be determined" and their practice and other manual locations state they will not use materials whose strength cannot be determined.</li> <li>• NWN O&amp;M manual did not include ASME testing procedures.</li> </ul>	<p>1 &amp; 2) NW Natural generally purchases all components used in its transmission and distribution system through commercial vendors. These components meet the requirements of the specifications/standards adopted by NW Natural and those generally accepted in the natural gas industry. A minimal numbers of components provided by local fabrication vendors may be purchased by NW Natural for specialized applications. These are primarily special length reinforcing sleeves used to mitigate third-party damages or manufacturing anomalies. These specialized components are manufactured to ASME standards and a copy of the certifications accompany the fabrication for record retention needs.</p>
7	49 CFR §192.807 Recordkeeping	<p>NWN did not present a procedure requiring records of individuals no longer performing covered tasks for a period of five years. NWN identified they throw-out these records annually. NWN identified they will go to the subcontracting company to obtain those records they have thrown-out. Staff identified that NWN is required to maintain these records and not to rely on contractor to maintain these records without a written agreement with the contractor regarding specific records retention/maintenance. Ultimately, NWN is responsible for the records.</p>	<p>Revising SPW 221 to clarify actual practice and procedures.</p> <p>Electronic records for all workers covered under the OQ program are retained for a period of no less than 5 years. This is addressed in NW Natural OQ program document Section 3.3 (<b>Enclosure 6</b>). In addition, NW Natural is revising SPW 223 to address recordkeeping for NDT contractors, which are not covered in the company's OQ program.</p>

**PROBABLE VIOLATIONS**

#	Code Ref	Description of Issue	Response
8	49 CFR §192.283 Plastic pipe. Qualifying joining procedures.	NWN did not present a procedure identifying how electrofusion burst test requirements referenced in (a)(1)(iii) above will be met.	For heat fusion applications, NW Natural uses only medium density polyethylene (MDPE) pipe and fittings in its distribution system. NW Natural has incorporated nationally recognized specifications commonly used in the natural gas industry for both pipe and fittings. NW Natural does not conduct additional qualification testing beyond those performed by the pipe/fitting manufacturers relative to burst testing. Additionally NW Natural has formally adopted the Plastics Pipe Institute (PPI) Generic Butt fusion procedures (TR-33) for polyethylene heat fusion applications. The scope of this PPI procedure includes technical justification so 'Pipeline operators could consider the recommendations and testing performed by PPI in their effort to comply with the fusion procedure qualification requirements of 49 CFR §192.283.'
9	49 CFR §192.307 Inspection of materials	NWN did not present procedures describing how to document the visual inspection of pipe and components at the site of installation.	NW Natural is clarifying it's procedures for inspection and receipt of material both in stores and construction staging areas and is currently formalizing this in Engineering Procedure M-2, "Material Receiving Inspection."
10	49 CFR §192.319 Installation of pipe in a ditch	NWN failed to demonstrate their procedures SPW 150-3.4.4 and SPW 160-3.5.1 include step-by-step instructions regarding NWN's practice requiring engineering approval and design of protection measures prior to the installation/construction of a shallow pipeline.	The company's Field Operations Manual (FOM), Section 1603, currently provides direction that a 'Variance Request' must be completed when an installation does not meet any element of our current installation criteria. The standardized 'Variance' must be approved prior to the installation taking place. This variance procedure is being revised to provide additional detail to clarify the process.

**PROBABLE VIOLATIONS**

#	Code Ref	Description of Issue	Response
11	49 CFR §192.357 Customer meters and regulators: Installation	NWN failed to demonstrate their procedures include requirements identified in (a), (b) and (c) of CFR §192.357.	<p>NW Natural's installation practices currently meet the requirements of §192.357(a) thru(c). However, the company is in the process of revising SPO 361, 383, 384 in order to further clarify the company's meter and regulator installation procedures and specifications. Revisions will include proposed language that includes the following:</p> <p>(a) Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter.</p> <p>(b) NW Natural purchases all pipe nipples per Engineering Standard 02-002. <b>(Enclosure 7)</b></p> <p>(c) NW Natural does not use connections made of lead or other easily damaged materials in the installation of meters or regulators.</p> <p>Additionally, NW Natural's Field Operations manual, Section 500, provides instruction regarding meter and regulation installation practices. It specifies that employees need to adhere to Company Meter Installation Design Standards whether the installation is a new meter set or an upgrade. Any exceptions must be approved.</p>
12	49 CFR §192.361 Service lines: Installation	NWN failed to demonstrate they have a procedure for completing/meeting drainage requirements as indicated in §192.361(c).	Revising SPW 150 & SPW 160 to clarify NW Natural's installation practices which currently meet these requirements.
13	49 CFR §192.453 General	NWN failed to identify what qualifies a corrosion engineer under procedure SPW 455.	<p>NW Natural is in the process of revising Standard Practice SPO 455 to include proposed language to the Definition section that specifies the qualifications of a Corrosion Supervisor:</p> <p><i>"Engineer who has extensive training in corrosion control methods, to include NACE Certification (or similar corrosion industry training) and field knowledge."</i></p>

**PROBABLE VIOLATIONS**

	<b>Code Ref</b>	<b>Description of Issue</b>	<b>Response</b>
<b>14</b>	49 CFR §192.455 External corrosion control: Buried or submerged pipelines installed after July 31, 1971	NWN failed to demonstrate their O&M manual identifies that a cathodic protection system designed to protect the pipeline shall be installed and placed in operation within 1 year after completion of construction. Under NWN procedure SPW 455, present language states, "cathodic protection is not required to function on a pipeline until prior to the introduction of gas in the pipeline."	NW Natural is in the process of revising Standard Practice SPO 455 to include proposed language to section 4.1.3, Pipelines installed after July 31, 1971:  "A cathodic protection system designed, installed, and functioning prior to introduction of gas in the pipeline, but in no event longer than 1 year after completion of construction."
<b>15</b>	49 CFR §192.479 Atmospheric corrosion control: General	NWN failed to demonstrate procedure SPW 480-3.3.3 and OP C 132-01 includes/references a procedure for the application of paint and primer to exposed areas of pipe.	Revising SPW 480 to add reference to a new Engineering Standard 14-001 that specifies the application of paints, primers, and coatings that NW Natural applies to above ground facilities for atmospheric corrosion control.
<b>16</b>	49 CFR §192.605 Procedural manual for operations, maintenance and emergencies	1) NWN failed to demonstrate they have a procedure(s) in their O&M manual regarding the periodic review of work done by operator personnel.  2) NWN failed to demonstrate they have a procedure(s) in their O&M manual regarding periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling AOC and corrective action.	NW Natural has a variety of processes currently in place that meet these requirements. Of primary consideration is our formal Quality Assurance Program. A copy of this program document was provided at the time of the inspection, however in summary, the objective of this program is to: "....enhance the quality of all field activities, and to improve standardization and efficiency of such activities by: <ul style="list-style-type: none"> <li>• Ensure adherence to federal, state and company requirements, standards, policies and procedures.</li> <li>• Identify areas in which our standards may need to be updated or clarified.</li> <li>• Evaluating the transfer of training/qualifying to the field and identifying training/qualification needs.</li> <li>• Providing support to Field Supervisors, Trainers, and Operator Qualifications (OQ)</li> <li>• Presenting recommendations by NWN Managers and Supervisors to the QA Committees and groups.</li> <li>• Facilitating and driving change through direction from the QA Technical Advisory Group (TAG) and Steering Committee."</li> </ul>

PROBABLE VIOLATIONS			
#	Code Ref	Description of issue	Response
			<p>This program calls for formal review of field work, in-progress or completed, within the following work groups;</p> <ul style="list-style-type: none"> <li>• Construction</li> <li>• CFS (Customer Field Services)</li> <li>• Leakage</li> <li>• Locating</li> </ul> <p>These statistically valid reviews include formalized inspection elements which are scored for routine or 'for-cause' work. The process includes steps for summary reporting and feedback to management and employees for performance management and/or process improvement.</p> <p>This program coupled with our OQ program and performance management through annual reviews create an efficient process for ensuring the requirements of section 49 CFR §192.605.</p>
17	49 CFR §192.614 Damage prevention program	NWN failed to demonstrate their procedures include information regarding how they provide information to excavators on how to identify the markings.	NW Natural currently meets this requirement. NW Natural's Public Awareness Addendum ( <b>Enclosure 8</b> ) provides the company's process (Section 2) on how NW Natural establishes excavator lists. Mailers that are sent to these excavators include letters in English ( <b>Enclosure 9</b> ), Spanish ( <b>Enclosure 10</b> ) and a brochure, "Know What's Underground" ( <b>Enclosure 11</b> ) explaining the types of line marking once utilities are located.
18	49 CFR §192.615 Emergency plans	NWN failed to demonstrate they have a procedure for determining/compiling: <ul style="list-style-type: none"> <li>a) A listing of public officials contacts.</li> <li>b) How they will maintain liaison with public officials.</li> <li>c) They learned the responsibility and resources of each government organization that may respond to a gas pipeline emergency.</li> </ul>	<p>NW Natural currently meets this requirement. NW Natural's Public Awareness Plan, Sections 3.2.1 and 3.3.1 of Stakeholder Identification, (<b>Enclosure 12</b>) indicates how NW Natural determines and maintain lists of local Emergency and Public Officials.</p> <p>Section 6.2 in the plan outlines the procedure for maintaining liaison (personal contact) with key stakeholder audiences including the Public Official sector. (<b>Enclosure 13</b>)</p> <p>Additionally, NW Natural's Fire Department Training Program (<b>Enclosure 14</b>) lists specific annual program strategies that are employed to make high quality contacts and network effectively in order to increase face to face training.</p>



**PROBABLE VIOLATIONS**

#	Code Ref	Description of Issue	Response
19	49 CFR §192.739 Pressure limiting and regulating stations: Inspection and testing	NWN failed to include procedure SPW 743-3.6 references to the engineering capacity calculation procedure including Engineering Procedure D-10 Regulator and Relief Set Point Requirements.	Revising SPW 743 and Engineering Procedure D-10 to clarify the company's current procedures for determining regulator/relief capacities and associated set points. Revisions will include clarification noting existing processes which use manufacturer's literature to determine capacities and standardized procedures for determining associated set-points considering system MAOP and orifice/spring data.
20	49 CFR §192.745 Valve maintenance: Transmission Lines	NWN failed to demonstrate they have a procedure for remedial action activities.	AOC-Q-02, Inoperability or Failure of any Pipeline Component, currently references valves in the Response portion on the AOC ( <b>Enclosure 3</b> ). Additionally NW Natural is in the process of updating our FOM 1400-Valves Section to include additional detail for valve maintenance and remedial action. This process, including enhanced training, will be completed by the end of 2012, in time for the 2013 valve inspection cycle to begin.
21	49 CFR §192.747 Valve maintenance: Distribution systems	NWN failed to demonstrate they have a procedure for remedial action activities.	AOC-Q-02, Inoperability or Failure of any Pipeline Component, currently references valves in the Response portion on the AOC ( <b>Enclosure 3</b> ). Additionally NW Natural is in the process of updating our FOM 1400-Valves to include additional detail for valve maintenance and remedial action. This process, including enhanced training, will be completed by the end of 2012, in time for the 2013 valve inspection cycle to begin.

## AREAS OF CONCERN

#	Code Ref	Description of Issue	Response
1	49 U.S.C. 60132 Subsection (b) ABD-08-07	NWN should include language in their procedures manual stating they are required to report no modifications, if none have occurring since the last complete submission.	Revised SPW 007 3.7.5 ( <b>Enclosure 15</b> ) to reflect language that NWN will provide accurate maps and updates to the WUTC on an annual basis. Notification to the WUTC will occur even if changes to the required pipeline facilities do not occur.
2	RCW 81.88.080 Pipeline Mapping System	Although NWN submitted maps required by this rule, they failed to include language in their procedures manual requiring they provide accurate maps (or updates) of the pipelines, operating over two hundred fifty pounds per square inch gauge, to specifications developed by the commission sufficient to meet the needs of first responders.	Revised SPW 007 3.7.5 ( <b>Enclosure 15</b> ) to reflect language that NWN will provide accurate maps and updates to the WUTC for pipelines that are operating at over two hundred fifty pounds per square inch gauge. These updates will be provided on an annual basis. Notification to the WUTC will occur even if changes to the required pipeline facilities do not occur.
3	WAC 480-93-180 Plans and procedures	Typo noted in procedure SPW 221-4.4.1 and 4.2. Section 8 should read Section 8 Division 2.	Revising SPW 221 4.2 to correct typo to reflect specific language from 192.153 (b) <i>"Each prefabricated unit that uses plate and longitudinal seams must be designed, constructed, and tested in accordance with section 1, section VIII, Division 1, or section VIII, Division 2 of the ASME Boiler and Pressure Vessel Code..."</i> Please note that the typo that is indicated in the inspection letter in section 4.4.1 and 4.2 is referenced in error.
4	WAC 480-93-180 Plans and procedures	Typo noted in procedure SPW 361-3.1 pate 2 of 7. Indent "Any source of ignition that could arc or spark during normal operation" so that it is under the 3'-0" separation requirement.	Revising SPW 384 3.3.1 to correct formatting typo. Please note that the typo that is referenced in the inspection letter as SPW 361 – 3.1 is referenced in error.
5	49 CFR §192.111 Design factor (F) for steel pipe	NWN O&M manual failed to identify/include a reference or link to their engineering procedures regarding the design factor requirements for steel in Class 1 locations.	NW Natural is currently in the process of revising, in their entirety, SPW 150 & 160 as well as updating Engineering Procedure, D-2. As part of this process, NW Natural will address the Areas of Concern numbers 5, 7, 8.

**AREAS OF CONCERN**

#	Code Ref	Description of Issue	Response
6	49 CFR §192.485 Remedial measures: Transmission lines	NWN O&M manual failed to identify/include a reference or link to their engineering procedures regarding the strength of the pipeline based on actual remaining wall thickness. It may be determined by ASME/ANSI B31G, PR 3-805 (RSTRENG disk), or other approved methods.	Revising SPW 226 & 227 to include a procedure to determine the strength of pipe based on actual remaining wall thickness that mirrors the existing procedure found in NW Natural's TIMP manual.
7	49 CFR §192.111 Design factor (F) for steel pipe	NWN O&M manual failed to identify/include a reference or link to their engineering procedures regarding the design factor requirements for steel in Class 2 locations under §192.111 (c).	NW Natural is currently in the process of revising, in their entirety, SPW 150 & 160 as well as updating Engineering Procedure, D-2. As part of this process, NW Natural will address the Areas of Concern numbers 5, 7, 8.
8	49 CFR §192.711 Design factor (F) for steel pipe	NWN O&M manual failed to identify/include a reference or link to their engineering procedures regarding the design factor requirements for steel in Class 1 and Class 2 locations under §192.111 (d) (1) and (2).	NW Natural is currently in the process of revising, in their entirety, SPW 150 & 160 as well as updating Engineering Procedure, D-2. As part of this process, NW Natural will address the Areas of Concern numbers 5, 7, 8.
9	49 CFR §192.713 Transmission lines: Permanent field repair of imperfections and damages.	NWN O&M procedure SPW 227 should reference Transmission IMP 5.1.3 which is the procedure to reduce operating pressure to a safe level during repair.	Revising SPW 227 to include a reference from NW Natural's TIMP manual 5.1.3 to assure that the pressure on the pipeline is reduced to a safe operating pressure when anomalies found on the pipe meet the requirements of 192.933 for an immediate repair condition.
10	49 CFR §192.721 Distribution systems: Patrolling	Language in NWN's patrol inspection procedures should include provisions to identify new small business districts.	Review is currently underway to finalize an Engineering Procedure to assure that it captures the key process steps that NW Natural currently utilizes to review / update business district assets. This procedure outlines the steps taken for GIS data analysis using analytical tools and aerial mapping, in addition to on-going surveillance activities for field resources to verify and identify new assets.

**AREA OF CONCERN**

#	Code Ref	Description of Issue	Response
11	49 CFR §192.721 Distribution systems: Patrolling	NWN O&M manual failed to identify/include a reference or link from their procedure SPW 751 Preventing Accidental Ignition to the OQ training/procedures associated with this activity.	<p>NW Natural does not have one specific OQ procedure that addresses all areas of preventing accidental ignition. It meets the requirements under §192.751 by addressing the following components of prevention in its Field Operations Manual, OQ Procedures, AOCs (Abnormal Operating Procedures) and Standard Practice procedures:</p> <ul style="list-style-type: none"> <li>• Fire Extinguishers and Fire Protection: Field Operations Manual, Section 203</li> <li>• Escaping Gas or Fire from a Pipeline Facility: AOC- 03</li> <li>• Static Electricity Control: Field Operations Manual, Section 406</li> <li>• Blowing down and Purging Pipe: OQ Procedure 140-01</li> <li>• Investigating Leaks and Odor Calls: OQ Procedure 501-01</li> <li>• Emergency Response: Field Operations Manual, Section 300</li> <li>• Welding: Field Operations Manual, Section 407</li> <li>• Requirements for Shut Down, Tie-In and Start up Procedures: SPW 303</li> </ul> <p>Additionally, NW Natural is revising SPW 751 Section 4, Related Company Information, to include a reference to the Field Operations Manual, Section 203 Jobsite and Field Safety. Please note that the code that was referenced in the letter, 49 CFR §192.721 Distribution systems: Patrolling, was referenced in error.</p>