

# Inspection Output (IOR)

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## Inspection Information

Inspection Name	NWN TIMP	Operator(s)	NORTHWEST NATURAL GAS CO (13840)	Plan Submitted	01/09/2018
Status	STARTED	Lead	Dennis Ritter	Plan Approval	--
Start Year	2018	Team Members	Denise Crawford	All Activity Start	02/12/2018
System Type	GT	Supervisor	Joe Subsits	All Activity End	02/15/2018
Protocol Set ID	GT.2017.01	Director	Sean Mayo	Inspection Submitted	--
				Inspection Approval	--

## Inspection Summary

2018 Transmission Integrity Management Inspection-procedures

Records review took place at Northwest Natural (NWN) HQ in Portland, OR

### AFOD

Pre inspection 3

Inspection 3

Post inspection 3

Exit interview was held the afternoon of 2/14/18. JR Gonzalez, Samantha Burt, Jaimie Lemke, Margaret Locke, Ryan Van Gordon were in attendance for NWN. Findings are summarized below and were discussed during exit interview.

### Summary:

A Transmission Integrity Management Program inspection was conducted February 12-14, 2018. A review of procedures and records to confirm NWN's integrity program meets 49 CFR 192 Subpart P requirements and whether records supporting the program are consistent with the integrity plan requirements. The inspection was conducted in IA using the following question sets: The Gas Transmission Core question set. Field inspection of transmission assets was not conducted as the standard transmission inspection for NWN is occurred in April, 2017.

The following issues were noted during the inspection. This resulted in 1 records violation and two areas of concern.

#### 1. P&M Measures - Automatic Shut-Off Valves or Remote Control Valves

Do records demonstrate that the operator has determined, based on risk, whether automatic shut-off valves or remote control valves should be added to protect high consequence areas? IM.PM.PMMASORCV.R - 192.947(d) (192.935(c))

Findings: There is no record to support that the operator has made a risk based determination (or not) whether a shut off valve should be installed to protect HCAs. **(UNSAT)**

#### 2. Performance Metrics

Does the process to evaluate IM program effectiveness include an adequate set of performance metrics to provide meaningful insight into IM program performance? IM.QA.IMPERFMETRIC.P - 192.945(a) (192.913(b), 192.951)

**Findings:** The performance metrics are prescriptive and for line P04 Camas Feeder, don't give much measure of effectiveness most of the measures are zero (nothing has happened to show its "effective"). 192.945(b) does state for using ECDA must "define and monitor measures to determine the effectiveness of the ECDA process." If the measures only show static outcomes,

it doesn't prove effectiveness, it proves that measure isn't adequate to monitor effectiveness. NWN should determine adequate measures for the ECDA process which give integrity managers a more realistic picture of the adequacy of the ECDA process and results. **(Concern)**

### 3. Cathodic Protection Monitoring

Do records adequately document cathodic protection monitoring tests have occurred as required? TD.CPMONITOR.TEST.R - 192.491(c) (192.465(a))

**Findings:** NWN employs ECDA as the periodic evaluation methodology for line P-04. ECDA relies heavily on accurate pipe to soil reads in assessing the external corrosion threats on the line. NWN does not employ an instant off when they take a pipe to soil read. They are assuming the IR drop will not drop the read below -850 mV criteria per NACE 0169 6.2.2. Past history might suggest the readings are meeting criteria as they have found limited corrosion. However, NWN really does not know (as compared to an ILI run using magnetic flux leakage tool). Past digs on the line based on CIS, DCVG or current mapper criteria, have not consistently found a corrosion issue. Most of these digs have been "repaired" with a recoat. As such, there is uncertainty and the associated risk which come with it. NWN has not assigned any additional risk to the line based on this uncertainty. This is a concern.

## Scope (Assets)

#	Short Label	Long Label	Asset Type	Asset IDs	Excluded Topics	Planned	Required	Total Inspected	Required % Complete
1.		Transmission IMP	other	Transmission	Compressor Stations Storage Fields Bottle/Pipe - Holders Offshore GOM OCS Cast or Ductile Iron Copper Pipe Aluminum pipe AMAOP	101	101	101	100.0%

a. Percent completion excludes unanswered questions planned as "always observe".

## Plans

#	Plan Assets	Focus Directives	Involved Groups/Subgroups	Qst Type(s)	Extent	Notes
1.	n/a		IM	P, R, O	Detail	
2.	Core		AR, CR, DC, EP, FS, IM, MO, PD, RPT, SRN, TD, TQ, GENERIC	P, R, O, S	Detail	
3.	n/a		--	P, R, O, S	Detail	

## Plan Implementations

#	Activity Name	SMART Act#	Start Date	End Date	Focus Directives	Involved Groups/Subgroups	Asset s	Qst Type(s)	Planned	Required	Total Inspected	Required % Complete
1	Procedures and Records	--	02/12/2018	02/15/2018	n/a	all planned questions		all types	101	101	101	100.0%

a. Since questions may be implemented in multiple activities, but answered only once, questions may be represented more than once in this table.

b. Percent completion excludes unanswered questions planned as "always observe".

## Forms

No.	Entity	Form Name	Status	Date Completed	Activity Name	Asset
1.	Attendance List	Procedures and Records	COMPLETED	03/01/2018	Procedures and Records	

## Results (Unsat,Concern values, 3 results)

### IM.PM: Preventive and Mitigative Measures

1. Question Result, ID, References **Unsat, IM.PM.PMMASORCV.R, 192.947(d) (192.935(c))**

Question Text *Do records demonstrate that the operator has determined, based on risk, whether automatic shut-off valves or remote control valves should be added to protect high consequence areas?*

Assets Covered

Result Issue Summary **A form J for Line P04 could not produced during the inspection.**

Standard Issues **B2 (Moderate or small impact/limited occurrence) : 192.947(d) : No record/documentation.**

Result Notes **IMP Section 8.7 Automatic Shutoff Valves or Remote Control Valves does not refer to Appendix J which is the evaluation form for performing the analysis.**

**Appendix J ASV or RCV Evaluation Form--A form J for Line P04 could not produced during the inspection.**

Note, NWN only has one line with associated risk meeting criteria to install ASV/RCVs. The criteria in Appendix J is fairly onerous.

### IM.QA: Quality Assurance

2. Question Result, ID, References **Concern, IM.QA.IMPERFMETRIC.P, 192.945(a) (192.913(b), 192.951)**

Question Text *Does the process to evaluate IM program effectiveness include an adequate set of performance metrics to provide meaningful insight into IM program performance?*

Assets Covered

Result Issue Summary **NWN should evaluate if additional metrics would give more meaningful insight on the effectiveness of the program.**

Result Notes **IMP Section 9.0 Performance Measures**

**Section 9.1 Annual PHMSA measures**

The performance metrics are prescriptive and don't give much measure of effectiveness as all zeros. Code does state for using ECDA must "define and monitor measures to determine the effectiveness of the ECDA process." NWN should evaluate if additional metrics would give more meaningful insight on the effectiveness of the program.

### TD.CPMONITOR: External Corrosion - CP Monitoring

3. Question Result, ID, References **Concern, TD.CPMONITOR.TEST.R, 192.491(c) (192.465(a))**

Question Text *Do records adequately document cathodic protection monitoring tests have occurred as required?*

Assets Covered

Result Issue Summary **There is uncertainty and the associated risk with not taking instant off readings. NWN should assign additional risk to the line based on this uncertainty.**

Result Notes **Reviewed annual reads since last inspection (20154-2018). All above -850mV. No instant off reads for PSPs**

**NWN referenced NACE 0169 Section 6.2. Specifically 6.2.2.1.1.2, and 6.2.2.1.1.4.**

6.2.2.1.1 A negative (cathodic) potential of at least 850 mV with the CP applied. This potential is measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte. Voltage drops other than those across the structure-to-electrolyte boundary must be **considered** for valid interpretation of this voltage measurement.

NOTE: Consideration is understood to mean the application of sound engineering practice in determining the significance of voltage drops by methods such as:

6.2.2.1.1.1 Measuring or calculating the voltage drop(s);

6.2.2.1.1.2 Reviewing the historical performance of the CP system;

6.2.2.1.1.3 Evaluating the physical and electrical characteristics of the pipe and its environment; and

6.2.2.1.1.4 Determining whether or not there is physical evidence of corrosion.

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*Report Parameters: Results: Unsat, Concern*

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