Inspection Output (IOR)

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Inspection Information

Inspection Name	8283 Northwest Natural TIMP	Operator(s)	NORTHWEST NATURAL GAS CO (13840)	Plan Submitted	06/15/2021
Status	PLANNED	Lead	David Cullom	Plan Approval	06/15/2021 by Sean Mayo
Start Year	2021	Team Members	Darren Tinnerstet	All Activity Start	10/12/2021
System Type	GT	Observer(s)	Scott Rukke, Dennis Ritter, Lex Vinsel, Anthony Dorrough, Deborah Becker, Derek Norwood, Scott Anderson, Kevin Hennessy, Rell Koizumi	All Activity End	10/22/2021
Protocol Set ID	WA.GT.2021.01	Director	Sean Mayo	Inspection Submitted	--
				Inspection Approval	--

Inspection Summary

Inspection Scope and Summary

For this inspection, the standard Groups or Directives -- GT IM and GT IM Implementation and Groups "TD" and "AR" were utilized. The procedures were verified by reviewing NWN's 2021 TIMP, Standard Practices Manual, and Field Operations Manual (FOM) housed online.

The Camas Feeder (P-04) MAOP is 400 psig at 26.2% SMYS. The line operates at around 370 psig and had been originally hydro tested to 850 psig in 1956. The materials used were 8.625" diameter ERW, Grade B, .188" WT, coal tar coated pipe. It is 3.56 miles in length and contains 1.73 miles of HCA and 0.85 miles of MCA. Integrity assessments performed in the past were a 2005 ECDA, a 2011 ECDA, and a 2016 ECDA. NW Natural plans to do an upcoming ILI run in 2023 and is moving away from using EDCA as the primary assessment method. This was the most significant change since the last assessment. There will need to be some line modifications to be made to the line so it can be successfully evaluated using ILI technologies. This is the only pipeline in NW Natural's Washington State transmission system. The 2018 inspection had items that were followed up on to ensure the P-04 Camas transmission line is still considered a discrete segment by the operator and is not part of a region that includes assets in the State of Oregon.

Facilities visited and Total AFOD

This inspection consisted of 3 days of program plan and procedures review and 2 remote field days utilizing MS Teams on October 11 and 12, 2021 to review records and clarify procedures. The exit interview was conducted on October 22, 2021.

This is a TIMP program inspection so it was primarily procedure and records review. The Clark County inspection was also performed during 2021 and many of the records reviewed during that inspection contained information on the P-04 Camas transmission line and were revisited during this inspection.

Summary of Significant Findings

There were no probable violations or areas of concern

Primary Operator contacts and/or participants

Samantha Rookstool - Compliance Specialist

Scott Lundgren - Integrity Management Supervisor

Ryan Truair - Compliance Supervisor

Lisa Sherer - Compliance Specialist

Jonathan Kopp

Report Filters: Results: all

Jordan Carabajal-Johnson

Ryan Van - Corrosion Control Manager

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Operator executive contact and mailing address for any official correspondence

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Scope (Assets)

#	Short Label	Long Label	Asset Type	Asset IDs	Excluded Topics	Planned	Required	Total Inspected	Required % Complete
1.	88966 (1,879)	Northwest Natural-TRANSMISSION	unit	88966	Compressor Stations Storage Fields Bottle/Pipe - Holders Vault Offshore GOM OCS Cast or Ductile Iron Copper Pipe Aluminum/Amphoteric Plastic Pipe AMAOP Abandoned	295	295	295	100.0%

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

Plans

#	Plan Assets	Focus Directives	Involved Groups/Subgroups	Qst Type(s)	Extent Notes
1.	88966 (1,879)	GT IM Implementation, GT IM	AR, CR, DC, EP, FS, IM, MO, PD, RPT, SRN, TD, TQ, UNGS, GENERIC	P, R, O, S	Detail
2.	88966 (1,879)	n/a	TD	P, R, O, S	Detail
3.	88966 (1,879)	n/a	AR	P, R, O, S	Detail

Plan Implementations

#	Activity Name	SMART Act#	Start Date End Date	Focus Directives	Involved Groups/Subgroups	Assets	Qst Type(s)	Planned	Required	Total Inspected	Required % Complete
1.	IM Groups and Directives	--	10/12/2021 10/22/2021	GT IM Implementation, GT IM	AR, CR, DC, EP, FS, IM, MO, PD, RPT, SRN, TD, TQ, UNGS, GENERIC	all assets	all types	182	182	182	100.0%
2.	IM Groups and Directives	--	10/12/2021 10/22/2021	n/a	AR, TD	all assets	all types	211	211	211	100.0%

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

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

Forms

No.	Entity	Form Name	Status	Date Completed	Activity Name	Asset
1.	Attendance List	IM Groups and Directives	COMPLETED	10/20/2021	IM Groups and Directives	88966 (1,879)

Results (all values, 295 results)

299 (instead of 295) results are listed due to re-presentation of questions in more than one sub-group.

AR.RCOM: Repair Criteria (O&M)

1. Question Result, ID, References: Sat, AR.RCOM.NONCOVERED.P, 192.485(a) (192.485(b), 192.485(c), 192.703(b))

Question Text: *Does the integrity assessment and maintenance processes include adequate criteria for determining the need for, and timeliness of, pipeline defect repairs in non-covered segments?*

Assets Covered: 88966 (1,879)

Result Notes: Section 5 (Remediation of Pipe) and the FOM

3.2 Data Gathering and Integration - The Integrity Management Group gathers the data that could be relevant to each pipeline segment, including other covered and non-covered segments that have similar characteristics to the segment being evaluated.

Appendix L – Repair Methods Meeting .285

External

- If Maximum Allowable Response Time per ASME B31.8 Table 4 is greater than 15 years sandblast and recoat (Powercrete) the area.
- If Maximum Allowable Response Time per ASME B31.8 Table 4 is less than 15 years install NW Natural approved composite wrap
- If Maximum Allowable Response Time per ASME B31.8 Table 4 is less than 15 years install Type B weld sleeve (if response time per B31.8S is less than 15 years).
- If metal loss is significant enough the affected area may be cut out at the discretion of the Integrity Management Team.

Internal

- Weld Sleeve
- If metal loss is significant enough the affected area may be cut out at the discretion of the Integrity Management Team.

2. Question Result, ID, References: NA, AR.RCOM.NONCOVERED.R, 192.485(a) (192.485(b), 192.485(c), 191.23(a)(1), 192.703(b))

Question Text: *From the review of the results of integrity assessments, did the operator repair conditions that posed a threat to pipeline integrity on Non-Covered segments?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review. This is evaluated as part of the distribution system inspection.

3. Question Result, ID, References: NA, AR.RCOM.REMEDIATIONOM.O, 192.485(a) (192.485(b), 192.485(c))

Question Text: *Is anomaly remediation and documentation of remediation adequate for all segments?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

AR.CDA: Confirmatory Direct Assessment

4. Question Result, ID, References: NA, AR.CDA.CDAREVQUAL.P, 192.915(a) (192.915(b))

Question Text: *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate CDA assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

7. Confirmatory Direct Assessment

NW Natural is not using CDA and will develop fully documented CDA plans for ECDA and/or ICDA prior to electing to use either of those methods for extending the assessment interval per rule guidelines.

5. Question Result, ID, References: NA, AR.CDA.CDAREVQUAL.R, 192.947(h) (192.915(a), 192.915(b))

Question Text: *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct assessments or review assessment results, are qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

6. Question Result, ID, References: NA, AR.CDA.CDAREVQUAL.O, 192.915(a) (192.915(b))

Question Text: *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

7. Question Result, ID, References: NA, AR.CDA.CDAPLAN.P, 192.931(a) (192.931(b), 192.931(c), 192.931(d))

Question Text: *Is an adequate Confirmatory Direct Assessment Plan in place?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

7. Confirmatory Direct Assessment

NW Natural is not using CDA and will develop fully documented CDA plans for ECDA and/or ICDA prior to electing to use either of those methods for extending the assessment interval per rule guidelines.

8. Question Result, ID, References: Sat, AR.CDA.CDAEXTCORR.R, 192.947(h) (192.931(b))

Question Text: *Do records indicate that the external corrosion plan was properly implemented?*

Assets Covered: 88966 (1,879)

Result Notes: The last ECDA work was done in 2016 and was reviewed in the 2018 TIMP inspection .

9. Question Result, ID, References: Sat, AR.CDA.CDAINTCORR.R, 192.947(h) (192.931(c))

Question Text: *Do records demonstrate that the internal corrosion plan was properly implemented?*

Assets Covered: 88966 (1,879)

Result Notes: Records are available from the 2006 ICDA. The outlet of the gate station was replaced in 2006. This was reviewed in prior TIMP reviews.

10. Question Result, ID, References: Sat, AR.CDA.CDAINDICATION.R, 192.947(h) (192.931(d))

Question Text: *Do records demonstrate that the next assessment should have been accelerated?*

Assets Covered: 88966 (1,879)

Result Notes: The plan is to switch to ILI in 2023. It will fall within the 7 years from the last ECDA inspection.

11. Question Result, ID, References: NA, AR.CDA.CDACORR.P, 192.933 (192.917(e)(5))

Question Text: *Does the process adequately account for taking required actions to address significant corrosion threats identified using confirmatory direct assessment?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

7. Confirmatory Direct Assessment

NW Natural is not using CDA and will develop fully documented CDA plans for ECDA and/or ICDA prior to electing to use either of those methods for extending the assessment interval per rule guidelines.

12. Question Result, ID, References: NA, AR.CDA.CDACORR.R, 192.933 (192.917(e)(5))

Question Text: *Do records demonstrate that required actions are being taken to address significant corrosion threats identified by CDA as required?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

AR.EC: External Corrosion Direct Assessment (ECDA)

13. Question Result, ID, References: Sat, AR.EC.ECDAREVQUAL.P, 192.915(a) (192.915(b))

Question Text: *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate ECDA assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered: 88966 (1,879)

Result Notes: 12.6 Personnel Qualification and Training Requirements

12.6.1 NW Natural Integrity Management Staff Qualifications

12.6.2 Integrity Management Contractor Qualifications

14. Question Result, ID, References: Sat, AR.EC.ECDAPREASSESS.R, 192.947(g) (192.925(b)(1))

Question Text: *Do records demonstrate that the ECDA pre-assessment process complied with NACE SP0502-2010 Section 3 and 192.925(b)(1)?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

15. Question Result, ID, References: Sat, AR.EC.ECDAREVQUAL.R, 192.947(g) (192.915(a), 192.915(b))

Question Text: *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct ECDA assessments or review and analyze assessment results are qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

16. Question Result, ID, References NA, AR.EC.ECDAREVQUAL.O, 192.915(a) (192.915(b))

Question Text *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

17. Question Result, ID, References Sat, AR.EC.ECDAPLAN.P, 192.925(a) (192.925(b))

Question Text *Is an adequate ECDA plan and process in place for conducting ECDA?*

Assets Covered 88966 (1,879)

Result Notes NW Natural follows the prescriptive ECDA process, which requires the use of at least two indirect examination methods, verification checks by excavation and direct examination, and post-assessment validation.

1. Pre-assessment

2. Indirect inspection

3. Direct examination and evaluation

4. Post-assessment

The first use of ECDA on a segment requires more restrictive and conservative criteria in each of these phases than do subsequent uses.

18. Question Result, ID, References Sat, AR.EC.ECDAINTEGRATION.P, 192.917(b) (ASME B31.8S-2004 Section 4.5)

Question Text *Is the process for integrating ECDA results with other information adequate?*

Assets Covered 88966 (1,879)

Result Notes 4.2.1 Data Gathering and Integration Types of data that may be considered are:

- Construction records.
- Operating and maintenance histories, including corrosion control, leak history, repairs, etc.
- Results of prior inspections, excavations of the pipe, and pipe surface evaluations.
- Adjacent pipelines, encroaching structures, or significant operational changes that might impede ECDA.

The data must include, at a minimum, the elements listed in table 4-1.

Category NW Natural Minimum ECDA Data Elements

Construction-related

- Year of installation

Pipe-related

- Coating condition
- Wall thickness
- Diameter

Corrosion control

- Coating type
- Years with adequate cathodic protection
- Years with questionable cathodic protection

- Years without cathodic protection

Soils/Environmental

- Soil characteristics

Operational data

- Pipe inspection reports (bell hole)
- MIC detected (microbiologically influenced corrosion)
- Leak history
- Operating stress level (%SMYS)
- Past pressure-test information

19. Question Result, ID, References: Sat, AR.EC.ECDAINTEGRATION.R, 192.947(g) (192.917(b))

Question Text: *Do records demonstrate that the operator integrated other data/information when evaluating data/results?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

20. Question Result, ID, References: Sat, AR.EC.ECDAREGION.R, 192.947(g) (192.925(b)(1))

Question Text: *Do records demonstrate that the operator identified ECDA Regions?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

21. Question Result, ID, References: Sat, AR.EC.ECDAINDIRECT.R, 192.947(g) (192.925(b)(2))

Question Text: *Do records demonstrate that ECDA indirect inspection process complied with NACE SP 0502-2010 Section 4 and ASME B31.8S-2004, Section 6.4?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

22. Question Result, ID, References: Sat, AR.EC.ECDADIRECT.R, 192.947(g) (192.925(b)(3))

Question Text: *Do records demonstrate that excavations, direct examinations, and data collection were performed in accordance with NACE SP 0502-2010, Sections 5 and 6.4.2 and ASME B31.8S-2004, Section 6.4?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

23. Question Result, ID, References: NA, AR.EC.ECDADIRECT.O, 192.925(b)(3)

Question Text: *Were ECDA direct examinations adequately conducted?*

Assets Covered: 88966 (1,879)

Result Notes: No such activity/condition was observed during the inspection.

24. Question Result, ID, References: Sat, AR.EC.ECDAANALYSIS.R, 192.947(g) (192.925(b)(4), 192.933(b))

Question Text: *Do records demonstrate that an analysis of the ECDA data and other information was adequate to identify areas where external corrosion activity is most likely?*

Assets Covered: 88966 (1,879)

Result Notes: This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

25. Question Result, ID, References: Sat, AR.EC.ECDAPLANMOC.P, 192.947(g) (192.925(b)(3)(iii), 192.911(k))

Question Text: *Have criteria and internal notification processes been established and implemented for any changes in the ECDA plan?*

Assets Covered: 88966 (1,879)

Result Notes: This is also included in the MOC Plan.

4.4.7 Changes to the ECDA Plan

If NW Natural revises the ECDA plan as a result of the in-process evaluation outlined in section 4.4.6 above, the changes are distributed to appropriate personnel within the company, to PHMSA and the applicable state as specified in section 13, Communication Plan, of this Program Plan.

Potential modifications to the ECDA Plan include, but are not limited to, changes that affect the severity classification, priority of direct examination, and time frame for direct examination of indications found during the indirect inspection phase.

26. Question Result, ID, References: Sat, AR.EC.ECDAPLANMOC.R, 192.947(g) (192.925(b)(3)(iii))

Question Text: *Do records demonstrate that changes in the ECDA plan have been implemented and documented?*

Assets Covered: 88966 (1,879)

Result Notes: The change log has the ECDA change has noted in the 2018 inspection on 4-2-2019 of ECDA regions to not cross state boundaries.

27. Question Result, ID, References: NA, AR.EC.ECDAPOSTASSESS.R, 192.947(g) (192.925(b)(4))

Question Text: *Do records demonstrate that the requirements for post-assessment were met?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. This was reviewed during the 2018 inspection. There has been no ECDA work since 2016. No ECDA digs on the Camas P-04 line have occurred during this inspection time frame.

28. Question Result, ID, References: Sat, AR.EC.ECCORR.P, 192.933 (192.917(e)(5))

Question Text: *Does the process adequately account for taking required actions to address significant external corrosion threats?*

Assets Covered: 88966 (1,879)

Result Notes: **3.2 Data Gathering and Integration**

The Integrity Management Group gathers the data that could be relevant to each pipeline segment, including other covered and non-covered segments that have similar characteristics to the segment being evaluated. The types of data used depend on the threat being assessed.

5.4.2 Discovery of a Corrosion Condition

If NW Natural identifies corrosion on a covered pipeline segment that could adversely affect the integrity of a pipeline (immediate repair corrosion condition), it will establish a schedule for evaluating all pipeline segments (both covered and non-covered) with similar material coating and environmental characteristics (i.e., CP, CP interference, age of construction) and make remediation as necessary.

29. Question Result, ID, References: NA, AR.EC.ECCORR.R, 192.933 (192.917(e)(5))

Question Text: *Do records demonstrate that required actions are being taken to address significant external corrosion threats as required?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. No significant corrosion threat.

AR.IC: Internal Corrosion Direct Assessment (ICDA)

30. Question Result, ID, References: Sat, AR.IC.ICDAREVQUAL.P, 192.915(a) (192.915(b))

Question Text: *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate ICDA assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered: 88966 (1,879)

Result Notes: **10.5 Training NW Natural maintains training documentation.**

A description of NW Natural's training program appears in section 12, Quality Assurance.

12.1 Integrity Management Program Responsibilities and Authorities

The Integrity Management Group is charged with development and implementation of the TIMP Plan. The authority for this charge is imparted with the acceptance of a candidate for the described job (see Job Descriptions for Integrity Management Manager and Pipeline Integrity Engineer located in the Integrity Management office files.) The flow of authority through the organization in descending order is: President and CEO; Senior Vice President, Utility Operations; Engineering Director; Integrity Management Manager; Integrity Management Engineers and Specialists.

12.6 Personnel Qualification and Training Requirements

NW Natural maintains specific job descriptions and organizational charts for integrity management positions that outline the specific responsibilities and lines of reporting for personnel that perform integrity management activities.

12.6.1 NW Natural Integrity Management Staff Qualifications

Qualifications: The Transmission Integrity Management Program requires personnel to have the appropriate training or experience for their assigned responsibilities. The Integrity Management Manager, Integrity Management Engineer and Integrity Management Specialist are evaluated and selected by a technical interview team. The qualifications for each position are specified in the NW Natural Position Descriptions that are found in NW Natural's Human Resources files. Selection of an individual to the Integrity Management Team is an acknowledgement by the Technical Interview Team that the individual satisfies the required qualifications.

Training: To maintain high standards of its integrity management personnel, members of the Integrity Management Group participate in periodic training or attend conferences/seminars relevant to Integrity Management. The qualifications of personnel performing integrity management activities, including decision-making, changes to the program, changes impacting pipeline integrity, or those that carry out assessments and who evaluate assessment results are available in the Integrity Management Group files.

31. Question Result, ID, References: NA, AR.IC.ICDAREVQUAL.R, 192.947(g) (192.915(a), 192.915(b))

Question Text: *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct ICDA assessments or review and analyze assessment results, are qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. ECDA 2005 and ICDA 2006.

32. Question Result, ID, References: NA, AR.IC.ICDAREVQUAL.O, 192.915(a) (192.915(b))

Question Text: *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: No such activity/condition was observed during the inspection.

33. Question Result, ID, References: Sat, AR.IC.ICDAPLAN.P, 192.927(c) (192.927(a), 192.927(b))

Question Text: *Is an ICDA plan and process in place for conducting ICDA?*

Assets Covered: 88966 (1,879)

Result Notes: **4.6 Dry Gas Internal Corrosion Direct Assessment (ICDA) Program Requirements**

ICDA assesses the internal corrosion threat on pipelines carrying gas that is usually dry but might occasionally be subject to an upset that introduces an electrolyte or other corrosion-inducing agent, such as the following:

- Water
- Carbon dioxide,(CO2)
- Oxygen
- Chlorides
- Hydrogen Sulfide
- Corrosion-inducing microbes
- Other contaminants in the gas

When the ICDA technique is utilized to evaluate covered segments, all other noncovered segments of the pipeline will also be evaluated using the same technique. The remediation criteria specified in §192.933 is limited exclusively to the covered segments. ICDA comprises the following steps:

- Pre-assessment
- ICDA region identification
- Local examination
- Post-assessment

The first time ICDA is performed on a covered segment, NW Natural applies more restrictive criteria. This involves performing extensive historical research dating back to the original installation and using this information to establish the historical operational baseline data for the pipeline segment. Subsequent ICDA assessments will review data since the last inspection and may reference the baseline.

34. Question Result, ID, References: NA, AR.IC.ICDAPREASSESS.R, 192.927(c)(1) (192.947(g))

Question Text: *Do records demonstrate that the requirements for an ICDA pre-assessment were met?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

35. Question Result, ID, References: Sat, AR.IC.ICDAINTEGRATION.P, 192.917(b)

Question Text: *Is the process for integrating ICDA results with other information adequate?*

Assets Covered: 88966 (1,879)

Result Notes: **4.7.1 Gathering Data on the Pipeline**

NW Natural's ICDA pre-assessment process involves obtaining and analyzing data that includes, but is not limited to:

? Location of all gas input and withdrawal points on the pipeline

? Location of all low points on the covered segments, including sags, drips, inclines, valves, manifolds, dead legs, and traps

Elevation profile of the pipeline with enough detail to calculate an angle of inclination for all pipe segments

Pipeline diameter, with any changes in diameter noted

Pipe wall thickness

Data elements listed in appendix A2 of ASME B31.8S

Operational parameters

- Range of expected gas velocities
- Areas of reduced velocity downstream of draw-off
- Identification of pipelines where gas flow changes directions

- Periods where there is no flow
- Pressure
- Operating stress level (% SMYS)

Historical pipeline data:

- Year of installation
- Pipe inspection reports
- Past hydrotest information
- Gas, liquid, and solid analyses (particularly hydrogen sulfide, carbon dioxide, free water, and chlorides)
- Results from bacteria culture tests
- Analyses of corrosion detection devices (such as coupons or probes) if devices are available
- Date, area, and nature of upsets and leaks

Areas where cleaning pigs have not been used or where cleaning pigs might have left deposits of electrolytes

36. Question Result, ID, References NA, AR.IC.ICDAINTEGRATION.R, 192.917(b) (192.947(g))

Question Text *Do records demonstrate that other data/information was integrated when evaluating data/results?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

37. Question Result, ID, References NA, AR.IC.ICDAREGION.R, 192.947(g) (192.927(c)(2), 192.927(c)(5))

Question Text *Do records demonstrate that ICDA Regions were adequately identified?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

38. Question Result, ID, References NA, AR.IC.ICDADIRECT.R, 192.947(g) (192.927(c)(3), 192.927(c)(5))

Question Text *Do records demonstrate that sites were identified where internal corrosion may be present?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

39. Question Result, ID, References NA, AR.IC.ICDAPOSTASSESS.R, 192.947(g) (192.927(c)(4)(i), 192.927(c)(4)(ii), 192.477)

Question Text *Do records demonstrate that the operator assessed the effectiveness of the ICDA process?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

40. Question Result, ID, References NA, AR.IC.ICDAANALYSIS.R, 192.947(g) (192.927(c), 192.933(b))

Question Text *Do records demonstrate that sufficient data was used to complete the ICDA analysis to identify the internal corrosion threats to the pipeline?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

41. Question Result, ID, References Sat, AR.IC.ICCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant internal corrosion threats related to internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes **4.8.1 Addressing Internal Corrosion**

If a direct examination reveals internal corrosion, an Integrity Engineer completes detailed documentation about the defect. The engineer evaluates the data to determine the severity of the defect and schedules remediation as described in section 5, Remediation. NW Natural will then perform additional downstream

excavations for each covered segment in the ICDA region or use an alternative assessment method for the region (i.e. ultrasonic or other approved technology).

Finally, on discovering internal corrosion in an ICDA region, the Integrity Management Engineer will determine the potential for internal corrosion in all pipeline segments in the transmission line system (both covered and noncovered) that have with similar characteristics to the ICDA region containing the covered pipeline segment in which the corrosion was found. As appropriate, the Integrity Management Engineer will remediate any discovered conditions as described in section 5.

42. Question Result, ID, References: NA, AR.IC.ICCORR.R, 192.933 (192.917(e)(5))

Question Text: *Do records demonstrate that required actions are being taken to address significant internal corrosion threats as required?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

AR.IL: In-Line Inspection (Smart Pigs)

43. Question Result, ID, References: Sat, AR.IL.ILIREVIEWQUAL.P, 192.915(a) (192.915(b))

Question Text: *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate ILI assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered: 88966 (1,879)

Result Notes: 12.6 Personnel Qualification and Training Requirements

12.6.1 NW Natural Integrity Management Staff Qualifications

12.6.2 Integrity Management Contractor Qualifications

In-line inspection tool operators and graders will be required to meet ASNT ILI – PQ -2005 or equivalent in-house certification program.

44. Question Result, ID, References: NA, AR.IL.ILIREVIEWQUAL.R, 192.947(g) (192.915(a), 192.915(b))

Question Text: *Do records demonstrate that personnel who conduct assessments or review assessment results are qualified per the process requirements?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

45. Question Result, ID, References: NA, AR.IL.ILIREVIEWQUAL.O, 192.915(a) (192.915(b))

Question Text: *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review.

46. Question Result, ID, References: Sat, AR.IL.ILISPECS.P, 192.921(a)(1) (192.933(b))

Question Text: *Does the process assure complete and adequate vendor ILI specifications?*

Assets Covered: 88966 (1,879)

Result Notes: Page 2-4 of the NWN TIMP Program Manual:

Potential ILI vendors are evaluated based on the following:

Confidence level of the ILI method they employ

Performance history of their ILI method/tool

First run Success rate of their surveys

Ability of their tool to inspect the full length and full circumference of the pipeline section, specifically considering the operating pressures of NW Natural's transmission pipeline system

Ability to indicate the presence of multiple cause anomalies

Ability to conform with API 1163, ASNT ILI PQ, and NACE SP0502

2.1.1.2 In-Line Inspection Process The following process outlines the steps that NW Natural takes to assess a pipeline using ILI technology.

1. Identify pipeline segments for inspection with ILI technology using the Baseline Assessment Plan.

2. Select an ILI technology and vendor. Factors to consider include the type and size of predicted anomalies, pipeline flow characteristics, and pipeline construction (i.e. bend radius, appurtenances, diameter changes, off takes…)

3. Integrity management group analyzes pipeline maps, as-builts, and other historical records for potential worksites.

4. Modify the pipeline to ILI vendor specifications. Potential projects include replacing/removing non piggable valves and fittings, installing launcher/receiver traps. Consider system reinforcement projects that allow for maintaining service during cleaning and inspection activities. Typically after the initial assessment, the pipeline will not require additional modifications.

5.1 Program Requirements for Discovery, Evaluation, and Remediation Scheduling

Discovery of condition occurs when the Integrity Management Group has adequate information to determine that the condition presents a potential threat to the integrity of the pipe. A condition that presents a potential threat to the integrity of the pipe are conditions that require remediation or monitoring. Discovery of a condition can occur through a scheduled integrity assessment or through any other means, such as an aerial or ground patrol, or routine maintenance.

The Integrity Management Group promptly reviews assessment reports for any immediate response indications. The reviews for other indications may occur during the initial review of the results of the integrity assessment data, or after historical, operational, and maintenance records are integrated.

All review and analysis processes leading to the discovery of a known condition must be complete no later than 180 days from the completion date of the integrity assessment data gathering.

The completion date of an integrity assessment data gathering is defined as:

For assessment by ILI – the date the ILI tool successfully records data for the entire pipeline segment. For pipeline segments assessed using multiple ILI tools, the date is defined as the date the final ILI tool successfully records data for the entire pipeline segment.

47. Question Result, ID, References	NA, AR.IL.ILISPECS.R, 192.947(g) (192.933(b))
Question Text	*Do records demonstrate that the ILI specifications were complete and adequate?*
Assets Covered	88966 (1,879)
Result Notes	No such event occurred, or condition existed, in the scope of inspection review.
48. Question Result, ID, References	Sat, AR.IL.ASSESSMETHOD.P, 192.919(b) (192.921(a), 192.937(c))
Question Text	*Does the process specify the assessment methods that are appropriate for the pipeline specific integrity threats?*
Assets Covered	88966 (1,879)
Result Notes	**2.2 Choosing Integrity Assessment Methods.**

The integrity threats to each pipeline segment will be analyzed and the appropriate assessment method to detect the effect of that threat will be selected. The Integrity Management Manager or designee will review and approve assessment methods. The following guidelines are used to determine the appropriate

assessment method: Pipeline gas flow driven ILI technology will be used, if applicable, on covered transmission lines that meet the following criteria:

• Pipeline segments that have sufficient pressure and flow to meet ILI tool vendor requirements,

• Pipeline segments that are currently piggable or can be modified to become piggable within resource limitations and time constraints,

• Pipeline segments of continuous significant length (generally greater than one mile), and

Pipeline segments selected for ILI inspection will typically be inspected with a multi- channel caliper tool and a high resolution MFL metal-loss tool. The multi-channel caliper tool will be used to measure the depth, length, width, and orientation (o'clock) position of deformation anomalies on the pipe. A high-resolution magnetic flux leakage (MFL) tool will be used to characterize the length, depth, and width of metal loss anomalies such as corrosion. In pipe with a possible low-frequency ERW long seam, a Transverse Flux tool may be used to inspect for seam failure or preferential corrosion of the long seam.

Pipeline segments that do not meet the above criteria for gas driven ILI assessment will be evaluated for cable pulled ILI, robotic ILI, hydrostatic testing, or DA techniques. ECDA, ICDA, and SCCDA will be utilized as appropriate to assess the pipeline threats of the particular pipeline segment.

Pipeline segments selected for cable pulled and robotic ILI will typically be inspected with a multi-channel caliper tool and a high-resolution MFL metal-loss tool. The multi- channel caliper tool is used to measure the depth, length, width, and orientation (o'clock) position of deformation anomalies on the pipe. A high-resolution MFL tool is used to omalies such as corrosion. If a caliper tool is not available, the MFL tool in conjuction with a camera can be used to locate Deformation Anomalies. Pipeline segments selected for hydrostatic test will be by a pressure test in accordance with 49 CFR, subpart J, and to a pressure specified by table 3 of section 5 of ASME B31.8S.

Newly constructed pipeline segments will use pressure test for the baseline assessment. Pressure tests will be completed using NW Natural Standard Practice 504.

49. Question Result, ID, References: NA, AR.IL.ASSESSMETHOD.R, 192.947(g) (192.919(b), 192.921(a), 192.937(c))

Question Text: *Do records demonstrate that the assessment methods shown in the baseline and/or continual assessment plan were appropriate for the pipeline specific integrity threats?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

50. Question Result, ID, References: Sat, AR.IL.ILIVALIDATE.P, 192.921(a)(1) (192.937(c))

Question Text: *Does the process for validating ILI results ensure that accurate integrity assessment results are obtained?*

Assets Covered: 88966 (1,879)

Result Notes: 2.1.1.3 ILI Report Acceptance and Validation.

The process is in Figure 2-2 "Process for accepting and validating an ILI Report" on page 2-8

51. Question Result, ID, References: NA, AR.IL.ILIVALIDATE.R, 192.947(g) (192.921(a)(1))

Question Text: *Do records demonstrate that the operator has validated ILI assessment results per their process?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review.

52. Question Result, ID, References: NA, AR.IL.ILIVALIDATE.O, 192.921(a)(1)

Question Text: *From observation of field activities, do the employees and vendors validate ILI assessment results per their process?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review.

53. Question Result, ID, References: Sat, AR.IL.ILIINTEGRATION.P, 192.917(b)

Question Text: *Is the process for integrating ILI results with other information adequate?*

Assets Covered 88966 (1,879)

Result Notes 3.2.4 Integrating Data The Integrity Management Group integrates risk data using the risk management software to calculate relative risk for pipeline segments. It gives each segment a unique alphanumeric name and location that aligns the risk data in the risk management software. The combination of the unique name and the location gives NW Natural's system a common reference system. After completing an integrity assessment, NW Natural will integrate ILI or DA results with data such as encroachments or foreign line crossings to define areas of potential third-party damage.

54. Question Result, ID, References NA, AR.IL.ILIINTEGRATION.R, 192.947(g) (192.917(b))

Question Text *Do records demonstrate that the operator integrated other data/information when evaluating tool data/results?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. The line will be pigged in 2023 for the first time.

55. Question Result, ID, References Sat, AR.IL.ILIACCEPCRITERIA.P, 192.921(a)

Question Text *Is the process for ILI survey acceptance criteria adequate to assure an effective assessment?*

Assets Covered 88966 (1,879)

Result Notes Figure 2-2

56. Question Result, ID, References NA, AR.IL.ILIACCEPCRITERIA.R, 192.947(g) (192.921(a))

Question Text *Do records indicate adequate implementation of the process for ILI survey acceptance?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. 2023 first ILI run.

57. Question Result, ID, References NA, AR.IL.ILIDELAY.R, 192.947(d) (192.909(a), 192.909(b), 192.943(a), 192.943(b), 190.341, 192.18)

Question Text *Do records indicate that the performance of integrity assessments has been delayed and integrity assessment delays have been justified?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

58. Question Result, ID, References NA, AR.IL.ILIIMPLEMENT.O, 192.921(a)(1) (192.620(d), 192.605(b))

Question Text *Are O&M and IMP procedural requirements for the performance of ILI assessments followed?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

59. Question Result, ID, References Sat, AR.IL.ILCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats identified during in-line inspections?*

Assets Covered 88966 (1,879)

Result Notes Page 3-15

Corrosion

If the Integrity Management Group finds a corrosion condition that could affect integrity on a segment covered by the rule, it will establish a schedule for evaluating and remediating all pipeline segments, both covered and non-covered, with similar material coating and environmental characteristics and make remediations as necessary. NW Natural interprets a corrosion condition to mean an immediate repair corrosion condition.

Figure 5.3 provides Special Conditions for remediation

60. Question Result, ID, References NA, AR.IL.ILCORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats identified during in-line inspections?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

AR.LSR: Low Stress Reassessment

61. Question Result, ID, References NA, AR.LSR.LSRPLAN.P, 192.941(a) (192.941(b), 192.941(c))

Question Text *Is the process for performing low stress reassessment adequate?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

6.3 Low Stress Reassessment

NW Natural does not intend to use this method at this time. If NW Natural chooses to use this method, a process will be developed per rule guidelines.

62. Question Result, ID, References NA, AR.LSR.LSRBA.R, 192.947(d) (192.919(c), 192.921(d), 192.941(a))

Question Text *Do records demonstrate that a baseline assessment meeting the requirements of 192.919 and 192.921 was performed prior to performing a low stress reassessment?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

63. Question Result, ID, References NA, AR.LSR.LSREXTCORR.R, 192.947(d) (192.941(b))

Question Text *Do records demonstrate that the requirements of 192.941(b) were implemented when performing low stress reassessment for external corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

64. Question Result, ID, References NA, AR.LSR.LSRINTCORR.R, 192.947(d) (192.941(c))

Question Text *Do records demonstrate that the requirements of 192.941(c) were implemented when performing low stress reassessment for internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

65. Question Result, ID, References NA, AR.LSR.LSRCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats following a LSR?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

6.3 Low Stress Reassessment

NW Natural does not intend to use this method at this time. If NW Natural chooses to use this method, a process will be developed per rule guidelines.

66. Question Result, ID, References NA, AR.LSR.LSRCORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats as required following a LSR?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

AR.OT: Other Technology

67. Question Result, ID, References Sat, AR.OT.OTPLAN.P, 192.921(a)(4)

Question Text *Has a process been developed for "other technologies" that provide an equivalent understanding of the condition of the pipe?*

Assets Covered 88966 (1,879)

Result Notes Page 2-2 Figure 2-1 has a flowchart of the BAP that illustrates the use of other technology.

Section 4.10 If NW Natural elects to use ICDA to assess a covered segment operating with electrolytes present in the gas stream (wet gas), it notifies PHMSA of an ICDA wet gas "other technology" as delineated in section 14 and conducts ICDA on the entire pipeline containing the covered segment.

- Section 6.2 (Page 6.2) has 90 days. This is consistent with Part 192.18(c)

68. Question Result, ID, References NA, AR.OT.OTPLAN.R, 192.947(d) (192.921(a)(4), 192.933(b))

Question Text *Do records demonstrate that the assessments were performed in accordance with the process and vendor recommendations and that defects were identified and categorized within 180 days, if applicable?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

69. Question Result, ID, References NA, AR.OT.OTREVQUAL.P, 192.915(a) (192.915(b), 192.921(a)(4))

Question Text *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate assessment results meet acceptable qualification standards?*

Assets Covered 88966 (1,879)

Result Notes NW Natural will notify OPS and appropriate state agencies at least 180 days prior to start of the assessment if using other technology. (Item 11 Page 2.2)

No such event occurred, or condition existed, in the scope of inspection review.

12.6 Personnel Qualification and Training Requirements

12.6.1 NW Natural Integrity Management Staff Qualifications

12.6.2 Integrity Management Contractor Qualifications

70. Question Result, ID, References NA, AR.OT.OTREVQUAL.R, 192.947(d) (192.915(a), 192.915(b))

Question Text *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct assessments or review assessment results are qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

71. Question Result, ID, References NA, AR.OT.OTREVQUAL.O, 192.915(a) (192.915(b))

Question Text *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

72. Question Result, ID, References NA, AR.OT.OTPLAN.O, 192.921(a)(4)

Question Text *Were assessments conducted using "other technology" adequately performed in accordance with the OT process?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

73. Question Result, ID, References NA, AR.OT.OTCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats identified using Other Technology?*

Assets Covered 88966 (1,879)

Result Notes NW Natural will notify OPS and appropriate state agencies at least 180 days prior to start of the assessment if using other technology. (Item 11 Page 2.2)

No such event occurred, or condition existed, in the scope of inspection review.

74. Question Result, ID, References NA, AR.OT.OTCORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats as required following the use of Other Technology?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

AR.PTI: Integrity Assessment Via Pressure Test

75. Question Result, ID, References Sat, AR.PTI.PRESSTESTREVQUAL.P, 192.915(a) (192.915(b) 192.921(a)(4))

Question Text *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate pressure test assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered 88966 (1,879)

Result Notes 12.6 Personnel Qualification and Training Requirements

12.6.1 NW Natural Integrity Management Staff Qualifications

12.6.2 Integrity Management Contractor Qualifications

76. Question Result, ID, References NA, AR.PTI.PRESSTESTREVQUAL.R, 192.947(g) (192.915(a), 192.915(b))

Question Text *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct or review pressure test assessment results are qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

77. Question Result, ID, References Sat, AR.PTI.PRESSTESTACCEP.P, 192.503(a) (192.503(b), 192.503(c), 192.503(d), 192.505(a), 192.505(b), 192.505(c), 192.505(d), 192.507(a), 192.507(b), 192.507(c), 192.513(a), 192.513(b), 192.513(c), 192.513(d), 192.921(a)(2))

Question Text *Were test acceptance criteria and processes sufficient to assure the basis for an acceptable pressure test?*

Assets Covered 88966 (1,879)

Result Notes Page 2-2 "Pressure test refers to a DOT 192 Subpart J qualifying hydrostatic test as discussed in section 2.1.2"

2.1.2 Pressure Testing

Pressure testing can be both a strength test and a leak test. Pressure testing conducted in accordance with the requirements in Part 192, Subpart J, and ASME B31.8S, Section 6.3 may be used to assess the following threats:

? Time-dependent threats such as external corrosion, internal corrosion, or SCC.

? Manufacturing-related threats such as faulty pipe seams.

? Dents and other forms of Mechanical Damage

NW Natural's pressure test procedure is detailed in procedures:

- OP-138-01 and OP-139-01 of the Operator's Qualification Program
- Standard Practice 504. Pressure tests must meet the requirements of standard practice 504 to be used as a valid assessment method.

78. Question Result, ID, References NA, AR.PTI.PRESSTESTRESULT.R, 192.517(a) (192.505(a), 192.505(b), 192.505(c), 192.505(d), 192.507(a), 192.507(b), 192.507(c), 192.513(a), 192.513(b), 192.513(c), 192.513(d), 192.517(b), 192.617, 192.619(a), 192.919(e), 192.921(a)(2))

Question Text *Do the test records validate the pressure test?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

79. Question Result, ID, References NA, AR.PTI.PRESSTESTCOMPLETE.O, 192.503(a) (192.503(b), 192.503(c), 192.503(d), 192.505(a), 192.505(b), 192.505(c), 192.505(d), 192.507(a), 192.507(b), 192.507(c), 192.513(a), 192.513(b), 192.513(c), 192.513(d))

Question Text *From field operations was the pressure test performed in accordance with Subpart J requirements and the process requirements?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

80. Question Result, ID, References Sat, AR.PTI.PTICORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats?*

Assets Covered 88966 (1,879)

Result Notes Figure 5-3

NW Natural's corrosion control program is detailed in Standard Practice 455, 463, 465, 467, 469, and 480.

81. Question Result, ID, References NA, AR.PTI.PTICORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats as required?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

AR.RC: Repair Criteria (HCA)

82. Question Result, ID, References NA, AR.RC.DEFECTCAT.R, 192.947(f) (192.933(b), 192.933(d))

Question Text *Do records demonstrate that all defects were properly categorized?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

83. Question Result, ID, References Sat, AR.RC.DISCOVERY.P, 192.933(b)

Question Text *Does the integrity assessment process properly define discovery and the required time frame?*

Assets Covered 88966 (1,879)

Result Notes 5.1 Program Requirements for Discovery, Evaluation, and Remediation Scheduling

- 5.1.1 Scheduling Remediation
- 5.1.2 Response to Pressure Testing
- 5.1.3 Response to Immediate Repair Conditions
- 5.1.4 Deviation from Remediation Timelines
- 5.1.5 Special Requirements for Scheduling Remediation

84. Question Result, ID, References NA, AR.RC.DISCOVERY.R, 192.947(f) (192.933(b))

Question Text *Do records demonstrate that discovery was declared in the required time frame or justification was documented?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

85. Question Result, ID, References: Sat, AR.RC.IMPRC.P, 192.933(a) (192.933(c), 192.933(d))

Question Text: *Does the Integrity Management Plan and/or maintenance processes include all of the actions that must be taken to address integrity issues in accordance with 192.933?*

Assets Covered: 88966 (1,879)

Result Notes: Discovered conditions have been appropriately corrected as required in §192.933 (remediation) and described in section 5 of this Program Plan. Table 5-3

86. Question Result, ID, References: NA, AR.RC.PRESSREDUCE.R, 192.947(f) (192.933(a)(1))

Question Text: *Do records demonstrate that an acceptable pressure reduction was promptly taken for each immediate repair condition or when a repair schedule could not be met?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

87. Question Result, ID, References: NA, AR.RC.SCHEDULE.R, 192.947(f) (192.933(c))

Question Text: *Do records demonstrate that a prioritized schedule was developed?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

88. Question Result, ID, References: NA, AR.RC.METHOD.R, 192.947(f) (192.933(a))

Question Text: *Do records demonstrate that the remediation specified in the prioritized schedule was adequate to ensure the integrity of the pipeline until the next scheduled reassessment?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

89. Question Result, ID, References: Sat, AR.RC.CRITERIA.P, 192.711(b) (192.703(a), 192.703(b), 192.703(c), 192.713(a), 192.713(b))

Question Text: *Does the repair process cover all of the elements for making repairs in covered segments?*

Assets Covered: 88966 (1,879)

Result Notes: Figure 5-1. Overview of the Remediation Process in Section 5 has a decision tree for immediate, 1 year, and other repairs. (Appendix L)

90. Question Result, ID, References: NA, AR.RC.SCHEDULEIMPL.R, 192.947(f) (192.933(d))

Question Text: *Do records demonstrate that defects in covered segments were remediated (i.e., repair, pressure reduction, or notification to PHMSA) within the applicable mandatory time limits of 192.933(d)?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

91. Question Result, ID, References: NA, AR.RC.REMEDIATION.O, 192.933(c) (192.933(a), 192.933(d))

Question Text: *Is anomaly remediation adequate for the covered segments being observed?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

92. Question Result, ID, References: Sat, AR.RC.LOOKBEYOND.P, 192.917(e)(5)

Question Text: *Does the process require an evaluation of all pipeline segments with similar environmental and material coating conditions as segments where corrosion that could adversely affect the integrity of the pipeline was found?*

Assets Covered: 88966 (1,879)

Result Notes: This is contained on Page 3-15 and the following in the TIMP manual, Section 3.2, discusses "Data Gathering and Integration"

3.2 Data Gathering and Integration

The Integrity Management Group gathers the data that could be relevant to each pipeline segment, including other covered and non-covered segments that have similar characteristics to the segment being evaluated. The types of data used depend on the threat being assessed. Appendix A lists the data

elements for a prescriptive transmission pipeline integrity program and the categories of threats that each data element can help assess.

93. Question Result, ID, References: NA, AR.RC.LOOKBEYOND.R, 192.947(b) (192.917(e)(5), 192.459)

Question Text: *From the review of the results of integrity assessments, were all pipeline segments evaluated with similar environmental and material coating conditions as segments where corrosion that could adversely affect the integrity of the pipeline was found?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

AR.RMP: Repair Methods and Practices

94. Question Result, ID, References: Sat, AR.RMP.SAFETY.P, 192.605(b)(9) (192.713(b))

Question Text: *Does the process ensure that repairs are made in a safe manner and are made so as to prevent damage to persons and property?*

Assets Covered: 88966 (1,879)

Result Notes: This is contained in Section 6.7

It is also located in the FOM. NW Natural's Field Operations Manual (FOM) is located online and you have to obtain a password in order the view it. The HUB links are not accessible to UTC staff. This is the section on safety and each of these categories can be expanded online for more

Safety

"Safety is a core value at NW Natural. It is also NW Natural policy to provide the safest work conditions possible and to promote safety programs through responsibility and training. The success of the Safety program depends upon each employee's commitment to the program and assuming personal responsibility for their own safety and the safety of their coworkers. Preventing accidents is also an important priority at NW Natural. Identifying and correcting known hazards is the most effective way to maintain a safe work environment.

Employees are encouraged to discuss safety procedures and policies with their supervisors and safety managers.

You can view the complete list of policies that relate to field operations and download the Accident Prevention policy from The Hub."

This section covers the following:

- General Guidelines for Safety
- Checking Facilities for the Presence of AC Voltage
- Guidelines for Using Personal Portable Electronic Devices During Field Operations
- Properties of Natural Gas
- Wearing Personal Protective Equipment
- Placing and Climbing Ladders
- Utilizing Barricades and Structures for Safety
- Flagging and Safely Controlling Traffic
- Operating NW Natural Vehicles
- Working Safely with Heavy Equipment
- Identifying and Responding to Hazardous Materials
- Preventing and Extinguishing Natural Gas Fires
- Responding to Personal Threats and Violence
- Seeking Medical Attention
- Reporting Events in the Field Using the Intelex Safety Reporting System
- Using Small Tools Safely
- Classifying Confined Spaces
- Preventing Injuries at the Job Site Using the Job Hazard Analysis (JHA) Process

95. Question Result, ID, References NA, AR.RMP.SAFETY.O, 192.605(b)(9) (192.713(b))

Question Text *Are repairs made in a safe manner and to prevent damage to persons and property?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

96. Question Result, ID, References Sat, AR.RMP.IGNITION.P, 192.605(b)(1) (192.751(a), 192.751(b), 192.751(c))

Question Text *Is there a process for preventing accidental ignition where gas presents a hazard of fire or explosion?*

Assets Covered 88966 (1,879)

Result Notes https://fom.nwnatural.com/fom/Content/fire-prevention-when-encountering-a-controlled-gas-escapement.htm

https://fom.nwnatural.com/fom/Content/guidelines-for-using-personal-portable-electronic-devices-during-field-operations.htm

https://fom.nwnatural.com/fom/Content/preventing-and-extinguishing-natural-gas-fires-section.htm

https://fom.nwnatural.com/fom/Content/form-6007-a-appliance-valve-lockout-tape.htm ; (This is for unsafe valves - not for entry or isolation of energized equipment - i.e not a lockout tree)
https://fom.nwnatural.com/fom/Content/performing-a-hot-zone-huddle.htm?Highlight=hot%20work

97. Question Result, ID, References NA, AR.RMP.IGNITION.R, 192.751(a) (192.751(b), 192.751(c))

Question Text *Do records indicate adequate steps were taken by the operator to prevent accidental ignition prior to performing work?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

98. Question Result, ID, References NA, AR.RMP.IGNITION.O, 192.751(a) (192.751(b), 192.751(c))

Question Text *Perform observations of selected locations to verify that adequate steps have been taken by the operator to minimize the potential for accidental ignition.*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

99. Question Result, ID, References Sat, AR.RMP.HOTTAP.P, 192.605(b)(1) (192.627)

Question Text *Is the process adequate for tapping pipelines under pressure?*

Assets Covered 88966 (1,879)

Result Notes https://fom.nwnatural.com/fom/Content/preparing-to-use-a-TDW-760-tapping-and-plugging-machine.htm?Highlight=hot%20tap

100. Question Result, ID, References NA, AR.RMP.HOTTAP.R, 192.627 (192 Subpart N)

Question Text *From a review of selected records, were the personnel who performed pressure taps on pipelines under pressure qualified?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

101. Question Result, ID, References NA, AR.RMP.HOTTAP.O, 192.627 (192 Subpart N)

Question Text *Were pressure taps on pipelines under pressure performed in accordance with processes by qualified personnel?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

102. Question Result, ID, References Sat, AR.RMP.REPAIRREQT.P, 192.605(b)(1) (192.711(a), 192.711(b), 192.711(c), 192.717(b)(3))

Question Text *Does the repair process capture the requirements of 192.711 for transmission lines?*

Assets Covered 88966 (1,879)

Result Notes TIMP Appendix L contains repair methods.

SPW 226 and 227

5.1.5 Special Requirements for Scheduling Remediation (Figure 5-3) shows the conditions listed in §192.933 and in sections 7.2.1, 7.2.2, and 7.2.3 of ASME B31.8S as requiring immediate repair, scheduled repair, or monitored treatment. In addition to the conditions shown in Figure 5-3, NW Natural also considers conditions under which pipelines operate and gives priority for evaluation and remediation to pipelines in high consequence areas.

103. Question Result, ID, References Sat, AR.RMP.FIELDREPAIRDEFECT.P, 192.605(b)(1) (192.713(a), 192.713(b))

Question Text *Is the process adequate for the permanent field repair of defects in transmission lines?*

Assets Covered 88966 (1,879)

Result Notes SPW 226 and 227 and Appendix L – Repair Methods Page 27-1

104. Question Result, ID, References NA, AR.RMP.METHOD.R, 192.709(a) (192.713(a), 192.713(b), 192. 717(a), 192.717(b), ASME B31.8S-2004 Section 7)

Question Text *From the review of records, were all repairs performed in accordance with processes, applicable sections of 49 CFR Parts 192 and the guidance of ASME B31.8S-2004, Section 7, and the Pipeline Repair Manual, Revision 5?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

105. Question Result, ID, References NA, AR.RMP.REPAIRQUAL.R, 192.807(b) (192.805(h))

Question Text *From the review of selected records, were personnel performing repairs, other than welding, and post repair tests qualified for the task they performed?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

106. Question Result, ID, References Sat, AR.RMP.FIELDREPAIRWELDS.P, 192.605(b) (192.715(a), 192.715(b), 192.715(c))

Question Text *Is the process adequate for the permanent field repair of welds?*

Assets Covered 88966 (1,879)

Result Notes SPW 226 and 227

27. Appendix L – Repair Methods (Page 27-2)

• Girth Welds

Lack of Penetration – Incomplete weld either due to lack of weld penetration inside the pipe or lack of a cap on the weld. Weld inspector and X-ray crews should be brought on site to review any girth weld issue.

Repair:

• If weld is within standard criteria area can be sandblasted and recoated (Powercrete).

• If weld is not within standard criteria a Dresser 110 weld sleeve should be used.

• If weld is not within the standard criteria and there are other defects in the area (i.e. external metal loss) a Dresser 220 weld sleeve should be used.

Cracking – Cannot be detected by MFL tools and only detected by Magnetic particle inspection. Repair for any cracked weld found should be cut out and replaced.

107. Question Result, ID, References NA, AR.RMP.WELDERQUAL.R, 192.225(a) (192.225(b), 192.227(a), 192.227(b), 192.229(a), 192.229(b), 192.229(c), 192.229(d))

Question Text *From the review of selected records, were repairs requiring welding performed by qualified welders using qualified welding processes?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

108. Question Result, ID, References NA, AR.RMP.WELDQUAL.R, 192.245(a) (192.245(b), 192.245(c), 192.715(a), 192.715(b), 192.715(c))

Question Text *From the review of records, were weld defects repaired in accordance with 192.245 and 192.715?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

109. Question Result, ID, References NA, AR.RMP.WELDINSPECT.R, 192.241(a) (192.241(b), 192.241(c), 192.243(a), 192.243(b), 192.243(c), 192.243(d), 192.243(e), 192.243(f))

Question Text *From the review of records, were welds inspected and examined in accordance with 192.241 and 192.243?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

110. Question Result, ID, References NA, AR.RMP.WELDINSPECT.O, 192.241(a) (192.241(b), 192.241(c), 192.243(a), 192.243(b), 192.243(c), 192.243(d), 192.243(e), 192.243(f))

Question Text *Were welds inspected and examined in accordance with 192.241 and 192.243?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

111. Question Result, ID, References NA, AR.RMP.PIPECONDITION.R, 192.709(a) (192.709(b))

Question Text *Do repair records document all information needed to understand the conditions of the pipe and its environment and provide the information needed to support the Integrity Management Risk Model?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

112. Question Result, ID, References NA, AR.RMP.REPLACESTD.R, 192.713(a) (Part 192 Subpart D)

Question Text *From the review of records, were any components that were replaced constructed to the same or higher standards as the original component?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

113. Question Result, ID, References Sat, AR.RMP.FIELDREPAIRLEAK.P, 192.605(b) (192.717(a), 192.717(b))

Question Text *Is there an adequate process for the permanent field repair of leaks on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes The Standard Practices section, SPW 709, contains the repair methods.

114. Question Result, ID, References NA, AR.RMP.FIELDREPAIRLEAK.R, 192.717(a) (192.717(b))

Question Text *From the review of records, did the operator properly repair leaks on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

115. Question Result, ID, References NA, AR.RMP.FIELDREPAIRLEAK.O, 192.717(a) (192.717(b))

Question Text *Does the operator properly repair leaks on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

116. Question Result, ID, References Sat, AR.RMP.WELDTEST.P, 192.605(b) (192.719(a), 192.719(b))

Question Text *Is the process adequate for the testing of replacement pipe and repairs made by welding on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes The Standard Practices section, SPW 709, contains the replacement pipe and repair testing methods.

117. Question Result, ID, References NA, AR.RMP.WELDTEST.R, 192.719(a) (192.719(b))

Question Text *From the review of records, did the operator properly test replacement pipe and repairs made by welding on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

118. Question Result, ID, References NA, AR.RMP.WELDTEST.O, 192.719(a) (192.719(b))

Question Text *Does the operator properly test replacement pipe and repairs made by welding on transmission lines?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

119. Question Result, ID, References Sat, AR.RMP.CRACKNDT.P, 192.929(b) (ASME B31.8S-2004 Appendix A3.4)

Question Text *Does the process require that when a pipeline segment that meets the conditions for cracking and/or possible SCC is exposed (i.e., the coating is removed), an NDE method (e.g., MPI, UT) is employed to evaluate for cracking?*

Assets Covered 88966 (1,879)

Result Notes Section 4.11 but SCC is not a threat for P-04 (Camas)

120. Question Result, ID, References NA, AR.RMP.CRACKNDT.R, 192.947(g) (192.929(b))

Question Text *From the review of records, when a pipeline segment that meets the conditions of possible cracking and/or SCC is exposed (i.e., the coating is removed), was an NDE method (e.g., MPI, UT) employed to evaluate for cracking and/or SCC?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

AR.SCC: Stress Corrosion Cracking Direct Assessment (SCCDA)

121. Question Result, ID, References NA, AR.SCC.SCCDAREVQUAL.P, 192.915(a) (192.915(b))

Question Text *Does the process require that operator/vendor personnel (including supervisors) who review and evaluate SCCDA assessment results meet appropriate training, experience, and qualification criteria?*

Assets Covered 88966 (1,879)

Result Notes NWN does not have lines operating over 60% SMYS in Washington State and all of the SCC elements must be present. Section 4.11 on page 4-30 of the TIMP plan discusses SCCDA and SCC.

122. Question Result, ID, References NA, AR.SCC.SCCDAREVQUAL.R, 192.947(e) (192.915(a), 192.915(b))

Question Text *Do records demonstrate that operator/vendor personnel, including supervisors, who conduct assessments or review assessment results, are qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

123. Question Result, ID, References NA, AR.SCC.SCCDAREVQUAL.O, 192.915(a) (192.915(b))

Question Text *From the observation of selected integrity assessments, are operator and vendor personnel, including supervisors, who conduct assessments or review assessment results, qualified for the tasks they perform?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

124. Question Result, ID, References Sat, AR.SCC.SCCDAPLAN.P, 192.929(b)

Question Text *Is an adequate plan developed for performing SCCDA, if the conditions for SCC were present?*

Assets Covered 88966 (1,879)

Result Notes I do not believe that NWN has lines over 60% SMYS and all of the SCC elements must be present. Section 4.11 on page 4-30 of the TIMP plan discusses SCCDA and SCC.

125. Question Result, ID, References NA, AR.SCC.SCCDADATA.R, 192.947(g) (192.929(b)(1))

Question Text *Do records demonstrate that data was collected and evaluated?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

126. Question Result, ID, References NA, AR.SCC.SCCDAMETHOD.R, 192.947(g) (192.929(b)(2))

Question Text *Do records demonstrate that an assessment was performed using one of the methods specified in ASME B31.8S-2004 Appendix A3?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

127. Question Result, ID, References NA, AR.SCC.SCCDAMETHOD.O, 192.929

Question Text *From field observations, was SCCDA performed in accordance with 192.929 and the SCCDA plan?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

128. Question Result, ID, References NA, AR.SCC.SCCDANEARNEUTRAL.R, 192.947(g) (192.929(b)(2))

Question Text *From the review of the results of selected integrity assessments, was the pipeline evaluated for near neutral SCC?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

129. Question Result, ID, References NA, AR.SCC.SCCDAREASSESSINTRVL.R, 192.947(d) (192.939(a)(3))

Question Text *From the review of the results of selected integrity assessments, did the operator determine a reassessment interval based on SCCDA results?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

130. Question Result, ID, References Sat, AR.SCC.SCCCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats found following SCCDA?*

Assets Covered 88966 (1,879)

Result Notes

4.11 Stress Corrosion Cracking Direct Assessment (SCCDA) Data Gathering and Integration 4-30

4.12 SCCDA Assessment, Examination, and Threat Remediation 4-32

ASME B31.8S specifies two methods for assessing the integrity of a segment with a potential for SCC—bell hole examinations and pressure testing. NW Natural will prepare a written plan for addressing the SCC threat, as well as other identified threats, of each segment that meets the criteria for an SCC threat. If a segment has an in-service leak or rupture because of SCC, NW Natural will hydrotest the segment within 12 months of the failure and will prepare a written retest plan for additional pressure testing of the segment at a technically justifiable interval. The pressure test method employs a high point test pressure of 100% SMYS and maintains the target for a minimum of 10 minutes. Upon returning the test segment to service, NW Natural will perform a leakage survey on the segment. Other approved technology may be used in lieu of hydrostatic testing.

If the pipe inspection reveals an SCC threat, NW Natural will exercise one the following three options:

- Pressure testing the valve section.
- Evaluating the SCC for repair or removal
- Performing an Engineering Critical Assessment

5. Remediation 5-1

131. Question Result, ID, References NA, AR.SCC.SCCCORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats as required following SCCDA?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

AR.SP: Special Permits

132. Question Result, ID, References NA, AR.SP.ILISP.P, 190.341(d)

Question Text *If the pipeline operates under a special permit have the processes been modified to incorporate the requirements of the permit for required ILI assessments performed?*

Assets Covered 88966 (1,879)

Result Notes The pipeline is not operating under a special permit. No such relevant facilities/equipment existed in the scope of inspection review.

133. Question Result, ID, References NA, AR.SP.ILISP.R, 190.341(d)

Question Text *If the pipeline operates under a special permit, from a review of selected records, were required ILI assessments performed?*

Assets Covered 88966 (1,879)

Result Notes The pipeline is not operating under a special permit. No such relevant facilities/equipment existed in the scope of inspection review.

134. Question Result, ID, References NA, AR.SP.REPAIRSP.P, 190.341(d)

Question Text *If the pipeline operates under a special permit have the processes been modified to incorporate the requirements of the permit for required repairs?*

Assets Covered 88966 (1,879)

Result Notes The pipeline is not operating under a special permit. No such relevant facilities/equipment existed in the scope of inspection review.

135. Question Result, ID, References NA, AR.SP.REPAIRSP.R, 190.341(d)

Question Text *If the pipeline operates under a special permit, from a review of selected records, were required repairs performed?*

Assets Covered 88966 (1,879)

Result Notes The pipeline is not operating under a special permit. No such relevant facilities/equipment existed in the scope of inspection review.

IM.BA: Baseline Assessments

136. Question Result, ID, References Sat, IM.BA.BAENVIRON.P, 192.911(o) (192.919(e))

Question Text *Does the process include requirements for conducting integrity assessments in a manner that minimizes environmental and safety risks?*

Assets Covered 88966 (1,879)

Result Notes **2.6.1 Minimizing Environmental and Safety Risks during Baseline Assessments and Reassessments.**

This portion of the TIMP manual references procedures to be used during ILI, DA, and Pressure Testing to minimize environmental and safety risks.

137. Question Result, ID, References NA, IM.BA.BAENVIRON.R, 192.947(d) (192.911(o), 192.919(e))

Question Text *Do records demonstrate that integrity assessments have been conducted in a manner that minimizes environmental and safety risks?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

138. Question Result, ID, References: Sat, IM.BA.BAMETHODS.P, 192.919(b) (192.921(a), 192.921(c), 192.921(h))

Question Text: *Does the process include requirements for specifying an assessment method(s) that is best suited for identifying anomalies associated with specific threats identified for the covered segment?*

Assets Covered: 88966 (1,879)

Result Notes: Section 2.1 The BAP process is in Figure 2-1.

139. Question Result, ID, References: NA, IM.BA.BAMETHODS.R, 192.947(c) (192.919(b), 192.921(a), 192.921(c), 192.921(h))

Question Text: *Do records demonstrate that the assessment method(s) specified is best suited for identifying anomalies associated with specific threats identified for the covered segment?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. ECDA records were reviewed during the 2018 inspection.

140. Question Result, ID, References: Sat, IM.BA.BANEW.P, 192.911(p) (192.905(c), 192.921(f), 192.921(g))

Question Text: *Does the process include requirements for updating the assessment plan for newly identified areas and newly installed pipe?*

Assets Covered: 88966 (1,879)

Result Notes: **Section 2.5**

Table 12-1. Quality Assurance of Integrity Management Processes contains this:

The BAP is updated with newly identified HCAs/MCAs, newly installed pipe, completed assessments and other new pipeline risk information IMG or Consultant.

Section 1.6 Identifying New and Modifying Existing HCA or MCA Segments

When the Integrity Management Group obtains information that the area near a pipeline segment may meet the criteria for an HCA or MCA, it evaluates the segment using either Method 1 (§1.4) or Method 2(§1.5). If the evaluation identifies a new HCA or MCA on the segment, the Integrity Management Group incorporates the segment into the baseline assessment plan and completes the baseline assessment of pipe in the newly identified HCA or MCA per the timeline stated in §2.5 of this plan.

141. Question Result, ID, References: Sat, IM.BA.BANEW.R, 192.947(d) (192.905(c), 192.911(p), 192.921(f), 192.921(g), 192.620)

Question Text: *Do records demonstrate that the assessment plan has been adequately updated for new HCAs and newly installed pipe?*

Assets Covered: 88966 (1,879)

Result Notes: HCAs and MCA were updated in 2020 and I reviewed a map of the 1 new MCA. The HCA boundaries stayed the same.

142. Question Result, ID, References: Sat, IM.BA.BASCHEDULE.P, 192.917(c) (192.919(c), 192.921(b))

Question Text: *Did the BAP process require a schedule for completing the assessment activities for all covered segments and consideration of applicable risk factors in the prioritization of the schedule?*

Assets Covered: 88966 (1,879)

Result Notes: The BAP process and schedule are contained in Section 2.3. (Prioritized Schedule)

143. Question Result, ID, References: NA, IM.BA.BASCHEDULE.R, 192.947(c) (192.921(d))

Question Text: *Do records demonstrate that all BAP required assessments were completed as scheduled?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. The last BAP was 2016.

144. Question Result, ID, References: NA, IM.BA.BAENVIRON.O, 192.911(o) (192.919(e))

Question Text: *From field observations, are integrity assessments conducted in a manner that minimizes environmental and safety risks?*

Assets Covered: 88966 (1,879)

Result Notes: No such activity/condition was observed during the inspection.

IM.CA: Continual Evaluation and Assessment

145. Question Result, ID, References: NA, IM.CA.LOWSTRESSREASSESS.P, 192.941(a) (192.941(b), 192.941(c))

Question Text: *Does the process include requirements for the "low stress reassessment" method to address threats of external and/or internal corrosion for pipelines operating below 30% SMYS?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review.

146. Question Result, ID, References: Sat, IM.CA.REASSESSINTERVAL.P, 192.937(a) (192.939(a), 192.939(b), 192.913(c))

Question Text: *Is the process for establishing the reassessment intervals consistent with 192.939 and ASME B31.8S-2004?*

Assets Covered: 88966 (1,879)

Result Notes: Section 6.4 of the TIMP plan addresses the 7 year interval.

147. Question Result, ID, References: NA, IM.CA.LOWSTRESSREASSESS.R, 192.947(d) (192.941(a), 192.941(b), 192.941(c))

Question Text: *Do records demonstrate that the implementation of "low stress reassessment" method to address threats of external and/or internal corrosion is adequate and being performed as required?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review.

148. Question Result, ID, References: Sat, IM.CA.PERIODICEVAL.P, 192.937(b) (192.917(a), 192.917(b), 192.917(c), 192.917(d), 192.917(e))

Question Text: *Does the process include requirements for a periodic evaluation of pipeline integrity based on data integration and risk assessment to identify the threats specific to each covered segment and the risk represented by these threats?*

Assets Covered: 88966 (1,879)

Result Notes: BAP is in Section 2.7

Data integration is in Section 6.4

149. Question Result, ID, References: NA, IM.CA.PERIODICEVAL.R, 192.947(d) (192.917(a), 192.917(b), 192.917(c), 192.917(d), 192.917(e), 192.937(b))

Question Text: *Do records demonstrate that periodic evaluations of pipeline integrity have been performed based on data integration and risk assessment to identify the threats specific to each covered segment and the risk represented by these threats?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

150. Question Result, ID, References: NA, IM.CA.REASSESSINTERVAL.R, 192.947(d) (192.937(a), 192.939(a), 192.939(b), 192.913(c))

Question Text: *Do records demonstrate that reassessment intervals were established consistent with the requirements of the operator's processes?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

151. Question Result, ID, References: Sat, IM.CA.REASSESSMETHOD.P, 192.937(c) (192.931)

Question Text: *Is the approach for establishing reassessment method(s) consistent with the requirements in 192.937(c)?*

Assets Covered: 88966 (1,879)

Result Notes: Section 6.4

152. Question Result, ID, References: Sat, IM.CA.REASSESSMETHOD.R, 192.947(d) (192.937(c))

Question Text: *Do records document the assessment methods to be used and the rationale for selecting the appropriate assessment method?*

Assets Covered: 88966 (1,879)

Result Notes: This was last reviewed October 5, 2016.

153. Question Result, ID, References: Sat, IM.CA.REASSESSWAIVER.P, 192.943(a) (192.943(b))

Question Text *Does the process include requirements for reassessment interval waivers (special permit per 190.341)?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. The process is in Section 6.6, but it has not been used.

154. Question Result, ID, References NA, IM.CA.REASSESSWAIVER.R, 192.947(d) (192.943(a), 192.943(b))

Question Text *Do records demonstrate that reassessment interval waivers (special permit per 190.341) have been adequately implemented, if applicable?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

155. Question Result, ID, References Sat, IM.CA.REASSESSEXCPERF.P, 192.913(a) (192.913(b), 192.913(c))

Question Text *Does the process include requirements for deviations from reassessment requirements based on exceptional performance?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. The process is in Section 6.6, but it has not been used.

156. Question Result, ID, References NA, IM.CA.REASSESSEXCPERF.R, 192.947(d) (192.913(a), 192.913(b), 192.913(c))

Question Text *Do records demonstrate that deviations from reassessment requirements are based on exceptional performance and have been adequately handled, if applicable?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

IM.HC: High Consequence Areas

157. Question Result, ID, References Sat, IM.HC.HCAID.P, 192.905(a)

Question Text *Does the process include the methods defined in 192.903 High Consequence Area (Method 1) and/or 192.903 High Consequence Area (Method 2) to be applied to each pipeline for the identification of high consequence areas?*

Assets Covered 88966 (1,879)

Result Notes

1. Identifying HCAs and MCAs 1-6

1.1 HCA & MCA Identification Process 1-6

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1.6 Identifying New and Modifying Existing HCA or MCA Segments 1-13

1.7 HCA and MCA Field Audit Process 1-14

1.1 HCA & MCA Identification Process

NW Natural's HCAs & MCA identification process is shown as Figure 1-1. NW Natural's consultant Integrity Plus by Mistras (formerly: New Century Software) assisted NW Natural with the HCA and MCA identification and supporting class location analysis for the NW Natural transmission system. The methodology for the analysis is described in additional detail in the final report completed in June 2020.

158. Question Result, ID, References: NA, IM.HC.HCAID.R, 192.947(d) (192.905(a), 192.907(a), 192.911(a))

Question Text: *Do records demonstrate that the identification of pipeline segments in high consequence areas was completed in accordance with process requirements?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review.

159. Question Result, ID, References: Sat, IM.HC.HCAMETHOD1.P, 192.903(1)(i) (192.903(1)(ii), 192.903(1)(iii), 192.903(1)(iv))

Question Text: *Is the integrity management process adequate for identification of 192.903 High Consequence Areas using Method (1) for identification of HCAs?*

Assets Covered: 88966 (1,879)

Result Notes: Within Subpart O – Gas Transmission Pipeline Integirty Management Part 192.905 allows transmission line operators to identify high consequence areas (HCAs) along covered pipelines by either of two methods:

- Method 1, primarily based on class locations
- Method 2, based on the contents of areas within potential impact circles

The method used can be different for different pipelines or for different segments of the same pipeline, but the method used for each segment of each pipeline must be described. NW Natural uses method 1 to identify HCAs for transmission lines:

- Within an Urban Growth Boundary in the State of Washington

NW Natural uses method 2 to identify HCAs for transmission lines:

- Outside an Urban Growth Boundary in the State of Washington

§192.3 – Definitions idenfies (sic) for operators the criteria for Moderate Consequence Areas (MCAs). These are areas as that are within the potential impact circle as defined in Section 1.2 that contain either:

- Five or more buildings intended for human occupancy
- Any portion of the paved surface, including shoulders, of a designated interstate or expressway or principal arterial roadway with 4 or more lanes.

160. Question Result, ID, References: Sat, IM.HC.HCAMETHOD2.P, 192.903(2)(i) (192.903(2)(ii))

Question Text: *Is the integrity management process adequate for identification of 192.903 High Consequence Areas using Method (2)?*

Assets Covered: 88966 (1,879)

Result Notes: Within Subpart O – Gas Transmission Pipeline Integirty Management Part 192.905 allows transmission line operators to identify high consequence areas (HCAs) along covered pipelines by either of two methods:

- Method 1, primarily based on class locations
- Method 2, based on the contents of areas within potential impact circles

The method used can be different for different pipelines or for different segments of the same pipeline, but the method used for each segment of each pipeline must be described. NW Natural uses method 1 to identify HCAs for transmission lines:

- Within an Urban Growth Boundary in the State of Washington

NW Natural uses method 2 to identify HCAs for transmission lines:

- Outside an Urban Growth Boundary in the State of Washington

§192.3 – Definitions idenfies (sic) for operators the criteria for Moderate Consequence Areas (MCAs). These are areas as that are within the potential impact circle as defined in Section 1.2 that contain either:

- Five or more buildings intended for human occupancy
- Any portion of the paved surface, including shoulders, of a designated interstate or expressway or principal arterial roadway with 4 or more lanes.

161. Question Result, ID, References: Sat, IM.HC.HCANEW.P, 192.905(c)

Question Text: *Does the process include a requirement for evaluation of new information that impacts, or creates a new, high consequence area?*

Assets Covered: 88966 (1,879)

Result Notes: The Integrity Management Group analyzes changes for impacts on pipeline segments that could affect HCAs or MCAs such as the following:

- Changes in the pipeline MAOP.
- Modifications affecting the diameter of the pipe.
- Changes in the commodity transported in the pipeline.
- Identification of new construction in the vicinity of the pipeline that results in additional buildings intended for human occupancy or additional identified sites.
- Identification of road construction in the vicinity of the pipeline that results in the widening of interstates, freeways, expressways or principal arterial roadways to 4 lanes or more.
- Changes in use of existing buildings.
- Installation of new pipeline.
- Change in class location or class location boundary.
- Pipeline rerouting.
- Corrections to pipeline platted location.
- Field design changes affecting pressure, diameter, or pipeline location.

162. Question Result, ID, References: Sat, IM.HC.HCANEW.R, 192.947(d) (192.905(c))

Question Text: *Do records demonstrate new information that impacts, or creates a new, high consequence area has been integrated with the integrity management program?*

Assets Covered: 88966 (1,879)

163. Question Result, ID, References: Sat, IM.HC.HCAPIR.P, 192.903 (192.905(a))

Question Text: *Is the process for defining and applying potential impact radius (PIR) for establishment of high consequence areas consistent with the requirements of 192.903?*

Assets Covered: 88966 (1,879)

Result Notes: Section 1.2 (Potential Impact Radius) contains the full formula and methods to calculate the PIR for natural gas.

Note - The calculated PIR will include an additional buffer of 20 feet to the radius when NW Natural's GIS files are overlaid and aligned to aerial imagery. The 20 foot buffer is intended to account for spatial inaccuracies in either the position of the pipeline centerline or aerial imagery.

164. Question Result, ID, References: Sat, IM.HC.HCAPIR.R, 192.947(d) (192.903, 192.905(a))

Question Text: *Do records demonstrate the use of potential impact radius (PIR) for establishment of high consequence areas consistent with requirements of 192.903?*

Assets Covered: 88966 (1,879)

Result Notes: This was used for the analysis run in 2020.

165. Question Result, ID, References Sat, IM.HC.HCASITES.P, 192.903 (192.905(b))

Question Text *Does the process for identification of identified sites include the sources listed in 192.905(b) for those buildings or outside areas meeting the criteria specified by 192.903 and require the source(s) of information selected to be documented?*

Assets Covered 88966 (1,879)

Result Notes **1.3 Identified Sites**

Both Method 1 and Method 2 of HCA identification require operators to evaluate identified sites within the PIC. Identified sites meet one of the three criteria described in Table 1-1.

Table 1-1. Identified Sites

Type of Site	Occupants	Occupation during any 12-month Period*	Examples
Outside area or open structure	20 or more persons	At least 50 days	Beaches, playgrounds, campgrounds, stadiums, cemeteries, golf course club houses, areas outside a rural building
Building	20 or more persons	At least 5 days a week for 10 weeks	Office buildings, community centers, religious facilities, stores
Facility	Persons difficult to evacuate	_____	Hospitals, prisons, schools, daycare facilities, retirement homes *Days and weeks need not be consecutive.

The Integrity Management Group uses the following sources, as appropriate, to find identified sites:

- Routine operation and maintenance activities. (See section 1.6)
- Public officials involved in safety, emergency response, and planning, such as the local emergency planning commission, fire marshals or chiefs, or Native American tribal officials.
- Visible marking (e.g., a sign observed during the quarterly patrols of the pipeline by the transmission line maintenance group. See section 1.6).
- Facility licensing or registration data available from private or government agencies.
- Lists and maps available from private or government agencies. Structures or gathering sites that meet the criteria in Table 1-1 and are within the PIC of NW Natural's pipeline facilities are included as identified sites.

166. Question Result, ID, References NA, IM.HC.HCASITES.R, 192.947(d) (192.903, 192.905(b))

Question Text *Do records indicate identification of identified sites being performed as required?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. None in Washington.

167. Question Result, ID, References Sat, IM.HC.HCAMETHOD1.R, 192.947(d) (192.903 (1)(i), 192.903(1)(ii), 192.903(1)(iii), 192.903(1)(iv))

Question Text *Do records demonstrate that identification of 192.903 High Consequence Areas using Method (1) was adequate?*

Assets Covered 88966 (1,879)

Result Notes They use both Method 1 and Method 2

168. Question Result, ID, References Sat, IM.HC.HCAMETHOD2.R, 192.947(d) (192.905(a), 192.903(2)(ii))

Question Text *Do records demonstrate that the identification of 192.903 High Consequence Areas using Method (2) was adequate?*

Assets Covered 88966 (1,879)

169. Question Result, ID, References Sat, IM.HC.HCADATA.O, 192.905(c)

Question Text *Are HCAs correctly identified per up-to-date information?*

Assets Covered 88966 (1,879)

Result Notes Building information is obtained from Clark County. They use this information to update building counts and other information for the GIS used to determine HCAs and MCAs.

IM.PM: Preventive and Mitigative Measures

170. Question Result, ID, References Sat, IM.PM.PMMGENERAL.P, 192.935(a)

Question Text *Does the process include requirements to identify additional measures to prevent a pipeline failure and to mitigate the consequences of a pipeline failure in a high consequence area?*

Assets Covered 88966 (1,879)

Result Notes **8.1 Identification of Additional Preventative and Mitigative Measures**

NW Natural's Integrity Management Group is responsible for the identification and implementation of additional P&M measures. The Integrity Management Group consults with team members from Damage Prevention, System Operations, Gas Operations and Telecommunications to identify additional P&M measures to prevent a pipeline failure and mitigate the consequences of such a failure. SME's outside these groups may also be consulted.

NW Natural retains preventive measures that have a record of success and examines new prevention measures for potential effectiveness. NW Natural currently uses the following addition P&M measures:

Installing automatic shut-off valves or remote control valves.

Additional response training.

Drills with local emergency responders.

Enhanced inspection and maintenance schedules.

Replacement of pipe segments with pipe of heavier wall thickness.

Installing computerized monitoring and leak detection systems.

Participation in one-call systems

Increased patrols during weather events

Other prevention activities.

171. Question Result, ID, References NA, IM.PM.PMMGENERAL.R, 192.947(d) (192.935(a))

Question Text *Do records demonstrate that additional measures have been identified and implemented (or scheduled) beyond those already required by Part 192 to prevent a pipeline failure and to mitigate the consequences of a pipeline failure in an HCA?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. None in Washington.

172. Question Result, ID, References Sat, IM.PM.PMMTPD.P, 192.917(e)(1) (192.935(b)(1), 192.935(e))

Question Text *Does the preventive and mitigative measure process include requirements that threats due to third party damage be addressed?*

Assets Covered 88966 (1,879)

Result Notes Section 8.2, Third-Party Damage, addresses this.

173. Question Result, ID, References Sat, IM.PM.PMMTPD.R, 192.947(d) (192.917(e)(1), 192.935(b)(1), 192.935(e))

Question Text *Do records demonstrate that preventive & mitigative measures have been implemented regarding threats due to third party damage as required by the process?*

Assets Covered 88966 (1,879)

Result Notes I reviewed records of a leak surveys and patrols in which NW Natural monitors for encroachment or any excavation activities near the transmission line.

Additionally, the FOM contains guidance on monitoring third party excavations. https://fom.nwnatural.com/fom/Content/monitoring-third-party-excavations2.htm?Highlight=excavation

8.2 Third-Party Damage **TIMP Manual**

NW Natural has implemented the following enhancements to its existing damage prevention program:

• Using qualified personnel when doing work that could affect the integrity of a covered segment, such as locating, marking, and standbys for known excavation work. (See Field Data Technician job description located in NW Natural Human Resources files).

• Collecting location-specific information on excavation damage into central database. This database would contain information on both covered and non-covered transmission line segments and would include root cause analyses that support the selection of P&M measures that target HCAs and MCAs. The damage information in the database must include damage not defined as an incident under Part 191. This data is collected in the NW Natural Compliance Services database.

• Participating in one-call systems where covered segments are present. NW Natural is a founding member of the Oregon Utility Notification Center, and Northwest Utility Location Center (Southwest Washington).

174. Question Result, ID, References Sat, IM.PM.PMMREVQUAL.P, 192.915(c)

Question Text *Does the process require that persons who implement preventive and mitigative measures or directly supervise excavation work be qualified?*

Assets Covered 88966 (1,879)

Result Notes **8.2 Third-Party Damage**

NW Natural has implemented the following enhancements to its existing damage prevention program:

- Using qualified personnel when doing work that could affect the integrity of a covered segment, such as locating, marking, and standbys for known excavation work. (See Field Data Technician job description located in NW Natural Human Resources files).

175. Question Result, ID, References NA, IM.PM.PMMREVQUAL.R, 192.947(e) (192.915(c))

Question Text *Do records demonstrate that personnel who implement preventive and mitigative measures or directly supervise excavation work are qualified?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

176. Question Result, ID, References Sat, IM.PM.PMMTPDSMYS.P, 192.935(d) (192.935(e), 192 Appendix E Table E.II.1)

Question Text *Does the process include requirements for preventive and mitigative measures for pipelines operating below 30% SMYS?*

Assets Covered 88966 (1,879)

Result Notes **8.3 Pipelines Operating below 30% SMYS**

Table 8-1 describes additional P&M measures that the Integrity Management Group considers for use to address the third-party damage threat for covered pipeline segments operating below 30% SMYS, both inside HCAs/MCAs and outside HCAs/MCAs but inside Class 3 or Class 4 locations.

The Integrity Management Group evaluates the method or methods that will most likely mitigate the threat caused by third party damage. It considers the likelihood of the threat, the consequence of the potential failure, resource availability and other factors in selecting the means to mitigate the potential hazard.

177. Question Result, ID, References NA, IM.PM.PMMTPDSMYS.R, 192.947(d) (192.935(d), 192.935(e), 192 Appendix E Table E.II.1)

Question Text *Do records demonstrate that preventive and mitigative measures for pipelines operating below 30% SMYS are being performed as required?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

178. Question Result, ID, References Sat, IM.PM.PMMOF.P, 192.935(b)(2)

Question Text *Does the process adequately address significant threats due to outside force (e.g., earth movement, floods, unstable suspension bridge)?*

Assets Covered 88966 (1,879)

Result Notes **8.5 Outside Force Damage**

The Integrity Management Group, in coordination with the Transmission Maintenance Group and/or Engineering Services, selects a method or methods listed below that will most likely mitigate the threat caused by outside force damage (e.g. earth movement, loading, longitudinal forces or lateral forces, seismicity in the area, floods, unstable suspension bridge) It considers the likelihood of the threat, the consequence of the potential failure, resource availability and other factors in selecting the means to mitigate the potential hazard.

- Stabilization of the soil
- Stabilization of the pipe or pipe joints
- Relocation or lowering of the pipeline
- Reducing stress on the pipeline
- Water diversion
- Increased line patrolling
- Monitoring land movement progress in areas of ongoing subsidence and slides.
- Inline inspection with geospatial and deformation tools

179. Question Result, ID, References NA, IM.PM.PMMOF.R, 192.947(d) (192.935(b)(2))

Question Text *Do records demonstrate that significant threats due to outside force (e.g., earth movement, floods, unstable suspension bridge) are being adequately addressed?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. No outside force threats have been identified.

180. Question Result, ID, References Sat, IM.PM.PMMASORCV.P, 192.935(c)

Question Text *Does the process include requirements to decide if automatic shut-off valves or remote control valves represent an efficient means of adding protection to potentially affected high consequence areas?*

Assets Covered 88966 (1,879)

Result Notes **8.7 Automatic Shutoff Valves or Remote Control Valves**

The Integrity Management Group will install either Automatic Shutoff Valves (ASV) or Remote Control Valves (RCV) at critical locations on the transmission system based on risk score. NW Natural will use the ASV or RCV Evaluation Form in Appendix J to evaluate a covered transmission line segment for installation of an ASV or RCV. Other factors that will be considered when installing an ASV or RCV are:

• Swiftness of leak detection and pipe shutdown capabilities

• Operation pressure

• Rate of Potential Release

• Potential of Ignition • personnel

181. Question Result, ID, References NA, 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 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. NO ASV's or RCV's in Washington State.

182. Question Result, ID, References NA, IM.PM.PMMIMPLEMENT.O, 192.935(a)

Question Text *Have identified additional preventive and mitigative measures to reduce the likelihood or consequence of a pipeline failure in an HCA been implemented?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. Only preventative measure currently in place is enhanced Damage Prevention risk ranking.

183. Question Result, ID, References Sat, IM.PM.PMCORR.P, 192.933 (192.917(e)(5))

Question Text *Does the process adequately account for taking required actions to address significant corrosion threats?*

Assets Covered 88966 (1,879)

Result Notes **20. Appendix E – Preventive and Mitigative Measures** - also in section 5.4.2

Corrosion prevention review

- Implications of time-dependent threat
- Discovered immediate repair corrosion damage
- Plan for evaluating and remediating corrosion on all segments (covered and non-covered) with similar coating and environmental characteristics
- Other means of preventing external corrosion, internal corrosion, and Stress Corrosion Cracking for high-risk segments

184. Question Result, ID, References NA, IM.PM.PMCORR.R, 192.933 (192.917(e)(5))

Question Text *Do records demonstrate that required actions are being taken to address significant corrosion threats as required?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. No significant corrosion threats since 2018.

IM.QA: Quality Assurance

185. Question Result, ID, References Sat, IM.QA.QARM.P, 192.911(l)

Question Text *Are quality assurance processes in place for risk management applications that meet the requirements of ASME B31.8S-2004, Section 12?*

Assets Covered 88966 (1,879)

Result Notes Section 12 of the TIMP Plan - Quality Assurance

186. Question Result, ID, References Sat, IM.QA.IMNONMANDT.P, 192.7(a)

Question Text *Does the process include requirements that non-mandatory requirements (e.g., "should" statements) from industry standards or other documents invoked by Subpart O (e.g., ASME B31.8S-2004 and NACE SP0502-2010) be addressed by an appropriate approach?*

Assets Covered 88966 (1,879)

Result Notes 12.3 Invoking Non-Mandatory Statements in Standards

NW Natural has reviewed all “should” statements in the documents incorporated by reference in Part 192, relating to Subpart O. Where non-mandatory statements apply, NW Natural accepts those “should” sta orated in the Plan as “shall”, “will”, or “must” as appropriate.

187. Question Result, ID, References Sat, IM.QA.QARM.R, 192.947(d) (192.911(l))

Question Text *Do records demonstrate that the quality assurance process for risk management applications is being completed as required by ASME B31.8S-2004, Section 12?*

Assets Covered 88966 (1,879)

Result Notes Section 10.1 is record keeping requirements for QA process. Reviewed HCA and MCA identification records as a sampling.

188. Question Result, ID, References Sat, IM.QA.RECORDS.P, 192.947(a) (192.947(b), 192.947(c), 192.947(d), 192.947(e), 192.947(f), 192.947(g), 192.947(h), 192.947(i))

Question Text *Is the process adequate to assure that required records are maintained for the useful life of the pipeline?*

Assets Covered 88966 (1,879)

Result Notes 12.4 Program Documentation Requirements for the QA Process

NWN maintains the documentation listed in Section 10.1 of this plan as part of its permanent records.

189. Question Result, ID, References Sat, IM.QA.IMMOC.P, 192.911(k) (192.909(a), 192.909(b))

Question Text *Is the process for management of changes that may impact pipeline integrity adequate?*

Assets Covered 88966 (1,879)

Result Notes **Section 11 - Management of Change (MOC)**

Section 11.2.1 - Changes Tracked by the MOC Process

NW Natural recognizes that system changes can precipitate changes in the Integrity Management program, and conversely, results from the program can necessitate system changes. To the fullest extent possible, NW Natural uses existing company change processes to manage change in the organization (i.e., PRISM, Standard Practice, Project Systems [SAP Project controls]…). Change for the purpose of MOC is generally defined as a deviation from applicable and current Standard Practices, Engineering or Material Specifications, standard operating procedures, or equivalent.

Section 11.2.3 - MOC Documentation and Review

The Management of Change (MOC) Form shall be used to document changes to pipelines and facilities. The MOC form includes a detailed explanation of the situation precipitating the change, the condition before the change, condition after the change, and the justification for the change. The individual proposing the change typically fills out this form, although in some cases a member of the Integrity Management Group may fill out the form to document a change that affects the System Integrity Program. Completed MOC forms shall be filed in the IMG office files for the life of the pipeline system. See Appendix H for the MOC form and instructions for completing the form.

Appendix H – Management of Change (MOC) Report

BAP updates will conform to the Management of Change requirements described in section 11 and include the following information:

- Reason for the change.
- Authority for approving the change.
- Analysis of any implications.
- Communication of the change to the affected parties.

As new information is acquired, the company will incorporate any applicable data into the program in a timely and effective manner, as described in section 11, Management of Change.

190. Question Result, ID, References NA, IM.QA.IMMOC.R, 192.947(d) (192.909(a), 192.909(b), 192.911(k))

Question Text *Do records demonstrate that changes that may impact pipeline integrity are being managed as required?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. No MOC forms for Washington State since 2018.

191. Question Result, ID, References Sat, IM.QA.IMPERFEFECTIVE.P, 192.945(a) (192.913(b), 192.951)

Question Text *Does the process for measuring IM program effectiveness include the elements necessary to conduct a meaningful evaluation?*

Assets Covered 88966 (1,879)

Result Notes This is in Section 9 of the TIMP plan.

192. Question Result, ID, References Sat, IM.QA.IMPERFEFECTIVE.R, 192.947(d) (192.913(b), 192.945(a), 192.951)

Question Text *Do records demonstrate that the methods to measure Integrity Management Program effectiveness provide effective evaluation of program performance and result in program improvements where necessary?*

Assets Covered 88966 (1,879)

Result Notes Section 9.2 is threat specific performance measurements (Table 9-1). Data is contained in annual reports and damage prevention data.

193. Question Result, ID, References Sat, 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 88966 (1,879)

Result Notes Section 9.2 - Threat Specific Performance Measurements.

194. Question Result, ID, References Sat, IM.QA.IMPERFMETRIC.R, 192.947(d) (192.913(b), 192.945(a), 192.951)

Question Text *Do records demonstrate that performance metrics are providing meaningful insight into integrity management program performance?*

Assets Covered 88966 (1,879)

Result Notes Data is being evaluated annually in annual reports and damage prevention reviews. Leak data is also being analysed.

195. Question Result, ID, References Sat, IM.QA.RECORDS.R, 192.947(a) (192.947(b), 192.947(c), 192.947(d), 192.947(e), 192.947(f), 192.947(g), 192.947(h), 192.947(i))

Question Text *Are required records being maintained for the life of the pipeline?*

Assets Covered 88966 (1,879)

Documents Reviewed 1. Baseline Assesment Plan (Camas P-04)

Result Notes NWN provided an export from an original spreadsheet that it used in the development of the BAP. We also reviewed project documentation for the LaCamas station rebuild done after the last inspection performed in 2018 by the UTC.

Reviewed a copy of the BAP that included the P-04 Camas segment and the attached file is what was provided for NW Naturals BAP prioritized list for assessment. NW Natural explained that the BAP is a combination of the TIMP plan, the model that was provided for 2019 and 2020, and the assessment list.

IM.RA: Risk Analysis

196. Question Result, ID, References Sat, IM.RA.RADATA.P, 192.917(b) (192.917(e)(1), 192.911(k))

Question Text *Does the process include requirements to gather and integrate existing data and information on the entire pipeline that could be relevant to covered segments?*

Assets Covered 88966 (1,879)

Result Notes 3.2 Data Gathering and Integration - The Integrity Management Group gathers the data that could be relevant to each pipeline segment, including other covered and non-covered segments that have similar characteristics to the segment being evaluated.

197. Question Result, ID, References Sat, IM.RA.RAMETHOD.P, 192.917(c) (192.917(d))

Question Text *Does the process include requirements for a risk assessment that follows ASME B31.8S-2004, Section 5, and that considers the identified threats for each covered segment?*

Assets Covered 88966 (1,879)

Result Notes Section 3.3 - Risk Assessment

198. Question Result, ID, References: Sat, IM.RA.THREATID.R, 192.947(b) (192.917(a), 192.917(e), 192.913(b)(1))

Question Text: *Do records demonstrate that all potential threats to each covered pipeline segment have been identified and evaluated?*

Assets Covered: 88966 (1,879)

Result Notes: Reviewed Appendix A - Data Element / Threat Matrix. The 2019 and 2020 Risk Assessment were provided by the operator and reviewed.

199. Question Result, ID, References: NA, IM.RA.RADATA.R, 192.947(b) (192.917(b), 192.917(e)(1), 192.911(k))

Question Text: *Do records demonstrate that existing data and information on the entire pipeline that could be relevant to covered segments being adequately gathered and integrated?*

Assets Covered: 88966 (1,879)

Result Notes: No such event occurred, or condition existed, in the scope of inspection review. No changes or adjustments have been made since 2018 inspection.

200. Question Result, ID, References: Sat, IM.RA.THREATID.P, 192.917(a) (192.917(e), 192.913(b)(1))

Question Text: *Does the process include requirements to identify and evaluate all potential threats to each covered pipeline segment?*

Assets Covered: 88966 (1,879)

Result Notes: Section 3.1 - Threat identification (Table 3-1)

201. Question Result, ID, References: Sat, IM.RA.RAMETHOD.R, 192.947(b) (192.917(c), 192.917(d))

Question Text: *Do records demonstrate that the risk assessment follows ASME B31.8S-2004, Section 5, and considers the identified threats for each covered segment?*

Assets Covered: 88966 (1,879)

Result Notes: Reviewed Table 3-1, Integrity Threat Classifications. Follows ASME B31, Section 5.

The risk analysis models with algorithms and outputs for 2019 and 2020 were reviewed.

202. Question Result, ID, References: Sat, IM.RA.RAFACTORS.P, 192.917(c)

Question Text: *Does the process include requirements for factors that could affect the likelihood of a release, and for factors that could affect the consequences of potential releases, be accounted for and combined in an appropriate manner to produce a risk value for each pipeline segment?*

Assets Covered: 88966 (1,879)

Result Notes: Section 3.3.1 - Risk Assessment approaches

Seciton 3.3.2 - Risk Model Characteristics.

203. Question Result, ID, References: NA, IM.RA.RAFACTORS.R, 192.947(b) (192.917(c))

Question Text: *Do records demonstrate that risk analysis data is combined in an appropriate manner to produce a risk value for each pipeline segment?*

Assets Covered: 88966 (1,879)

Result Notes: No such relevant facilities/equipment existed in the scope of inspection review. There is only the P-04 segment in Washington.

204. Question Result, ID, References: Sat, IM.RA.RAMOC.P, 192.917(c)

Question Text: *Does the process provide for revisions to the risk assessment if new information is obtained or conditions change on the pipeline segments?*

Assets Covered: 88966 (1,879)

Result Notes: Section 3.3.3 contains this.

205. Question Result, ID, References: Sat, IM.RA.RAMOC.R, 192.947(b) (192.917(c))

Question Text: *Was the risk assessment revised as necessary as new information is obtained or conditions change on the pipeline segments?*

Assets Covered: 88966 (1,879)

Result Notes NW Natural provided Risk Analysis output from 2019 and 2020 containing the model and output for P-04 Camas. It is attached.

206. Question Result, ID, References Sat, IM.RA.RAMOC.O, 192.917(c)

Question Text *Are conditions on the pipeline segments accurately reflected in the appropriate risk assessment data and information?*

Assets Covered 88966 (1,879)

Result Notes Field verification were performed before this inspection. One area of particular review was the LaCamas Lake crossing. Several CP readings were also taken on this system.

PD.DP: Damage Prevention

207. Question Result, ID, References Sat, PD.DP.DPINFOGATHER.P, 192.917(b) (192.935(b)(1)(ii))

Question Text *Does the process require critical damage prevention information be gathered and recorded during pipeline patrols, leak surveys, and integrity assessments?*

Assets Covered 88966 (1,879)

Result Notes Table 9-1

Third-party damage

Number of leaks or failures caused by third-party damage

Number of leaks or failures caused by previously damaged pipe

Number of leaks or failures caused by vandalism

Number of repairs implemented as a result of third-party damage prior to a leak or failure

208. Question Result, ID, References Sat, PD.DP.DPINFOGATHER.R, 192.947(b) (192.917(b), 192.935(b)(1)(ii))

Question Text *Do records demonstrate that critical damage prevention information is being gathered and recorded during pipeline patrols, leakage surveys, and integrity assessments?*

Assets Covered 88966 (1,879)

Result Notes 1/1/2017 to 3/13/2020 Semi Annual Report was reviewed as well as the leak survey.

RPT.NR: Notices and Reporting

209. Question Result, ID, References Sat, RPT.NR.NOTIFYIMCHANGE.P, 192.909(b) (192.921(a)(7), 192.937(c)(7), 192.18)

Question Text *Is the process for notifying PHMSA and/or state/local authorities of significant changes to the Integrity Management Program adequate?*

Assets Covered 88966 (1,879)

Result Notes Section 14 contains this.

210. Question Result, ID, References NA, RPT.NR.NOTIFYIMCHANGE.R, 192.947(i) (192.909(b), 192.921(a)(7), 192.937(c)(7))

Question Text *Do records demonstrate that PHMSA and/or state/local authorities were notified of substantial or significant changes to the Integrity Management Program?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. NW Natural provides TIMP manual updates annually.

211. Question Result, ID, References Sat, RPT.NR.NOTIFYIMPRESS.P, 192.933(a)(1)

Question Text *Do processes require notifying PHMSA and/or state/local authorities: 1) if the schedule for evaluation and remediation required under paragraph 192.933(c) cannot be met and safety cannot be provided through temporary reduction in operating pressure or other action, and 2) when a pressure reduction exceeds 365 days?*

Assets Covered 88966 (1,879)

Result Notes Section 4.4.1 contains the pressure reduction and 365 time frame. Section 13 also provides pathways for communication.

212. Question Result, ID, References NA, RPT.NR.NOTIFYIMPRESS.R, 192.947(i) (192.933(a)(1))

Question Text *Do records demonstrate that PHMSA and/or state/local authorities were notified with the required information when one of the following occurred: 1) schedule for evaluation and remediation could not be met and safety could not be provided through a temporary reduction in operating pressure, or 2) when a pressure reduction exceeded 365 days?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

213. Question Result, ID, References NA, RPT.NR.IMDEVIATERPT.P, 192.913(b)(1)(vii)

Question Text *Is there a process for reporting integrity management program performance measures if deviating from certain IMP requirements (exceptional performance)?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. This was contained in Section 9, but was removed from this version.

214. Question Result, ID, References NA, RPT.NR.IMDEVIATERPT.R, 192.947(i) (192.913(b)(1)(vii))

Question Text *Do records demonstrate adequate reporting of integrity management program performance measures if deviating from certain IMP requirements (exceptional performance)?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

215. Question Result, ID, References Sat, RPT.NR.IMPERFRPT.P, 192.947(i) (192.945(a), 191.17, ASME B31.8S-2004 Appendix A Section 9.8)

Question Text *Is there a process for annual reporting of integrity management performance data?*

Assets Covered 88966 (1,879)

Result Notes This is contained in section 14.1

216. Question Result, ID, References Sat, RPT.NR.IMPERFRPT.R, 192.947(i) (192.945(a), 191.17, ASME B31.8S-2004 Appendix A Section 9.8)

Question Text *Do annual reports demonstrate that integrity management performance data were reported?*

Assets Covered 88966 (1,879)

TD.ATM: Atmospheric Corrosion

217. Question Result, ID, References Sat, TD.ATM.ATMCORRODE.P, 192.605(b)(2) (192.479(a), 192.479(b), 192.479(c))

Question Text *Does the process give adequate guidance identifying atmospheric corrosion and for protecting above ground pipe from atmospheric corrosion?*

Assets Covered 88966 (1,879)

Result Notes SPW 480, The FOM also contains this.

218. Question Result, ID, References Sat, TD.ATM.ATMCORRODE.R, 192.491(c) (192.479(a), 192.479(b), 192.479(c))

Question Text *Do records document the protection of above ground pipe from atmospheric corrosion?*

Assets Covered 88966 (1,879)

Result Notes 1/12018-1/15/2021 Camas Gate ATMS inspection. Bridge line inspections.

219. Question Result, ID, References Sat, TD.ATM.ATMCORRODEINSP.P, 192.605(b)(2) (192.481(a), 192.481(b), 192.481(c))

Question Text *Does the process give adequate instruction for the inspection of aboveground pipeline segments for atmospheric corrosion?*

Assets Covered 88966 (1,879)

Result Notes This is contained in the FOM. It can be referenced in OP 220-01.

220. Question Result, ID, References Sat, TD.ATM.ATMCORRODEINSP.R, 192.491(c) (192.481(a), 192.481(b), 192.481(c))

Question Text *Do records document inspection of aboveground pipe for atmospheric corrosion?*

Assets Covered 88966 (1,879)

221. Question Result, ID, References Sat, TD.ATM.ATMCORRODEINSP.O, 192.481(b) (192.481(c), 192.479(a), 192.479(b), 192.479(c))

Question Text *Is pipe that is exposed to atmospheric corrosion protected?*

Assets Covered 88966 (1,879)

TD.CPMONITOR: External Corrosion - CP Monitoring

222. Question Result, ID, References Sat, TD.CPMONITOR.MONITORCRITERIA.P, 192.605(b)(2) (192.463(a), 192.463(c))

Question Text *Does the process require CP monitoring criteria to be used that is acceptable?*

Assets Covered 88966 (1,879)

Result Notes SPW 463 or 465

223. Question Result, ID, References Sat, TD.CPMONITOR.CURRENTTEST.R, 192.491(c) (192.465(b))

Question Text *Do records document details of electrical checks of sources of rectifiers or other impressed current sources?*

Assets Covered 88966 (1,879)

Result Notes This record was looked at during this years Clark County inspection. Sam provided the record again to review during this inspection.

224. Question Result, ID, References NA, TD.CPMONITOR.MONITORCRITERIA.O, 192.465(a) (192.463(a))

Question Text *Are methods used for taking CP monitoring readings that allow for the application of appropriate CP monitoring criteria?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

225. Question Result, ID, References Sat, TD.CPMONITOR.MONITORCRITERIA.R, 192.491(c) (192.463(a))

Question Text *Do records document that the CP monitoring criteria used was acceptable?*

Assets Covered 88966 (1,879)

Result Notes CP records were reviewed from 2018 to 2021 and no readings more positive than -850mV were found. NW Natural is continuing to take more steps to account for IR drop. They stated that right now if a system cannot be interrupted, they place the 1/2 cell very close to the pipe to lessen the amount of IR drop.

226. Question Result, ID, References Sat, TD.CPMONITOR.TEST.P, 192.605(b)(2) (192.465(a))

Question Text *Does the process adequately describe how to monitor CP that has been applied to pipelines?*

Assets Covered 88966 (1,879)

Result Notes This is in SPW 465.

227. Question Result, ID, References Sat, 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 88966 (1,879)

Result Notes Records reviewed between 2018 and 2021 showed that the tests occurred at the required intervals.

228. Question Result, ID, References Sat, TD.CPMONITOR.CURRENTTEST.P, 192.605(b)(2) (192.465(b))

Question Text *Does the process give sufficient details for making electrical checks of rectifiers or impressed current sources?*

Assets Covered 88966 (1,879)

Result Notes This is contained in the FOM (https://fom.nwnatural.com/fom/Content/inspecting-and-testing-a-rectifier.htm) and the SPW 465 procedure 3.4 (Rectifier Survey) discusses the interval (NTE 2.5 months)

229. Question Result, ID, References NA, TD.CPMONITOR.CURRENTTEST.O, 192.465(b)

Question Text *Are impressed current sources properly maintained and are they functioning properly?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

230. Question Result, ID, References NA, TD.CPMONITOR.REVCURRENTTEST.P, 192.605(b)(2) (192.465(c))

Question Text *Does the process give sufficient details for making electrical checks of interference bonds, diodes, and reverse current switches?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. None on this pipeline.

231. Question Result, ID, References NA, TD.CPMONITOR.REVCURRENTTEST.R, 192.491(c) (192.465(c))

Question Text *Do records document details of electrical checks interference bonds, diodes, and reverse current switches?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

232. Question Result, ID, References NA, TD.CPMONITOR.REVCURRENTTEST.O, 192.465(c)

Question Text *Are interference bonds, diodes, and reverse current switches properly maintained and are they functioning properly?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

233. Question Result, ID, References Sat, TD.CPMONITOR.DEFICIENCY.P, 192.605(b)(2) (192.465(d))

Question Text *Does the process require that the operator promptly correct any identified deficiencies in corrosion control?*

Assets Covered 88966 (1,879)

Result Notes SPW 483 – Corrosion Control Remedial Action

3.1.2 Repair Schedule

Complete remedial action to correct any cathodic protection deficiencies known and indicated by any test, survey, or inspection as defined above:

• Within 90 days of discovery, or

• Within 120 days of discovery if more time is required due to circumstances beyond NW Natural's control, such as permitting issues, availability of repair materials, or unusually long investigation or repair requirements.

234. Question Result, ID, References NA, TD.CPMONITOR.DEFICIENCY.R, 192.491(c) (192.465(d))

Question Text *Do records adequately document actions taken to correct any identified deficiencies in corrosion control?*

Assets Covered 88966 (1,879)

Result Notes Records were reviewed that included the P-04 transmission line during the 2021 Clark County inspection, but no such event occurred, or condition existed, in the scope of inspection review.

235. Question Result, ID, References Sat, TD.CPMONITOR.TESTSTATION.P, 192.469

Question Text *Does the process contain provisions to assure that each pipeline has sufficient test stations or other contact points to determine the adequacy of cathodic protection?*

Assets Covered 88966 (1,879)

Result Notes SPW 469 Cathodic Protection Test Stations and Test Leads

3.1 Test Stations

Install test stations throughout the cathodically protected pipeline systems to ensure the effectiveness of the rectifier and anode circuits. Aboveground facilities such as regulator stations, blowdown stations, and service risers are acceptable sites to monitor cathodic protection levels if the aboveground facility is electrically continuous with the buried pipeline.

3.2 Test Leads

For new steel pipelines longer than 2,500 lineal feet, install test leads at approximately 2,500-foot intervals for monitoring and locating purposes. For difficult to access pipeline installations such as directional bores, install test leads as close as practical to the entrance and exit points of the bores.

236. Question Result, ID, References: Sat, TD.CPMONITOR.TESTSTATION.R, 192.469

Question Text: *Do records identify the location of test stations and show a sufficient number of test stations?*

Assets Covered: 88966 (1,879)

Result Notes: The operator showed an inventory of test site locations in Map Frame during this inspection.

237. Question Result, ID, References: Sat, TD.CPMONITOR.TESTSTATION.O, 192.469

Question Text: *Do cathodically protected pipelines have a sufficient number of test stations?*

Assets Covered: 88966 (1,879)

Result Notes: There are a sufficient number of test stations on the P-04 Camas line.

238. Question Result, ID, References: Sat, TD.CPMONITOR.TESTLEAD.P, 192.605(b)(2) (192.471(a), 192.471(b), 192.471(c))

Question Text: *Does the process provide adequate instructions for the installation of test leads?*

Assets Covered: 88966 (1,879)

Result Notes: The general procedure is contained in SPW 469 and the detailed procedure is located in the FOM at https://fom.nwnatural.com/fom/Content/typical-test-lead-installation-test-leads-only.htm?Highlight=test%20lead

239. Question Result, ID, References: Sat, TD.CPMONITOR.TESTLEAD.R, 192.491(c) (192.471(a), 192.471(b), 192.471(c))

Question Text: *Do records document that pipelines with cathodic protection have electrical test leads installed in accordance with requirements of Subpart I?*

Assets Covered: 88966 (1,879)

Result Notes: The test lead locations were shown in Map Frame.

240. Question Result, ID, References: Sat, TD.CPMONITOR.TESTLEAD.O, 192.471(a) (192.471(b), 192.471(c))

Question Text: *Do pipelines with cathodic protection have electrical test leads installed in accordance with requirements of Subpart I?*

Assets Covered: 88966 (1,879)

Result Notes: Test lead locations were verified during the transmission inspection and were recently checked during a facility inspection

241. Question Result, ID, References: Sat, TD.CPMONITOR.INTFRCURRENT.P, 192.605(b)(2) (192.473(a))

Question Text: *Does the operator have a program in place to minimize detrimental effects of interference currents on its pipeline system and does the process for designing and installing cathodic protection systems provide for the minimization of detrimental effects of interference currents on existing adjacent metallic structures?*

Assets Covered: 88966 (1,879)

Result Notes: SPW 455

3. POLICY

Cathodic protection systems, both impressed current and galvanic, must be designed and installed so as to minimize any adverse effects on existing adjacent underground metallic structures.

242. Question Result, ID, References: Sat, TD.CPMONITOR.INTFRCURRENT.R, 192.491(c) (192.473(a))

Question Text *Do records document an effective program is in place to minimize detrimental effects of interference currents and that detrimental effects of interference currents from CP systems on other underground metallic structures are minimized?*

Assets Covered 88966 (1,879)

Result Notes There are anodes that are used for current drainage on this line

243. Question Result, ID, References NA, TD.CPMONITOR.INTFRCURRENT.O, 192.473(a)

Question Text *Are areas of potential stray current identified, and if found, the detrimental effects of stray currents minimized?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

244. Question Result, ID, References Sat, TD.CP.RECORDS.P, 192.605(b)(2) (192.491(a), 192.491(b), 192.491(c)) (also presented in: TD.CP, TD.CPEXPOSED)

Question Text *Does the process include records requirements for the corrosion control activities listed in 192.491?*

Assets Covered 88966 (1,879)

Result Notes SPW 007 contains some requirements for records. TIMP Section 10.1 SPW 465 also contains the specific records related to .491.

3.6 Records 3.6.1 Corrosion control facility records and maps

1. Maintain records or maps to show the location of:

- Cathodically protected piping,
- Cathodic protection facilities,
- Galvanic anodes,
- Test stations,
- Rectifiers and ground beds, and
- Neighboring structures bonded to the cathodic protection system.

2. Retain these records and maps for as long as the pipeline remains in service.

245. Question Result, ID, References Sat, TD.CP.RECORDS.R, 192.491(a) (also presented in: TD.CP, TD.CPEXPOSED)

Question Text *Do records indicate the location of all items listed in 192.491(a)?*

Assets Covered 88966 (1,879)

Result Notes There is a layer in Map Frame that displays locations of casings, rectifiers, .etc

TD.CP: External Corrosion - Cathodic Protection

246. Question Result, ID, References Sat, TD.CP.POST1971.P, 192.605(b)(2) (192.455(a), 192.457(a), 192.452(a), 192.452(b))

Question Text *Does the process require that each buried or submerged pipeline installed after July 31, 1971, be protected against external corrosion with a cathodic protection system within 1 year after completion of construction, conversion to service, or becoming jurisdictional onshore gathering?*

Assets Covered 88966 (1,879)

Result Notes SPW 455 Section 4.1

247. Question Result, ID, References Sat, TD.CP.POST1971.R, 192.491(c) (192.455(a), 192.457(a), 192.452(a), 192.452(b))

Question Text *Do records document that each buried or submerged pipeline installed after July 31, 1971, has been protected against external corrosion with a cathodic protection system within 1 year after completion of construction, conversion to service, or becoming jurisdictional onshore gathering?*

Assets Covered 88966 (1,879)

Result Notes The P-04 Camas line CP records were reviewed during the Clark County 2021 inspection. There were no issues or low CP readings.

248. Question Result, ID, References Sat, TD.CP.PRE1971.P, 192.605(b)(2) (192.457(b))

Question Text *Does the process require that pipelines installed before August 1, 1971 (except for cast and ductile iron lines) which are 1) bare or ineffectively coated transmission lines or 2) bare or coated pipes in compressor, regulator or meter stations must be cathodically protected in areas where active corrosion is found?*

Assets Covered 88966 (1,879)

Result Notes This is contained in SPW 455 Section 4.2

249. Question Result, ID, References NA, TD.CP.PRE1971.R, 192.491(c) (192.457(b))

Question Text *Do records document that pipelines installed before August 1, 1971 (except for cast and ductile iron lines) which are 1) bare or ineffectively coated transmission lines or 2) bare or coated pipes in compressor, regulator or meter stations have been cathodically protected in areas where active corrosion was found?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. There are no bare or poorly coated transmission lines in Washington.

250. Question Result, ID, References NA, TD.CP.PRE1971.O, 192.457(b)

Question Text *Are bare or coated pipes in compressor, regulator or meter stations installed before August 1, 1971 (except for cast and ductile iron lines) cathodically protected in areas where active corrosion was found in accordance with Subpart I or Part 192?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

251. Question Result, ID, References Sat, TD.CP.UNPROTECT.P, 192.605(b)(2) (192.465(e))

Question Text *Does the process give sufficient direction for the monitoring of external corrosion on buried pipelines that are not protected by cathodic protection?*

Assets Covered 88966 (1,879)

Result Notes SPW 455

4.3 Review Process for Active Corrosion, Bare Mains and Services

1. Reevaluate possible areas of active corrosion on bare mains and services once every 3 calendar years, at intervals not exceeding 39 months. Cathodically protect or replace as necessary areas in which active corrosion is found. Determine active corrosion by electrical survey.

2. On distribution lines, and where an electrical survey is impractical on transmission lines, determine areas of active corrosion by other means that include:

• leakage survey,

• review and analysis of leak repair and inspection records,

• corrosion monitoring records,

• exposed pipe inspection records, and

• the pipeline environment

252. Question Result, ID, References NA, TD.CP.UNPROTECT.R, 192.491(c) (192.465(e))

Question Text *Do records adequately document the re-evaluation of non-cathodically protected buried pipelines for areas of active corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

253. Question Result, ID, References Sat, TD.CP.ELECISOLATE.P, 192.605(b)(2) (192.467(a), 192.467(b), 192.467(c), 192.467(d), 192.467(e))

Question Text *Does the process give adequate guidance for electrically isolating each buried or submerged pipeline from other metallic structures unless they electrically interconnect and cathodically protect the pipeline and the other structures as a single unit?*

Assets Covered 88966 (1,879)

Result Notes SPW 467. The field procedure is in the FOM.

254. Question Result, ID, References Sat, TD.CP.ELECISOLATE.R, 192.491(c) (192.467(a), 192.467(b), 192.467(c), 192.467(d), 192.467(e))

Question Text *Do records adequately document electrical isolation of each buried or submerged pipeline from other metallic structures unless they electrically interconnect and cathodically protect the pipeline and the other structures as a single unit?*

Assets Covered 88966 (1,879)

Result Notes The CP records reviewed for 2018 - 2021 demonstrated isolation from unprotected structures such as casings and other foreign metallic structures.

255. Question Result, ID, References NA, TD.CP.ELECISOLATE.O, 192.467(a) (192.467(b), 192.467(c), 192.467(d), 192.467(e))

Question Text *Are measures performed to ensure electrical isolation of each buried or submerged pipeline from other metallic structures unless they electrically interconnect and cathodically protect the pipeline and the other structures as a single unit?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

256. Question Result, ID, References Sat, TD.CP.CASINGINSPECT.P,

Question Text *Does the process give sufficient direction for conducting annual casing inspections to ensure electrical isolation from the pipeline?*

Assets Covered 88966 (1,879)

Result Notes **SPW 455 3.3 Casing Survey**

Test cathodically protected pipelines installed in steel casings once each calendar year, at intervals not to exceed 15 months, for:

• electrical isolation, and

• adequate levels of cathodic protection at the casing-to-pipeline interface, or as close to as practical.

Refer to SPW 467, External Corrosion Control: Electrical Isolation, for electrical isolation requirements.

SPW 467 3.2 Testing for Electrical Isolation of Metallic Pipe in Metallic Casings

3.2.1 Potential Survey The standard test for electrical isolation on casings is a comparison of the pipe-to-soil and the casing-to-soil potentials. If the two values are nearly identical or within 250 mV of each other, additional testing will be necessary.

257. Question Result, ID, References Sat, TD.CP.CASINGINSPECT.R,

Question Text *Do records indicate that annual casing inspections have been performed to ensure electrical isolation from the pipeline?*

Assets Covered 88966 (1,879)

Result Notes The P-04 Camas line CP records were reviewed during the Clark County 2021 inspection. There were no issues or low CP readings.

258. Question Result, ID, References NA, TD.CP.CASINGINSPECT.O,

Question Text *Are casings electrically isolated from the pipeline?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

259. Question Result, ID, References Sat, TD.CP.FAULTCURRENT.P, 192.605(b)(2) (192.467(f))

Question Text *Does the process give sufficient guidance for determining when protection against damage from fault currents or lightning is needed and how that protection must be installed?*

Assets Covered 88966 (1,879)

Result Notes SPW 467 3.1.1.2

260. Question Result, ID, References NA, TD.CP.FAULTCURRENT.R, 192.491(c) (192.467(f))

Question Text *Do records adequately document the installation and inspection of fault current and lightning protection?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

261. Question Result, ID, References NA, TD.CP.FAULTCURRENT.O, 192.467(f)

Question Text *Are fault current and lightning protection for the pipeline installed and inspected?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

262. Question Result, ID, References Sat, TD.CP.RECORDS.P, 192.605(b)(2) (192.491(a), 192.491(b), 192.491(c)) (also presented in: TD.CPMONITOR, TD.CPEXPOSED)

Question Text *Does the process include records requirements for the corrosion control activities listed in 192.491?*

Assets Covered 88966 (1,879)

Result Notes SPW 007 contains some requirements for records. TIMP Section 10.1 SPW 465 also contains the specific records related to .491.

3.6 Records 3.6.1 Corrosion control facility records and maps

1. Maintain records or maps to show the location of:

- Cathodically protected piping,
- Cathodic protection facilities,
- Galvanic anodes,
- Test stations,
- Rectifiers and ground beds, and
- Neighboring structures bonded to the cathodic protection system.

2. Retain these records and maps for as long as the pipeline remains in service.

263. Question Result, ID, References Sat, TD.CP.RECORDS.R, 192.491(a) (also presented in: TD.CPMONITOR, TD.CPEXPOSED)

Question Text *Do records indicate the location of all items listed in 192.491(a)?*

Assets Covered 88966 (1,879)

Result Notes There is a layer in Map Frame that displays locations of casings, rectifiers, .etc

TD.COAT: External Corrosion - Coatings

264. Question Result, ID, References Sat, TD.COAT.NEWPIPE.P, 192.605(b)(2) (192.455(a)(1), 192.461(a), 192.461(b), 192.483(a))

Question Text *Does the process require that each buried or submerged pipeline installed after July 31, 1971 be externally coated with a material that is adequate for underground service on a cathodically protected pipeline?*

Assets Covered 88966 (1,879)

Result Notes SPW 455 4.1

265. Question Result, ID, References NA, TD.COAT.NEWPIPE.R, 192.491(c) (192.455(a)(1), 192.461(a), 192.461(b), 192.483(a))

Question Text *Do records document that each buried or submerged pipeline installed after July 31, 1971 has been externally coated with a suitable coating material?*

Assets Covered 88966 (1,879)

Result Notes NWN has no transmission lines in Washington installed after 1971. However, the line is coated with a coal tar coating. Therefore, no such relevant facilities/equipment existed in the scope of inspection review.

266. Question Result, ID, References NA, TD.COAT.NEWPIPENOCOAT.R, 192.491(c) (192.455(b))

Question Text *If a buried or submerged pipeline installed after July 31, 1971 was not installed with an external protective coating do records provide adequate documentation why such a coating was not necessary to protect the pipe from external corrosion?*

Assets Covered 88966 (1,879)

Result Notes NWN has no transmission lines in Washington installed after 1971. However, the line is coated with a coal tar coating. Therefore, no such relevant facilities/equipment existed in the scope of inspection review.

267. Question Result, ID, References Sat, TD.COAT.NEWPIPEINSTALL.P, 192.605(b)(2) (192.461(c), 192.461(d), 192.461(e), 192.483(a))

Question Text *Does the process give adequate guidance for the application and inspection of protective coatings on pipe?*

Assets Covered 88966 (1,879)

Result Notes OP 132-01 is the OQ portion that references the FOM for application

268. Question Result, ID, References Sat, TD.COAT.NEWPIPEINSTALL.R, 192.491(c) (192.461(c), 192.461(d), 192.461(e), 192.483(a))

Question Text *Do records document that acceptable external protective coating materials have been used and the application and inspection was done in accordance with the written procedures?*

Assets Covered 88966 (1,879)

Result Notes Records reviewed were for the LaCamas project performed after the last 2018 TIMP program inspection. Wax tape is used to coat joints in many cases. Powercrete is also used if the application can be done under dry conditions. If the conditions are not suitable for epoxy type coatings, then wax tape is used.

269. Question Result, ID, References Sat, TD.COAT.COATAPPLY.O, 192.461(a) (192.461(c), 192.461(d), 192.461(e), 192.319(b), 192.483(a))

Question Text *Is protective coating adequately applied?*

Assets Covered 88966 (1,879)

Result Notes Coating and supports were checked at the LaCamas Lake crossing during a recent facility inspection.

TD.CPEXPOSED: External Corrosion - Exposed Pipe

270. Question Result, ID, References Sat, TD.CPEXPOSED.EXPOSEINSPECT.P, 192.605(b)(2) (192.459)

Question Text *Does the process require that exposed portions of buried pipeline be examined for external corrosion and coating deterioration, and if external corrosion is found, further examination is required to determine the extent of the corrosion?*

Assets Covered 88966 (1,879)

Result Notes SPW 459 3.1.1

271. Question Result, ID, References Sat, TD.CPEXPOSED.EXPOSEINSPECT.R, 192.491(c) (192.459)

Question Text *Do records adequately document that exposed buried piping was examined for corrosion and deteriorated coating?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. The LaCamas rebuild involved an EPCR 03628649. Coating was not removed

272. Question Result, ID, References NA, TD.CPEXPOSED.EXPOSEINSPECT.O, 192.459

Question Text *Is exposed buried piping examined for corrosion and deteriorated coating?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

273. Question Result, ID, References Sat, TD.CPEXPOSED.EXTCORRODEEVAL.P, 192.605(b)(2) (192.485(a), 192.485(b), 192.485(c))

Question Text *Does the process provide sufficient direction for personnel to evaluate the remaining strength of externally corroded pipe?*

Assets Covered 88966 (1,879)

Result Notes ASME/ANSI B31G-2012 - Determining the Remaining Strength of Corroded Pipelines

SPW 483 3.1.3

The FOM detail actual tool use. Measuring Wall Thickness of Steel pipes with an ultrasonic thickness tester

274. Question Result, ID, References NA, TD.CPEXPOSED.EXTCORRODEEVAL.R, 192.491(c) (192.485(a), 192.485(b), 192.485(c))

Question Text *Do records adequately document the evaluation of externally corroded pipe?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

275. Question Result, ID, References Sat, TD.CPEXPOSED.EXTCORRODREPAIR.P, 192.605(b)(2) (192.485(a), 192.485(b), 192.485(c))

Question Text *Does the process give sufficient guidance for personnel to repair or replace pipe that is externally corroded to an extent that there is not sufficient remaining strength in the pipe wall?*

Assets Covered 88966 (1,879)

Result Notes Sections 4.4.4, 4.5.1, 5.4.1 and Appendix L contain sufficient detail

276. Question Result, ID, References NA, TD.CPEXPOSED.EXTCORRODREPAIR.R, 192.491(c) (192.485(a), 192.485(b), 192.485(c))

Question Text *Do records document the repair or replacement of pipe that has been externally corroded to an extent that there is not sufficient remaining pipe wall strength?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

277. Question Result, ID, References Sat, TD.CP.RECORDS.P, 192.605(b)(2) (192.491(a), 192.491(b), 192.491(c)) (also presented in: TD.CPMONITOR, TD.CP)

Question Text *Does the process include records requirements for the corrosion control activities listed in 192.491?*

Assets Covered 88966 (1,879)

Result Notes SPW 007 contains some requirements for records. TIMP Section 10.1 SPW 465 also contains the specific records related to .491.

3.6 Records 3.6.1 Corrosion control facility records and maps

1. Maintain records or maps to show the location of:

- Cathodically protected piping,
- Cathodic protection facilities,
- Galvanic anodes,
- Test stations,
- Rectifiers and ground beds, and
- Neighboring structures bonded to the cathodic protection system.

2. Retain these records and maps for as long as the pipeline remains in service.

278. Question Result, ID, References Sat, TD.CP.RECORDS.R, 192.491(a) (also presented in: TD.CPMONITOR, TD.CP)

Question Text *Do records indicate the location of all items listed in 192.491(a)?*

Assets Covered 88966 (1,879)

Result Notes There is a layer in Map Frame that displays locations of casings, rectifiers, .etc

TD.ICP: Internal Corrosion - Preventive Measures

279. Question Result, ID, References Sat, TD.ICP.EXAMINE.P, 192.605(b)(2) (192.475(a), 192.475(b))

Question Text *Does the process direct personnel to examine removed pipe for evidence of internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes SPW 459 3.2

280. Question Result, ID, References NA, TD.ICP.EXAMINE.R, 192.491(c) (192.475(a), 192.475(b))

Question Text *Do records document examination of removed pipe for evidence of internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review. We reviewed the Lacamas project file and no transmission pipe was removed.

281. Question Result, ID, References NA, TD.ICP.EXAMINE.O, 192.475(a) (192.475(b))

Question Text *Is removed pipe examined for evidence of internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such activity/condition was observed during the inspection.

282. Question Result, ID, References Sat, TD.ICP.EVALUATE.P, 192.605(b)(2) (192.485(c))

Question Text *Does the process give sufficient guidance for personnel to evaluate the remaining strength of pipe that has been internally corroded?*

Assets Covered 88966 (1,879)

Result Notes SPW 459 contains this for internal and external.

283. Question Result, ID, References NA, TD.ICP.EVALUATE.R, 192.491(c) (192.485(c))

Question Text *Do records document adequate evaluation of internally corroded pipe?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

284. Question Result, ID, References Sat, TD.ICP.REPAIR.P, 192.491(c) (192.485(a), 192.485(b))

Question Text *Does the process give sufficient guidance for personnel to repair or replace pipe that has internally corroded to an extent that there is no longer sufficient remaining strength in the pipe wall?*

Assets Covered 88966 (1,879)

Result Notes Section 5 and Section L

285. Question Result, ID, References NA, TD.ICP.REPAIR.R, 192.485(a) (192.485(b))

Question Text *Do records document the repair or replacement of pipe that has been internally corroded to an extent that there is not sufficient remaining strength in the pipe wall?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

TD.ICCG: Internal Corrosion - Corrosive Gas

286. Question Result, ID, References Sat, TD.ICCG.CORRGAS.P, 192.605(b)(2) (192.475(a))

Question Text *Does the process require that the corrosive effect of the gas in the pipeline be investigated and if determined to be corrosive, steps be taken to minimize internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes Section 4.6 adresses this.

287. Question Result, ID, References NA, TD.ICCG.CORRGAS.R, 192.491(c) (192.475(a))

Question Text *Do the records demonstrate that the corrosive effect of the gas in the pipeline has been investigated and if determined to be corrosive, steps be taken to minimize internal corrosion?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

288. Question Result, ID, References NA, TD.ICCG.CORRGASACTION.P, 192.605(b)(2) (192.477)

Question Text *Does the process give adequate direction for actions to be taken if corrosive gas is being transported by pipeline?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review.

289. Question Result, ID, References NA, TD.ICCG.CORRGASACTION.R, 192.491(c) (192.477)

Question Text *Do records document the actions taken when corrosive gas is being transported by pipeline?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

290. Question Result, ID, References NA, TD.ICCG.CORRGASACTION.O, 192.477

Question Text *Are adequate actions taken when corrosive gas is being transported by pipeline?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

TD.SP: Special Permits

291. Question Result, ID, References NA, TD.SP.CONDITIONS.P, 190.341(d)(2)

Question Text *Has a process been developed as necessary for complying with the special permit conditions?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

292. Question Result, ID, References NA, TD.SP.CONDITIONS.R, 190.341(d)(2)

Question Text *Do records demonstrate compliance with all special permit or waiver requirements?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

293. Question Result, ID, References NA, TD.SP.CONDITIONS.O, 190.341(d)(2)

Question Text *Are special permit requirements being complied with?*

Assets Covered 88966 (1,879)

Result Notes No such event occurred, or condition existed, in the scope of inspection review.

TD.SCC: Stress Corrosion Cracking

294. Question Result, ID, References Sat, TD.SCC.SCCIM.P, 192.911(c) (192.917(a)(1))

Question Text *Does the integrity management program have a process to identify and evaluate stress corrosion cracking threats to each covered pipeline segment?*

Assets Covered 88966 (1,879)

Result Notes 4.11 and Page 4-31 contains this information.

295. Question Result, ID, References NA, TD.SCC.SCCIM.R, 192.947(d) (192.917(a)(1))

Question Text *Do integrity management program records document results of studies to identify and evaluate stress corrosion cracking threats to each covered pipeline segment?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. The P-04 line does not meet the SCC susceptibility criteria.

296. Question Result, ID, References NA, TD.SCC.SCCREPAIR.R, 192.709(a) (192.703(b))

Question Text *Do records document that the operator has properly remediated any occurrences of SCC?*

Assets Covered 88966 (1,879)

Result Notes No such relevant facilities/equipment existed in the scope of inspection review. The P-04 line does not meet the SCC susceptibility criteria.

TQ.QUIM: Qualification of Personnel - Specific Requirements (IM)

297. Question Result, ID, References: Sat, TQ.QUIM.IMREVIEWQUAL.P, 192.915(a) (192.915(b), 192.915(c), 192.935(b))

Question Text: *Does the process require that operator/vendor personnel (including supervisors and persons responsible for preventive and mitigative measures), who review and evaluate results meet acceptable qualification standards?*

Assets Covered: 88966 (1,879)

Result Notes: 12.6 Personnel Qualification and Training Requirements 12-2

12.6.1 NW Natural Integrity Management Staff Qualifications 12-2

12.6.2 Integrity Management Contractor Qualifications 12-3

298. Question Result, ID, References: Sat, TQ.QUIM.IMREVIEWQUAL.R, 192.947(e) (192.915(a), 192.915(b), 192.915(c), 192.935(b)(1)(i), 192.947(d))

Question Text: *Do records indicate adequate qualification of integrity management personnel?*

Assets Covered: 88966 (1,879)

Result Notes: Julius Samson's CV was reviewed by DR in 2018. Scott Lundgren is the Integrity Management manager. He is a PE and keeps up his CEUs. Julius and Ryan Van Gorden are NACE Level IIs.

299. Question Result, ID, References: Sat, TQ.QUIM.IMQC.P, 192.805(b) (ASME B31.8S-2004, Section 12.2(b)(4), 192.935(b)(1)(i), 192.907(b), 192.911(l))

Question Text: *Does the process require personnel who execute IM program activities to be competent and qualified in accordance with the quality control plan in accordance with ASME B31.8S-2004, Section 12.2(b)(4)?*

Assets Covered: 88966 (1,879)

Result Notes: **12.4 Program Documentation Requirements for the QA Process**

NW Natural maintains the documentation listed in Section 10.1 of this plan as part of its permanent records.

12.5 Integrity Management Program Reviews

The Transmission Integrity Management Program plan shall be reviewed once each calendar year for code compliance and appropriateness. Subject matter experts may be called upon to make recommendations for improvement to the manual. Regulatory audits will be reviewed to evaluate if the content of the manual needs updating as well. The reviews are performed to determine the appropriateness and adequacy of the policy used in normal operation and maintenance during pipeline integrity tasks.

New or revised contents require the approval of the Integrity Management Manager or designee. As part of that review, the Integrity Management Group:

• Evaluates necessary program documentation,

• Reviews the qualifications and lines of reporting of personnel making decisions and performing integrity management activities,

• Reviews the choices of performance measures for each integrity management activity to make sure that the performance measures accurately and thoroughly track the effectiveness of the activities,

• As applicable, reviews current vendor records to make sure that vendors are maintaining NW Natural standards for documentation, operator qualification, and other quality issues.

Report Parameters: Results: all

Except as required to be disclosed by law, any inspection documentation, including completed protocol forms, summary reports, executive summary reports, and enforcement documentation are for internal use only by federal or state pipeline safety regulators. Some inspection documentation may contain information which the operator considers to be confidential. In addition, supplemental inspection guidance and related documents in the file library are also for internal use only by federal or state pipeline safety regulators (with the exception of

documents published in the federal register, such as advisory bulletins). Do not distribute or otherwise disclose such material outside of the state or federal pipeline regulatory organizations. Requests for such information from other government organizations (including, but not limited to, NTSB, GAO, IG, or Congressional Staff) should be referred to PHMSA Headquarters Management.