

Inspection Output (IOR)

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Inspection Information

Inspection Name	7847 MCCHORD CRM	Operator(s)	MCCHORD PIPELINE CO. (31049)	Plan Submitted	10/17/2019
Status	PLANNED	Lead	Lex Vinsel	Plan Approval	10/22/2019 by Joe Subsits
Start Year	2019	Team Members	Anthony Dorrough	All Activity Start	11/05/2019
System Type	HL	Supervisor	Joe Subsits	All Activity End	11/06/2019
Protocol Set ID	HL.2019.01	Director		Inspection Submitted	--
				Inspection Approval	--

Inspection Summary

This liquid control room inspection took place on Nov 6, 2019. Staff reviewed control room process and procedure records at their US Oil Refinery location in Tacoma. Staff observed and asked questions of individuals in the control room onsite. No violations or areas of concern were noted during the inspection.

Scope (Assets)

#	Short Label	Long Label	Asset Type	Asset IDs	Excluded Topics	Planned	Required	Total Inspected	Required % Complete
1.	McChord CRM	McChord Pipeline Co	unit	--	Offshore GOM Reg Rural Gather Rural Low Stress Crosses Nav. Abandoned	170	170	170	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.	McChord CRM	n/a	CR	P, R, O, S	Detail	

Plan Implementations

Activity #	Activity Name	SMART Act#	Start Date	End Date	Focus Directives	Involved Groups/Subgroups	Qst Assets	Qst Type(s)	Planned	Required	Total Inspected	Required % Complete
1.	McChord CRM	--	11/05/2019	11/06/2019	n/a	all planned questions	all assets	all types	170	170	170	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	McChord CRM	STARTED	--	McChord CRM	--

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Results (all values, 170 results)

174 (instead of 170) results are listed due to re-presentation of questions in more than one sub-group.

CR.CRMGEN: General

1. Question Result, ID, References [Sat, CR.CRMGEN.CRMCRITERIA.P, 195.446\(a\)](#)
Question Text *Do procedures adequately address the process and criteria that determine which facilities are determined to be control rooms?*
Assets Covered [McChord CRM](#)
Result Notes [Section D-17 Maintenance Manual](#)
2. Question Result, ID, References [Sat, CR.CRMGEN.CRMMGMT.P, 195.446\(a\)](#)
Question Text *Are CRM procedures formalized and controlled?*
Assets Covered [McChord CRM](#)
Result Notes [See Operations Manual](#)
3. Question Result, ID, References [Sat, CR.CRMGEN.CRMIMPLEMENT.R, 195.446\(a\)](#)
Question Text *Were procedures approved, in place, and implemented on or before the regulatory deadline?*
Assets Covered [McChord CRM](#)
4. Question Result, ID, References [Sat, CR.CRMGEN.CRMPROCLOCATION.O, 195.446\(a\)](#)
Question Text *Are procedures readily available to controllers in the control room?*
Assets Covered [McChord CRM](#)

CR.CRMRR: Roles and Responsibilities

5. Question Result, ID, References [Sat, CR.CRMRR.RESPONSIBLE.P, 195.446\(b\)\(1\)](#)
Question Text *Are there clear processes to describe each controller's physical domain of responsibility for pipelines and other facility assets?*
Assets Covered [McChord CRM](#)
6. Question Result, ID, References [Sat, CR.CRMRR.QUALCONTROL.P, 195.446\(b\)\(1\)](#)
Question Text *Are there provisions in place to assure that only qualified individuals may assume control at any console/desk?*
Assets Covered [McChord CRM](#)
7. Question Result, ID, References [Sat, CR.CRMRR.DOMAINCHANGE.P, 195.446\(b\)\(1\)](#)
Question Text *If the physical domain of responsibility periodically changes, has a clear process been established to describe the conditions for when such a change occurs?*
Assets Covered [McChord CRM](#)
Result Notes [OPS Section 2-6](#)
8. Question Result, ID, References [Sat, CR.CRMRR.RESPCHANGE.P, 195.446\(b\)\(1\)](#)
Question Text *Do processes address a controller's role during temporary impromptu (unplanned) changes in controller responsibilities?*
Assets Covered [McChord CRM](#)
9. Question Result, ID, References [Sat, CR.CRMRR.COMMANDVERIFY.P, 195.446\(b\)\(1\)](#)
Question Text *Do the defined roles and responsibilities require controllers to stay at the console to verify all SCADA commands that have been initiated are fulfilled, and that commands given via verbal communications are acknowledged before leaving the console for any reason?*

Assets Covered [McChord CRM](#)

10. Question Result, ID, References [Sat, CR.CRMRR.AUTHORITYABNORMAL.P, 195.446\(b\)\(2\)](#)
Question Text *Have processes been established to define the controllers' authority and responsibilities when an abnormal operating condition is detected?*
Assets Covered [McChord CRM](#)
Result Notes [Section II 1.4](#)
11. Question Result, ID, References [Sat, CR.CRMRR.PRESSLIMITS.O, 195.446\(b\)\(2\)](#)
Question Text *Are controllers aware of the current MOPs of all pipeline segments for which they are responsible, and have they been assigned the responsibility to maintain those pipelines at or below the MOP?*
Assets Covered [McChord CRM](#)
12. Question Result, ID, References [Sat, CR.CRMRR.AUTHORITYEMERGENCY.P, 195.446\(b\)\(3\)](#)
Question Text *Do processes define the controllers' authority and responsibility to make decisions, take actions, and communicate with others upon being notified of, or upon detection of, and during, an emergency or if a leak or rupture is suspected?*
Assets Covered [McChord CRM](#)
13. Question Result, ID, References [Sat, CR.CRMRR.EVACUATION.P, 195.446\(b\)\(3\)](#)
Question Text *Do processes specifically address the controller's responsibilities in the event the control room must be evacuated?*
Assets Covered [McChord CRM](#)
Result Notes [Section II 4.5](#)
14. Question Result, ID, References [Sat, CR.CRMRR.COMMSYSFAIL.P, 195.446\(b\)\(3\)](#)
Question Text *Do processes specifically address the controller's responsibilities in the event of a SCADA system or data communications system failure impacting large sections of the controller's domain of responsibility?*
Assets Covered [McChord CRM](#)
15. Question Result, ID, References [Sat, CR.CRMRR.HANDOVER.P, 195.446\(b\)\(4\) \(195.446\(c\)\(5\)\)](#)
Question Text *Have processes been established for the hand-over of responsibility that specify the type of information to be communicated to the oncoming shift?*
Assets Covered [McChord CRM](#)
Result Notes [Section II 2.6](#)
16. Question Result, ID, References [Sat, CR.CRMRR.HANDOVER.O, 195.446\(b\)\(4\) \(195.446\(c\)\(5\)\)](#)
Question Text *Do observations indicate adequate hand-over of responsibility to the oncoming shift?*
Assets Covered [McChord CRM](#)
17. Question Result, ID, References [Sat, CR.CRMRR.HANDOVERDOC.P, 195.446\(b\)\(4\) \(195.446\(c\)\(5\)\)](#)
Question Text *Do processes require that records document the hand-over of responsibility, document the time the actual hand-over of responsibility occurs, and the key information and topics that were communicated during the hand-over?*
Assets Covered [McChord CRM](#)
18. Question Result, ID, References [Sat, CR.CRMRR.HANDOVERDOC.R, 195.446\(b\)\(4\) \(195.446\(c\)\(5\)\)](#)
Question Text *Are there records that document the hand-over of responsibility, document the time the actual hand-over of responsibility occurs, and the key information and topics that were communicated during the hand-over?*
Assets Covered [McChord CRM](#)
Result Notes [Verified copy of document dated 10/22/2019](#)
19. Question Result, ID, References [Sat, CR.CRMRR.HANDOVEROVERLAP.P, 195.446\(b\)\(4\)](#)

- Question Text *Do processes require the controllers to discuss recent and impending important activities ensuring adequate overlap?*
Assets Covered **McChord CRM**
20. Question Result, ID, References **Sat, CR.CRMRR.HANDOVERALTERNATIVE.P, 195.446(b)(4)**
Question Text *When a controller is unable to continue or assume responsibility for any reason, do the shift hand-over processes include alternative shift hand-over actions that specifically address this situation?*
Assets Covered **McChord CRM**
21. Question Result, ID, References **Sat, CR.CRMRR.UNATTENDCONSOLE.P, 195.446(b)(4)**
Question Text *Has the operator established an adequate process for occasions when the console is left temporarily unattended for any reason?*
Assets Covered **McChord CRM**
22. Question Result, ID, References **Sat, CR.CRMRR.CONSOLECOVERAGE.P, 195.446(b)(4)**
Question Text *Do processes maintain adequate console coverage during shift hand-over?*
Assets Covered **McChord CRM**
23. Question Result, ID, References **NA, CR.CRMRR.OTHERAUTHORITYDISALLOW.P, 195.446(b)(5)**
Question Text *Do processes disallow others to have authority to direct or supersede the specific technical actions of a controller?*
Assets Covered **McChord CRM**
Result Notes **No such activity/condition was observed during the inspection.**
24. Question Result, ID, References **NA, CR.CRMRR.OTHERAUTHORITYDISALLOW.R, 195.446(b)(5)**
Question Text *Do records indicate that the policy disallowing others to have authority to direct or supersede the specific technical actions of a controller has been communicated to controllers and others?*
Assets Covered **McChord CRM**
Result Notes **No such activity/condition was observed during the inspection.**
25. Question Result, ID, References **NA, CR.CRMRR.OTHERAUTHORITYDISALLOW.O, 195.446(b)(5)**
Question Text *Are controllers aware of, and can reference, processes that disallow others to have authority to direct or supersede the specific technical actions of a controller?*
Assets Covered **McChord CRM**
Result Notes **No such activity/condition was observed during the inspection.**
26. Question Result, ID, References **Sat, CR.CRMRR.OTHERAUTHORITYQUAL.P, 195.446(b)(5)**
Question Text *Does the process result in identification of required qualification elements for those authorized to direct or supersede the technical actions of a controller that are sufficient for those individuals to understand the implications of the scope of potential actions?*
Assets Covered **McChord CRM**
27. Question Result, ID, References **NA, CR.CRMRR.OTHERAUTHORITYQUAL.R, 195.446(b)(5)**
Question Text *Do records indicate that others given authority to direct or supersede the specific technical actions of a controller were qualified?*
Assets Covered **McChord CRM**
Result Notes **No such activity/condition was observed during the inspection.**
28. Question Result, ID, References **Sat, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.P, 195.446(b)(5)**
Question Text *Is the process defined with respect to the details of how those authorized to direct or supersede the technical actions of a controller are to implement their authority?*
Assets Covered **McChord CRM**

29. Question Result, ID, References **Sat, CR.CRMRR.OTHERAUTHORITYLIST.R, 195.446(b)(5)**
 Question Text *Is a list of individuals with authority to direct or supersede the technical actions of a controller readily available to controllers?*
 Assets Covered **McChord CRM**
30. Question Result, ID, References **Sat, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.R, 195.446(b)(5)**
 Question Text *Do records adequately document occurrences of when others authorized to direct or supersede the technical actions of a controller have done so?*
 Assets Covered **McChord CRM**
31. Question Result, ID, References **Sat, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.O, 195.446(b)(5)**
 Question Text *Do others authorized to direct or supersede the technical actions of a controller demonstrate an understanding of the process to implement this authority?*
 Assets Covered **McChord CRM**
 Result Notes **Individuals responsible are the shift supervisors.**

CR.SCADA: Supervisory Control and Data Acquisition

32. Question Result, ID, References **Sat, CR.SCADA.SYSTEMMOC.P, 195.446(c)(1)**
 Question Text *Do processes clearly define the types of changes to the SCADA system(s) that constitute additions, expansions, or replacements under the meaning of the CRM rule?*
 Assets Covered **McChord CRM**
33. Question Result, ID, References **Sat, CR.SCADA.DISPLAYCONFIG.P, 195.446(c)(1)**
 Question Text *Are there written processes to implement the API RP 1165 display standards to the SCADA systems that have been added, expanded, or replaced since August 1, 2012?*
 Assets Covered **McChord CRM**
34. Question Result, ID, References **Sat, CR.SCADA.1165HUMANFACTORS.O, 195.446(c)(1)**
 Question Text *Has section 4 of API RP 1165 regarding human factors engineering been implemented?*
 Assets Covered **McChord CRM**
35. Question Result, ID, References **Sat, CR.SCADA.DISPLAYHARDWARE.R, 195.446(c)(1)**
 Question Text *Has section 5 of API RP 1165 regarding display hardware been implemented?*
 Assets Covered **McChord CRM**
36. Question Result, ID, References **Sat, CR.SCADA.DISPLAYLAYOUT.R, 195.446(c)(1)**
 Question Text *Has section 6 of API RP 1165 regarding display layout and organization been implemented?*
 Assets Covered **McChord CRM**
37. Question Result, ID, References **Sat, CR.SCADA.DISPLAYNAVIGATION.R, 195.446(c)(1)**
 Question Text *Has section 7 of API RP 1165 regarding display navigation been implemented?*
 Assets Covered **McChord CRM**
38. Question Result, ID, References **Sat, CR.SCADA.DISPLAYOBJECTS.O, 195.446(c)(1)**
 Question Text *Has section 8 of API RP 1165 regarding display object characteristics been implemented?*
 Assets Covered **McChord CRM**
39. Question Result, ID, References **Sat, CR.SCADA.DISPLAYDYNAMICS.R, 195.446(c)(1)**
 Question Text *Has section 9 of API RP 1165 regarding display object dynamics been implemented?*
 Assets Covered **McChord CRM**

40. Question Result, ID, References **Sat, CR.SCADA.CONTROLSELECTION.R, 195.446(c)(1)**
 Question Text *Has section 10 of API RP 1165 control selection and techniques been implemented?*
 Assets Covered **McChord CRM**
41. Question Result, ID, References **Sat, CR.SCADA.ADMINISTRATION.R, 195.446(c)(1)**
 Question Text *Has section 11 of API RP 1165 administration been implemented?*
 Assets Covered **McChord CRM**
42. Question Result, ID, References **NA, CR.SCADA.1165IMPRACTICAL.R, 195.446(c)(1)**
 Question Text *If any/all applicable paragraph(s) of API RP 1165 have not been implemented, has it been demonstrated and documented that the unimplemented provisions are impractical for the SCADA system used?*
 Assets Covered **McChord CRM**
 Result Notes **No such activity/condition was observed during the inspection.**
43. Question Result, ID, References **Sat, CR.SCADA.SETPOINT.P, 195.446(c)(2) (195.406(b))**
 Question Text *Does the process adequately define safety-related points?*
 Assets Covered **McChord CRM**
44. Question Result, ID, References **Sat, CR.SCADA.SETPOINT.R, 195.446(c)(2)**
 Question Text *Do records indicate safety-related points have been adequately implemented?*
 Assets Covered **McChord CRM**
45. Question Result, ID, References **Sat, CR.SCADA.POINTVERIFY.P, 195.446(c)(2)**
 Question Text *Are there adequate processes to define and identify the circumstances which require a point-to-point verification?*
 Assets Covered **McChord CRM**
46. Question Result, ID, References **Sat, CR.SCADA.POINTVERIFY.R, 195.446(c)(2)**
 Question Text *Have required point-to-point verifications been performed?*
 Assets Covered **McChord CRM**
 Result Notes **Verified, viewed doc from 2018**
47. Question Result, ID, References **Sat, CR.SCADA.POINTVERIFYEXTENT.P, 195.446(c)(2)**
 Question Text *Are there adequate processes for the thoroughness of the point-to-point verification?*
 Assets Covered **McChord CRM**
48. Question Result, ID, References **Sat, CR.SCADA.POINTVERIFYEXTENT.R, 195.446(c)(2)**
 Question Text *Do records demonstrate adequate thoroughness of the point-to-point verification?*
 Assets Covered **McChord CRM**
49. Question Result, ID, References **Sat, CR.SCADA.POINTVERFIYINTVL.P, 195.446(c)(2)**
 Question Text *Is there an adequate process for defining when the point-to-point verification must be completed?*
 Assets Covered **McChord CRM**
50. Question Result, ID, References **Sat, CR.SCADA.POINTVERFIYINTVL.R, 195.446(c)(2)**
 Question Text *Do records indicate the point-to-point verification has been completed at the required intervals?*
 Assets Covered **McChord CRM**
51. Question Result, ID, References **Sat, CR.SCADA.POINTVERIFY.O, 195.446(c)(2)**
 Question Text *Are point-to-point verifications performed adequately when required?*

Assets Covered **McChord CRM**

52. Question Result, ID, References **Sat, CR.SCADA.COMMPLAN.P, 195.446(c)(3)**

Question Text *Has an internal communication plan been established and implemented that is adequate to manually operate the pipeline during a SCADA failure/outage?*

Assets Covered **McChord CRM**

Result Notes **OPS manual section 4 - Abnormal operations**

53. Question Result, ID, References **NA, CR.SCADA.COMMPLAN.R, 195.446(c)(3)**

Question Text *Has the internal communication plan been tested and verified for manual operation of the pipeline safely at least once each calendar year but at intervals not exceeding 15 months?*

Assets Covered **McChord CRM**

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

54. Question Result, ID, References **Sat, CR.SCADA.BACKUPSCADA.O, 195.446(c)(4)**

Question Text *Is there a backup SCADA system?*

Assets Covered **McChord CRM**

Result Notes **McChord has a redundant server to back-up their SCADA system.**

55. Question Result, ID, References **Sat, CR.SCADA.BACKUPSCADADEV.P, 195.446(c)(4)**

Question Text *Has the use of the backup SCADA system for development work been defined?*

Assets Covered **McChord CRM**

56. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADATEST.P, 195.446(c)(4)**

Question Text *Is the backup SCADA system required to be tested at least once each calendar year at intervals not to exceed 15 months?*

Assets Covered **McChord CRM**

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

57. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADATEST.R, 195.446(c)(4)**

Question Text *Is the backup SCADA system tested at least once each calendar year at intervals not to exceed 15 months?*

Assets Covered **McChord CRM**

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

58. Question Result, ID, References **Sat, CR.SCADA.BACKUPSCADAVERIFY.P, 195.446(c)(4)**

Question Text *Are there adequate processes in place for decision-making and internal communications to successfully implement a transition from primary SCADA to backup SCADA, and back to primary SCADA?*

Assets Covered **McChord CRM**

59. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADAVERIFY.R, 195.446(c)(4)**

Question Text *Does the testing verify that there are adequate processes in place for decision-making and internal communications to successfully implement a transition from primary SCADA to backup SCADA, and back to primary SCADA?*

Assets Covered **McChord CRM**

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

60. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADADEQUACY.R, 195.446(c)(4)**

Question Text *If the back-up SCADA system is not designed to handle all the functionality of the main SCADA system, does the testing determine whether there are adequate procedures in place to account for displaced and/or different available functions during back-up operations?*

Assets Covered **McChord CRM**

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

61. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADATRANSFER.P, 195.446(c)(4)**
 Question Text *Do processes adequately address and test the logistics of transferring control to a backup control room?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**
62. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADARETURN.P, 195.446(c)(4)**
 Question Text *Do procedures adequately address and test the logistics of returning operations back to the primary control room?*
 Assets Covered **McChord CRM**
 Result Notes **No such activity/condition was observed during the inspection.**
63. Question Result, ID, References **NA, CR.SCADA.BACKUPSCADAFUNCTIONS.R, 195.446(c)(4)**
 Question Text *Is a representative sampling of critical functions in the back-up SCADA system being tested to ensure proper operation in the event the backup system is needed?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**
64. Question Result, ID, References **NA, CR.SCADA.SCADAOVERPRESSTESTBO.P, 195.428(b)** (also presented in: FS.TS)
 Question Text *Does the process adequately test applicable SCADA controlled overpressure protection devices on pressurized breakout tanks?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**
65. Question Result, ID, References **NA, CR.SCADA.SCADAOVERPRESSTESTBO.R, 195.404(a)(vii) (195.404(c)(3), 195.428(b))** (also presented in: FS.TS)
 Question Text *Do records indicate adequate inspection and testing of SCADA overpressure protection devices on pressurized breakout tanks?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**
66. Question Result, ID, References **NA, CR.SCADA.SCADAOVERFILL.P, 195.428(d) (195.446(b), 195.446(c))** (also presented in: FS.TS)
 Question Text *Is an adequate process/procedure in place for testing applicable SCADA controlled overfill protection devices?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**
67. Question Result, ID, References **NA, CR.SCADA.SCADAOVERFILL.R, 195.404(a)(vii) (195.404(c)(3), 195.428(d))** (also presented in: FS.TS)
 Question Text *Do records indicate adequate inspection and testing of SCADA overfill protection systems?*
 Assets Covered **McChord CRM**
 Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**

CR.CRMFM: Fatigue Management

68. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEMITIGATION.P, 195.446(d)**
 Question Text *Does the fatigue mitigation process or procedures (plan) identify operator-specific fatigue risks?*
 Assets Covered **McChord CRM**
 Result Notes **Admin A-2**
69. Question Result, ID, References **Sat, CR.CRMFM.FATIGUERISKS.P, 195.446(d)**
 Question Text *Does the fatigue mitigation plan adequately address how the program reduces the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**

70. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEQUANTIFY.P, 195.446(d)**
 Question Text *Do processes require that the potential contribution of controller fatigue to incidents and accidents be quantified during investigations?*
 Assets Covered **McChord CRM**
71. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEMANAGER.P, 195.446(d)**
 Question Text *Is there a designated fatigue risk manager who is responsible and accountable for managing fatigue risk and fatigue countermeasures, and someone (perhaps the same person) that is authorized to review and approve HOS emergency deviations?*
 Assets Covered **McChord CRM**
72. Question Result, ID, References **Sat, CR.CRMFM.SHIFTLENGTH.R, 195.446(d)(1)**
 Question Text *Is the scheduled shift length less than or equal to 12 hours (not including shift hand-over) or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?*
 Assets Covered **McChord CRM**
73. Question Result, ID, References **Sat, CR.CRMFM.SHIFTLENGTHTIME.R, 195.446(d)(1)**
 Question Text *Does the operator factor in all time the individual is working for the company when establishing shift lengths and schedule rotations or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?*
 Assets Covered **McChord CRM**
74. Question Result, ID, References **Sat, CR.CRMFM.SCHEDULEDTIMEOFF.R, 195.446(d)(1)**
 Question Text *Are all scheduled periods of time off at least one hour longer than 8 hours plus commute time or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?*
 Assets Covered **McChord CRM**
75. Question Result, ID, References **NA, CR.CRMFM.ONCALLCONTROLLER.P, 195.446(d)**
 Question Text *For controllers who are on call, do processes minimize interrupting the required 8 hours of continuous sleep or require a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?*
 Assets Covered **McChord CRM**
 Result Notes **No such activity/condition was observed during the inspection.**
76. Question Result, ID, References **NA, CR.CRMFM.ONCALLCONTROLLER.R, 195.446(d)(1)**
 Question Text *For controllers who are on call, does the operator minimize interrupting the required 8 hours of continuous sleep or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?*
 Assets Covered **McChord CRM**
 Result Notes **No such requirement existed in the scope of inspection review.**
77. Question Result, ID, References **Sat, CR.CRMFM.MAXHOS.P, 195.446(d)(4)**
 Question Text *Do processes limit the maximum HOS limit in any sliding 7-day period to no more than 65 hours or is there a documented technical basis to show reduction of the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**
78. Question Result, ID, References **Sat, CR.CRMFM.MINTIMEOFF.P, 195.446(d)(4)**
 Question Text *After reaching the HOS limit in any sliding 7-day period, is the minimum time off at least 35 hours or is there a documented technical basis to show a reduction of the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**

79. Question Result, ID, References **Sat, CR.CRMFM.DOCSCCHEDULE.P, 195.446(d)(4)**
 Question Text *Is there a formal system to document all scheduled and unscheduled HOS worked, including overtime and time spent performing duties other than control room duties?*
 Assets Covered **McChord CRM**
80. Question Result, ID, References **NA, CR.CRMFM.DAYSOFF.P, 195.446(d)(4)**
 Question Text *For normal business hour type operations (i.e., five days per week), are no more than five days worked in succession before at least two days off?*
 Assets Covered **McChord CRM**
 Result Notes **No such activity/condition was observed during the inspection.**
81. Question Result, ID, References **NA, CR.CRMFM.WORKHOURS.R, 195.446(d)(4)**
 Question Text *For normal business hour type operations (i.e., five days per week), do records indicate shift start times no earlier than 6:00 a.m. and shift end times no later than 7:00 p.m.?*
 Assets Covered **McChord CRM**
 Result Notes **No such activity/condition was observed during the inspection.**
82. Question Result, ID, References **Sat, CR.CRMFM.FATIGUECOUNTERMEASURES.P, 195.446(d)(4)**
 Question Text *For shifts longer than 8 hours, have specific fatigue countermeasures been implemented for the ninth and beyond hours?*
 Assets Covered **McChord CRM**
83. Question Result, ID, References **Sat, CR.CRMFM.DAILYHOSLIMIT.P, 195.446(d)(4)**
 Question Text *Do processes limit the daily maximum HOS limit to no more than 14 hours in any sliding 24-hour period?*
 Assets Covered **McChord CRM**
84. Question Result, ID, References **Sat, CR.CRMFM.CONTROLLERNUMBERS.O, 195.446(d)(4)**
 Question Text *Do operations include a sufficient number of qualified controllers?*
 Assets Covered **McChord CRM**
85. Question Result, ID, References **Sat, CR.CRMFM.OFFDUTYHOURS.P, 195.446(d)(4)**
 Question Text *Do processes ensure that controllers are provided with at least thirty-five (35) continuous off-duty hours when limits are reached following the most recent 35-hour (minimum) off-duty rest period or is there a documented technical basis to show that the maximum limit on controller HOS is adequate to reduce the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**
86. Question Result, ID, References **Sat, CR.CRMFM.SHIFTHOLDOVER.P, 195.446(d)(4)**
 Question Text *Does the shift holdover process conform to shift holdover guidelines or is there a documented technical basis to show that the maximum limit on controller HOS is adequate to reduce the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**
87. Question Result, ID, References **Sat, CR.CRMFM.SPECIFICCOUNTERMEASURES.P, 195.446(d)(4)**
 Question Text *Do processes require specific fatigue countermeasures during applicable time periods, or is there a documented technical basis to show that the maximum limit on controller HOS is adequate to reduce the risk associated with controller fatigue?*
 Assets Covered **McChord CRM**
88. Question Result, ID, References **Sat, CR.CRMFM.HOSDEVIATIONS.P, 195.446(d)(4)**
 Question Text *Is there a formal process for approving deviations from the maximum HOS limits?*
 Assets Covered **McChord CRM**

89. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEEDUCATE.P, 195.446(d)(2) (195.446(d)(3))**
 Question Text *Does the program require that fatigue education/training is required for all controllers and control room supervisors?*
 Assets Covered **McChord CRM**
90. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEEDUCATE.R, 195.446(d)(2) (195.446(d)(3))**
 Question Text *Is periodic fatigue education/training documented for all controllers and control room supervisors?*
 Assets Covered **McChord CRM**
91. Question Result, ID, References **Sat, CR.CRMFM.FATIGUEREVIEW.P, 195.446(d)(2) (195.446(d)(3), 195.402(a))**
 Question Text *Do processes require that the effectiveness of the fatigue education/training program be reviewed at least once each calendar year, not to exceed 15 months?*
 Assets Covered **McChord CRM**
92. Question Result, ID, References **Sat, CR.CRMFM.FATIGUESTRATEGY.P, 195.446(d)(2)**
 Question Text *Does fatigue education address fatigue mitigation strategies (countermeasures)?*
 Assets Covered **McChord CRM**
93. Question Result, ID, References **Sat, CR.CRMFM.OFFDUTY.P, 195.446(d)(2)**
 Question Text *Does fatigue education address how off-duty activities contribute to fatigue?*
 Assets Covered **McChord CRM**
94. Question Result, ID, References **Sat, CR.CRMFM.FATIGUECONTENT.P, 195.446(d)(3)**
 Question Text *Is the content of fatigue training adequate for training controllers and supervisors to recognize the effects of fatigue?*
 Assets Covered **McChord CRM**
95. Question Result, ID, References **Sat, CR.CRMFM.FATIGUECONTENT.R, 195.446(d)(3)**
 Question Text *Has controller and supervisor training to recognize the effects of fatigue been documented?*
 Assets Covered **McChord CRM**

CR.CRMAM: Alarm Management

96. Question Result, ID, References **Sat, CR.CRMAM.ALARM.P, 195.446(e)**
 Question Text *Is the alarm management plan a formal process that specifically identifies critical topical areas included in the program?*
 Assets Covered **McChord CRM**
 Result Notes **Admin A-5**
97. Question Result, ID, References **Sat, CR.CRMAM.ALARMMALFUNCTION.P, 195.446(e)(1)**
 Question Text *Is there a process to identify and correct inaccurate or malfunctioning alarms?*
 Assets Covered **McChord CRM**
98. Question Result, ID, References **Sat, CR.CRMAM.ALARMREVIEW.P, 195.446(e)(1)**
 Question Text *Does the review of safety-related alarms account for different alarm designs and all alarm types/priorities?*
 Assets Covered **McChord CRM**
 Result Notes **Admin A-5**
99. Question Result, ID, References **NA, CR.CRMAM.CONTROLLERPERFORMANCE.P, 195.446(h) (195.446(e)(1))**

Question Text *Does the review of safety-related alarms account for console differences that could affect individual-specific controller qualification and performance?*

Assets Covered **McChord CRM**

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

100. Question Result, ID, References **NA, CR.CRMAM.STALEDATA.P, 195.446(e)(1)**

Question Text *Does the review of safety-related alarms include specific procedures and practices for managing stale or unreliable data?*

Assets Covered **McChord CRM**

Result Notes

- No such relevant facilities/equipment existed in the scope of inspection review.**

101. Question Result, ID, References **Sat, CR.CRMAM.MONTHLYANALYSIS.P, 195.446(e)(2)**

Question Text *Do processes require the monthly identification, recording, review, and analysis of points that have been taken off scan, have had alarms inhibited, generated false alarms, or that have had forced or manual values for periods of time exceeding that required for associated maintenance or operating activities?*

Assets Covered **McChord CRM**

Result Notes **Section 5.1**

102. Question Result, ID, References **Sat, CR.CRMAM.PROBLEMCORRECTION.P, 195.446(e)(2)**

Question Text *Does the alarm management plan include a process for promptly correcting identified problems and for returning these points to service?*

Assets Covered **McChord CRM**

103. Question Result, ID, References **NA, CR.CRMAM.ALARMVERIFY.R, 195.446(e)(2)**

Question Text *Do records verify that monthly reviews and analysis of alarm points have been performed?*

Assets Covered **McChord CRM**

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

104. Question Result, ID, References **Sat, CR.CRMAM.ALARMSETPOINTS.P, 195.446(e)(3)**

Question Text *Is there a formal process to determine the correct alarm setpoint values and alarm descriptions?*

Assets Covered **McChord CRM**

Result Notes **Section 5.5**

105. Question Result, ID, References **NA, CR.CRMAM.SETTINGCONTROL.P, 195.446(e)(3)**

Question Text *Have procedures been established to clearly address how and to what degree controllers can change alarm limits or setpoints, or inhibit alarms, or take points off-scan?*

Assets Covered **McChord CRM**

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

106. Question Result, ID, References **NA, CR.CRMAM.VERIFICATION.P, 195.446(e)(3)**

Question Text *Do processes require that any calibration or change to field instruments require verification of alarm setpoints and alarm descriptions?*

Assets Covered **McChord CRM**

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

107. Question Result, ID, References **Sat, CR.CRMAM.ALARMVALUEVERIFY.R, 195.446(e)(3)**

Question Text *Do records demonstrate verification of correct safety-related alarm set-point values and alarm descriptors when associated field instruments are calibrated or changed and at least once each calendar year, but at intervals not to exceed 15 months?*

Assets Covered **McChord CRM**

108. Question Result, ID, References **Sat, CR.CRMAM.PLANREVIEW.P, 195.446(e)(4)**

Question Text *Are there processes to review the alarm management plan at least once each calendar year, but at intervals not exceeding 15 months, in order to determine the effectiveness of the plan?*

Assets Covered **McChord CRM**

Result Notes **Section 5.5**

109. Question Result, ID, References **Sat, CR.CRMAM.PLANREVIEW.R, 195.446(e)(4)**

Question Text *Do records indicate review of the alarm management plan at least once each calendar year, but at intervals not exceeding 15 months, in order to determine the effectiveness of the plan?*

Assets Covered **McChord CRM**

110. Question Result, ID, References **Sat, CR.CRMAM.WORKLOAD.P, 195.446(e)(5)**

Question Text *Does the CRM program have a means of identifying and measuring the work load (content and volume of general activity) being directed to an individual controller?*

Assets Covered **McChord CRM**

111. Question Result, ID, References **Sat, CR.CRMAM.WORKLOADMONITORING.P, 195.446(e)(5)**

Question Text *Is the process of monitoring and analyzing general activity comprehensive?*

Assets Covered **McChord CRM**

Result Notes **Reviewed - document**

112. Question Result, ID, References **Sat, CR.CRMAM.CONTROLLERREACTION.P, 195.446(e)(5)**

Question Text *Does the process have a means of determining that the controller has sufficient time to analyze and react to incoming alarms?*

Assets Covered **McChord CRM**

Result Notes **Admin A-5.6**

113. Question Result, ID, References **Sat, CR.CRMAM.PERFORMANCEANALYSIS.R, 195.446(e)(5)**

Question Text *Has an analysis been performed to determine if controller(s) performance is currently adequate?*

Assets Covered **McChord CRM**

114. Question Result, ID, References **Sat, CR.CRMAM.DEFICIENCIES.P, 195.446(e)(6)**

Question Text *Is there a process to address how deficiencies found in implementing 195.446(e)(1) through 195.446(e)(5) will be resolved?*

Assets Covered **McChord CRM**

115. Question Result, ID, References **NA, CR.CRMAM.DEFICIENCIES.R, 195.446(e)(6)**

Question Text *Do records indicate deficiencies found in implementing 195.446(e)(1) through 195.446(e)(5) have been resolved?*

Assets Covered **McChord CRM**

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

CR.CRMCMGT: Change Management

116. Question Result, ID, References **Sat, CR.CRMCMGT.CHANGEMEETINGS.P, 195.446(f)(1)**

Question Text *Is there a process to mandate a control room representative will participate in meetings where changes that could directly or indirectly affect control room operations (including routine maintenance and repairs) are being considered, designed and implemented?*

Assets Covered **McChord CRM**

117. Question Result, ID, References **NA, CR.CRMCMGT.CHANGETRAINING.R, 195.446(f)(1)**

Question Text *Before implementing changes, do records indicate controllers were provided with notification and training to assure their ability to safely incorporate the proposed change into operations?*

Assets Covered **McChord CRM**

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

118. Question Result, ID, References Sat, CR.CRMCMGT.EMERGENCYCONTACT.P, 195.446(f)(2)
Question Text *Is there a process requiring field personnel and SCADA support personnel to contact the control room when emergency conditions exist?*
Assets Covered McChord CRM
119. Question Result, ID, References Sat, CR.CRMCMGT.CHANGECOORDINATION.P, 195.446(f)(1)
Question Text *Does the process assure changes in field equipment (for example, moving a valve) that could affect control room operations are coordinated with control room personnel?*
Assets Covered McChord CRM
120. Question Result, ID, References NA, CR.CRMCMGT.CHANGECOORDINATION.R, 195.446(f)(1)
Question Text *Do records indicate that changes in field equipment (for example, moving a valve) that could affect control room operations were coordinated with control room personnel?*
Assets Covered McChord CRM
Result Notes No such event occurred, or condition existed, in the scope of inspection review.
121. Question Result, ID, References Sat, CR.CRMCMGT.FIELDCONTACT.P, 195.446(f)(2)
Question Text *Does the process require field personnel and SCADA support personnel to contact the control room when making field changes (for example, moving a valve) that affect control room operations?*
Assets Covered McChord CRM
122. Question Result, ID, References NA, CR.CRMCMGT.FIELDCHANGES.R, 195.446(f)(2)
Question Text *Do records indicate field personnel and SCADA support personnel contacted the control room when making field changes (for example, moving a valve) that affect control room operations?*
Assets Covered McChord CRM
Result Notes No such event occurred, or condition existed, in the scope of inspection review.

CR.CRMEXP: Operating Experience

123. Question Result, ID, References Sat, CR.CRMEXP.REPORTABLEACCIDENTREVIEW.P, 195.446(g)(1)
Question Text *Is there a formal, structured approach for reviewing and critiquing reportable events to identify lessons learned?*
Assets Covered McChord CRM
124. Question Result, ID, References NA, CR.CRMEXP.REPORTABLEACCIDENTREVIEW.R, 195.446(g)(1)
Question Text *Do records indicate reviews of reportable events specifically analyzed all contributing factors to determine if control room actions contributed to the event, and corrected any deficiencies?*
Assets Covered McChord CRM
Result Notes No such event occurred, or condition existed, in the scope of inspection review.
125. Question Result, ID, References Sat, CR.CRMEXP.LESSONSLEARNED.P, 195.446(g)(2) (195.446(b)(5))
Question Text *Does the program require training on lessons learned from a broad range of events (reportable incidents/accidents, near misses, leaks, operational and maintenance errors, etc.), even though the control room may not have been at fault?*
Assets Covered McChord CRM
126. Question Result, ID, References Sat, CR.CRMEXP.LESSONSLEARNED.R, 195.446(g)(2) (195.446(b)(5))
Question Text *Has operating experience review training been conducted on lessons learned from a broad range of events (reportable incidents/accidents, near misses, leaks, operational and maintenance errors, etc.)?*
Assets Covered McChord CRM
Result Notes Third party incident 2017 - facilitated adding Appendix 15

CR.CRMTRAIN: Training

127. Question Result, ID, References [Sat, CR.CRMTRAIN.CONTROLLERTRAIN.P, 195.446\(h\)](#)
Question Text *Has a controller training program been established to provide training for each controller to carry out their roles and responsibilities?*
Assets Covered [McChord CRM](#)
128. Question Result, ID, References [Sat, CR.CRMTRAIN.CONTROLLERTRAIN.R, 195.446\(h\)](#)
Question Text *Has a controller training program been implemented to provide training for each controller to carry out their roles and responsibilities?*
Assets Covered [McChord CRM](#)
129. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAININGREVIEW.P, 195.446\(h\)](#)
Question Text *Have processes been established to review the controller training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months?*
Assets Covered [McChord CRM](#)
Result Notes [Admin B-1.6](#)
130. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAININGREVIEW.R, 195.446\(h\)](#)
Question Text *Have processes been implemented to review the controller training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months?*
Assets Covered [McChord CRM](#)
Result Notes [Third Party damage incident in 2017- served as a training opportunity](#)
131. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAININGCONTENT.R, 195.446\(h\)](#)
Question Text *Does training content address all required material, including training each controller to carry out the roles and responsibilities that were defined by the operator?*
Assets Covered [McChord CRM](#)
132. Question Result, ID, References [Sat, CR.CRMTRAIN.AOCLIST.R, 195.446\(h\)\(1\)](#)
Question Text *Has a list of the abnormal operating conditions that are likely to occur simultaneously or in sequence been established?*
Assets Covered [McChord CRM](#)
133. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAININGABNORMAL.P, 195.446\(h\)\(1\)](#)
Question Text *Does the training program provide controller training on recognizing and responding to abnormal operating conditions that are likely to occur simultaneously or in sequence?*
Assets Covered [McChord CRM](#)
134. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAINING.R, 195.446\(h\)\(2\)](#)
Question Text *Does the training program use a simulator or tabletop exercises to train controllers how to recognize and respond to abnormal operating conditions?*
Assets Covered [McChord CRM](#)
Result Notes [McChord uses table top exercises and scenarios within teams](#)
135. Question Result, ID, References [Sat, CR.CRMTRAIN.TRAINING.O, 195.446\(h\)\(2\)](#)
Question Text *Does the training program use a simulator or tabletop exercises to train controllers how to recognize and respond to abnormal operating conditions?*
Assets Covered [McChord CRM](#)
136. Question Result, ID, References [Sat, CR.CRMTRAIN.COMMUNICATIONTRAINING.P, 195.446\(h\)\(3\)](#)
Question Text *Does the CRM program train controllers on their responsibilities for communication under the operator's emergency response procedures?*

Assets Covered **McChord CRM**

137. Question Result, ID, References **Sat, CR.CRMTRAIN.SYSKNOWLEDGE.P, 195.446(h)(4)**
Question Text *Does the training program provide controllers a working knowledge of the pipeline system, especially during the development of abnormal operating conditions?*
Assets Covered **McChord CRM**
138. Question Result, ID, References **Sat, CR.CRMTRAIN.INFREQOPSLIST.R, 195.446(h)(5)**
Question Text *Has a list of pipeline operating setups that are periodically (but infrequently) used been established?*
Assets Covered **McChord CRM**
139. Question Result, ID, References **Sat, CR.CRMTRAIN.INFREQOPSREVIEW.P, 195.446(h)(5)**
Question Text *Do processes specify that, for pipeline operating set-ups that are periodically (but infrequently) used, the controllers must be provided an opportunity to review relevant procedures in advance of their use?*
Assets Covered **McChord CRM**
140. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINPERSONNEL.P, 195.446(h)(6)**
Question Text *Do processes establish who, regardless of location, operationally collaborates with control room personnel?*
Assets Covered **McChord CRM**
141. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINFREQ.P, 195.446(h)(6)**
Question Text *Do processes define the frequency of new and recurring team training?*
Assets Covered **McChord CRM**
142. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINCOMPLETE.P, 195.446(h)(6)**
Question Text *Do processes address all operational modes and operational collaboration/control?*
Assets Covered **McChord CRM**
143. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINEXPERIENCE.P, 195.446(h)(6)**
Question Text *Do processes include incorporation of lessons learned from actual historical events and other oil-gas industry events?*
Assets Covered **McChord CRM**
144. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINEXERCISE.R, 195.446(h)(6)**
Question Text *Do records indicate that training exercises were adequate and involved at least one qualified controller?*
Assets Covered **McChord CRM**
Result Notes **Reviewed 2017 third party damage incident**
145. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINEXERCISE.O, 195.446(h)(6)**
Question Text *Does implementation of a control room team exercise demonstrate performance in accordance with regulatory and process requirements?*
Assets Covered **McChord CRM**
146. Question Result, ID, References **Sat, CR.CRMTRAIN.TEAMTRAINIDENTINDIVIDUAL.R, 195.446(h)(6)**
Question Text *Do records demonstrate that individuals identified as of January 23, 2018 received team training by January 23, 2019?*
Assets Covered **McChord CRM**

CR.CRMCOMP: Compliance Validation and Deviations

147. Question Result, ID, References **Sat, CR.CRMCOMP.SUBMITPROCEDURES.P, 195.446(i)**

Question Text *Are there adequate processes to assure that the operator is responsive to requests from applicable agencies to submit their CRM procedures?*

Assets Covered **McChord CRM**

148. Question Result, ID, References **Sat, CR.CRMCOMP.SUBMITPROCEDURES.R, 195.446(i)**

Question Text *Has the operator been responsive to requests from applicable agencies to submit their CRM procedures?*

Assets Covered **McChord CRM**

149. Question Result, ID, References **Sat, CR.CRMCOMP.CRMCOORDINATOR.R, 195.446(i)**

Question Text *Is there an individual that is responsible and accountable for compliance with requests from PHMSA or other applicable agencies?*

Assets Covered **McChord CRM**

150. Question Result, ID, References **Sat, CR.CRMCOMP.RECORDS.P, 195.446(j)(1)**

Question Text *Are records management processes adequate to assure records are sufficient to demonstrate compliance with the CRM rule?*

Assets Covered **McChord CRM**

151. Question Result, ID, References **Sat, CR.CRMCOMP.RECORDS.R, 195.446(j)(1)**

Question Text *Are records sufficient to demonstrate compliance with the CRM rule?*

Assets Covered **McChord CRM**

152. Question Result, ID, References **Sat, CR.CRMCOMP.ELECTRONICRECORDS.R, 195.446(j)(1)**

Question Text *Are electronic records properly stored, safeguarded, and readily retrievable?*

Assets Covered **McChord CRM**

153. Question Result, ID, References **Sat, CR.CRMCOMP.DEVIATIONS.P, 195.446(j)(2)**

Question Text *Are there processes to demonstrate and provide a documented record that every deviation from any CRM rule requirement was necessary for safe operation?*

Assets Covered **McChord CRM**

154. Question Result, ID, References **NA, CR.CRMCOMP.DEVIATIONS.R, 195.446(j)(2)**

Question Text *Were all deviations documented in a way that demonstrates they were necessary for safe operation?*

Assets Covered **McChord CRM**

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

CR.LD: Leak Detection

155. Question Result, ID, References **Sat, CR.LD.LDSYS.R, 195.446(g) (195.452(i)(3))**

Question Text *Do records demonstrate the operator has identified, considered, or implemented leak detection measures to mitigate the consequences of a pipeline failure?*

Assets Covered **McChord CRM**

156. Question Result, ID, References **Sat, CR.LD.CPMOUTPUT.P, 195.402(a) (195.446(b))**

Question Text *What is the output of the CPM System?*

Assets Covered **McChord CRM**

157. Question Result, ID, References **NA, CR.LD.ALARMLOOP.P, 195.402(a) (195.446(c), 195.446(e))**

Question Text *Is automatic closed-loop control response to alarm conditions used?*

Assets Covered **McChord CRM**

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

158. Question Result, ID, References **Sat, CR.LD.CPM.P, 195.402(a) (195.444, 195.446(b), 195.446(c))**
 Question Text *If Computational Pipeline Monitoring (CPM) is used, does it comply with guidance in API 1130 requirements in operating, maintaining, testing, record-keeping, and dispatcher training?*
 Assets Covered **McChord CRM**
159. Question Result, ID, References **Sat, CR.LD.CPMTRAINING.P, 195.444 (API-1130, 195.505(h))**
 Question Text *Are the Pipeline Controllers trained in the recognition of CPM alarms?*
 Assets Covered **McChord CRM**
160. Question Result, ID, References **Sat, CR.LD.CPMTRAINING.O, 195.444 (API-1130, 195.505(h))**
 Question Text *Are the Pipeline Controllers trained in the recognition of CPM alarms?*
 Assets Covered **McChord CRM**
161. Question Result, ID, References **Sat, CR.LD.ALARMDISPLAY.P, 195.444 (API-1130)**
 Question Text *Are alarms in compliance with Section 5.4.3 of API 1130?*
 Assets Covered **McChord CRM**
162. Question Result, ID, References **Sat, CR.LD.ALARMCRED.P, 195.444 (API-1130, 195.134, 195.446(e))**
 Question Text *Do alarms conform to API-1130?*
 Assets Covered **McChord CRM**
163. Question Result, ID, References **Sat, CR.LD.LDSTEST.P, 195.444 (API-1130, 195.134)**
 Question Text *Does testing of the LDS conform to API-1130?*
 Assets Covered **McChord CRM**
164. Question Result, ID, References **Sat, CR.LD.LDSTESTINITIAL.P, 195.134 (API-1130)**
 Question Text *Does initial testing of the LDS conform to API-1130?*
 Assets Covered **McChord CRM**
165. Question Result, ID, References **Sat, CR.LD.LDSTESTINITIAL.R, 195.134 (API-1130)**
 Question Text *Have initial system testing records and results been retained/available and indicate adequate results?*
 Assets Covered **McChord CRM**
 Result Notes **Reviewed meter calibration for 7/29/2011**
166. Question Result, ID, References **Sat, CR.LD.LDSMOC.P, 195.444 (API-1130, 195.134)**
 Question Text *Are parameter and/or system changes reflected in the leak detection system?*
 Assets Covered **McChord CRM**
167. Question Result, ID, References **Sat, CR.LD.LDSCADA.P, 195.134 (API-1130, 195.444, 195.446(c))**
 Question Text *Are the LDS data, communication, and controller interface appropriately integrated with the SCADA displays?*
 Assets Covered **McChord CRM**
168. Question Result, ID, References **Sat, CR.LD.LDSINSTRUMENT.P, 195.444 (API-1130, 195.134)**
 Question Text *Is the accuracy and calibration of field instrumentation used in the leak detection system appropriately assured?*
 Assets Covered **McChord CRM**
169. Question Result, ID, References **Sat, CR.LD.LDSINSTRUMENT.R, 195.444 (API-1130, 195.446(j))**
 Question Text *Do records indicate the calibration of field instrumentation used in the leak detection system was performed?*

Assets Covered **McChord CRM**
Result Notes **Meter calibration for 7/9/2019**

170. Question Result, ID, References **Sat, CR.LD.CPMPROTECT.P, 195.402(a)**
Question Text *Is the CPM system adequately protected from security threats?*
Assets Covered **McChord CRM**

FS.TS: Tanks and Storage

171. Question Result, ID, References **NA, CR.SCADA.SCADAOVERFILL.P, 195.428(d) (195.446(b), 195.446(c))** (also presented in: CR.SCADA)
Question Text *Is an adequate process/procedure in place for testing applicable SCADA controlled overfill protection devices?*
Assets Covered **McChord CRM**
Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**

172. Question Result, ID, References **NA, CR.SCADA.SCADAOVERFILL.R, 195.404(a)(vii) (195.404(c)(3), 195.428(d))** (also presented in: CR.SCADA)
Question Text *Do records indicate adequate inspection and testing of SCADA overfill protection systems?*
Assets Covered **McChord CRM**
Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**

173. Question Result, ID, References **NA, CR.SCADA.SCADAOVERPRESSTESTBO.P, 195.428(b)** (also presented in: CR.SCADA)
Question Text *Does the process adequately test applicable SCADA controlled overpressure protection devices on pressurized breakout tanks?*
Assets Covered **McChord CRM**
Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**

174. Question Result, ID, References **NA, CR.SCADA.SCADAOVERPRESSTESTBO.R, 195.404(a)(vii) (195.404(c)(3), 195.428(b))** (also presented in: CR.SCADA)
Question Text *Do records indicate adequate inspection and testing of SCADA overpressure protection devices on pressurized breakout tanks?*
Assets Covered **McChord CRM**
Result Notes **No such relevant facilities/equipment existed in the scope of inspection review.**

Report Parameters: Results: all

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