CRM, SCADA, and Leak Detection - General

*** 1. Control Room Management Criteria (detail)** *Does the process adequately address criteria by which the operator determines which of its facilities are control rooms?* (CR.CRMGEN.CRMCRITERIA.P) (detail)

192.631(a)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Control Room Management (detail)** *Are CRM procedures formalized and controlled?* (CR.CRMGEN.CRMMGMT.P) (detail)

192.631(a)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Control Room Management (detail)** *Were procedures approved, in place, and implemented on or before the regulatory deadline?* (CR.CRMGEN.CRMIMPLEMENT.R) (detail)

192.631(a)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Control Room Management (detail)** *Are procedures readily available to controllers in the control room?* (CR.CRMGEN.CRMPROCLOCATION.O) (detail)

192.631(a)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Roles and Responsibilities

*** 1. Roles and Responsibilities (detail)** *Are there clear processes to describe each controller's physical domain of responsibility for pipelines and other facility assets?* (CR.CRMRR.RESPONSIBLE.P) (detail)

192.631(b)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Roles and Responsibilities (detail)** *Are there provisions in place to assure that only qualified individuals may assume control at any console/desk?* (CR.CRMRR.QUALCONTROL.P) (detail)

192.631(b)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Roles and Responsibilities (detail)** *If the physical domain of responsibility periodically changes, has a clear process been established to describe the conditions for when such a change occurs?* (CR.CRMRR.DOMAINCHANGE.P) (detail)

192.631(b)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Controller Authority (Abnormal Operations) (detail)** *Have processes been established to define the controllers' authority and responsibilities when an abnormal operating condition is detected?* (CR.CRMRR.AUTHORITYABNORMAL.P) (detail)

192.631(b)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. Roles and Responsibilities (detail)** *Do processes address a controller's role during temporary impromptu (unplanned) changes in controller responsibilities?* (CR.CRMRR.RESPCHANGE.P) (detail)

192.631(b)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. Roles and Responsibilities (detail)** *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?* (CR.CRMRR.COMMANDVERIFY.P) (detail)

192.631(b)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. Overpressure Limits (detail)** *Are controllers aware of the current MAOPs of all pipeline segments for which they are responsible, and have they been assigned the responsibility to maintain those pipelines at or below the MAOP?* (CR.CRMRR.PRESSLIMIT.O) (detail)

192.631(b)(2) (192.619(a); 192.631(e)(1))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. Controller Authority (Emergency Operations) (detail)** *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?* (CR.CRMRR.AUTHORITYEMERGENCY.P) (detail)

192.631(b)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 9. Control Center Evacuation (detail)** *Do processes specifically address the controller's responsibilities in the event the control room must be evacuated?* (CR.CRMRR.EVACUATION.P) (detail)

192.631(b)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 10. Communication Failure (detail)** *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?* (CR.CRMRR.COMMSYSFAIL.P) (detail)

192.631(b)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 11. Shift Change Process (detail)** *Have processes been established for the hand-over of responsibility that specify the type of information to be communicated to the oncoming shift?* (CR.CRMRR.HANDOVER.P) (detail)

192.631(b)(4) (192.631(c)(5))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 12. Shift Change Process - Documentation (detail)** *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?* (CR.CRMRR.HANDOVERDOC.P) (detail)

192.631(b)(4) (192.631(c)(5))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 13. Shift Change Process - Documentation (detail)** *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?* (CR.CRMRR.HANDOVERDOC.R) (detail)

192.631(b)(4) (192.631(c)(5))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 14. Shift Change Process - Overlap (detail)** *Do processes require the controllers to discuss recent and impending important activities ensuring adequate overlap?* (CR.CRMRR.HANDOVEROVERLAP.P) (detail)

192.631(b)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 15. Shift Change Process - Handover Alternative (detail)** *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?* (CR.CRMRR.HANDOVERALTERNATIVE.P) (detail)

192.631(b)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 16. Shift Change Process - Unattended Consoles (detail)** *Has the operator established an adequate process for occasions when the console is left temporarily unattended for any reason?* (CR.CRMRR.UNATTENDCONSOLE.P) (detail)

192.631(b)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 17. Shift Change Process - Console Coverage (detail)** *Do processes maintain adequate console coverage during shift hand-over?* (CR.CRMRR.CONSOLECOVERAGE.P) (detail)

192.631(b)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Supervisory Control and Data Acquisition

*** 1. Change Management (detail)** *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?* (CR.SCADA.SYSTEMMOC.P) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. SCADA Displays (detail)** *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?* (CR.SCADA.DISPLAYCONFIG.P) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. SCADA Human Factors (detail)** *Has section 4 of API RP 1165 regarding human factors engineering been implemented?* (CR.SCADA.HUMANFACTORS.R) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. SCADA Display Objects (detail)** *Has section 8 of API RP 1165 regarding display object characteristics been implemented?* (CR.SCADA.DISPLAYOBJECTS.O) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. SCADA Display Dynamics (detail)** *Has section 9 of API RP 1165 regarding display object dynamics been implemented?* (CR.SCADA.DISPLAYDYNAMICS.R) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. SCADA Administration (detail)** *Have applicable paragraphs of section 11 of API RP 1165 administration been implemented?* (CR.SCADA.ADMINISTRATION.R) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. SCADA Impracticality (detail)** *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?* (CR.SCADA.1165IMPRACTICAL.R) (detail)

192.631(c)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. Set Points (detail)** *Does the process adequately define safety-related points?* (CR.SCADA.SETPOINT.P) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 9. Set Points (detail)** *Do records indicate safety-related points have been adequately implemented?* (CR.SCADA.SETPOINT.R) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 10. Point-to-Point Verification (detail)** *Are there adequate processes to define and identify the circumstances which require a point-to-point verification?* (CR.SCADA.POINTVERIFY.P) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 11. Point-to-Point Verification (detail)** *Have required point-to-point verifications been performed?* (CR.SCADA.POINTVERIFY.R) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 12. Point-to-Point Verification Extent (detail)** *Are there adequate processes for the thoroughness of the point-to-point verification?* (CR.SCADA.POINTVERIFYEXTENT.P) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 13. Point-to-Point Verification Extent (detail)** *Do records demonstrate adequate thoroughness of the point-to-point verification?* (CR.SCADA.POINTVERIFYEXTENT.R) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 14. Point-to-Point Verification Interval (detail)** *Is there an adequate process for defining when the point-to-point verification must be completed?* (CR.SCADA.POINTVERFIYINTVL.P) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 15. Point-to-Point Verification Interval (detail)** *Do records indicate the point-to-point verification has been completed at the required intervals?* (CR.SCADA.POINTVERFIYINTVL.R) (detail)

192.631(c)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 16. Internal Communication Plan (detail)** *Has an internal communication plan been established and implemented that is adequate to manually operate the pipeline during a SCADA failure/outage?* (CR.SCADA.COMMPLAN.P) (detail)

192.631(c)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 17. Internal Communication Plan (detail)** *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?* (CR.SCADA.COMMPLAN.R) (detail)

192.631(c)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 18. Backup SCADA System (detail)** *Is there a backup SCADA system?* (CR.SCADA.BACKUPSCADA.O) (detail)

192.631(c)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 19. Backup SCADA Development (detail)** *Has the use of the backup SCADA system for development work been defined?* (CR.SCADA.BACKUPSCADADEV.P) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 20. Backup SCADA Testing (detail)** *Is the backup SCADA system tested at least once each calendar year at intervals not to exceed 15 months?* (CR.SCADA.BACKUPSCADATEST.R) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 21. Backup SCADA Verification (detail)** *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?* (CR.SCADA.BACKUPSCADAVERIFY.R) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 22. Backup SCADA Adequacy (detail)** *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?* (CR.SCADA.BACKUPSCADAADEQUACY.R) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 23. Backup SCADA Transfer (detail)** *Do processes adequately address and test the logistics of transferring control to a backup control room?* (CR.SCADA.BACKUPSCADATRANSFER.P) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 24. Backup SCADA Return to Primary (detail)** *Do procedures adequately address and test the logistics of returning operations back to the primary control room?* (CR.SCADA.BACKUPSCADARETURN.P) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 25. Backup SCADA Testing (detail)** *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?* (CR.SCADA.BACKUPSCADAFUNCTIONS.R) (detail)

192.631(c)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Fatigue Management

*** 1. Fatigue Mitigation (detail)** *Does the fatigue mitigation process or procedures (plan) identify operator-specific fatigue risks?* (CR.CRMFM.FATIGUEMITIGATION.P) (detail)

192.631(d)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Fatigue Risk Reduction (detail)** *Does the fatigue mitigation plan adequately address how the program reduces the risk associated with controller fatigue?* (CR.CRMFM.FATIGUERISKS.P) (detail)

192.631(d)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Fatigue Quantification (detail)** *Do processes require that the potential contribution of controller fatigue to incidents and accidents be quantified during investigations?* (CR.CRMFM.FATIGUEQUANTIFY.P) (detail)

192.631(d)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Fatigue Mitigation Manager (detail)** *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?* (CR.CRMFM.FATIGUEMANAGER.P) (detail)

192.631(d)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. Normal Shift Length (detail)** *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?* (CR.CRMFM.SHIFTLENGTH.R) (detail)

192.631(d)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. Factors in Shift Length (detail)** *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?* (CR.CRMFM.SHIFTLENGTHTIME.R) (detail)

192.631(d)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. Scheduled Time Off (detail)** *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?* (CR.CRMFM.SCHEDULEDTIMEOFF.R) (detail)

192.631(d)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. On Call Controllers (detail)** *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?* (CR.CRMFM.ONCALLCONTROLLER.R) (detail)

192.631(d)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 9. Maximum Hours of Service (detail)** *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 a reduction of the risk associated with controller fatigue?* (CR.CRMFM.MAXHOS.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 10. Minimum Time Off (detail)** *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?* (CR.CRMFM.MINTIMEOFF.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 11. Documented Time Schedule (detail)** *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?* (CR.CRMFM.DOCSCHEDULE.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 12. Days Off (detail)** *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?* (CR.CRMFM.DAYSOFF.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 13. Normal Work Hours (detail)** *For normal business hour type operations (i.e., five days per week), is the shift start time no earlier than 6:00 a.m. and the shift end time no later than 7:00 p.m.?* (CR.CRMFM.WORKHOURS.R) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 14. Fatigue Countermeasures (detail)** *For shifts longer than 8 hours, have specific fatigue countermeasures been implemented for the ninth and beyond hours?* (CR.CRMFM.FATIGUECOUNTERMEASURES.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 15. Daily HOS Limit (detail)** *Do processes limit the daily maximum HOS limit no more than 14 hours in any sliding 24-hour period?* (CR.CRMFM.DAILYHOSLIMIT.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 16. Number of Qualified Controllers (detail)** *Do operations include a sufficient number of qualified controllers?* (CR.CRMFM.CONTROLLERNUMBERS.O) (detail)

192.631(d)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 17. Off Duty Hours (detail)** *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?* (CR.CRMFM.OFFDUTYHOURS.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 18. Shift Holdover (detail)** *Does the shift holdover process conform to shift holdover guidelines or is their a documented technical basis to show that the maximum limit on controller HOS is adequate to reduce the risk associated with controller fatigue?* (CR.CRMFM.SHIFTHOLDOVER.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 19. Specific Fatigue Countermeasures (detail)** *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?* (CR.CRMFM.SPECIFICCOUNTERMEASURES.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 20. Deviations from HOS Limits (detail)** *Is there a formal process for approving deviations from the maximum HOS limits?* (CR.CRMFM.HOSDEVIATIONS.P) (detail)

192.631(d)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 21. Fatigue Education (detail)** *Does the program require that fatigue education/training is required for all controllers and control room supervisors?* (CR.CRMFM.FATIGUEEDUCATE.P) (detail)

192.631(d)(2) (192.631(d)(3))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 22. Fatigue Education Refresher (detail)** *Is refresher fatigue education provided at regular intervals?* (CR.CRMFM.FATIGUEREFRESHER.R) (detail)

192.631(d)(2) (192.631(d)(3))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 23. Review of Fatigue Education Program (detail)** *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?* (CR.CRMFM.FATIGUEREVIEW.P) (detail)

192.631(d)(2) (192.631(d)(3))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 24. Fatigue Mitigation Strategy (detail)** *Does fatigue education address fatigue mitigation strategies (countermeasures)?* (CR.CRMFM.FATIGUESTRATEGY.P) (detail)

192.631(d)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 25. Off-Duty Activity Impact on Fatigue (detail)** *Does fatigue education address how off-duty activities contribute to fatigue?* (CR.CRMFM.OFFDUTY.P) (detail)

192.631(d)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 26. Fatigue Training Content (detail)** *Is the content of fatigue training adequate for training controllers and supervisors to recognize the effects of fatigue?* (CR.CRMFM.FATIGUECONTENT.P) (detail)

192.631(d)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Alarm Management

*** 1. Alarm Procedures (detail)** *Is the alarm management plan a formal process that specifically identifies critical topical areas included in the program?* (CR.CRMAM.ALARM.P) (detail)

192.631(e)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Alarm Malfunction (detail)** *Is there a process to identify and correct inaccurate or malfunctioning alarms?* (CR.CRMAM.ALARMMALFUNCTION.P) (detail)

192.631(e)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Alarm Review (detail)** *Does the review of safety-related alarms account for different alarm designs and all alarm types/priorities?* (CR.CRMAM.ALARMREVIEW.P) (detail)

192.631(e)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Controller SCADA Performance (detail)** *Does the review of safety-related alarms account for individual-specific controller qualification and performance?* (CR.CRMAM.CONTROLLERPERFORMANCE.P) (detail)

192.631(e)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. Managing Stale or Unreliable Data (detail)** *Does the review of safety-related alarms include specific procedures and practices for managing stale or unreliable data?* (CR.CRMAM.STALEDATA.P) (detail)

192.631(e)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. Monthly Analysis of SCADA Data (detail)** *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?* (CR.CRMAM.MONTHLYANALYSIS.P) (detail)

192.631(e)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. Correction of SCADA Problems (detail)** *Does the alarm management plan include a process for promptly correcting identified problems and for returning these points to service?* (CR.CRMAM.PROBLEMCORRECTION.P) (detail)

192.631(e)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. Alarm Setpoint Process (detail)** *Is there a formal process to determine the correct alarm setpoint values and alarm descriptions?* (CR.CRMAM.ALARMSETPOINTS.P) (detail)

192.631(e)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 9. Controls on SCADA Settings (detail)** *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?* (CR.CRMAM.SETTINGCONTROL.P) (detail)

192.631(e)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 10. Alarm Management Plan Review (detail)** *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?* (CR.CRMAM.PLANREVIEW.P) (detail)

192.631(e)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 11. Alarm Management Plan Review (detail)** *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?* (CR.CRMAM.PLANREVIEW.R) (detail)

192.631(e)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 12. Measuring Work Load (detail)** *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?* (CR.CRMAM.WORKLOAD.P) (detail)

192.631(e)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 13. Monitoring Work Load (detail)** *Is the process of monitoring and analyzing general activity comprehensive?* (CR.CRMAM.WORKLOADMONITORING.P) (detail)

192.631(e)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 14. Controller Reaction to Incoming Alarms (detail)** *Does the process have a means of determining that the controller has sufficient time to analyze and react to incoming alarms?* (CR.CRMAM.CONTROLLERREACTION.P) (detail)

192.631(e)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 15. Analysis of Controller Performance (detail)** *Has an analysis been performed to determine if controller(s) performance is currently adequate?* (CR.CRMAM.PERFORMANCEANALYSIS.R) (detail)

192.631(e)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 16. Alarm Deficiency Resolution (detail)** *Is there a process to address how deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) will be resolved?* (CR.CRMAM.DEFICIENCIES.P) (detail)

192.631(e)(6)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 17. Alarm Management Deficiencies (detail)** *Do records indicate deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) have been resolved?* (CR.CRMAM.DEFICIENCIES.R) (detail)

192.631(e)(6)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Change Management

*** 1. Field Equipment Changes (detail)** *Is there a process to assure changes in field equipment that could affect control room operations are coordinated with the control room personnel?* (CR.CRMCMGT.EQUIPMENTCHANGES.P) (detail)

192.631(f)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Controller Participation in System Changes (detail)** *Are control room representative(s) required to participate in meetings where changes that could directly or indirectly affect the hydraulic performance or configuration of the pipeline (including routine maintenance and repairs) are being considered, designed and implemented?* (CR.CRMCMGT.CONTROLLERPARTICIPATE.P) (detail)

192.631(f)(1) (192.631(f)(3))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Controller Participation in System Changes (detail)** *Do records indicate that control room representative(s) participate in meetings where changes that could directly or indirectly affect the hydraulic performance or configuration of the pipeline (including routine maintenance and repairs) are being considered, designed and implemented?* (CR.CRMCMGT.CONTROLLERPARTICIPATE.R) (detail)

192.631(f)(1) (192.631(f)(3))	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Emergency Contact with Control Room (detail)** *Is there a process requiring field personnel and SCADA support personnel to contact the control room when emergency conditions exist?* (CR.CRMCMGT.EMERGENCYCONTACT.P) (detail)

192.631(f)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. Coordination of Field Changes (detail)** *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?* (CR.CRMCMGT.FIELDCONTACT.P) (detail)

192.631(f)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. Coordination of Field Changes (detail)** *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?* (CR.CRMCMGT.FIELDCHANGES.R) (detail)

192.631(f)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Operating Experience

*** 1. Abnormal Operations (Review) (detail)** *Is there a formal, structured approach for reviewing and critiquing reportable events to identify lessons learned?* (CR.CRMEXP.ABNORMALREVIEW.P) (detail)

192.631(g)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Abnormal Operations (Review) (detail)** *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?* (CR.CRMEXP.ABNORMALREVIEW.R) (detail)

192.631(g)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Lessons Learned (detail)** *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?* (CR.CRMEXP.LESSONSLEARNED.P) (detail)

192.631(g)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Lessons Learned (detail)** *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.)?* (CR.CRMEXP.LESSONSLEARNED.R) (detail)

192.631(g)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Training

*** 1. Controller Training Program (detail)** *Has a controller training program been established to provide training for each controller to carry out their roles and responsibilities?* (CR.CRMTRAIN.CONTROLLERTRAIN.P) (detail)

192.631(h)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Controller Training Program (detail)** *Has a controller training program been implemented to provide training for each controller to carry out their roles and responsibilities?* (CR.CRMTRAIN.CONTROLLERTRAIN.R) (detail)

192.631(h)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. Training Program Review (detail)** *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?* (CR.CRMTRAIN.TRAININGREVIEW.P) (detail)

192.631(h)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. Training Program Review (detail)** *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?* (CR.CRMTRAIN.TRAININGREVIEW.R) (detail)

192.631(h)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. Content of Training Program (detail)** *Does training content address all required material, including training each controller to carry out the roles and responsibilities that were defined by the operator?* (CR.CRMTRAIN.TRAININGCONTENT.R) (detail)

192.631(h)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. List of AOCs for Training (detail)** *Has a list of the abnormal operating conditions that are likely to occur simultaneously or in sequence been established?* (CR.CRMTRAIN.AOCLIST.R) (detail)

192.631(h)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. Controller Training and Qualification (detail)** *Does the training program provide controller training on recognizing and responding to abnormal operating conditions that are likely to occur simultaneously or in sequence?* (CR.CRMTRAIN.TRAININGABNORMAL.P) (detail)

192.631(h)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. Controller Training and Qualification (detail)** *Do records indicate the training program used a simulator or tabletop exercises to train controllers how to recognize and respond to abnormal operating conditions?* (CR.CRMTRAIN.TRAINING.R) (detail)

192.631(h)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 9. Controller Training and Qualification (detail)** *Does the training program use a simulator or tabletop exercises to train controllers how to recognize and respond to abnormal operating conditions?* (CR.CRMTRAIN.TRAINING.O) (detail)

192.631(h)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 10. Communication Training (detail)** *Does the CRM program train controllers on their responsibilities for communication under the operator's emergency response procedures?* (CR.CRMTRAIN.COMMUNICATIONTRAINING.P) (detail)

192.631(h)(3)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 11. Working Knowledge of Pipeline System (detail)** *Does the training program provide controllers a working knowledge of the pipeline system, especially during the development of abnormal operating conditions?* (CR.CRMTRAIN.SYSKNOWLEDGE.P) (detail)

192.631(h)(4)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 12. List of Infrequently Used Pipeline Setups (detail)** *Has a list of pipeline operating setups that are periodically (but infrequently) used been established?* (CR.CRMTRAIN.INFREQOPSLIST.R) (detail)

192.631(h)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 13. Review of Procedures Prior to Use (detail)** *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?* (CR.CRMTRAIN.INFREQOPSREVIEW.P) (detail)

192.631(h)(5)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

CRM, SCADA, and Leak Detection - Compliance Validation and Deviations

*** 1. Submittal of Procedures (detail)** *Are there adequate processes to assure that the operator is responsive to requests from applicable agencies to submit their CRM procedures?* (CR.CRMCOMP.SUBMITPROCEDURES.P) (detail)

192.631(i)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 2. Record of Procedure Submittals (detail)** *Has the operator been responsive to requests from applicable agencies to submit their CRM procedures?* (CR.CRMCOMP.SUBMITPROCEDURES.R) (detail)

192.631(i)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 3. CRM Coordinator (detail)** *Is there an individual that is responsible and accountable for compliance with requests from PHMSA or other applicable agencies?* (CR.CRMCOMP.CRMCOORDINATOR.R) (detail)

192.631(i)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 4. CRM Records Management (detail)** *Records management processes adequate to assure records are sufficient to demonstrate compliance with the CRM rule?* (CR.CRMCOMP.RECORDS.P) (detail)

192.631(j)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 5. CRM Records (detail)** *Are records sufficient to demonstrate compliance with the CRM rule?* (CR.CRMCOMP.RECORDS.R) (detail)

192.631(j)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 6. Electronic Records (detail)** *Are electronic records properly stored, safeguarded, and readily retrievable?* (CR.CRMCOMP.ELECTRONICRECORDS.R) (detail)

192.631(j)(1)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 7. CRM Deviations (detail)** *Are there processes to demonstrate and provide a documented record that every deviation from any CRM rule requirement was necessary for safe operation?* (CR.CRMCOMP.DEVIATIONS.P) (detail)

192.631(j)(2)	Sat+	Sat	Concern	Unsat	NA	NC

Notes

*** 8. Deviation Records (detail)** *Were all deviations documented in a way that demonstrates they were necessary for safe operation?* (CR.CRMCOMP.DEVIATION.R) (detail)

192.631(j)(2)	Sat+	Sat	Concern	Unsat	NA	NC
Notes						

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