Inspection Output (IOR)

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Inspection Information

Inspection Name	8294 PSE HQ Control Room Management	Operator(s)	PUGET SOUND ENERGY (22189)	Plan Submitted	05/04/2021
Status	PLANNED	Lead	Darren Tinnerstet	Plan Approval	05/04/2021 by Joe Subsits
Start Year	2021	Team Members	Dennis Ritter	All Activity Start	08/30/2021
System Type	GD	Observer(s)	Scott Rukke, David Cullom, Lex Vinsel, Anthony Dorrough, Derek Norwood, Scott Anderson	All Activity End	09/09/2021
Protocol Set ID	WA.GD.2020.02	Supervisor	Joe Subsits	Inspection Submitted	--
		Director	Sean Mayo	Inspection Approval	--

Inspection Summary

Inspection Scope and Summary

This is a PSE Unit inspection for the HQ Control Room Management (WUTC Inspection #8294)

Records are physically located in the Georgetown office but were reviewed virtually.

Facilities visited and Total AFOD

Virtual records review: 8/30/21 to 9/1/2021 = 3 AFOD days (exit interview was conducted on 9/9/21)

Summary of Significant Findings
(DO NOT Discuss Enforcement options)

Two (2) probable violations and seven (7) areas of concern were identified during this inspection.

PROBABLE VIOLATIONS

1. CFR §192.631 – Control Room Management

(e) *Alarm management.* Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

(1) Review SCADA safety-related alarm operations using a process that ensures alarms are accurate and support safe pipeline operations;

(2) Identify at least once each calendar month points affecting safety that have been taken off scan in the SCADA host, 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;

(3) Verify the correct safety-related alarm set-point values and alarm descriptions at least once each calendar year, but at intervals not to exceed 15 months;

(4) Review the alarm management plan required by this paragraph at least once each calendar year, but at intervals not exceeding 15 months, to determine the effectiveness of the plan;

(5) Monitor the content and volume of general activity being directed to and required of each controller at least once each calendar year, but at intervals not to exceed 15 months, that will assure controllers have sufficient time to analyze and react to incoming alarms; and

(6) Address deficiencies identified through the implementation of paragraphs (e)(1) through (e)(5) of this section.

Finding(s):

The 2018 PSE Control Room Management Plan (CRMP) fails to address how deficiencies discovered during the implementation of §192.631(e)(1-5) will be resolved. It was noted during the review of the 2018, 2019 and 2020 Alarm Management Effectiveness Reviews, that PSE generates a list of "bad actors"-false alarms, RTU issues and gas tariff quality alarms. However, a schedule to fix these deficiencies does not exist. PSE should **promptly** correct specific issues commensurate with their importance to safety. PSE should maintain records which show an itemized list of deficiencies, their date of discovery, the corrective action to be taken, and the completion date (or schedule) for corrective actions. The procedure should provide a criteria and/or guidelines for prioritizing the resolution and correction of deficiencies. PSE's documentation should also record the basis for the selection and scheduling of corrective action.

2. CFR §192.605 – Procedural manual for operations, maintenance, and emergencies

(a) *General.* Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.

Finding(s):

PSE failed to follow their procedures for following up on action items from annual backup SCADA tests. The following items were identified as action items that needed follow up:

- 3/29/2018 - LNG did not connect.
- 7/18/2018 - LNG did not connect.
- 7/24/2019 - several comms failed in Chehalis and Buckley.
- 11/16/2020 - did not return to primary stayed on backup until primary could be restored.

PSE CRMP 7700.3400, section 4.6, states that the supervisor shall ensure that all necessary action items from the test are addressed. No records were available of follow up on these issues with the backup SCADA tests.

AREAS OF CONCERN

1. CFR §192.631 – Control Room Management

(*b) Roles and responsibilities.* Each operator must define the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, an operator must define each of the following:

(1) A controllers authority and responsibility to make decisions and take actions during normal operations.

Finding(s):

The 2018 PSE Control Room Management Plan fails to address the importance of remaining at the console and staying attentive once critical commands have been executed. Some SCADA commands can be complex or take extended periods of time to execute in the field. Controllers should not leave the console prematurely or let shift change processes interfere with the fulfillment of command actions or critical communications with field personnel.

2. CFR §192.631 – Control Room Management

(*b) Roles and responsibilities.* Each operator must define the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, an operator must define each of the following:

(5) The roles, responsibilities, and qualifications of others with the authority to direct or supersede the specific technical actions of a controller.

Finding(s):

The 2018 PSE Control Room Management Plan fails to provide a procedure for how 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. The policy disallowing others to direct controller actions (in any operating mode) should be included in training or some other form of communication with the controllers (e.g., controller awareness training, policy statement on bulletin board, etc.).

This written policy or documentation must be readily available to controllers so that every controller unambiguously knows which (if any) individuals are authorized to direct or supersede the controller's actions (for reference and use as needed should unauthorized individuals attempt to direct or supersede controller actions.

3. CFR §192.631 – Control Room Management

(c) *Provide adequate information.* Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

(1) Implement sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 (incorporated by reference, see §192.7) whenever a SCADA system is added, expanded or replaced, unless the operator demonstrates that certain provisions of sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 are not practical for the SCADA system used

Finding(s):

The Jan. 19, 2017, PSE SCADA display design guide shows valves either being green or red depending on open or closed status. When looking at Vashon Island automatic valves, it was noted that the valves do not show green or red indication of

status. PSE needs to clarify and update this discrepancy. Section 6 of PSE Design Guide gives API 1165 Section 8 criteria that is required for SCADA displays. PSE uses the static symbol for all control valves and intend to update the schematic to reflect this, however this action could not be completed prior to the exit interview.

4. CFR §192.631 – Control Room Management

(c) *Provide adequate information.* Each operator must provide its controllers with the information, tools, processes, and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

(2) Conduct a point-to-point verification between SCADA displays and related field equipment when field equipment is added or moved and when other changes that affect pipeline safety are made to field equipment or SCADA displays.

Finding(s):

The 2018 PSE Control Room Management Plan fails to provide a procedure for how safety related data points are determined and defined. The requirement is to verify all safety-related points in the SCADA system. This would also include calculated (software generated) points that are safety-related. Safety-related points often, but do not necessarily, have alarms associated with them. FAQ CRM:C.01 provides a list of potential safety related points.

5. CFR §192.631 – Control Room Management

(d) *Fatigue mitigation.* Each operator must implement the following methods to reduce the risk associated with controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:

(4) Establish a maximum limit on controller hours-of-service, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.

Finding(s):

The 2018 PSE Control Room Management Plan fails to provide a procedure for specific fatigue countermeasures that will be implemented for shifts longer than 8 hours, especially for the ninth and beyond hours. The longer the shift extends beyond 8 hours, the more attention to countermeasures is needed. Operators should document the countermeasures to be used and when they are used.

6. CFR §192.631 – Control Room Management

(d) *Fatigue mitigation.* Each operator must implement the following methods to reduce the risk associated with controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:

(4) Establish a maximum limit on controller hours-of-service, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.

Finding(s):

The 2018 PSE Control Room Management Plan fails to provide a procedure for specific fatigue countermeasures during applicable time periods, or a documented technical basis to show that the maximum limit on controller HOS is adequate to reduce the risk associated with controller fatigue. Applicable time periods refer to:

- Any and all shift duty hours worked after the first 8 hours.
- Any and all hours worked between 2:00 a.m. and 6:00 a.m.
- Any and all night shifts immediately following three successive nights.

- Any and all day or night shifts following four successive night shifts unless three nocturnal sleep cycles have been completed.

7. CFR §192.631 – Control Room Management

(h) *Training.* Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence;

(2) Use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions;

(3) Training controllers on their responsibilities for communication under the operator's emergency response procedures;

(4) Training that will provide a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions;

(5) For pipeline operating setups that are periodically, but infrequently used, providing an opportunity for controllers to review relevant procedures in advance of their application; and

(6) Control room team training and exercises that include both controllers and other individuals, defined by the operator, who would reasonably be expected to operationally collaborate with controllers (control room personnel) during normal, abnormal or emergency situations. Operators must comply with the team training requirements under this paragraph by no later than January 23, 2018.

Finding(s):

The 2020 PSE Gas Control Training Manual contains a different review date for each individual module that has been reviewed. However, it was not clear if this date was the annual review or the date of original approval of the individual module. Records must demonstrate that a review occurs at least once each calendar year, with intervals not to exceed 15 months between consecutive reviews. Operators are expected to identify improvements, or document that no improvements are necessary.

Primary Operator contacts and/or participant

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Scope (Assets)

#	Short Label	Long Label	Asset Type	Asset IDs	Excluded Topics	Planned	Required	Total Inspected	Required % Complete
1.	88984 (1829)	Puget Sound Energy-HEADQUARTERS	unit	88984	Offshore GOM OCS Cast or Ductile Iron Copper Pipe Aluminum/Amphoteric Abandoned	143	143	143	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.	88984 (1829)	Control Room Management	PRO, PRR, FR, GDIM, MMLPGIM, MISCTOPICS, GENERIC	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.	PSE CRM	--	08/30/2021 09/09/2021	n/a	all planned questions	all assets	all types	143	143	143	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	PSE CRM	COMPLETED	09/23/2021	PSE CRM	--

Results (all values, 143 results)

MISCTOPICS.CRM: Control Room Management

1. Question Result, ID, References: Sat, CR.CRMGEN.CRMCRITERIA.P, 192.631(a)(2)

Question Text: *Do procedures adequately address the process and criteria that determine which facilities are determined to be control rooms?*

Assets Covered: 88984 (1829)

Result Notes: PSE CRMP 7700.1000; Eastside system operations (ESO) is primary and Backup Control Center (BUCC)

2. Question Result, ID, References: Sat, CR.CRMGEN.CRMMGMT.P, 192.631(a)(2)

Question Text: *Are CRM procedures formalized and controlled?*

Assets Covered: 88984 (1829)

Result Notes: CRM procedures are formalized PSE Standards and controlled by Gas Control. CRM contains changed log. Updated CRMP on 6/21/21 7700.6000 section 3 Change management.

3. Question Result, ID, References: Sat, CR.CRMGEN.CRMIMPLEMENT.R, 192.631(a)(2)

Question Text: *Were procedures approved, in place, and implemented on or before the regulatory deadline?*

Assets Covered: 88984 (1829)

Result Notes: 8/1/2012 per GOS 2425.2500 section 3

4. Question Result, ID, References: Sat, CR.CRMGEN.CRMPROCLOCATION.O, 192.631(a)(2)

Question Text: *Are procedures readily available to controllers in the control room?*

Assets Covered: 88984 (1829)

Result Notes: CRM procedures are available both electronically and in hard copy form in the control rooms.

5. Question Result, ID, References: Sat, CR.CRMRR.RESPONSIBLE.P, 192.631(b)

Question Text: *Are there clear processes to describe each controller's physical domain of responsibility for pipelines and other facility assets?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.2000. North side of the room is in control of North System and South side of the room is in control of the South System.

6. Question Result, ID, References: Sat, CR.CRMRR.QUALCONTROL.P, 192.631(b)

Question Text: *Are there provisions in place to assure that only qualified individuals may assume control at any console/desk?*

Assets Covered: 88984 (1829)

Result Notes: Controller login

limited access with key cards

CRMP 7700.9000

OQ Plan 7600.1000

7. Question Result, ID, References: Sat, CR.CRMRR.DOMAINCHANGE.P, 192.631(b)

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: 88984 (1829)

Result Notes: CRMP 7700\.3300 Section 4 - Shift Change process.

8. Question Result, ID, References: Sat, CR.CRMRR.RESPCHANGE.P, 192.631(b)

Question Text: *Do processes address a controller's role during temporary impromptu (unplanned) changes in controller responsibilities?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.2000 - section 3. Two controllers are always on duty and have access to both the North and South systems constantly.

9. Question Result, ID, References: Concern, CR.CRMRR.COMMANDVERIFY.P, 192.631(b)

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: 88984 (1829)

Result Issue Summary: The procedure fails to address the prescribed requirements. Operator to update procedures to reflect requirements and update training.

Result Notes: The PSE CRMP does not contain a procedure for requiring controllers to stay at the console to verify all SCADA commands that have been initiated are fulfilled, and commands given via verbal communications are acknowledged before leaving the console for any reason. Should be contained in CRMP 7700.2000, Section 3.

10. Question Result, ID, References: Sat, CR.CRMRR.AUTHORITYABNORMAL.P, 192.631(b)(2)

Question Text: *Have processes been established to define the controllers' authority and responsibilities when an abnormal operating condition is detected?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.2000 - Section 5

Definition of AOC in 7700.1000 - Section 2

11. Question Result, ID, References: Sat, CR.CRMRR.PRESSLIMITS.O, 192.631(b)(2) (192.619(a), 192.631(e)(1))

Question Text: *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?*

Assets Covered: 88984 (1829)

Result Notes: MAOP limits in SCADA.

12. Question Result, ID, References: Sat, CR.CRMRR.AUTHORITYEMERGENCY.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.1000 Emergency definition

CRMP 7700.2000 - Section 6 (Emergency Conditions)

Notify personnel in accordance with gas Control Emergency Notification Matrix - reviewed 11/20/2020 version

13. Question Result, ID, References: Sat, CR.CRMRR.EVACUATION.P, 192.631(b)(3)

Question Text: *Do processes specifically address the controller's responsibilities in the event the control room must be evacuated?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.3400

14. Question Result, ID, References: Sat, CR.CRMRR.COMMSYSFAIL.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.3200 Appendix A

Also AOC and CRMP 7700.2000 - Roles and responsibilities.

20 minutes is time frame to initiate manual operations.

15. Question Result, ID, References: Sat, CR.CRMRR.HANDOVER.P, 192.631(b)(4) (192.631(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: 88984 (1829)

Result Notes CRMP 7700.3300

16. Question Result, ID, References Sat, CR.CRMRR.HANDOVER.O, 192.631(b)(4) (192.631(c)(5))

Question Text *Do observations indicate adequate hand-over of responsibility to the oncoming shift?*

Assets Covered 88984 (1829)

Result Notes observed controllers Joseph Specchio (off Shift) and Mark jacobs (on shift) perform shift hand off virtually.

17. Question Result, ID, References Sat, CR.CRMRR.HANDOVERDOC.P, 192.631(b)(4) (192.631(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 88984 (1829)

Result Notes CRMP 7700.3300 - Section 3

Shift Hand off Form

Shift Takeover form

18. Question Result, ID, References Sat, CR.CRMRR.HANDOVERDOC.R, 192.631(b)(4) (192.631(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 88984 (1829)

Result Notes Randomly selected Shift Change takeover records to review for 2018 to 2020 period (8/23 was day for all three years).

19. Question Result, ID, References Sat, CR.CRMRR.HANDOVEROVERLAP.P, 192.631(b)(4)

Question Text *Do processes require the controllers to discuss recent and impending important activities ensuring adequate overlap?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3000 Section 4.1.4 and section 4.2 (verbal)

20. Question Result, ID, References Sat, CR.CRMRR.HANDOVERALTERNATIVE.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.2000 Section 5.2-5.4

Reviewed 8/23/19 shift change where controller needed to be relieved at around 12PM. Controller emailed supervisor and proper procedures for coverage were followed.

21. Question Result, ID, References Sat, CR.CRMRR.UNATTENDCONSOLE.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.2000 - Section 3.3

CRMP 7700.3300 - Section 3.6

22. Question Result, ID, References Sat, CR.CRMRR.CONSOLECOVERAGE.P, 192.631(b)(4)

Question Text *Do processes maintain adequate console coverage during shift hand-over?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.2000 - Section 3.3

CRMP 7700.3300 - Section 3.6

23. Question Result, ID, References Sat, CR.CRMRR.OTHERAUTHORITYDISALLOW.P, 192.631(b)(5)

Question Text *Do processes disallow others to have authority to direct or supersede the specific technical actions of a controller?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.2000 Section 3.5. Gas controllers have final authority.

24. Question Result, ID, References Concern, CR.CRMRR.OTHERAUTHORITYDISALLOW.R, 192.631(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 88984 (1829)

Result Issue Summary Specific language citing the controllers final authority over the technical actions of the control room has been added to the Gas Control Training Module 4, section 4.1.2 which is now posted to the Control Room Sharepoint site. Need to maintain records of training moving forward.

Result Notes PSE CRMP does not have a procedure for how and when this policy being provided to controllers or others.

No current records are available documenting that controllers have reviewed and are aware of this policy.

New training is currently being developed that will incorporate this requirement.

25. Question Result, ID, References Sat, CR.CRMRR.OTHERAUTHORITYDISALLOW.O, 192.631(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 88984 (1829)

Result Notes Asked controller Joseph Specchio if he was aware of procedure and could quickly reference it if needed. He was able to do both.

26. Question Result, ID, References NA, CR.CRMRR.OTHERAUTHORITYQUAL.P, 192.631(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 88984 (1829)

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

27. Question Result, ID, References NA, CR.CRMRR.OTHERAUTHORITYQUAL.R, 192.631(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 88984 (1829)

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

28. Question Result, ID, References NA, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.P, 192.631(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 88984 (1829)

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

29. Question Result, ID, References NA, CR.CRMRR.OTHERAUTHORITYLIST.R, 192.631(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 88984 (1829)

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

30. Question Result, ID, References: NA, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.R, 192.631(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: 88984 (1829)

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

31. Question Result, ID, References: NA, CR.CRMRR.OTHERAUTHORITYIMPLEMENT.O, 192.631(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: 88984 (1829)

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

32. Question Result, ID, References: Sat, CR.SCADA.SYSTEMMOC.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.6000 Section 3, Table 3-1 - MOC

Aveva is SCADA software system.

33. Question Result, ID, References: Sat, CR.SCADA.DISPLAYCONFIG.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7000.3000 Section 3

Reviewed PSE SCADA display guidelines.

34. Question Result, ID, References: Sat, CR.SCADA.1165HUMANFACTORS.O, 192.631(c)(1)

Question Text: *Has section 4 of API RP 1165 regarding human factors engineering been implemented?*

Assets Covered: 88984 (1829)

Result Notes: Reviewed SCADA system with Supervisor and compared to API section 4 criteria. No issues.

35. Question Result, ID, References: Concern, CR.SCADA.DISPLAYOBJECTS.O, 192.631(c)(1)

Question Text: *Has section 8 of API RP 1165 regarding display object characteristics been implemented?*

Assets Covered: 88984 (1829)

Result Issue Summary: PSE uses the static symbol for all control valves and intend to update the schematic to reflect this, however, this action could not be completed prior to the exit interview.

Result Notes: Reviewed SCADA system with Supervisor and compared to API section 8 criteria.

Section 6 of PSE Design Guide gives API 1165 Section 8 criteria, Fonts, colors, shapes

It was noted that PSE's guide shows valves either being green or red depending on open or closed status. When looking at Vashon auto valves,

it was noted that the valves do not show green or red indication of status. PSE needs to clarify.

36. Question Result, ID, References: Sat, CR.SCADA.DISPLAYDYNAMICS.R, 192.631(c)(1)

Question Text: *Has Section 9 of API RP 1165 regarding display object dynamics been implemented?*

Assets Covered 88984 (1829)

Result Notes Reviewed SCADA system with Supervisor and compared to API section 9 criteria. No issues.

37. Question Result, ID, References Sat, CR.SCADA.ADMINISTRATION.R, 192.631(c)(1)

Question Text *Have applicable paragraphs of section 11 of API RP 1165 administration been implemented?*

Assets Covered 88984 (1829)

Result Notes Both Control Room locations use the same SCADA system and software.

38. Question Result, ID, References Sat, CR.SCADA.1165IMPRACTICAL.R, 192.631(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 88984 (1829)

39. Question Result, ID, References Concern, CR.SCADA.SETPOINT.P, 192.631(c)(2)

Question Text *Does the process adequately define safety-related points?*

Assets Covered 88984 (1829)

Result Issue Summary PSE's CRMP fails to adequately define safety related points. Operator is in the process of updating procedures but was not able to finalize during inspection.

Result Notes Safety related points are not adequately defined in PSE's CRMP. Should be included or added to 7700.5000 Section 4.1.

40. Question Result, ID, References Sat, CR.SCADA.SETPOINT.R, 192.631(c)(2)

Question Text *Do records indicate safety-related points have been adequately implemented?*

Assets Covered 88984 (1829)

Result Notes Reviewed safety-related points database.

41. Question Result, ID, References Sat, CR.SCADA.POINTVERIFY.P, 192.631(c)(2)

Question Text *Are there adequate processes to define and identify the circumstances which require a point-to-point verification?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3100

Reviewed Point-to-Point Actions Table

42. Question Result, ID, References Sat, CR.SCADA.POINTVERIFY.R, 192.631(c)(2)

Question Text *Have required point-to-point verifications been performed?*

Assets Covered 88984 (1829)

Result Notes Reviewed point to point verifications for 2018-2020

43. Question Result, ID, References Sat, CR.SCADA.POINTVERIFYEXTENT.P, 192.631(c)(2)

Question Text *Are there adequate processes for the thoroughness of the point-to-point verification?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3100 Sections 3-4

44. Question Result, ID, References Sat, CR.SCADA.POINTVERIFYEXTENT.R, 192.631(c)(2)

Question Text *Do records demonstrate adequate thoroughness of the point-to-point verification?*

Assets Covered 88984 (1829)

Result Notes Reviewed point to point verification records. No issues.

45. Question Result, ID, References Sat, CR.SCADA.POINTVERFIYINTVL.P, 192.631(c)(2)

Question Text *Is there an adequate process for defining when the point-to-point verification must be completed?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3100 Section 3

46. Question Result, ID, References Sat, CR.SCADA.POINTVERFIYINTVL.R, 192.631(c)(2)

Question Text *Do records indicate the point-to-point verification has been completed at the required intervals?*

Assets Covered 88984 (1829)

Result Notes Reviewed SCADA point-to-point system log.

Reviewed Reg station 1172 (Startup) replacement (Now R-2829) - 2020

47. Question Result, ID, References NA, CR.SCADA.POINTVERIFY.O, 192.631(c)(2)

Question Text *Are point-to-point verifications performed adequately when required?*

Assets Covered 88984 (1829)

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

48. Question Result, ID, References Sat, CR.SCADA.COMMPLAN.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.3200 Appendix A - Section 4

49. Question Result, ID, References Sat, CR.SCADA.COMMPLAN.R, 192.631(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 88984 (1829)

Result Notes Reviewed 2018-2020 CWA checks

Simulated actions for manual operations. (Sites changes each year)

50. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADA.O, 192.631(c)

Question Text *Is there a backup SCADA system?*

Assets Covered 88984 (1829)

Result Notes PSE has a physical backup in BUCC

Backup SCADA is same software but different server.

GCS is primary

GBU is backup

51. Question Result, ID, References NA, CR.SCADA.BACKUPSCADADEV.P, 192.631(c)(4)

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

Assets Covered 88984 (1829)

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

52. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADATEST.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.3400 - Sections 3-4

Pre-Covid - Tested quarterly

53. Question Result, ID, References Unsat, CR.SCADA.BACKUPSCADATEST.R, 192.631(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 88984 (1829)

Result Issue Summary Probable violation of 192.605 (a) for failing follow procedures. PSE CRMP 7700.3400 section 4.6 states that supervisor shall ensure that all necessary action items from the test are addressed. No records of follow up on issues with backup SCADA tests.

Standard Issues A2 (Significant impact/limited occurrence) : 192.605(a) : Documentation does not demonstrate adequate implementation of operator's process.

Result Notes Reviewed test records for 2018-2020

Backup Gas Control Center Test Form 6095

3/29/2018 - LNG did not connect

7/18/2018 - LNG did not connect

7/24/2019 - several comms failed in Chehalis and Buckley

11/16/2020 - did not return back to Primary stay on backup until could restore primary.

need some additional language in procedure to ensure issues found during the test are addressed-Section 4.6 states Supervisor Gas control will ensure all necessary action items are addressed, but there is not a record of such actions or at least it is not formalized.

54. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADAVERIFY.P, 192.631(c)(4)

Question Text *Is testing required to verify adequate processes are 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 88984 (1829)

Result Notes CRMP 7700.3200 Appendix A - Internal Communications Plan

55. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADAVERIFY.R, 192.631(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 88984 (1829)

Result Notes Reviewed Gas Control Form 6095

CRMP 7700.3400 Section 2.2 requires manager of gas systems operations and the controller are responsible for making decision to transfer pipeline control to the backup SCADA system.

56. Question Result, ID, References NA, CR.SCADA.BACKUPSCADAADEQUACY.R, 192.631(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 88984 (1829)

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

57. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADATRANSFER.P, 192.631(c)(4)

Question Text *Do processes adequately address and test the logistics of transferring control to a backup control room?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3400 Section 4

From 6095

58. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADARETURN.P, 192.631(c)(4)

Question Text *Do procedures adequately address and test the logistics of returning operations back to the primary control room?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.3400 Section 4

From 6095

59. Question Result, ID, References Sat, CR.SCADA.BACKUPSCADAFUNCTIONS.R, 192.631(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 88984 (1829)

Result Notes Reviewed form 6095 (Backup Gas Control Test Center Form)

60. Question Result, ID, References Sat, CR.CRMFM.FATIGUEMITIGATION.P, 192.631(d)

Question Text *Does the fatigue mitigation process or procedures (plan) identify operator-specific fatigue risks?*

Assets Covered 88984 (1829)

Result Notes Fatigue Risk Management Plan (FRMP)(2014) - Section 3

61. Question Result, ID, References Sat, CR.CRMFM.FATIGUERISKS.P, 192.631(d)

Question Text *Does the fatigue mitigation plan adequately address how the program reduces the risk associated with controller fatigue?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.4000 - Fatigue Management

FRMP Section 4 (also Seciton 3.3.2)

62. Question Result, ID, References Sat, CR.CRMFM.FATIGUEQUANTIFY.P, 192.631(d)

Question Text *Do processes require that the potential contribution of controller fatigue to incidents and accidents be quantified during investigations?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.7000 Section 3.5.1

From 4690 -Post incident Review form (5/1/2018 incident #180501)

63. Question Result, ID, References Sat, CR.CRMFM.FATIGUEMANAGER.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.4000

Bob Forbes is designee for fatigue risk management.

He also authorizes and approves HOS emergency deviations.

64. Question Result, ID, References Sat, CR.CRMFM.SHIFTLENGTH.R, 192.631(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 88984 (1829)

Result Notes Reviewed PSE Gas Control Center Schedule 2018-2020

PSE utilizes the Dupont schedule.

65. Question Result, ID, References Sat, CR.CRMFM.SHIFTLENGTHTIME.R, 192.631(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 88984 (1829)

Result Notes Reviewed timesheets for two controllers:

Josh Woodside:

8/14/2020 to 8/30/2020 - went over 65 hours (72); 35 hour reset from 8/23-8/25

8/13/2019 to 8/29/2019 - total all under 65 hours.

8/14/2018 to 8/30/2018 - total all under 65 hours

Doug Thain:

11/14/2018 to 12/1/2018 - total all under 65 hours

11/4/2019 to 12/1/2019 - total all under 65 hours

11/4/2020 to 12/6/2020 - total all under 65 hours

66. Question Result, ID, References Sat, CR.CRMFM.SCHEDULEDTIMEOFF.R, 192.631(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 88984 (1829)

Result Notes Reviewed PSE Gas Control Center Schedule for 2018-2020

Reviewed Doug Thain scheduled off periods - 1.5 hour commute + 8 hours + 1 hour = 10.5 hours

Josh Woodside - 1.1 hour commute + 8 hours + 1 hour = 10.1 hours

67. Question Result, ID, References NA, CR.CRMFM.ONCALLCONTROLLER.P, 192.631(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 88984 (1829)

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

68. Question Result, ID, References NA, CR.CRMFM.ONCALLCONTROLLER.R, 192.631(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 88984 (1829)

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

69. Question Result, ID, References Sat, CR.CRMFM.MAXHOS.P, 192.631(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 a reduction of the risk associated with controller fatigue?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.5

70. Question Result, ID, References Sat, CR.CRMFM.MINTIMEOFF.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.5.2

71. Question Result, ID, References Sat, CR.CRMFM.DOCSCHEDULE.P, 192.631(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 88984 (1829)

Result Notes Reviewed PSE Gas Control Center Schedule for 2018-2020. Includes (3) 12 hour consecutive shifts for time spent performing other duties.

72. Question Result, ID, References NA, CR.CRMFM.DAYSOFF.P, 192.631(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 88984 (1829)

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

73. Question Result, ID, References NA, CR.CRMFM.WORKHOURS.R, 192.631(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 88984 (1829)

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

74. Question Result, ID, References Concern, CR.CRMFM.FATIGUECOUNTERMEASURES.P, 192.631(d)(4)

Question Text *For shifts longer than 8 hours, have specific fatigue countermeasures been implemented for the ninth and beyond hours?*

Assets Covered 88984 (1829)

Result Issue Summary PSE CRMP does not document or define what countermeasures are to be used and when they are to be used. Operator is in the process of updating procedures but was unable to finalize during inspection.

Result Notes Gas control shift checklist contains plain verbiage about being aware of fatigue countermeasures but there is no procedure for which ones are used and when they are used.

75. Question Result, ID, References Sat, CR.CRMFM.DAILYHOSLIMIT.P, 192.631(d)(4)

Question Text *Do processes limit the daily maximum HOS limit no more than 14 hours in any sliding 24-hour period?*

Assets Covered 88984 (1829)

Result Notes FRMP Section 4.1.1

PSE maximum of hours consecutive duty in any 24 hour period.

76. Question Result, ID, References Sat, CR.CRMFM.CONTROLLERNUMBERS.O, 192.631(d)

Question Text *Do operations include a sufficient number of qualified controllers?*

Assets Covered 88984 (1829)

Result Notes PSE always as two controllers on duty per shift. One for North System and One for South System.

Employment ratio is 1.13 / 9.01 total controllers needed. Currently have 9 controllers employed.

77. Question Result, ID, References Sat, CR.CRMFM.OFFDUTYHOURS.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.5.2

78. Question Result, ID, References Sat, CR.CRMFM.SHIFTHOLDOVER.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.6

Controllers are allowed on 18-hour shift within work schedule, must be allowed to obtain 8 hours of sleep following.

79. Question Result, ID, References Concern, CR.CRMFM.SPECIFICCOUNTERMEASURES.P, 192.631(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 88984 (1829)

Result Issue Summary PSE CRMP does not contain a procedure for specific countermeasures during applicable time periods. Operator is in the process of updating procedures but was unable to finalize during inspection.

Result Notes No procedure for specific fatigue countermeasures during applicable time periods.

FAQ D.07 Section 6 requirements

80. Question Result, ID, References Sat, CR.CRMFM.HOSDEVIATIONS.P, 192.631(d)(4)

Question Text *Is there a formal process for approving deviations from the maximum HOS limits?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.8000

Procedural Deviation Form - Form 4722

Reviewed 4722 for controller Doug Thain for 7/31/2020- 8/2/2020 - determined to not be a deviation by supervisor

81. Question Result, ID, References Sat, CR.CRMFM.FATIGUEEDUCATE.P, 192.631(d)(2) (192.631(d)(3))

Question Text *Does the program require that fatigue education/training is required for all controllers and control room supervisors?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.2

82. Question Result, ID, References Sat, CR.CRMFM.FATIGUEEDUCATE.R, 192.631(d)(2) (192.631(d)(3))

Question Text *Is fatigue education/training documented for all controllers and control room supervisors?*

Assets Covered 88984 (1829)

Result Notes Reviewed fatigue education/training records for 2018-2020.

83. Question Result, ID, References Sat, CR.CRMFM.FATIGUEREVIEW.P, 192.631(d)(2) (192.631(d)(3), 192.605(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 88984 (1829)

Result Notes CRMP 7700.4000 Section 3.8

84. Question Result, ID, References Sat, CR.CRMFM.FATIGUESTRATEGY.P, 192.631(d)(2)

Question Text *Does fatigue education address fatigue mitigation strategies (countermeasures)?*

Assets Covered 88984 (1829)

Result Notes Reviewed Fatigue Education Training presentation.

85. Question Result, ID, References Sat, CR.CRMFM.OFFDUTY.P, 192.631(d)(2)

Question Text *Does fatigue education address how off-duty activities contribute to fatigue?*

Assets Covered 88984 (1829)

Result Notes Reviewed Fatigue Training Presentation.

86. Question Result, ID, References Sat, CR.CRMFM.FATIGUECONTENT.P, 192.631(d)(3)

Question Text *Is the content of fatigue training adequate for training controllers and supervisors to recognize the effects of fatigue?*

Assets Covered 88984 (1829)

87. Question Result, ID, References Sat, CR.CRMFM.FATIGUECONTENT.R, 192.631(d)(3)

Question Text *Has controller and supervisor training to recognize the effects of fatigue been documented?*

Assets Covered 88984 (1829)

Result Notes Reviewed annual Fatigue Awareness and Mitigation for Controllers records for 2018-2020.

Reviewed training presentation for fatigue training provided MEA

88. Question Result, ID, References Sat, CR.CRMAM.ALARM.P, 192.631(e)

Question Text *Is the alarm management plan a formal process that specifically identifies critical topical areas included in the program?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.5000 Sections 4,5 and 6

Reviewed PSE Alarm Management and Philosophy settings document (5/8/2021 version)

89. Question Result, ID, References Sat, CR.CRMAM.ALARMMALFUNCTION.P, 192.631(e)(1)

Question Text *Is there a process to identify and correct inaccurate or malfunctioning alarms?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.5000 Section 7.1

Procedure requires a test of alarms once each calendar month.

Deficiencies identified during review are addressed immediately.

90. Question Result, ID, References Sat, CR.CRMAM.ALARMREVIEW.P, 192.631(e)(1)

Question Text *Does the review of safety-related alarms account for different alarm designs and all alarm types/priorities?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.5000 Section 5

91. Question Result, ID, References NA, CR.CRMAM.CONTROLLERPERFORMANCE.P, 192.631(h) (192.631(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 88984 (1829)

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

92. Question Result, ID, References Sat, CR.CRMAM.STALEDATA.P, 192.631(e)(1)

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

Assets Covered 88984 (1829)

Result Notes CRMP 7700.5000 Section 7.1.3

Controllers on duty ensure stale data (Comm loss) is promptly remediated by contacting IOC when deficiencies are found.

93. Question Result, ID, References Sat, CR.CRMAM.MONTHLYANALYSIS.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.5000 Section 7.1

Reviewed Feb. 2020/2019/ Gas control alarm metrics report.

94. Question Result, ID, References Sat, CR.CRMAM.PROBLEMCORRECTION.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.5000 Section 7.2

95. Question Result, ID, References Sat, CR.CRMAM.ALARMVERIFY.R, 192.631(e)(2)

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

Assets Covered 88984 (1829)

Result Notes Reviewed February 2018-2020 Gas Control Alarm Metrics and Compliance Metrics reports.

96. Question Result, ID, References Sat, CR.CRMAM.ALARMSETPOINTS.P, 192.631(e)(3)

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

Assets Covered 88984 (1829)

Result Notes CRMP 7700.5000

Reviewed Alarm Management and Philosophy Settings document

97. Question Result, ID, References Sat, CR.CRMAM.SETTINGCONTROL.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.5000

Reviewed Alarm Management and Philosophy Settings document

98. Question Result, ID, References: Sat, CR.CRMAM.ALARMVALUEVERIFY.R, 192.631(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: 88984 (1829)

Result Notes: Reviewed Annual Alarm Review records for 2018-2020.

99. Question Result, ID, References: Sat, CR.CRMAM.PLANREVIEW.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.5000 Section 8

100. Question Result, ID, References: Sat, CR.CRMAM.PLANREVIEW.R, 192.631(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: 88984 (1829)

Result Notes: Reviewed Alarm Management Effectiveness reports for 2018-2020

101. Question Result, ID, References: Sat, CR.CRMAM.WORKLOADMONITORING.P, 192.631(e)(5)

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

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.5000 Section 10.1

Reviewed 2018-2020 Workload Assessment reports

102. Question Result, ID, References: Sat, CR.CRMAM.CONTROLLERREACTION.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.5000 Table 5-1

103. Question Result, ID, References: Sat, CR.CRMAM.PERFORMANCEANALYSIS.R, 192.631(e)(5)

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

Assets Covered: 88984 (1829)

Result Notes: Reviewed 2018-2020 Workload Assessment reports

104. Question Result, ID, References: Sat, CR.CRMAM.DEFICIENCIES.P, 192.631(e)(6)

Question Text: *Is there a process to address how deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) will be resolved?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.5000 Sections 7.2 and 8.2

All deficiencies are corrected as needed and priority is given to safety sensitive issues.

105. Question Result, ID, References: Unsat, CR.CRMAM.DEFICIENCIES.R, 192.631(e)(6)

Question Text: *Do records indicate deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) have been resolved?*

Assets Covered: 88984 (1829)

Result Issue Summary: The 2018 PSE Control Room Management Plan fails to address how deficiencies discovered during the implementation of §192.631(e)(1-5) will be resolved. PSE should promptly correct specific issues commensurate with their importance to safety. PSE should maintain an itemized list of deficiencies and their date of discovery, the corrective action to be taken, and the completion date (or schedule) for corrective actions. The procedure should provide a criteria and/or guidelines for prioritizing the resolution

and correction of deficiencies. PSE's documentation should also record the basis for the selection and selection and scheduling of corrective action.

Standard Issues: A1 (Significant impact/widespread occurrence) : 192.631(e)(6) : No record/documentation.

Result Notes: follow up on Unattainable RTU master list

most of the master list has not been resolved. Operator stated that budget issues are the driving force behind delays.

FAQ E.16

106. Question Result, ID, References: Sat, CR.CRMCMGT.EQUIPMENTCHANGES.P, 192.631(f)(1)

Question Text: *Is there a process to assure changes in field equipment that could affect control room operations are coordinated with the control room personnel?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.6000 Section 4 - MOC Process

CRMP 7700.9000 Section 7 - Training

New procedures or training requirements are indicated in the MOC

107. Question Result, ID, References: Sat, CR.CRMCMGT.CONTROLLERPARTICIPATE.P, 192.631(f)(1) (192.631(f)(3))

Question Text: *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?*

Assets Covered: 88984 (1829)

Result Notes: CRMP 7700.6000 Section 3 - MOC Process

CRMP 7700.9000 Section 7 - Training

New procedures or training requirements are indicated in the MOC

108. Question Result, ID, References: Sat, CR.CRMCMGT.CONTROLLERPARTICIPATE.R, 192.631(f)(1) (192.631(f)(3))

Question Text: *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?*

Assets Covered: 88984 (1829)

Result Notes: Reviewed training records contained within MOC's for 2018-2020.

109. Question Result, ID, References: Sat, CR.CRMCMGT.EMERGENCYCONTACT.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.6000 Section 4.3

CRMP 7700.3500 Section 3 - Field Notifications.

110. Question Result, ID, References: Sat, CR.CRMCMGT.FIELDCONTACT.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.3500 Section 3, Table 3-1.

111. Question Result, ID, References: Sat, CR.CRMCMGT.FIELDCHANGES.R, 192.631(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 88984 (1829)

Result Notes Reviewed operator logs for 2018-2020.

112. Question Result, ID, References Sat, CR.CRMEXP.REPORTABLEINCIDENTREVIEW.P, 192.631(g)(1)

Question Text *Is there a formal, structured approach for reviewing and critiquing reportable events to identify lessons learned?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.7000 Section 3

From 4690 Post incident Review

113. Question Result, ID, References Sat, CR.CRMEXP.REPORTABLEINCIDENTREVIEW.R, 192.631(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 88984 (1829)

Result Notes Reviewed the following incident form (4690)

Incident 180501 - 5/1/2018 - MAOP exceedance.

114. Question Result, ID, References Sat, CR.CRMEXP.LESSONSLEARNED.P, 192.631(g)(2) (192.631(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 88984 (1829)

Result Notes CRMP 7700.3000 Section 3.6

115. Question Result, ID, References Sat, CR.CRMEXP.LESSONSLEARNED.R, 192.631(g)(2) (192.631(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 88984 (1829)

Result Notes Reviewed record for training conducted in 2020 which included lessons learned from annual Vashon Island Crossing Test. Scenario 1 was based off of an actual event which occurred involving turning of valves.

116. Question Result, ID, References Sat, CR.CRMTRAIN.CONTROLLERTRAIN.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.9000

OQ Covered Task 2705a "Ga Control - SCADA instrumental monitoring at ESO," per CRM 7600.1000

117. Question Result, ID, References Sat, CR.CRMTRAIN.CONTROLLERTRAIN.R, 192.631(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 88984 (1829)

Result Notes Reviewed OQ records for 2018-2020

Attached records in inspection database.

118. Question Result, ID, References: Sat, CR.CRMTRAIN.TRAININGREVIEW.P, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.9000 Section 7.1

119. Question Result, ID, References: Concern, CR.CRMTRAIN.TRAININGREVIEW.R, 192.631(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: 88984 (1829)

Result Issue Summary: PSE training manual is not being updated or documented in each individual section. Going forward, if a training section gets modified, then the revision date of that page will be updated update. This update is reflected in the Gas Control Training Module 4, Section 4.1.2 which was updated on 9/6/2021. This process will also be formalized in the procedures but could not be completed prior to the exit interview.

Result Notes: Reviewed annual training review records for 2018-2020

Michael Kreft (Sr. Engineer) is training reviewer.

*not updating training manual. Most recent training manual 3/2020 (individual sections differently) -

120. Question Result, ID, References: Sat, CR.CRMTRAIN.TRAININGCONTENT.R, 192.631(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: 88984 (1829)

Result Notes: CRMP 7700.9000

Reviewed Task Sign Off records for 2018-2020

121. Question Result, ID, References: Sat, CR.CRMTRAIN.AOCLIST.R, 192.631(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: 88984 (1829)

Result Notes: Reviewed PSE Gas Training Manual - Module 3, Section 3.4

122. Question Result, ID, References: Sat, CR.CRMTRAIN.TRAININGABNORMAL.P, 192.631(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: 88984 (1829)

Result Notes: CRM 7700.9000 Section 4.1.1

123. Question Result, ID, References: NA, CR.CRMTRAIN.TRAINING.O, 192.631(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: 88984 (1829)

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

124. Question Result, ID, References: Sat, CR.CRMTRAIN.TRAINING.R, 192.631(h)(2)

Question Text: *Do records indicate the training program used a simulator or tabletop exercises to train controllers how to recognize and respond to abnormal operating conditions?*

Assets Covered: 88984 (1829)

Result Notes reviewed Module 3 training records for:

Michael Meyer - 2017

Michael Kreft - 2012 (module 1)

MIchael Radi - 2016 (module 3)

125. Question Result, ID, References Sat, CR.CRMTRAIN.COMMUNICATIONTRAINING.P, 192.631(h)(3)

Question Text *Does the CRM program train controllers on their responsibilities for communication under the operator's emergency response procedures?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.9000 Section 4.1.3

126. Question Result, ID, References Sat, CR.CRMTRAIN.SYSKNOWLEDGE.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.9000 Section 4.1.4

127. Question Result, ID, References Sat, CR.CRMTRAIN.INFREQOPSLIST.R, 192.631(h)(5)

Question Text *Has a list of pipeline operating setups that are periodically (but infrequently) used been established?*

Assets Covered 88984 (1829)

Result Notes PSE Gas Control Training Manual, Module 14.3

PSE has seasonal and unique setups. (winter and summer)

128. Question Result, ID, References Sat, CR.CRMTRAIN.INFREQOPSREVIEW.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.9000 Section 4.1.5

129. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINPERSONNEL.P, 192.631(h)(6)

Question Text *Do processes establish who, regardless of location, operationally collaborates with control room personnel?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.9100 Section 1 and 3.2

Process was in place by 5/15/18

Reviewed Team Training Matrix

130. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINFREQ.P, 192.631(h)(6)

Question Text *Do processes define the frequency of new and recurring team training?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.9100 Section 3.7

Once a year not to exceed 15 months.

131. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINCOMPLETE.P, 192.631(h)(6)

Question Text *Do processes address all operational modes and operational collaboration/control?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.9100 Section 3

132. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINEXPERIENCE.P, 192.631(h)(6)

Question Text *Do processes include incorporation of lessons learned from actual historical events and other oil-gas industry events?*

Assets Covered 88984 (1829)

Result Notes CRMP 7700.9100 Section 3.6.1

133. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINEXERCISE.R, 192.631(h)(6)

Question Text *Do records indicate that training exercises were adequate and involved at least one qualified controller?*

Assets Covered 88984 (1829)

Result Notes Reviewed training roster sheets for the following team training's:

December 2020 - Vashon Island Scenario

December 2019 - Cyber Scenario (Table top)

December 2018 - Low pressure scenario

134. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINEXERCISE.O, 192.631(h)(6)

Question Text *Does implementation of a control room team exercise demonstrate performance in accordance with regulatory and process requirements?*

Assets Covered 88984 (1829)

Result Notes Compared Team training matrix with attendance roster sheet to determine if required personnel were at training. Compared 2018-2020 training records.

135. Question Result, ID, References Sat, CR.CRMTRAIN.TEAMTRAINIDENTINDIVIDUAL.R, 192.631(h)(6)

Question Text *Do records demonstrate that individuals identified as of January 23, 2018 received team training by January 23, 2019?*

Assets Covered 88984 (1829)

Result Notes Reviewed training roster sheets for the following team training's:

December 2020 - Vashon Island Scenario

December 2019 - Cyber Scenario (Table top)

December 2018 - Low pressure scenario

136. Question Result, ID, References Sat, CR.CRMCOMP.SUBMITPROCEDURES.P, 192.631(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 88984 (1829)

Result Notes GOS 2425.2500 Section 5

In house notification system for annual submittals (Archer)

137. Question Result, ID, References Sat, CR.CRMCOMP.SUBMITPROCEDURES.R, 192.631(i)

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

Assets Covered 88984 (1829)

Result Notes received CRM updated manual on 8/31/2021.

previous update was 2018.

138. Question Result, ID, References: Sat, CR.CRMCOMP.CRMCOORDINATOR.R, 192.631(i)

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

Assets Covered: 88984 (1829)

Result Notes: Vidushi Raina - Manager of Regulatory Compliance.

139. Question Result, ID, References: Concern, CR.CRMCOMP.RECORDS.P, 192.631(j)(1)

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

Assets Covered: 88984 (1829)

Result Issue Summary: PSE's CRMP is lacking several procedures in regards to the requirements. Operator is aware of deficiencies and in the process of updating procedures but was unable to finalize during inspection.

Result Notes: Procedure for records management of alarm issues and remediation.

This AOC directly relates to the following inspection questions:

#9 - The PSE CRMP does not contain a procedure for requiring controllers to stay at the console to verify all SCADA commands that have been initiated are fulfilled, and commands given via verbal communications are acknowledged before leaving the console for any reason.

#39 - Procedure for defining Safety Related Points

#74 - Procedures for identifying fatigue countermeasures

#79 - Procedures for identifying fatigue countermeasures.

140. Question Result, ID, References: Unsat, CR.CRMCOMP.RECORDS.R, 192.631(j)(1)

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

Assets Covered: 88984 (1829)

Result Issue Summary: The 2018 PSE Control Room Management Plan fails to address how deficiencies discovered during the implementation of §192.631(e)(1-5) will be resolved. PSE should promptly correct specific issues commensurate with their importance to safety. PSE should maintain an itemized list of deficiencies and their date of discovery, the corrective action to be taken, and the completion date (or schedule) for corrective actions. The procedure should provide a criteria and/or guidelines for prioritizing the resolution and correction of deficiencies. PSE's documentation should also record the basis for the selection and selection and scheduling of corrective action. (Question #106)

Also probable violation of 192.605 (a) for failing follow procedures. PSE CRMP 7700.3400 section 4.6 states that supervisor shall ensure that all necessary action items from the test are addressed. No records of follow up on issues with backup SCADA tests. (Question #53)

Standard Issues: A2 (Significant impact/limited occurrence) : 192.605(a) : Documentation does not demonstrate adequate implementation of operator's process.
A1 (Significant impact/widespread occurrence) : 192.631(j)(1) : No record/documentation.

Result Notes: This violation is the result of questions #53 and #106 for not having records for how SCADA backup test issues were corrected and how deficiencies discovered during the implementation of §192.631(e)(1-5) will be resolved.

141. Question Result, ID, References: Sat, CR.CRMCOMP.ELECTRONICRECORDS.R, 192.631(j)(1)

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

Assets Covered: 88984 (1829)

Result Notes: SharePoint, Department servers.

142. Question Result, ID, References: Sat, CR.CRMCOMP.DEVIATIONS.P, 192.631(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 88984 (1829)

Result Notes CRMP 7700.8000 Section 3.2

Procedural Deviation Form (Form 4722)

143. Question Result, ID, References Sat, CR.CRMCOMP.DEVIATIONS.R, 192.631(j)(2)

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

Assets Covered 88984 (1829)

Result Notes Reviewed Deviation Form 4722

Josh Woodside - September 23, 2019 (deviation resulted in not having 2 nights off prior to starting night shift due to covering a shift)

Report Parameters: Results: all

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