



STATE OF WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

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Sent via email

September 23, 2021

Booga K. Gilbertson
Sr. Vice President Operations
Puget Sound Energy
355 110th Ave NE, M/S EST 11W
Bellevue, Washington 98004

**RE: 2021 Natural Gas Control Room Management – Puget Sound Energy Headquarters
(Insp. No. 8294)**

Dear Ms. Gilbertson:

Staff from the Washington Utilities and Transportation Commission (staff) conducted a Control Room Management inspection of Puget Sound Energy's (PSE) Control Room from Aug. 30, 2021 to Sept. 1, 2021. The inspection included an electronic review of records.

Our inspection indicates two probable violations as noted in the enclosed report. We also noted seven areas of concern, which unless corrected, could potentially lead to future violation of state and/or federal pipeline safety rules.

Your response needed

Please review the attached report and respond in writing by October 25, 2021. The response should include how and when you plan to bring the probable violations into full compliance.

What happens after you respond to this letter?

The attached report presents staff's decision on probable violations and does not constitute a finding of violation by the commission at this time.

After you respond in writing to this letter, there are several possible actions the commission, in its discretion, may take with respect to this matter. For example, the commission may:

- Issue an administrative penalty under [RCW 81.04.405](#); or
- Issue a complaint under [RCW 81.88.040](#), seeking monetary penalties, changes in the company's practices, or other relief authorized by law, and justified by the circumstances. Any pipeline company that violates any pipeline safety provision of any commission

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order, or any rule in this chapter including those rules adopted by reference, or chapter [81.88 RCW](#) is subject to a civil penalty not to exceed \$222,504 for each violation for each day that the violation persists. The maximum civil penalty for a related series of violations is \$2,225,034; or

- Consider the matter resolved without further commission action.

We have not yet decided whether to pursue a penalty or complaint in this matter. Should the commission decide to assess a penalty or initiate a complaint, your company will have an opportunity to respond and formally present its position.

If you have any questions or if we may be of any assistance, please contact Darren Tinnerstet at (360) 764-0779. Please refer to the subject matter described above in any future correspondence pertaining to this inspection.

Sincerely,

Sean C. Mayo
Pipeline Safety Director

cc: Troy Hutson, Director of Enterprise Risk Management, Puget Sound Energy
Harry Shapiro, Director of Gas Operations, Puget Sound Energy
Kaaren Daugherty, Manager Compliance Programs, Puget Sound Energy

**UTILITIES AND TRANSPORTATION COMMISSION
2021 Natural Gas Pipeline Safety Inspection
Puget Sound Energy – Control Room Management HQ**

The following probable violation(s) and areas of concern of CFR §192 were noted as a result of the 2021 inspection of PSE’s Control Room Management. The inspection included a random selection of records as well as a review of relevant procedures.

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 criterion 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 controller's 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 should clarify and update this discrepancy. Section 6 of PSE Design Guide uses API 1165 Section 8 criteria 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.

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.