

PUBLIC UTILITIES COMMISSION

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January 4, 2021

Christine Cowsert
VP, Gas Asset Management and System Operations
Pacific Gas and Electric Company
Gas Transmission and Distribution Operations
6121 Bollinger Canyon Road
San Ramon, CA 94583

GI-2020-09-PGE-29

SUBJECT: SED's Closure Letter for General Order (GO) 112-F Gas Inspection of PG&E's Control Room Management Program

Dear Ms. Cowsert:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission reviewed Pacific Gas & Electric Company's (PG&E) response letter dated December 17, 2020 for the findings identified during the General Order 112-F inspection of PG&E's Control Room Management Program, which included a remote review of procedures and records for the period of 2017 through 2019. Due to California's stay at home orders, SED conducted this procedures and records review inspection remotely. Due to the COVID-19 pandemic, PG&E's control room facilities was not available for inspection and SED has postponed the observation portion of this inspection to 2021.

A summary of the inspection findings documented by the SED, PG&E's response to our findings, and SED's evaluation of PG&E's response taken for each identified Area of Concern and Recommendation is attached.

This letter serves as the official closure for this portion of the 2020 GO 112-F Inspection of PG&E's Control Room Management Program and any matters that are being recommended for enforcement will be processed through the Commission's Citation Program or a formal proceeding.

Thank you for your cooperation in this inspection. If you have any questions, please contact Wai Yin (Franky) Chan at (415) 703-2482 or by email at wai-yin.chan@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Dennis Lee".

Dennis Lee, P.E.
Program and Project Supervisor
Gas Safety and Reliability Branch
Safety and Enforcement Division

Enclosure: Post-Inspection Written Preliminary Findings

cc: Susie Richmond, PG&E Gas Regulatory Compliance
Alberta Ekukinam, PG&E Gas Regulatory Compliance
Enza Barbato, PG&E Gas Regulatory Compliance
Terence Eng, SED
Claudia Almengor, SED
Kelly Dolcini, SED

Post-Inspection Written Preliminary Findings

Dates of Inspection: 9/14/2020 to 9/25/2020

Operator: PACIFIC GAS & ELECTRIC CO

Operator ID: 15007 (primary)

Inspection Systems: Control Room Management

Assets (Unit IDs): GI-2020-09-PGE-29-10 (86283)

System Type: GT

Inspection Name: 2020 PG&E Control Room Inspection

Lead Inspector: Wai-Yin Chan

Operator Representative: Alberta Ekukinam, Anthony Kwong, and Rosa Duenas

Unsatisfactory Results

No Preliminary Findings.

Concerns

CRM, SCADA, and Leak Detection : Fatigue Management (CR.CRMFM)

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

References 192.631(d)(4)

Assets Covered GI-2020-09-PGE-29-10 (86283 (29))

SED reviewed PG&E's Shift Work Scheduling Process (Rev 3 Rev Date 5/2/2018) and found that the 15 hours daily maximum hours of service (HOS) limit for the Gas System Coordinators with 10 Hour Shifts does not align with the 14 hours daily maximum HOS limit in the PHMSA Control Room Management Frequently Asked Questions (FAQs) dated 1/16/2018.

FAQ D.07 states in part, "Working beyond or outside of a traditional 8-5 schedule has inherent fatigue risks. In these cases reasonable maximum normal limits on controller hours of service should be...2. Fourteen (14) duty hours in any 24-hour period, which includes shift hand-over time...4. An occasional hold-over shift/s is allowed within the following parameters. It would be permissible for such occasional holdovers to breach item 2 immediately above, but should not breach items 1 or 3:...b. For a 10-hour shift, one 15-hour shift (16 hours with hand-over time), or two 12-hour shifts (13 hours with hand-over time) in any sliding 6-day period..."

PG&E's Shift Work Scheduling Process (Rev 3 Rev Date 5/2/2018) section 2.2 indicates that the daily limit is 15 hours for the Gas System Coordinators with 10 Hour Shifts. The document states that "Personnel should not work more than the daily limit of 15 hours. If an employee needs to work more than, two 12

hour shifts in a sliding 6 day period or is expected to exceed 15 hours in one shift during a sliding 6 day period, this is considered a Deviation."

According to PG&E's data request response dated 9/22/2020, PG&E has examined its Shift Work Scheduling Process and determined that even though it never exceeded the 15 hour daily limit for 10-hour employees during 2017-2019 it also recognizes that the 14 hour limitation in FAQ D.07 will further align its CRM Plan. PG&E will add clarifying language to call out the 14 hour daily limit for all personnel with an occasional hold-over shift of 15 hours for 10-hour employees and an occasional hold-over shift of 18 hours for 12-hour employees.

PG&E's Response:

PG&E recognizes this concern and has taken the following action:
PG&E has updated sections 2.2 and 2.3 of the Shift Work Scheduling Process to clarify the daily maximum limits for occasional holdovers.

SED's Conclusion:

SED has reviewed the response from PG&E and determined that the corrective actions articulated by PG&E sufficiently address SED's concern.

CRM, SCADA, and Leak Detection : Alarm Management (CR.CRMAM)

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

References 192.631(e)(5)

Assets Covered GI-2020-09-PGE-29-10 (86283 (29))

Issue Summary REFERENCE: Gas Control Center Process, Publication Date: 05/02/18, Rev: 3 (Shift Work Scheduling Process)

(1)

The section 1.6 outlines Transmission Scheduling Guidelines and specify the number of Gas System Operators (GSOs), Gas System Coordinators (GSCs) and Senior Gas System Coordinators (SGSCs) for both day and night shifts as well GSCs for Swing Shift (weekdays and weekends and holidays).

Similarly, section 1.7 outlines Distribution Scheduling Guidelines for Distribution Gas System Operators (DGSOs) and Senior Distribution Gas System Operators (SDGSOs) for both day and night shifts (weekdays and weekends and holidays).

In response to data request (Control Room Inspection Data Request, CR # 29) regarding above scheduling guidelines, PG&E mentioned that "*The original control room design afforded the ability to explore regional coverage for the gas system. The guidelines were made in part with control room expertise and workload studies.*". In addition, PG&E mentioned that for preparing the routine six-week schedule, "*During the audit period of 2017 - 2019, the number of persons assigned were as outlined in Sections 1.6 and 1.7.*".

Section 1.2 of the same document, states "*Scheduling guidelines and framework below may be subject to change at the discretion of Control Room leadership in accordance with applicable State and Federal Regulation, Letters of Agreement and operational needs. This includes, but is not limited to initiating Deviations (as described below) for emergency or abnormal conditions or electing to not fill shifts based on operational needs.*"

During discussions, PG&E mentioned that they do not maintain any records outlining the reasons for decisions made when "*electing to not fill shifts based on operational needs.*". There are currently no written guidelines outlining criteria that how decisions not to fill shifts be made. PG&E mentioned that due to its dynamic nature, it is impractical to outline all conditions (Control Room Inspection Data Request, CR # 17). SED emphasizes that all decisions such as this must be made while considering "Safety as a Priority". Therefore, it is very important to have a guidance document as specific as possible. In addition, when this provision was used in past, PG&E should have documented the reasons for using this option with supporting information including safety considerations.

Furthermore, review of "Workload Analysis" reports for 2017-2019 shows that PG&E did not meet its Key Performance Indicator (KPI) goal for alarms for a number of years. In addition, some of the consoles also exceeded the urgent, high, and medium alarm thresholds during the weekday day shift. To address this issue, there are two options i.e. either reassessing staffing levels or alarm rationalization; PG&E understandably is using the latter option, but the issues have persisted.

Therefore, in summary, considering data request response (Control Room Inspection Data Request, CR # 29) and results of "Workload Analysis reports", SED recommends PG&E schedule at a minimum the staff outlined in sections 1.6 and 1.7 as is done currently during six week routine scheduling process and should maintain the same throughout; any absences must be filled with equal number of replacements to maintain this level of staffing. This should happen unless PG&E duly analyze and come up with different level of staffing to handle the Control Room properly considering safety as priority; all the process must be documented, and records maintained.

(2)

In the above referred document, Section 3.2., item 3 states, *"A designated "on-call" individual will be assigned, and is responsible to be available 24 hours a day. There will be one GSC on call at all times. There may be times when the SGSC on-call individual will be required to fill the GSC position."*

When PG&E uses this provision i.e. SGSC filling GSC position, SED recommends documenting the reasons for the decision and keeping the records.

PG&E's Response:

(1) Safety always remains the top priority for PG&E. PG&E confirms that it does have a shift scheduling process as part of the Control Room Manual. The "Vacant Shift Staffing Guidance", not part of the Control Room Manual, considers conditions such as weather and historical workload when there is a vacancy on a shift, as referenced in the document. Documentation is not required under this guidance; however PG&E maintains complete records of all qualified control room staffing.

PG&E maintains in its response to CR#39 that KPI targets align with API 1167 Pipeline SCADA Alarm Management Table C.1 and ANSI/ISA 18.2 Management of Alarm Systems for the Process Industries page 75, Table 5 where 6 alarms per operator per hour is the likely acceptable target value, however an approximate maximum manageable target value of 12 (average) alarms per operator per hour is recognized. During the 2018-2019 workload studies, Gas Control Center's alarm rationalization was going through a process re-engineering. There has been significant improvement in the health of the Alarm Management Plan since the full ADR implementation in May 2020.

(2) PG&E will take this recommendation under advisement.

SED's Conclusion:

(1) SED has reviewed the response. As a best practice, SED suggests that when PG&E uses the provision of section 1.2 of the procedure "Shift Work Scheduling Process, Rev 3a, Rev Date: 09/23/2020" for electing not to fill shifts based on operational needs, PG&E keep the records of reasons for such decision. SED further emphasizes that use of 'historical workload' as mentioned in "Vacant Shift Staffing Guidance" pointed by PG&E is not a good indicator and does not assure that an emergency will not occur on the day when a staff vacancy is not filled.

There is no further response required for this item.

(2) SED has reviewed the response and appreciates PG&E taking this into consideration as an advisement.

CRM, SCADA, and Leak Detection : Operating Experience (CR.CRMEXP)

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?

References 192.631(g)(1)

Assets Covered GI-2020-09-PGE-29-10 (86283 (29))

Issue Summary SED reviewed PG&E's responses to our request for a reportable incident example showing PG&E's review and analysis of all contributing factors to determine if control room actions contributed to the event. SED found that PG&E failed to provide accurate information twice in its responses. SED submitted this request on 9/14/2020. PG&E's regulatory department provided its first written response on 9/15/2020 and attached the documentation of the "Creed High Pressure Elimination" lessons learned example. However, this example was already confirmed to be a "near misses" lessons learned example by PG&E's Control Room Management Subject Matter Experts during the 9/15/2020 morning call and it did not meet the reportable incident criteria. SED requested PG&E to keep this request as open status.

PG&E's regulatory department provided its second written response on 9/16/2020 stating that, "we are writing to confirm that there hasn't been any reportable incidents due to Gas Control's actions." After some investigation, SED found one reportable incident (DOT #1183141) dated 7/1/2017 that involved PG&E's gas control system and operator. In PG&E's Apparent Cause Evaluation Report for this incident, the apparent cause is stated as, "the gas control system allowed the load valve controller PIC233A set point to be set higher than the trimmer valve V-3.", and the contributing cause is stated as, "a gas system operator (GSO) unintentionally executed the gas system set point changes incorrectly." Then SED requested PG&E to provide an explanation why this incident did not meet the criteria in SED's initial request. On 9/18/2020, PG&E's regulatory department provided the lessons learned documents for this reportable incident. On 9/21/2020, PG&E's regulatory department confirmed that there were two reportable incidents (June 22 Paicines and July 1 Dunnigan Hill) in 2017 that met the criteria in SED's initial request.

SED wants to remind PG&E about the importance of providing accurate information to the CPUC in all of PG&E's data request responses.

According to PG&E, the PG&E team struggled to provide accurate information to show compliance with this regulation due to inadequate reporting capabilities. PG&E will focus their corrective actions in areas that will result in the accurate collection and communication of contributing factors for reportable events.

PG&E's Response:

PG&E understands and agrees with the importance of providing accurate information to the CPUC in all of PG&E's data request responses.

In this particular instance, the event, as well as gas control's involvement, was captured within the abnormal incident report as well as reported per regulation to the CPUC as a reportable incident after the event first occurred.

PG&E regrets that in the initial response to the data request during the inspection we were not able to produce the incident that responded to the request. We have reviewed and addressed this issue to reduce the risk of this occurring in future inspections.

SED's Conclusion:

SED has reviewed the response from PG&E and determined that the corrective actions articulated by PG&E sufficiently address SED's concern.

CRM, SCADA, and Leak Detection : Training (CR.CRMTRAIN)

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?

References 192.631(h)(5)

Assets Covered GI-2020-09-PGE-29-10 (86283 (29))

Issue Summary SED reviewed PG&E's Senior Distribution Gas System Operators (SDGSO) Training Material and found that it contains out of date information. The current SDGSO training material references the "Distribution Infrequent Setup Implementation Plan" (i.e. page 210 of 279). However, the "Distribution Infrequent Setup Implementation Plan" and the "Transmission Infrequent Setup Implementation Plan" were combined into the "Infrequent System Setup Plan" in 2016.

According to PG&E, the SDGSO presentation is administered by the PG&E Academy and the screenshot was not updated; however this training is Instructor-Led, therefore when this content is given, the current Infrequent Setup Implementation Plan is provided as the reference process. PG&E recognizes this opportunity and will work with the Academy to update/revise this training slide.

PG&E's Response:

PG&E recognizes this concern and has taken the following action:
PG&E is in the process of updating all of the training programs to align T&D. Consolidating training content to create a more efficient and effective program. This effort will increase operational understanding between transmission and distribution controllers."

SED's Conclusion:

SED has reviewed the response from PG&E and determined that the corrective actions articulated by PG&E sufficiently address SED's concern.

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

References 192.631(h)(6)

Assets Covered GI-2020-09-PGE-29-10 (86283 (29))

Issue Summary SED reviewed PG&E's Utility Procedure TD-4436P-06, Gas System Operations CRM – Gas Transmission and Gas Distribution Training Programs, and found that PG&E's required frequency of once every 4 years for its recurring team training was not clearly stated. Utility Procedure TD-4436P-06 (Revision 5c) Section 2, Operational Collaboration, states in part, "It is recommended that personnel who operationally collaborate with Gas Control complete the ILT scenario-based team training (GAS-9225) every 4 years." On 9/16/2020, PG&E confirmed that every 4 years is the requirement. Based on Revision 5c of TD-4436P-06 (Effective Date 05/19/2020) Section 2, SED found that it is unclear whether the once every 4 years frequency is a recommendation or a requirement to complete the ILT scenario-based team training (GAS-9225).

PG&E's Response:

PG&E agrees with this recommendation and has taken the following action:
TD-4436P-06 is being updated and will be published during the next monthly update to Gas Guidance documents.

SED's Conclusion:

SED has reviewed the response from PG&E and determined that the corrective actions articulated by PG&E sufficiently address SED's concern.