

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



June 12, 2017

GI-2017-03-PGE29-10

Mr. Sumeet Singh, Vice President
Pacific Gas and Electric Company
Gas Asset and Risk Management
6111 Bollinger Canyon Road, Room 4590-D
San Ramon, CA 94583

SUBJECT: General Order 112 Gas Inspection of PG&E's Control Room Management Program

Dear Mr. Singh:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112 inspection of Pacific Gas & Electric (PG&E) Company's Control Room Management Program from March 6-10 and April 3-4, 2017¹.

SED's findings are noted in the Summary of Inspection Findings (Summary) which is enclosed with this letter. The Summary reflects only those particular records that SED inspected during the audit.

Within 30 days of your receipt of this letter, please provide a written response indicating the measures taken by PG&E to address the violations and observations noted in the Summary.

If you have any questions, please contact Sikandar Khatri at (415) 703-2565 or by email at Sikandar.Khatri@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth A. Bruno".

Kenneth Bruno - Program Manager
Safety and Enforcement Division

Enclosure: Summary of Inspection Findings

cc: Dennis Lee, SED
Mike Bradley, PG&E Compliance Gas Operations
Susie Richmond, PG&E Gas Operations Regulatory Compliance and Risk Analysis

¹ General Order 112-F was adopted by the Commission on June 25, 2015 via Decision 15-06-044.

PG&E's Internal Audit Findings:

PG&E provided SED its finding from the internal review. PG&E's internal review finding is violation of PG&E's standards, and therefore violation of Title 49 Code of Federal Regulations (CFR), §192.13(c) or §192.605(a). SED is aware that PG&E is addressing the identified issue through creation of a Corrective Action Program (CAP) item. Please provide an update on the same.

Topic	Period	Findings	Corrective actions	Proposed action to prevent occurrence	Completion date
Clearances	2014-2017	<p>Non Compliance with Internal Requirements (TD-441S, Gas Clearances)</p> <p>It was discovered that communication on key steps between PGE personnel and Gas Control were not completed or documented in accordance with TD-441S. 220 instances of 48,000 discovered</p> <p>Not an imminent safety threat</p>	<p>Reviewing the gas clearance process to further clarify communication requirements to Gas Control</p> <p>Exploring technology to automate the process</p> <p>Reissuing a communication to field employees on the importance of the communications</p>	CAP 112670136	tbd

SUMMARY OF INSPECTION FINDINGS

I. Probable Violations

1. Title 49 CFR §192.605 states in part:

(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...*

(b) *Maintenance and normal operations.*

The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations.

(1) Operating, maintaining, and repairing the pipeline in accordance with each of the requirements of this subpart and Subpart M of this part...

1.1. Title 49 CFR §192.631 (g) Operating experience states:

“Each operator must assure that lessons learned from its operating experience are incorporated, as appropriate, into its control room management procedures by performing each of the following:

(1) Review incidents that must be reported pursuant to 49 CFR part 191 to determine if control room actions contributed to the event and, if so, correct, where necessary, deficiencies related to:

(i) Controller fatigue...”

PG&E procedure TD-4436P-02, section 4 Conducting Post-incident Investigations addresses steps required after an incident. In addition, Frequently Asked Question (FAQ) produced by PHMSA for Control Room Management under D.12 emphasizes the importance of fatigue assessment after incidents that have been due to contribution of control room personnel.

SED observed that fatigue analysis was not performed for the control room personnel involved in the Hershey Junction incident that occurred on 6/5/2016. Without performing a fatigue analysis, PG&E wouldn't be able to determine that whether fatigue contributed to the incident. SED discussed with PG&E staff who recognized this deficiency and will take measures to avoid this in future. Please provide an update.

II. Areas of Concern/ Observations/Recommendations:

SED made following observations during the audit.

1. For the Pipeline and Hazardous Materials Safety Administration (PHMSA) protocol form item E4-1, bullet 2, PG&E referred SED to PG&E document "SCADA Alarm Management Process", section 11 which states that:

"Effectiveness Review

11.1 After the change has been implemented, perform an assessment of the effectiveness of the change ..."

SED made an observation that "Effectiveness Review" should not be limited to "change in alarm" only condition. Please provide an update on the proposed action.

2. PHMSA protocol form item E4-1 addresses Annual Review of the Alarm Management Plan. PG&E provided information on the monthly Key Performance Indicator (KPI) studies, and others including work load study, review of set points and personnel training. However, since these studies are inter-related, there was no comprehensive annual review that includes all such studies and their interaction to identify systemic deficiencies or root cause analyses, if needed.
SED recommends such studies will be helpful to provide overall insight in the Alarm Management Plan.
3. SED requested minutes for monthly KPI meetings to get an insight that who was present, what was discussed and how items were identified for further action. PG&E provided document that listed action items, deadlines and to whom these items were assigned. SED recommends that detailed minutes be recorded for such meetings.
4. PG&E provided reports of "work load study" performed by consultants "Human Centered Solutions" for control room management program, both for transmission and distribution systems. These reports refer to "System Performance Metrics" for comparison.
 - (a) The work load study for Transmission system dated November 9, 2016 states that "Analysis of the Alarm System Effectiveness found several metrics that were not in compliance with the PG&E Alarm System Philosophy metrics."
Please provide information on what actions PG&E is taking to address this.
 - (b) SED had inquired which PG&E document has information on Alarm System Philosophy metrics, such as Total Alarms per hour, Emergency Priority per shift, High per shift etc. PG&E mentioned that these were identified earlier in the program but current documents do not have this information. SED recommends that these be included in appropriate document(s).
5. PHMSA protocol form item E6-1, item 2 states procedure should provide a criteria and/or guidelines for prioritizing the resolution and correction of deficiencies. The operator's documentation should also record the basis for the selection and scheduling of corrective action.

SED reviewed PG&E document “SCADA Alarm Management Process” which did not contain criteria and/or guidelines for prioritizing the resolution and correction of deficiencies. SED recommends that if it is referred in any other document, please provide the reference or else add to the relevant document(s).

6. During the audit, PG&E stated that they are working on developing a new ADR (Alarm Definition and Rationalization) process. SED recommends that consideration of work load requirements be included into this study to assure the availability of adequate staff. (Reference: PHMSA Protocol form E5-3, FAQ E.07)
7. PG&E provided a document in response to data request # 29 that shows fatigue metrics. SED recommends that an analysis of different fatigue measures used by each individual will be helpful for PG&E for such studies.
8. PG&E reported a SCADA outage that occurred in May 2016. During this outage, the Control Room inventory list and Planning Tool mismatched on a measurement point. PG&E has already identified it as a lesson learned, however no CAP item was created. During the audit, PG&E stated that they will create a CAP item; please provide an update on the same.

SED also recommends that the Planning tool and Control Room Inventory be compared more frequently than the current Annual practice. Please provide an update on any changes being made.

9. SED has reviewed PG&E's document, 'SCADA Alarm Management Process', section 2, "Defining Alarm Limits". PG&E provided another document, "SCADA Transmission Alarm Limits" in response to data request 48, which has been reviewed. In this document, the 'Active' alarm settings for the examples below look appropriate, however, SED has observed discrepancies for 'CRM plan' values. Please provide reason(s) for the same.

Page # in document	Tag	Point Description	CRM Plan Low	CRM Plan Low-Low	Alarm Rule	Active Low	Active Low-Low	SED Comment
1	SDV PT0002	Dav Twn Feed Press	110	140	Special	160	140	Why CRM plan Low is less than Low-Low? What is the meaning of Alarm Rule "Special"?
17	SSB PT0023	SAC GLC PT 23 Press	310	325	1	350	325	Why CRM plan Low is less than Low-Low?
17	ALM PT0002	L-Medanos K1 Suct Press	397	410	7	435	410	Why CRM plan Low is less than Low-Low?
17	SSB PT0025	SAC GLC PT 25 Press	310	325	1	365	325	Why CRM plan Low is less than Low-Low?