Pacific Gas and Electric Company

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May 7, 2025

Mr. Terence Eng, P.E.
Program Manager
Gas Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Notice of Probable Violations – July 10, 2024, Gas Pipeline Incident in Avenal

Dear Mr. Eng:

Pacific Gas and Electric Company (PG&E) submits this response to the Safety and Enforcement Division's (SED) Notice of Probable Violations (NOPV) letter dated April 7, 2025, regarding the gas pipeline incident that occurred on July 10, 2024, in Avenal, California.

For clarity, the two NOPVs identified in Attachment A of SED's NOPV letter are repeated below, followed by PG&E's response.

NOPV #1: §192.13(c) What general requirements apply to pipelines regulated under this part

1. General Order (G.O.) 112-F Referenced Title 49 Code of Federal Regulations (CFR), Part 192, Section 192.13 What general requirements apply to pipelines regulated under this part.

   § 192.13 What general requirements apply to pipelines regulated under this part:

   (c) Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.

   a. PG&E's Gas Design Standard (GDS), A-38-1h, "Purging Gas Facilities" (Publication Date: 04/12/2023, Effective Date: 07/01/2023)

   According to PG&E's Root Cause Evaluation (RCE) report, the following items in PG&E's GDS A-38 were not addressed:
   - *The required purge drive pressure. If the purge will be done in multiple segments, include the purge drive pressure for each segment.*
   - *The expected duration of each segment of the purge, as well as the overall purging operation*

   The RCE report indicated that the purge drive pressure is critical to ensure an adequate and safe purge velocity and flowrate. If purge velocity is too low, stratification

and excessive mixing could occur. If purge velocity is too high, other hazards (projectiles, increased range of flammability, etc.) could occur. The expected purge duration is critical as well, as it allows for the identification of potential abnormal operating conditions (AOCs) when purge end points do not meet the expectation. According to the RCE report, without the ability to monitor purge drive pressure and expected duration, the clearance team was severely limited in their capacity to identify hazards, apply essential controls, and fail safely.

According to the RCE report, PG&E Gas Design Standard A-38 requires the use of a drive pressure gauge, so the crew understands how much gas is being introduced into the system while "purging into service". However, the RCE report indicated that there was no gauge installed, so the only indicator of the amount of gas being introduced would be through sound or feel at a purge point. Because a gauge was not installed, SED found that the following requirements in PG&E's GDS A-38 were not followed:

- *On the section to be purged and near the upstream mainline valve, install a pressure gauge that is accurate and readable within 1 psi so that the inlet pressure can be observed. (The gauge should be connected through several feet of flexible tubing to minimize vibration.)*
- *Open throttle control valve steadily while monitoring the inlet pressure gauge. Continually monitor the pressure and gradually adjust the throttle control valve throughout the purge.*

b. PG&E's Gas Design Standard (GDS), A-38.3-0a, "Temporary Vent Stacks" (Publication Date: 12/16/2020, Effective Date: 03/16/2021)

According to the RCE report, PG&E's GDS A-38.3 covers the installation of vent stacks to allow gas and air/gas mixtures to escape into the atmosphere without hazard during purging and blowdown operations. The RCE report indicated that temporary vent stacks are a key safety control to protect coworkers and the public in the vicinity of the escaping gas or air/gas mixture from the associated noise, dust/debris, and odor as well as allowing the operation to "fail safely" if an unintended ignition should occur. SED found that the purge vent location at V-78 during the purge into service lacked the necessary vent stacks, because the 6-inch blind flange was removed and not reinstalled. PG&E did not meet the following requirements in PG&E's GDS A-38.3:

- *Vent stacks must be of adequate height to provide enough clearance out of the excavation, and pointed in a safe direction away from any potential hazards. If it is not feasible to extend stack above the excavation due to depth, ensure personnel are at a safe distance away from the location and height of the stack.*
- *Flanged connections must be fully bolted and tightened with appropriately rated gasket and welded per appropriate weld procedure. If there are any threaded connections in assembly, follow requirements for threaded components.*

c. PG&E's Code of Safe Practices (CSP) Section 1304, "Vent Stacks" and 1305, "Sources of Ignition or Fire Near Escaping Gas"

According to the RCE report, PG&E's CSP Section 1304 and 1305 also cover the installation of vent stacks to allow gas and air/gas mixtures to escape to the

atmosphere without hazard during purging and blowdown operations. SED found that the purge vent location at V-78 during the purge into service, where the 6-inch blind flange was removed and not reinstalled, did not meet the following requirements in PG&E's CSP Section 1304 and 1305:

- *Vent stacks shall be of sufficient size and height to minimize the hazard of releasing gas in the work area…*
- *Gas shall not be blown against the side of an excavation; it must be vented upward.*

d. PG&E's Work Clearance Document (WCD) # 80252165

According to the RCE report, employees failed to adhere to the steps in the Work Clearance Document and failed to maintain worker safety and system configuration control. They removed the Valve-78 (V-78) downstream flange that also removed a vertical vent valve downstream of V-78 (VENT D/S of V-78) as it was mounted to the face of the blind flange. They did not fully open Valve-56 (V-56) per the WCD after maintenance was performed. They did not fine throttle Valve-90 (V-90) or monitor purge drive pressure. The blind flange was dropped at the direction of a supporting Clearance Supervisor and was not reinstalled prior to Purging into Service. SED found that the following sequence of operations in PG&E's WCD # 80252165 were not followed:

- *Operation No. 18 Operation: CHECK OPEN Technical Object: V-56*
- *Operation No. 38 Operation: OPEN Technical Object: VENT D/S V-78*
- *Operation No. 52 Operation: POSITION Technical Object: V-90 Remarks: R/MOL, SLOWLY PURGE PER A-38*

PG&E is in probable violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.13(c) for failure to ensure the procedures above were properly followed.

PG&E Response to NOPV #1:

PG&E acknowledges this notice of probable violation of G.O 112-F, Reference Title 49 CFR, Part 192, Section 192.13(c) for failure to ensure procedures were properly followed. Per CAP# 129207510 Task "CC2CA2", PG&E is working to update the existing guidance in Gas Design Standard A-38, "Purging Gas Facilities" to clarify roles and responsibilities for providing purge drive pressures and expected purge durations. Also, in support of CAP# 129207510 Task "CC2CA1" related to new blowdown and purging training, PG&E is developing content in a field-friendly format, utilizing diagrams and visual images to help enable success in adherence to purging requirements. These guidance document updates will provide the foundation for the new training material. The "GO Kettleman Compressor Station Ignition RCE Evaluation Report," Section 10, "Evaluation Conclusion" discusses these efforts further.

Additionally, PG&E acknowledges that the Root Cause Evaluation (RCE) highlighted areas to strengthen effective change in safe behaviors and adherence to written guidance assuring configuration control is maintained. The identified correctives stemming from the investigation of the RCE process prevents or reduces the likelihood of a reoccurrence, as PG&E reinforces essential controls to mitigate high-energy hazards. CAP# 129207510 Task 10 & 11 "Document

Interim Actions" addresses the safety stand down that occurred to suspend purging operations, as well as an updated safety awareness communication with interim controls that remain in place, including reinforcement of existing requirements in PG&E's Gas Design Standards A-38, A-38.3, and Code of Safe Practices Section 1304 and 1305.

NOPV #2: §192.805 Qualification program and 192.803 Definition.

2. G.O. 112-F Referenced Title 49 CFR, Part 192, Sections 192.805 Qualification program and 192.803 Definition.

§ 192.805 Qualification Program States in part:

Each operator shall have and follow a written qualification program. The program shall include provisions to:
(a) Identify covered tasks.
(b) Ensure through evaluation that individuals performing covered tasks are qualified…

Furthermore,

§ 192.803 Definitions states:

Abnormal operating condition means a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may:
(a) Indicate a condition exceeding design limits; or
(b) Result in a hazard(s) to persons, property, or the environment.

Evaluation means a process, established and documented by the operator, to determine an individual's ability to perform a covered task by any of the following:
(a) Written examination;
(b) Oral examination;
(c) Work performance history review;
(d) Observation during:
(1) Performance on the job,
(2) On the job training, or
(3) Simulations; or
(e) Other forms of assessment.

Qualified means that an individual has been evaluated and can:
(a) Perform assigned covered tasks; and
(b) Recognize and react to abnormal operating conditions.

The PG&E RCE team reviewed the training requirements and Operator Qualifications (OQs) for the work being performed during the execution of Work Clearance Document (WCD) #80252165 and identified that these requirements did not provide an adequate level of detail or require significant On the Job Training (OJT) necessary to ensure knowledge, skills, and proficiency for safe execution of the tasks. The PG&E RCE team identified the following gaps:

- **OQ Task: 07-01 Purging with Gas and/or Air**

  This OQ task requires a score of 80% or higher on an open book, written test, administered on a computer. PG&E personnel have full access to all relevant documents that the

questions on the test were built from along with a “key word” search function. Most written tests are followed by a performance evaluation that PG&E personnel must pass to become qualified. 07-01 has no performance evaluation. 07-01 also has no formal training program. Purging and venting is briefly discussed during Clearance Class (Gas-9658) but there is not a dedicated training for purging and venting. The RCE team indicated that purging and venting is high-risk and performed frequently.

- **OQ Task: 17-01 Valve Operations and Maintenance**

  This OQ task requires a score of 80% or higher on an open book, written test, administered on a computer. PG&E personnel have full access to all relevant documents that the questions on the test were built from along with a “key word” search function. PG&E personnel must also pass a performance evaluation. The performance being evaluated is the closing and opening of a pin off tee. Once completed this qualifies PG&E personnel to maintain and operate every type of non-actuated valve PG&E has in its system. There is no dedicated training on Valve operations and maintenance, however it is covered in several training courses offered in the Gas Control Tech. Apprenticeship (GPOM-2000, GPOM-3000 and GPOM-4000).

- **OQ Task: 14-01 Control Valve Systems (Actuated Valves)**

  This OQ task requires a score of 80% or higher on an open book, written test, administered on a computer. PG&E personnel have full access to all relevant documents that the questions on the test were built from along with a “key word” search function. PG&E personnel must also pass a performance evaluation. The performance evaluation has PG&E personnel demonstrate the person can bump test a Becker control valve with one specific type of controller. There is a wide variety of power Actuated Valves in the PG&E system with many different operator and controller configurations. Lack of understanding of the functionality of the pneumatic and hydraulic operation of V-90 in an abnormal operating configuration were contributors to this ignition event. Lack of specific training for this equipment combined with inadequate experience could have led to incorrect actions taken during execution of the purge drive steps taken prior to ignition.

Based on the gaps identified by the PG&E RCE team, SED believes that PG&E’s OQ program and evaluation for the three OQ tasks above (07-01, 17-01, and 14-01) were inadequate to ensure individuals performing these cover tasks are qualified. According to Title 49 CFR §192.803, “qualified” means that an individual has been evaluated and can perform assigned covered tasks; and recognize and react to abnormal operating conditions. As demonstrated by this incident, PG&E personnel were not able to recognize and react to some of the abnormal operating conditions found during this purging operation such as removal of the vertical vent valve, gas venting horizontally, and failed hydraulic operation of V-90.

Therefore, PG&E is in probable violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.805(b) for failure to have an adequate OQ program and sufficient evaluations to ensure individual performing OQ tasks 07-01, 17-01, and 14-01 are qualified.

PG&E Response to NOPV #2:

PG&E acknowledges the notice of probable violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.805(b) to SED’s concerns of an adequate Operator Qualification (OQ) program and sufficient evaluations to ensure individuals performing OQ tasks 07-01, 17-01, and

14-01 are qualified. This conclusion was reached based on the PG&E RCE report of the Kettleman incident. While we acknowledge that certain concerns were raised by the PG&E Kettleman RCE report for OQ-0701, OQ-1701, and OQ-14-01, we believe these do not constitute a failure of the overall OQ program.

The PG&E OQ program meets regulatory requirements and includes comprehensive evaluation methods designed to verify task-specific knowledge, skills, and ability. Specifically, 49 CFR 192.805 states that operators shall have and follow a written qualification program. PG&E's Utility Standard, TD-4008S establishes the written requirements for the OQ program. The RCE report does not establish that PG&E failed to follow TD-4008S but does raise areas for improvement that need to be addressed by improving training on pipeline operations that involve exposure to inherently dangerous conditions. Improved training is likely to reduce the risk of failure when performing these types of operations, including covered tasks due to human error.

For the covered tasks referenced in both the Kettleman RCE and the SED letter, the PG&E OQ program considers an individual qualified when they successfully complete task-related testing as follows:

Covered Task #	Title	Testing Method
OQ-07-01	Purging with Gas and/or Air	Written/Knowledge
OQ-17-01	Valve Operation and Maintenance	Written/Knowledge Performance/Physical
OQ-14-01	Control of Valve Systems (Actuated Valves)	Written/Knowledge Performance/Physical

TD-4008S also requires the qualification process to evaluate personnel by either a written or performance evaluation or both. Performance evaluations are conducted using equipment and facilities identical or very similar in operation to the equipment and facilities that personnel will use or by using the actual equipment and facilities. Personnel must also identify and react to Abnormal Operating Conditions (AOCs).

PG&E requires individuals to receive training and be operator qualified before performing covered tasks. Foundational training for covered tasks is provided at the Academy. This training provides general awareness and familiarization with pipeline operations and maintenance, including how to identify and react to AOCs. The OQ program builds on the foundation training by ensuring personnel have the specific knowledge and skills for covered tasks.

While PG&E acknowledges that all aspects of pipeline operations can and should be continually improved, in the case of the Kettleman incident, the concerns raised by the RCE report indicate the incident represents a breakdown in task execution by a qualified individual, indicating a potential lapse in either individual competency retention or adherence to procedural requirements, as defined by PG&E procedures, training and OQ program, not an inadequate OQ program. Further, the final, approved RCE report does not include corrective actions related to the OQ program.

Please contact [redacted] at [redacted] or [redacted] for any questions you may have regarding this response.

Sincerely,

/S/ Mike Kerans
Mike Kerans
Sr. Director, Gas Regulatory and Risk
Pacific Gas and Electric Company

cc: Dennis Lee, SED
Wai-Yin Chan, SED
[redacted], PG&E
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