Pacific Gas and Electric Company®

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October 27, 2022

Mr. Robert Burrough
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
840 Bear Tavern Road, Suite 300
West Trenton, NJ 08628

Re: Notice of Amendment (NOA) CPF 1-2022-062-NOA, - Pacific Gas and Electric Company (PG&E) Response and Closure Request

Dear Mr. Burrough:

Pacific Gas and Electric Company (PG&E) submits this response to the Pipeline and Hazardous Materials Safety Administration's (PHMSA) NOA CPF 1-2022-062-NOA dated August 18, 2022, pursuant to PG&E's approved September 29, 2022, time extension request, and respectfully requests PHMSA's review in support of closure.

Please note that guidance within PG&E's Underground Storage Risk and Integrity Management Plan (RIMP) reviewed during the 2021 inspection was reformatted into PG&E's Technical Document library effective February 1, 2022, as TD-4870M [Gas Storage Asset Management (GSAM) manual (Att#0-1)]. Because this latest publication restructured the sections of the RIMP into separate underground gas storage (UGS) standards and procedures within the manual, PG&E has included mapping tables of RIMP Rev. 5 to TD-4870M in the new TD-4870M document (see pages 2 to 11).

For clarity, each of the four items identified in the NOA will be repeated followed by PG&E's response.

Item #1:

§ 192.12 Underground natural gas storage facilities.
(a) ...
(c) *Procedural manuals. Each operator of a UNGSF must prepare and follow for each facility one or more manuals of written procedures for conducting operations, maintenance, and emergency preparedness and response activities under paragraphs (a) and (b) of this section. Each operator must keep records necessary to administer such procedures and review and update these manuals at intervals not exceeding 15 months, but at least once each calendar year. Each operator must keep the appropriate parts of these manuals accessible at locations where UNGSF work is being performed. Each operator must have written procedures in place before commencing operations or beginning an activity not yet implemented.*

PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities (RIMP) were inadequate to ensure safe operation of a pipeline facility. Specifically, PGE's RIMP, Section 9 *Mechanical Integrity of the Wells* failed to describe in sufficient detail the process for selecting an integrity assessment methodology and frequencies when each methodology would be used as required by API RP 1171 Section 9.3.1 (Section 9.3.1).

Section 9.3.1 states in part that "[a]ctive well mechanical integrity evaluations shall include initial and subsequent evaluations as determined using the risk assessment and the information derived from the initial evaluation."

At the time of the inspection, PGE's written procedures for well integrity evaluation only listed different types of potential integrity evaluations that PGE can perform but did not describe a selection process and a frequency for each type of evaluation. The process should include criteria for selection of evaluation, and frequencies for evaluations based on the risk assessments.

Therefore, PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility in accordance with § 192.12(c). PGE must revise its procedures to include adequate detail for selecting and implementing its various integrity assessment methodologies.

Response to Item #1:

As noted above, PG&E has restructured its RIMP into a new Gas Storage Asset Management manual (TD-4870M), effective February 1, 2022, and has restructured the RIMP into separate UGS standards and procedures within the manual. PG&E's current standard on mechanical integrity of wells, UGS-9-S (Att#1-1), provides an overview of the integrity assessment approach with references to supplemental documents for details. Section 1 of USG-9-S requires an initial well integrity evaluation and outlines considerations for subsequent evaluations using risk assessment and information derived from previous evaluations. Derived information can feed into condition-based frameworks to establish survey frequencies [e.g., casing inspection tools, see UGS-S15-P (Att#1-2) and UGS-C-P (Att#1-3)]. Other frequencies are prescriptive to align with regulatory requirements [e.g., annual noise-temperature, see UGS-T16-P (Att#1-4)].

Item #2:

§ 192.12 Underground natural gas storage facilities.
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PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility. Specifically, PGE's *Underground Storage Risk and Integrity Management Plan,* RIMP Section 6, failed to describe in sufficient detail each process PGE follows to maintain ongoing functional integrity of its reservoirs as required by API RP 1171, Section 9.2.1 (Section 9.2.1).

Section 9.2.1 states in part, "[t]he operator shall maintain functional integrity of storage wells and reservoirs. Storage wells and reservoirs can have different characteristics resulting in unique requirements in approaching integrity demonstration, verification, and monitoring."

At the time of the inspection, PGE's written procedures for functional integrity of the reservoirs was inadequate because PGE failed to describe the integrity work in detail. The procedures presented during the inspection only listed different integrity management processes used by PGE to demonstrate functional integrity of the reservoirs but were not descriptive of the processes.

Therefore, PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility in accordance with § 192.12(c). PGE must revise its procedures to include adequate detail regarding its processes for maintaining ongoing functional integrity of its reservoirs.

Response to Item #2:

Section 6 of UGS-1-S (Att#2-1) lists guidance documents addressing activities performed to demonstrate and verify reservoir and well integrity. UGS-8-S (Att#2-2) addresses underground gas storage project data, testing and monitoring and is supported in detail by the procedures and requires a characterization and design basis for the reservoir; such studies are contained in comprehensive assessments of the reservoir for the three PG&E operated fields. Annual inventory verification is included within UGS-P12-P (Att#2-3) and provides guidance for field shut in testing and analysis for storage gas inventory verification validating well and reservoir integrity.

Item #3:

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PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility. Specifically, PGE's RIMP, Section 11 *Safety Valve Operation, Maintenance and Inspection,* did not include a requirement to perform a physical inspection of a closed safety valve in order for it to be reopened, in accordance with PGE's practices in the field.

During the inspection, PGE provided CalGEM with procedures and question responses stating that its storage well safety valves can be opened manually at the wellhead or from the control pad on the well pad. The written procedures in place at the time of the inspection did not include a requirement that an observer be present at the wellhead during safety valve re-opening in order to inspect for abnormalities, which was identified by PGE to be its practice in the field.

Therefore, PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility in accordance with § 192.12(c). PGE must revise its procedures to be consistent with their field practices.

Response to Item #3:

PG&E's Gas Control Center has no automated control of the UNGSFs, but rather communicates to local station operators at the manned facilities for all UNGSF field operations. All well safety valve systems are designed to require onsite local intervention to reopen. Section 4 of UGS-11-S (Att#3-1) requires that the reason for the activation of a safety valve be investigated, and safety confirmed prior to reopening the well safety valve. Also, section 4 of UGS-11-S references more specific operating procedures for well safety valves for each storage field. For example, section 11 (Downhole Safety Valve) and section 12 (Uphole Safety Valve) of the Turner Cut Station (TCS) Operating Procedures (Att#3-2) include steps when returning to operation (i.e., subsections 11.2 and 12.2). Each subsection outlines multiple steps that can only be completed while the station operator is located at the wellhead.

Item #4:

§ 192.12 Underground natural gas storage facilities.
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PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility. Specifically, PGE's RIMP, Section 12 *Wellhead (Christmas Tree) Valve Operation, Maintenance and Inspection* did not include a requirement to perform a visual inspection of the wellhead at least annually as required by API RP 1171 Section 9.3.2 (Section 9.3.2).

Section 9.3.2 states in part that" ... [t]he operator shall visually inspect each wellhead assembly at least annually for leaks ... "

During the inspection, CalGEM requested PGE's procedures addressing visual inspection of wellhead assemblies for leaks pursuant to Section 9.3.2. PGE provided CalGEM with its **RIMP,** Section 12, *Wellhead (Christmas Tree) Valve Operation, Maintenance and Inspection,* and *Utility Standard: TD-4521S Gas Valve Maintenance Standard* (Valve Standard). The Valve Standard specified that PGE will "[i]nspect, operate, lubricate (if required) ... =[g]as storage Christmas Tree wellhead valves once each calendar year, not to exceed 15 months. The standard did not specify any requirements for inspection of non-valve components or the wellhead itself for leaks. In addition, the procedures did not describe the process used to conduct a visual inspection of the wellhead assembly for leaks, or a process for what is to be done when a leak is discovered from a visual inspection.

Therefore, PGE's written procedures for conducting operations, maintenance, and emergency preparedness and response activities were inadequate to ensure safe operation of a pipeline facility in accordance with § 192.12(c). PGE must revise its procedures to require and include adequate detail for performing annual visual inspections of wellhead assemblies for leaks.

Response to Item #4:

PG&E conducts daily leak screenings at each injection/withdrawal wellhead and attached pipelines in accordance with section 3.1 from each of the approved California Air Resources Board (CARB) monitoring plans (effective October 10, 2018 and approved by CARB on February 7, 2019) per UNGSF (e.g., McDonald Island monitoring plan Att#4-1). Section 3.1 describes that PG&E performs these daily leak surveys of the wells in accordance with TD-4110 series utility procedures (see, e.g., Appendix D of approved McDonald Island monitoring plan). Section 1 of UGS-12-S (Att#4-2) acknowledges the approved CARB monitoring plans within its inspection, monitoring and reporting requirements for unintended releases of natural gas, which are identified as supplemental references to the standard.

PG&E believes the four items identified in the NOA have been satisfactorily addressed by the above clarifications regarding the structure and content of PG&E's new Gas Storage Asset Management manual (TD-4870M). Upon completion of your review, PG&E requests notification of closure of this NOA.

The NOA requested (not mandated) that PG&E maintain documentation of the safety improvement costs associated with fulfilling this NOA and submit the total to PHMSA. Negligible costs were incurred as only clarification to existing guidance was provided.

Please contact Justin Leany at (415) 603–9552 or justin.leany@pge.com for any questions you may have regarding this response.

Sincerely,

/s/ Susie Richmond
Manager, Gas Regulatory Compliance

cc: Kristina Castrence, PG&E
Lucy Redmond, PG&E

Attachements :

Att#0-1_TD-4870M (Gas Storage Asset Management manual).pdf
Att#1-1_UGS-9-S (Mechanical Integrity of Wells).pdf
Att#1-2_UGS-S15-P (Casing Inspection Logging and Data Assessments).pdf
Att#1-3_UGS-C-P (Casing Inspection Survey Frequency Decision Tree).pdf
Att#1-4_UGS-T16-P (Temperature - Noise Logging and Data Review).pdf
Att#2-1_UGS-1-S (Underground Storage Risk and Integrity Management).pdf
Att#2-2_UGS-8-S (Reservoir Integrity).pdf
Att#2-3_UGS-P12-P [Inventory Verification (Pressure Hysteresis and Semi-Annual Field Shut In Testing)].pdf
Att#3-1_UGS-11-S (Safety Valve Operation, Maintenance & Inspection).pdf
Att#3-2_TCS Operating Procedures (DHSV & UPSV).pdf
Att#4-1_Natural Gas Underground Storage Facility Monitoring Plan – Facility McDonald Island.pdf
Att#4-2_UGS-12-S [Wellhead (Christmas Tree) Valve Operation, Maintenance & Inspection].pdf