

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



April 1, 2022

GI-2021-07-PGE-29-08

Ms. Janisse Quiones  
Senior Vice President, Gas Engineering  
Pacific Gas and Electric Company  
6121 Bollinger Canyon Road  
San Ramon, CA 94583

SUBJECT: SED Closure Letter for the General Order 112-F Inspection of PG&E's Transmission Integrity Management Program (TIMP)

Dear Ms. Quiones:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission (CPUC) reviewed Pacific Gas and Electric Company's (PG&E) response letter dated February 1, 2022, that addressed the follow-up questions SED identified from PG&E's closure letter response.

A summary of the inspection findings documented by SED, and each subsequent response from PG&E and SED taken for each finding are outlined for the four violations in this letter. One of the four violations identified by SED in this letter requires a response. The other violations will be addressed during the TIMP audit this year.

This letter serves as the official closure of the 2021 Inspection of PG&E's TIMP.

If you have any questions, please contact Paul Penney at (415) 703-1817 or by email at: [Paul.Penney@cpuc.ca.gov](mailto:Paul.Penney@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

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# Post-Inspection Written Preliminary Findings

**Dates of Inspection:** July 12-16, and July 19-23, 2021

**Operator:** PACIFIC GAS & ELECTRIC CO

**Operator ID:** 15007 (primary)

**Inspection Systems:** PG&E's Transmission System

**Assets (Unit IDs) with results in this report:** All Transmission Lines with DA Used ( )

**System Type:** GT

**Inspection Name:** (2021) PG&E TIMP Audit (ECDA, ICDA and SCCDA Focused)

**Lead Inspector:** Paul Penney

**Operator Representative:** Anthony Kwong, et al.

## Unsatisfactory Results

### Assessment and Repair: Confirmatory Direct Assessment (AR.CDA)

Question 4. Is an adequate Confirmatory Direct Assessment Plan in place?

References 192.931(a) (192.931(b), 192.931(c), 192.931(d))

Assets Covered All Transmission Lines with DA Used (Trans with DA)

Issue Summary According to PG&E's procedure list (Data Request (DR) #1) a procedure for Confirmatory Direct Assessment (CDA) has not been written. However, a CDA project was done in 2016 per DR #2 (CDA-119B).

However, 192.931 states in part:

*An operator using the confirmatory direct assessment (CDA) method as allowed in §192.937 must have a plan that meets the requirements of this section and of §§192.925 (ECDA) and §192.927 (ICDA).*

PG&E is therefore in violation of 192.931 for not having a procedure as required by the underlined portion of this code section.

#### **PG&E's Response:**

PG&E disagrees with this violation. When using Confirmatory Direct Assessment (CDA), 192.931 requires an operator to have a plan that meets the requirements of 192.925 for external corrosion and 192.927 for internal corrosion.

Although PG&E did not have a CDA procedure in place at the time, PG&E's plan for the 2016 CDA project followed the External Corrosion Direct Assessment (ECDA) procedure which meets the requirements of 192.925. In addition, not only was an appropriate external corrosion procedure followed, but more stringent requirements were applied to the CDA project than what is provided in 192.931. When performing CDA to address the external corrosion threat, the plan must comply with 192.925 with the following exceptions, (1) the indirect examination may allow use of only one indirect examination tool suitable for the application and (2) all immediate action indications must be excavated and at least one high risk indication that meets the criteria of scheduled must be excavated in each region. PG&E used three indirect examination tools for the 2016 CDA project (rather than the allowed use of only one) and excavated all scheduled indications for each region and a monitored criteria indication as an effectiveness dig for the project. Based on the above explanation, PG&E disagrees with this violation since it utilized a plan for the 2016 CDA project that met the requirements of 192.925 and 192.931.

#### **SED's Conclusion:**

PG&E's efforts to exceed the requirements in 192.931 for the identified project are laudable. However, SED disagrees with PG&E's assertion that this is not a violation.

This is clearly a violation of 192.931 based on the following. First, PG&E acknowledged it did not have a procedure. Second, the code section cited by SED states:

An operator using the confirmatory direct assessment (CDA) method as allowed in §192.937 must have a plan that meets the requirements of this section and of §§192.925 (ECDA) and §192.927 (ICDA).

This quoted section of 192.931 not only states PG&E must have a plan, but it must meet the requirements of this section (i.e., the whole 192.931 code section). The remainder of 192.931 states several times that certain CDA procedures may or must include certain requirements. For example, 192.931(b) states in part:

*(b) External corrosion plan. An operator's CDA plan for identifying external corrosion must comply with §192.925 with the following exceptions.*

*(1) The procedures for indirect examination may allow use of only one indirect examination tool suitable for the application.*

*(2) The procedures for direct examination and remediation must provide that—*

*(i) All immediate action indications must be excavated for each ECDA region...*

This means the CDA procedures must include elements identified in the rest of 192.931.

Third, while not specifically quoted in this audit letter, 192.13(c) states:

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

**PG&E's Response to the Closure Letter:**

PG&E did not respond to this item in its closure letter response.

**SED's Follow-up:**

GSRB would like PG&E's commitment to not do future CDA projects without having a CDA procedure in place prior to the initiation of the project. Please provide PG&E's comment in writing.

## Assessment and Repair : Internal Corrosion Direct Assessment (ICDA) (AR.IC)

Question 5. Do records demonstrate that the requirements for an ICDA pre-assessment were met?

References 192.927(c)(1) (192.947(g))

Assets Covered All Transmission Lines with DA Used (Trans with DA)

Issue Summary GSRB staff believes that project IC19-109 should not have been assessed with ICDA because there were no liquid hold up points on this short section of pipe coming out of the Milpitas terminal. PG&E's Report B, Item 7 states that this section of pipe is horizontal. Therefore, any liquid introduced would be expected to be transported downstream. Part 192.927(c)(1) states in part:

*Preassessment. In the preassessment stage, an operator must gather and integrate data and information needed to evaluate the feasibility of ICDA for the covered segment, and to support use of a model to identify the locations along the pipe segment where electrolyte may accumulate, to identify ICDA regions, and to identify areas within the covered segment where liquids may potentially be entrained. This data and information includes, but is not limited to...*

As noted in the underlined code section, the purpose is to sample areas along the High Consequence Areas (HCA) segment where liquids may be entrained and where internal corrosion might be found. PG&E should have found this section of pipe to be infeasible for the ICDA process because there are no liquid holdup points.

As further identified by PG&E, the direct examinations covered approximately 50% of the footage of the HCA. PG&E could have chosen another assessment technique such as direct examination for this HCA segment.

PG&E is therefore in violation of 192.927(c)(1).

**Data Request:**

Please provide a plan for reassessing this HCA segment with an approved reassessment technique per 192.937(c) before the next scheduled reassessment would have been scheduled.

**PG&E's Response:**

PG&E does not agree with this violation. The finding presents itself as a question of ICDA effectiveness as opposed to ICDA feasibility. 192.927(c)(1) lists some of the data to be collected for an ICDA project, low points being one of those data elements, but it does not specifically state that a low point in the covered segment is required for ICDA to be feasible.

PG&E's procedures not only incorporate the requirements of 192.927, but also follow the NACE ICDA industry standard SP0206. Section 3.3 within SP0206 lists the conditions that would make ICDA infeasible, none of which states the presence of a low point in the covered segment is required for feasibility. PG&E agrees that the IC19-109 project was less effective than planned due to the lack of a liquid hold up location but was still feasible since all four phases of the ICDA process can be performed on this horizontal piping.

In addition, as stated in PG&E's response in data request #10, PG&E performed an ILI run on L-109 in 2019, downstream of IC19-109, and the results did not indicate any internal corrosion on the pipeline. Since there were no indications of internal corrosion in IC19-109 or the 2019 ILI run, the IC threat became inactive in 2020 and there are no planned reassessments for this threat. Therefore, it is PG&E's belief that it is not in violation of 192.927(c)(1).

Additionally, PG&E requests that SED clarify its statement that "project IC19-109 should not have been assessed with ICDA because there were no liquid hold up points on this short section of pipe coming out of the Milpitas terminal". Specifically, is SED implying that an IC threat does not exist due to the lack of low spots or liquid hold up points in the pipeline?

**SED's Conclusion:**

SED strongly disagrees with PG&E's arguments. The very purpose of doing ICDA on a covered segment is to find internal corrosion at selected locations. As noted in 192.927(a),

*Definition. Internal Corrosion Direct Assessment (ICDA) is a process an operator uses to identify areas along the pipeline where fluid or other electrolyte introduced during normal operation or by an upset condition may reside, and then focuses direct examination on the locations in covered segments where internal corrosion is most likely to exist...*

PG&E is stating the ICDA process is feasible without any potential liquid holdup points to dig and find internal corrosion, other than random locations near the beginning and ending of the ICDA region; this is a specious argument. Covered segment IC19-109 was horizontal with no locations for liquid to accumulate. Therefore, it was very unlikely internal corrosion would be found. As a result, the ICDA process should have been declared infeasible for this horizontal section of pipe.

Also, PG&E stated in its response that "... it [192.927(c)(1)] does not specifically state that a low point in the covered segment is required for ICDA to be feasible." This is not an issue since 192.927(c)(1) states in the last quoted sentence "...This data and information includes, but is not limited to..."

Finally, SED will answer PG&E's question with another question. Has PG&E ever found Internal Corrosion on a section of horizontal pipe where the ICDA process has been used? If so, please provide those examples.

**PG&E's Response to the Closure Letter:**

PG&E responded to the item highlighted in yellow from SED's conclusion (above). However, PG&E did not answer the instruction highlighted in blue from SED's finding (above).

**SED's Follow-up:**

SED will follow up on this item during the next TIMP audit in 2022. SED will look at this section of pipe and all other incoming and outgoing transmission lines at the Milpitas Terminal.

Question 9. Do records demonstrate that sites were identified where internal corrosion may be present?

References 192.947(g) (192.927(c)(3), 192.927(c)(5))

Assets Covered All Transmission Lines with DA Used (Trans with DA)

Issue Summary PG&E applied ICDA to a 47-foot segment that was horizontal in project IC19-109. There were no critical inclination angles or other potential liquid hold up locations (i.e., sags, drips, dead legs, etc.). This section of pipe was horizontal. PG&E therefore picked two locations near the beginning and near the end of the 47-foot segment. These are random locations that do not meet the requirements of 192.927(c)(3), which states in part:

*"(3) Identification of locations for excavation and direct examination. An operator's plan must identify the locations where internal corrosion is most likely in each ICDA region. In the location identification process, an operator must identify a minimum of two locations for excavation within each ICDA Region within a covered segment and must perform a direct examination for internal corrosion at each location, using ultrasonic thickness measurements, radiography, or other generally accepted measurement technique. One location must be the low point (e.g., sags, drips, valves, manifolds, dead-legs, traps) within the covered segment nearest to the beginning of the ICDA Region. The second location must be further downstream, within a covered segment, near the end of the ICDA Region. If corrosion exists at either location, the operator must..."*

PG&E is therefore in violation of 192.927(c)(3).

PG&E needs to identify all other segments where ICDA was used over the past seven years (2013-2020) as assessment techniques and there was no critical inclination angle or liquid hold up points on the covered segments, and the covered segments were not part of a larger ICDA region.

**Data Request:**

1. Please provide a list of ICDA segments, including the name of the segment, the ICDA project name, and the mile points associated with the ICDA project.
2. Please indicate how PG&E will reassess each of these covered segments before the next assessment is due to assess for Internal corrosion using another assessment technique.

**PG&E's Response:**

PG&E does not agree with this violation and disagrees with the SED's statement that the digs selected were random. 192.927(c)(3) specifies that one dig must be at the beginning of the covered segment and the other further downstream in the covered segment, and PG&E applied these criteria during the dig selection process. Since this piping is horizontal, based on the flow conditions, the beginning site would be the most likely location for liquid collection if there was no flow, and the site at the end of the segment would likely be a liquid collection point if there was flow. Therefore, PG&E disagrees that these locations were randomly selected and thus not in violation of 192.927(c)(3).

In response to SED's data requests, PG&E reviewed all ICDA projects from 2013-2020 and determined that other than IC19-109, all other projects had critical inclination angles or liquid hold up points. This list of ICDA projects is provided in Table 1 below for SED's review. Since all other ICDA projects had either a critical inclination angle or liquid hold up point, PG&E does not believe it is necessary to reassess these covered segments using a different method prior to the next assessment cycle.

Table 1. 2013-2020 ICDA Projects

Year	Project Name	Critical Inclination Angle/Low Point Location	Low Point – Mile Points
2013	IC13-119	Yes	0.01, 9.08, 1.63, 1.68, 69.81, 0.0096, 16.46, 8.96
2013	IC13-123	Yes	4.4, 7.92, 14.96, 2.31, 11.44, 2.86, 4.35, 4.18, 0.00, 3.47
2013	IC13-191-1	Yes	9.92, 10.33, 15.38, 15.43, 15.78
2014	IC14-101	Yes	0.00
2014	IC14-118	Yes	20.393, 20.88, 43.242, 0.0272, 49.43, 13.69, 25.01, 40.94
2014	IC14-121	Yes	0.049, 1.774, 0.0009, 0.0073, 0.0049
2014	IC14-148	Yes	0.00, 0.605, 8.912, 0.017, 10.137, 13.169, 0.004

2014	IC14-300	Yes	490.9285, 491.828, 0.00, 490.83, 450.83, 134.435, 0.0362, 0.0054, 0.027
2018	IC18-118	Yes	0.011, 0.057, 39.95, 12.55, 13.08, 24.54
2019	IC19-191-1	Yes	35.568, C-Street Station
2019	IC19-3019-01	Yes	0.00, 0.026, 0.009
2020	IC20-021A	Yes	19.7312, 12.8453, 12.697
2020	IC20-057A	Yes	9.111, 9.093
2020	IC20-121	Yes	7.921, 11.366, 10.061, 11.71, 9.857
2020	IC20-138	Yes	43.4501, 24.4154, 1.7892, 2.465
2020	IC20-0817-01	Yes	0.0315, 0.171, 0.1957, 0.2495

**SED's Conclusion:**

SED disagrees with PG&E's assertion that it is not a violation of this code section. As noted in the quoted code section, an operator must identify a minimum of two dig locations. For one dig location, the quoted code section states: *...One location must be the low point (e.g., sags, drips, valves, manifolds, dead-legs, traps) within the covered segment nearest to the beginning of the ICDA Region...* Clearly, the horizontal location near the beginning of IC19-109 is not a low point, nor does it have a critical inclination angle. For the other dig location, the quoted code section from above states: *...The second location must be further downstream, within a covered segment, near the end of the ICDA Region...* SED rejects PG&E's argument.

However, SED agrees with PG&E that reassessment of the ICDA projects in the table above with other assessment techniques are not necessary because low point and/or critical inclination angle were chosen on the project.

## Assessment and Repair: In-Line Inspection (Smart Pigs) (AR.IL)

Question 7. Do records demonstrate that the assessment methods shown in the baseline and/or continual assessment plan were appropriate for the pipeline specific integrity threats?

References 192.947(g) (192.919(b), 192.921(a), 192.937(c))

Assets Covered All Transmission Lines with DA Used (Trans with DA)

Issue Summary For the ICDA assessment project IC19-109, PG&E used Guided Wave Ultrasonic Technology (GWUT) to examine a portion of pipe encased in concrete (a thrust block). While the use of GWUT is acceptable to examine for internal corrosion, it does not appear that PG&E obtained a special permit prior to using this technology. This is based on a review of special permits issued by PHMSA in 2018 and 2019.

192.937(c)(4) states:

*(4) Other technology that an operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 180 days before conducting the assessment, in accordance with §192.949. An operator must also notify a State or local pipeline safety authority when either a covered segment is located in a State where OPS has an interstate agent agreement, or an intrastate covered segment is regulated by that State.*

PG&E is therefore in violation of 192.937(c)(4) for not obtaining a special permit prior to using GWUT within the ICDA process for project IC19-109.

**PG&E's Response:**

PG&E does not agree with this violation. SED's finding indicates that the use of GWUT for this project is considered "other technology" and a notification to PHMSA for use of this technology should have been made 180 days prior to its use. However FAQ-235 states: "...If guided wave technology is being used as a tool to examine the predicted locations to determine if corrosion exists, then it is being used in a manner consistent with the ICDA process and would not be considered "other technology". If, on the other hand, the intent is to use guided wave technology in some other manner to assess internal corrosion (e.g., not first analyzing the pipeline to determine likely locations for internal corrosion), then its use would be

different from the normal ICDA process and it would be considered "other technology". Since GWUT was used in a manner consistent with the ICDA process and the guidance in FAQ-235, PG&E does not believe it is in violation of 192.937(c)(4).

**SED's Conclusion:**

SED agrees with PG&E based on Transmission FAQ-235. However, please explain in detail how the thrust block met the requirements in FAQ-235 as part of the ICDA process. In other words, was the thrust block at a low point or a critical inclination angle?

## **Concerns**

**No Concerns.**