

PACIFIC GAS AND ELECTRIC COMPANY

GENERAL ORDER 174

2021 ANNUAL ELECTRIC SUBSTATION REPORT

July 1, 2022

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I. GENERAL

Pursuant to Section IV, Paragraphs 40.1 and 40.2 of the California Public Utilities Commission's (Commission) General Order (GO) 174, adopted in Decision No. (D.) 12-10-029, Pacific Gas and Electric Company (PG&E) submits its Annual Substation Report, which includes:

- PG&E's Substation Inspection Program Summary; and
- A report summarizing PG&E's completed and past due substation inspections for 2021.

II. SUBSTATION INSPECTION PROGRAM SUMMARY

Accompanying this report as Appendix A is a copy of PG&E's Substation Inspection Program Summary ("Program Summary"), which complies with Section III of GO 174. This summary is effective as of June 30, 2022. No changes have been made to PG&E's Substation Inspection Program ("Program") since the prior version of the Program Summary.

III. SUMMARY OF COMPLETED AND PAST DUE SUBSTATION INSPECTIONS

A. SUMMARY OF SUBSTATION INSPECTIONS

As required by GO 174, Table 1 below summarizes completed and past due inspections for the 2021 calendar year. The data presented in Table 1 is a point-in-time reporting of inspections and, as of the date of submittal to the Commission, is based on the

most accurate data available. As described in PG&E’s GO 174 Substation Inspection Program Summary, there may be special circumstances outside of PG&E’s control that prevented performing a substation inspection as planned (such as inclement weather, lack of access due to snow, fire, or other natural causes). For these circumstances, the substation inspection was performed when conditions were made safe, and equipment is accessible. Any planned inspection that was missed is reflected as “Past Due” in the GO 174 Annual Report, along with the reason(s) why the inspection was missed or late.

In 2021, PG&E completed a total of 6,755 substation inspections on-time with none past due within the full PG&E service territory; this number includes substations under the control of the California Independent System Operator (CAISO). PG&E was planning to exclude all CAISO controlled substations in the 2021 GO 174 Annual Report; however, CAISO jurisdiction is monitored at the equipment level per the approved Transmission Rating Registry (TRR), which may cause misinterpretations when summarizing at the substation facility level. To be comprehensive and fully transparent, PG&E determined we would not be excluding any substation from the GO 174 Annual Report at this time.

Table 1 – 2021 Substation Inspection Summary

Type of Inspection	Completed	Past Due
Substation Inspections	6,755	0

Notes:

- 1) Definition of Reporting Unit Basis
 - A. Substation Inspection: PG&E defines a substation inspection as a planned basic evaluation, performed using visual and auditory senses (if applicable) to identify abnormal conditions.
 - B. Definition of a Substation: PG&E defines a substation as an assemblage of equipment from 4 to 500kV, secured via perimeter fence, wall or building and

under the control of qualified personnel, through which electric energy is passed for the purposes of switching or modifying its characteristics. This includes facilities with transformers, switching stations, PG&E-owned equipment inside a third party-owned facility, and 12/4kV (or 21/4kV) unit substations. Note the term “control” does not imply continuously manned operation.

C. Count of Substation Inspection: PG&E’s count of substation inspections is based on all substations within the service territory

2) Definition of “Completed”

PG&E defines a Completed substation inspection as the actual number of GO 174 inspections performed for the reporting period. If applicable, will also include completed but Past Due inspections due within the reporting period. Does not include inspections from the prior reporting periods.

3) Definition of “Past Due”

PG&E defines a Past Due substation inspection as the total number of GO 174 inspections scheduled but not performed by set due date or missed within the reporting period. Does not include inspections from prior reporting periods.

B. EXPLANATION OF PAST DUE INSPECTIONS

PG&E completed all inspections on-time, with no past due inspections in 2021.

APPENDIX A

Substation Inspection Program Summary

Meeting Section III of CPUC General Order 174 (adopted October 25, 2012)

Rules for Electric Utility Substations

PG&E Substation Inspection Program Summary

1. Scope

This document provides the general requirements for the inspection of substation facilities that are owned by Pacific Gas and Electric Company (PG&E). This document is prepared to ensure compliance with California Public Utilities Commission General Order (“GO”) 174 “Rules for Electric Utility Substations.”

The intent of PG&E’s Inspection Program is to help ensure the safe delivery of reliable power in a cost-effective manner and comply with all applicable regulatory requirements.

2. Definitions

Annual – A calendar year.

Customer Substation – a Substation that functions as the main source of electric power supply for a single customer, including those that provide feed through for additional customers.

Good Utility Practice – FERC issued Order 890 (February 16, 2007) and defined Good Utility Practice as: “Any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region, including those practices required by Federal Power Act section 215(a)(4).”

Monthly – Once per calendar month.

Substation – An assemblage of equipment from 4 to 500kV, secured via perimeter fence, wall or building and under the control¹ of qualified personnel, through which electric energy is passed for the purposes of switching or modifying its characteristics. This includes facilities with transformers, switching stations, PG&E-owned equipment inside a third party-owned facility, and 12/4kV (or 21/4kV) unit substations.

Substation Inspection – A planned basic evaluation, performed using visual and auditory senses (if applicable) to identify abnormal conditions.

¹ Note the term “control” is used in GO 174 but is not meant to imply continuously manned operation.

Substation Inspection Type – PG&E developed substation inspection types to determine the frequency of inspection. Initially the categorization of a substation type is based on a PG&E-developed model that takes into account the risk each substation may have for public and employee safety, system criticality, security, and environmental risk. Then, field conditions or current activities (e.g., specific equipment or public issues) not represented in the model are taken into account, and the final substation type categorization is then made. Type 1 substations are inspected monthly and Type 2 substations are inspected on an every other month cycle.

General

- a. Substation Inspections – PG&E’s Substation Inspection Program is based on a time-based trigger. Substation Inspections are scheduled to be performed based on a monthly basis for high criticality substation, and every other month for low criticality.

Note: Infrequently there may be special circumstances out of our control which prevent performing the substation inspection as planned, such as inclement weather, or lack of access due to snow, fire, or other natural causes. For these circumstances, the substation inspection will be performed when conditions are safe, and equipment is accessible. Any planned inspection that is missed or performed late will be reflected as past due in the GO 174 Annual Report, along with the reason(s) why the inspection was missed.

The Substation Inspection Program activities include:

- i. Inspecting the substation and equipment for damage or abnormal conditions.
- ii. Inspecting all other items appropriate to the substation and its equipment.
- iii. Documenting and reporting any abnormal conditions found in the substation and documenting any repairs, services or other work performed.

Note: The Program does not include readings of equipment meters or environmental activities, though PG&E may perform these during the same planned visit; nor does the program include other maintenance items such as unplanned or corrective maintenance, on-line condition monitoring, infrared and corona camera inspection, or testing.

- b. Qualified Personnel – Substation Inspections are performed by qualified personnel who have the training and experience to perform inspections, repairs, and other services to substation equipment.
- c. Facilities – At a minimum, qualified personnel perform a visual and/or auditory (if applicable) inspection of the following substation equipment and facilities, whether in service or not:
- Batteries
 - Buses
 - Support structures
 - Capacitor banks
 - Circuit breakers
 - Fire detection and suppression system (where applicable)
 - Grounding system
 - Insulators/bushings/arrestors
 - Perimeter Fencing and Gates
 - Transformers
 - Reactors
 - Voltage Regulators

- d. Records – Upon completion of a substation inspection, the following information (at a minimum) is captured via electronic check sheet records
- Inspector name or identification
 - Date the inspection was completed
 - Brief description of identified discrepancies
 - Condition rating (where applicable)
 - Estimated Date of Corrective Action (whenever applicable), determined with a timeframe from the date a corrective action notification is created)
- e. Record Retention – Records of completed substation inspections are retained for not less than 5 years.
- f. Reporting – On July 1 of each year, PG&E will submit an Annual Report to the Safety and Enforcement Division of the CPUC summarizing the number of completed and past due substation inspections for the prior calendar year.

Consistent with GO 174, PG&E’s Annual Report excludes Customer Substations and transmission substations not serving distribution customers.

The Annual Report will include a matrix showing the following:

Type of Inspection	Completed ⁽¹⁾	Past Due ⁽²⁾
Substation Inspection	X,XXX	X

⁽¹⁾ Actual number of GO 174 inspections performed for the reporting period. If applicable, will also include completed but Past Due inspections due within the reporting period. Does not include inspections from the prior reporting periods.

⁽²⁾ Total number of GO 174 inspections scheduled but not performed by set due date within the reporting period. Does not include inspections from prior reporting periods.

Revision Log

Revision Number	Date Effective	Description of Change(s)
0	7/1/2014	Issued Original Substation Inspection Program Summary
1	6/29/2015	Minor changes. Removed Criticality Matrix terminology and replaced it with Substation Inspection Type. Also made non-substantial changes in the Definitions Section.
1	12/31/2016	No Changes were made to the Substation Inspection Program
1	12/31/2017	No Changes were made to the Substation Inspection Program
1	12/31/2018	No Changes were made to the Substation Inspection Program
2	11/06/2019	Changed attachment number from 12 to 11
2	12/31/2020	No Changes were made to the Substation Inspection Program
2	12/31/2021	No Changes were made to the Substation Inspection Program