PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

February 4, 2022 TA2021-931

Lise Jordan, Sr. Director
Regulatory Compliance and Quality Assurance
Pacific Gas and Electric Company (PG&E)
77 Beale Street
San Francisco, CA 94105

SUBJECT: Electric Transmission Audit of PG&E's Pismo Beach Division

Dear Ms. Jordan:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Oge Enyinwa, Brandon Vasquez, and Monica Hoskins conducted a transmission audit of PG&E's Pismo Beach Division from December 6 through December 10, 2021. ESRB staff reviewed PG&E's procedures and records, and conducted a field inspection of PG&E's transmission facilities and equipment.

As a result of the audit, my staff identified violations of General Order 95 and 165. A copy of the audit findings itemizing the violations is enclosed. Please respond no later than March 4, 2022, via electronic transmittal of all corrective actions and preventive measures taken by PG&E to correct the identified violations and prevent the recurrence of such violations. In addition, please provide the projected completion dates of all corrective actions for the violations outlined in Sections II and IV of the enclosed CPUC Audit Report for any outstanding items not addressed.

If you have any questions concerning this audit, please contact Oge Enyinwa at (415) 470-3504 or ogeonye.enyinwa@cpuc.ca.gov.

Sincerely,

Banu Acimis, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

Enclosure: CPUC Electric Transmission Audit Report of PG&E Pismo Beach Division

Cc: Lee Palmer, Director, Safety and Enforcement Division, CPUC
Nika Kjensli, Program Manager, ESRB, SED, CPUC
Nathan Sarina, Senior Utilities Engineer- Supervisor, ESRB, SED, CPUC

Rickey Tse, Senior Utilities Engineer- Supervisor, ESRB, SED, CPUC
Ogeonye Enyinwa, Senior Utilities Engineer - Specialist, ESRB, SED, CPUC
Brandon Vasquez, Utilities Engineer, ESRB, SED, CPUC
Monica Hoskins, Utilities Engineer, ESRB, SED, CPUC

CPUC ELECTRIC TRANSMISSION
AUDIT REPORT OF
PG&E PISMO BEACH DIVISION
December 6-10, 2021

I. Records Review

During the transmission audit, Electric Safety and Reliability Branch (ESRB) staff reviewed the following records for PG&E Pismo Beach District:

• PG&E's "Electric Transmission Preventive Maintenance Manual (ETPM) TD-1001M" Rev 3, Rev 4, and Rev 5
• PG&E's utility procedures, standards, guidelines, and job aids for electric transmission facility inspections
• Maps of transmission circuits
• A list of transmission circuits and tower count
• A list of transmission facilities
• Lists of all patrol and inspections for electric transmission facilities
• A list of non-routine patrols for electric transmission facilities
• Third-Party Notification and Resolution of Potential Violations and Safety Hazards
• Notification to Third-Party Non-Utility of Nonconformance
• PG&E's utility procedures, standards, guidelines, and job aids for electric transmission vegetation management
• A list of vegetation management records for transmission circuits
• Open, closed, and canceled notifications
• Four pole loading calculations
• Internal audits PG&E conducted on its transmission facilities
• A list of PG&E's training courses
• PG&E's utility standard and procedures for transmission work verification, vegetation management quality assurance, and vegetation management audit

II. Records Review - Violations List

ESRB staff found the following violations during the record review portion of the audit:

General Order (GO) 95, Rule 31.1, Design, Construction and Maintenance states in part:
"Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

GO 165, Section IV – Transmission Facilities states:

"Each utility shall prepare and follow procedures for conducting inspections and maintenance activities for transmission lines.

Each utility shall maintain records of inspection and maintenance activities. Commission staff shall be permitted to inspect records and procedures consistent with Public Utilities Code Section 314 (a)."

1. PG&E's TD-1001M-B009, Revision 1: Revised Inspection Guidelines Table 1 (below) provides the Overhead Inspection Frequencies requirements, and Section 3.6 states the following:

"All overhead transmission line facilities are patrolled annually. Patrols are performed on a line-base frequency. A detailed facility inspection (i.e., detailed ground or aerial inspections) may be considered as a patrol, but a patrol cannot be considered as, or substituted for any of the inspection methods."

Table 1. Overhead Inspection Frequencies

Voltage (kV)	Inspection Type	Structure Type	Non-HFTD (years)	Non-HFTD Areas of Concern[3] (years)	HFTD Tier 2 and Zone 1 (years)	HFTD Tier 3
500	Detailed Ground[1]	Steel (non-critical)	3	Annually	3	Annually
	Climbing[1]	Steel (non-critical)	12 (and as triggered)	Annually	3	Annually
	Detailed Ground and Climbing[1]	Steel (critical)	3 (and as triggered)	Annually	3	Annually
	High Water Table Inspection (Bay Waters Foundation)	Steel	5	5	3	Annually
	Infrared	Steel	5 (and as triggered	5	3	Annually
230 115 70 60	Detailed Ground and Aerial, or Detailed Ground and Climbing[2]	Steel	5	Annually	3	Annually
	High Water Table Location Inspection (Bay Waters Foundation)	Steel	5	5	5	Annually
	Detailed Ground and Aerial	Wood	5	Annually	3	Annually
	Climbing[4] or aerial lift	Wood	As triggered	As triggered	As triggered	As triggered
	Infrared	Steel or Wood	5 (and as triggered)	5 (and as triggered)	3	Annually

[1] Detailed Ground and Climbing inspections are proposed for 2020; aerial inspections do not currently gather all information from 500kV climbing inspections.

[2] Aerial can be selected as an option in lieu of Climbing for non-500kV structures if photos informing structural integrity are included in the aerial inspections (to substitute for the rattle test performed in Climbing inspections).

[3] All Non-HFTD Areas of Concern structures will be inspected in 2020 to gain an understanding of asset health, then will shift to a revised timeline (TBD) in 2021.

[4] Climbing of wood poles is not typically performed as part of routine inspections. Climbing is performed as-triggered per Utility Standard TD-2325S, "Inspecting, Testing, and Maintaining Wood Poles."

PG&E did not meet the inspection frequency requirement as prescribed above. ESRB staff reviewed all PG&E's inspection and patrol records for the years: 2017, 2018, 2019, 2020, and 2021. ESRB staff found one overdue inspection in 2021, shown in Table 1 below.

Table 1: Past due overhead inspection

Structure Number	Functional Location Description	OH/UG	Inspection Type	Inspection Due Date	Inspection Date
T087	10502 MIDWAY-SANTA MARIA (12KV)-SANTA MA	OH	Enhanced Inspections	7/31/2021	8/13/2021

2. **GO 95, Rule 18.B.(1)** states in part:

"(a) The maximum time periods for corrective actions associated with potential violation of GO 95 or a Safety Hazard are based on the following priority levels:

(i) Level 1 -- An immediate risk of high potential impact to safety or reliability:

• Take corrective action immediately, either by fully repairing or by temporarily repairing and reclassifying to a lower priority.

(ii) Level 2 -- Any other risk of at least moderate potential impact to safety or reliability:

• Take corrective action within specified time period (either by fully repair or by temporarily repairing and reclassifying to Level 3 priority). Time period for corrective action to be determined at the time of identification by a qualified company representative, but not to exceed:

(1) six months for potential violations that create a fire risk located in Tier 3 of the High Fire Threat District,

(2) 12 months for potential violations that create a fire risk located in Tier 2 of the High Fire Threat District,

(3) 12 months for potential violations that compromise worker safety, and

(4) 36 months for all other Level 2 potential violations.

(iii) Level 3 -- Any risk of low potential impact to safety or reliability:

• Take corrective action within 60 months subject to the exception specified below."

PG&E's ETPM, Revision 5, effective August 31, 2020, Table 3 below defines the priority codes and associated time frames for the corrective actions.

Table 3. Priority Codes

Priority Code[1]	Priority Description
A[2]	The condition is urgent and requires **immediate** response and continued action until the condition is repaired or no longer presents a potential hazard. SAP due date will be 30 days to allow time for post-construction processes and notification close-out.
B[3]	Corrective action is required within **3 months** from the date the condition is identified. The condition must be reported to the transmission line supervisor as soon as practical.
E	Corrective action is required within **12 months** from the date the condition is identified ***EXCEPT FOR ITEMS WITHIN HFTD TIER 3 ARE REQUIRED WITHIN 6 MONTHS.***[4].
F	Corrective action is recommended within **24 months** from the date the condition is identified, (due beyond 12 months, not to exceed 24 months). ***EXCEPT FOR ITEMS WITHIN HFTD TIER 3 ARE REQUIRED WITHIN 6 MONTHS AND WITHIN HFTD TIER 2 ARE REQUIRED WITHIN 12 MONTHS.***[5]

[1] Refer to 2.3.5.2, "Priority Code Due Dates for High Fire Risk Conditions within HFTDs" and 2.3.5.3, "Priority Code Due Dates for Non-Fire Risk Conditions within HFTDs."

[2] QCRs must report immediately any "Priority Code A" abnormal condition to the transmission line supervisor, and the transmission supervisor or QCR contacts GCC.

[3] In addition, QCRs must report any "Priority Code B" condition to the transmission line supervisor as soon as practical, to ensure that correction occurs within the appropriate time.

[4] If the condition in the HFTD Tier 3 does NOT create a fire risk (non-threatening) the corrective action is required within 12 months.

[5] If the condition in the HFTD Tier 3 OR Tier 2 does NOT create a fire risk (non-threatening) the corrective action is required within 24 months.

Table 3 - Most overdue work orders per priority and the number of days overdue

Priority Code	Most Overdue Work Order	Number of Days Overdue
B	116501254	554
E	117447352	780
F	117450630	151

- PG&E identified Work Order #116501254 as a Priority E on February 19, 2019, then reassessed it to a Priority B on June 30, 2021. However, PG&E did not complete this work until August 25, 2021.
- PG&E identified Work Order #117447352 as Priority E on March 30, 2018, created the Work Order on June 14, 2019, and assigned a correction due date of March 30, 2020; but PG&E did not complete this work until May 18, 2021.
- PG&E identified Work Order #117450630 as Priority F on June 13, 2019, created the Work Order on June 17, 2019, and assigned a correction due date of June 13, 2021; but this Work Order was still open at the time ESRB conducted this audit. Therefore, PG&E should provide a status update of this Work Order in its response to this Report.

III. Field Inspection

During the field inspection, ESRB staff inspected PG&E's transmission facilities listed in Table 4:

Table 4. Structures Inspected During Field Visit

Locations	Structure Number	Circuit	Voltage (kV)
1	019/076	Diablo-Midway #2	500
2	019/076	Diablo-Midway #3	500
3	008/039	San Luis Obispo-Oceano-Host & San Luis Obispo-Santa Maria-Guest	115
4	008/038A	San Luis Obispo-Oceano-Host & San Luis Obispo-Santa Maria-Guest	115
5	008/038	San Luis Obispo-Oceano-Host & San Luis Obispo-Santa Maria-Guest	115
6	19/77	Diablo-Midway #3	500
7	24/107	Morro-Bay-Mesa-Host & Diablo-Mesa-Guest	230
8	041/705	San Luis Obispo-Santa Maria	70
9	025/130	Mesa-Santa Maria-Host & San Luis Obispo-Santa Maria-Guest	70
10	025/129	Mesa-Santa Maria-Host, San Luis Obispo-Santa Maria-Guest	70
11	025/128	Mesa-Santa Maria-Host, San Luis Obispo-Santa Maria-Guest	70
12	025/131	San Luis Obispo - Santa Maria	115
13	025/132	San Luis Obispo - Santa Maria	115
14	025/133	San Luis Obispo - Santa Maria	115
15	025/134	San Luis Obispo - Santa Maria	115
16	000/002	Santa Maria -Sisquoc	115
17	015/220	Sisquoc-Santa-Ynez-Switching Station	115
18	015/219	Sisquoc-Santa-Ynez-Switching Station	115
19	000/019	Buellton Tap	115
20	000/018	Buellton Tap	115
21	000/017	Buellton Tap	115
22	000/016	Buellton Tap	115
23	000/015	Buellton Tap	115
24	015/132A	Cabrillo-Santa Ynez Switching Station (Guest)-Divide Cabrillo #1 (Host)	115
25	014/1201	Cabrillo-Santa Ynez Switching Station (Guest)-Divide Cabrillo #1 (Host)	115
26	014/200	Divide Cabrillo #1	115
27	014/199	Divide Cabrillo #1	115
28	014/198	Divide Cabrillo #1	115
29	014/197	Divide Cabrillo #1	115
30	002/039	Manville Tap	115
31	002/040	Manville Tap	115

32	006/060	Divide-Vandenberg #1	70
33	006/057	Divide-Vandenberg #2	70
34	006/059	Divide-Vandenberg #1	70
35	005/031	San Luis Obispo-Cayucos	70
36	005/032	San Luis Obispo-Cayucos	70
37	005/032A	San Luis Obispo-Cayucos	70
38	005/034	San Luis Obispo-Cayucos	70
39	005/033	San Luis Obispo-Cayucos	70
40	005/035	San Luis Obispo-Cayucos	70
41	005/036	San Luis Obispo-Cayucos	70
42	012/066	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
43	012/067	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
44	012/068	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
45	012/069	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
46	012/070	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
47	013/072	Morro Bay-San Luis Obispo #1- Host & #2-Guest	115
48	013/073	Morro Bay - Mesa - Host & Morro Bay - Diablo-Guest	115
49	004/022	Morro Bay - Mesa - Host & Morro Bay - Diablo-Guest	230
50	013/124	San Luis Obispo - Cayucos	70
51	004/028	Morro Bay- San Luis Obispo - Host & Morro Bay - San Luis Obispo #2 - Guest	115
52	005/029	Morro Bay-San Luis Obispo #1 & 2	115
53	013/123	San Luis Obispo - Cayucos	70
54	005/022	Morro Bay - Mesa - Host & Morro Bay- Diablo-Guest	230
55	013/122	San Luis Obispo - Cayucos	70
56	005/022	Morro Bay - San Luis #1 & #2	115
57	010/044	Morro Bay - Diablo - Guest & Diablo -Mesa-Host	230
58	010/044	Diablo Gate #1	500
59	009/043	Diablo Gate #1	500
60	010/043	Diablo Mesa - Host, Morro Bay- Diablo - Guest	230
61	010/042	Diablo Mesa - Host, Morro Bay- Diablo - Guest	230
62	009/042	Diablo Gates #1	500
63	000/002	Morro Bay - Mesa - Host & Morro Bay - Diablo - Guest	230
64	000/003B	Morro Bay - Solar - Switch Station #1	230
65	000/003A	Morro Bay Switching Station	230
66	000/003	Morro Bay - Templeton-Host & Morro Bay - CA Flats - Switching Station - Guest	230
67	000/003	Morro Bay - San Luis Obispo # 1 - Host, #2 - Guest	115

68	000/004	Morro Bay - Solar Switching Station #1 - Host & #2- Guest	230
69	000/003	Morro Bay - Mesa - Host & Morro Bay - Diablo - Guest	230
70	000/005	Morro Bay - San Luis Obispo #1 - Host & #2 - Guest	115
71	000/004	Morro Bay - San Luis Obispo #1 - Host & #2 - Guest	115
72	000/004	Morro Bay - Templeton - Host & Morro Bay - CA Flats Switching Station - Guest	230
73	000/001	Morro Bay - Mesa - Host & Morro Bay - Diablo - Guest	230
74	000/002B	Morro Bay - Solar Switching Station #2	230
75	000/002A	Morro Bay - Solar Switching Station #3	230
76	000/002	Morro Bay - Templeton - Host & Morro Bay - CA Flats Switching Station - Guest	230
77	000/001	Morro Bay - San Luis Obispo #1 - Host & #2- Guest	115
78	022/207	San Luis Obispo- Cayucos	70
79	011/093	Atascadero - Cayucos	70
80	A00/001	A0/1 Atascadero - Cayucos (Substation JCT Switch)	70
81	000/001	Cayucos - Cambria	70
82	000/002	Cayucos - Cambria	70
83	000/003	Cayucos - Cambria	70
84	000/004	Cayucos - Cambria	70
85	000/005	Cayucos - Cambria	70
86	011/092	Atascadero - Cayucos	70
87	011/091	Atascadero - Cayucos	70
88	018/134	Cayucos - Cambria	70
89	014/097	Cayucos - Cambria	70
90	914/096	Cayucos - Cambria	70
91	014/098	Cayucos - Cambria	70
92	014/094	Cayucos - Cambria	70
93	000/002	Templeton - Atascadero	70
94	004/077	Paso Robles - Templeton	70
95	000/001	Templeton - Atascadero	70
96	004/078	Paso Robles - Templeton	70
97	000/003	Templeton - Gates - Host & Morro Bay - CA Flats Switching Station - Guest	230
98	027/110	Diablo -Gate #1	500
99	027/111	Diablo -Gate #2	500
100	000/004	Templeton - Gates - Host & Morro Bay - CA Flats - Guest	230

101	016/067	Templeton - Gates - Host & Morro Bay - CA Flats - Guest	230
102	000/001	Templeton - Gates	230

III. Field Inspection – Violations List

ESRB staff observed the following violations during the field inspection:

1. **GO 95, Rule 31.1, Design Construction and Maintenance** states in part:

   "Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

   For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

   ESRB identified the following tower structures which either need to be repaired or replaced, shown in Table 5.

Table 5: Bent Tower Members and Other Structures

Location	Structure Number	Deficiencies
2	019/076	There is a bent tower member that needs to be repaired or replaced
7	024/107	There is a bent tower member that needs to be repaired or replaced
11	025/128	There is a bent tower member that needs to be repaired or replaced
47	013/072	There is a bent tower member that needs to be repaired or replaced
57	010/044	There is a bent tower member that needs to be repaired or replaced
58	010/044	Barricade is broken and needs to be fixed
68	000/004	There is a bent tower member that needs to be repaired or replaced
100	000/004	There is a bent tower member that needs to be repaired or replaced

2. **General Order 95, Rule 51.6 – Marking and Guarding, High Voltage Marking** states:

   "A. High Voltage Marking

   Poles which support line conductors of more than 750 volts shall be marked with high voltage signs. This marking shall consist of a single sign showing the words

"HIGH VOLTAGE," or pair of signs showing the words "HIGH" and "VOLTAGE," not more than six (6) inches in height with letters not less than 3 inches in height. Such signs shall be of weather and corrosion–resisting material, solid or with letters cut out therefrom and clearly legible."

General Order 95, Rule 61.6 – Marking and Guarding states:

"A. Marking

All towers shall be equipped with signs designed to warn the public of the danger of climbing same. Additionally, such signs shall include a graphic depiction of the dangers of falling or electrocution associated with climbing the towers. Such signs shall be placed and arranged so that they may be read from the four corners of the tower. Such signs shall be neither less than 8 feet nor more than 20 feet above the ground except where the lowest horizontal member of the tower is more than 20 feet above the ground in which case the sign shall be not more than 30 feet above the ground."

ESRB identified the following missing signage and high visibility strips given in Table 6.

Table 6: Structures Missing Signs

Location	Structure Number	Deficiencies
12	025/131	One "High Voltage" sign not legible
22	000/016	High Voltage sign is loose/peeling
34	001/012	One "High Voltage" sign not legible
72	000/004	No High Voltage signs
93	000/002	Faded/Peeled HV signs

3. **General Order 95, Rule 31.6 – Abandoned Lines** states:
   "Lines or portions of lines permanently abandoned shall be removed by their owners so that such lines shall not become a public nuisance or a hazard to life or property. For the purposes of this rule, lines that are permanently abandoned shall be defined as those lines that are determined by their owner to have no foreseeable future use."

   ESRB identified the following abandoned facilities listed in Table 7 below:

Table 7: Abandoned Facilities not Removed

Location	Structure Number	Deficiencies
10	025/129	Idle facility left and potentially a tripping hazard.
19	000/019	Idle wood pole left lying at the location

Location	Structure Number	Deficiencies
76	000/002	Some equipment hardware left by the tower
88	018/134	An idle buried anchor needs to be removed

4. **General Order 95, Rule 31.1 – Design, Construction and Maintenance** states in part:

   "Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service."

   PG&E TD-1001M-JA12 – Identifying Foundation Condition on Transmission Line Structures and Supports provides foundation condition levels and priority code levels based on foundation condition.

   ESRB identified the following deficiencies related to structure foundations. Table 8 below shows the locations that have foundations that require repair.

Table 8: Deficient Foundations

Location	Structure Number	Deficiencies
34	006/059	Partially buried anchor
57	010/044	C-Leg footing is partially buried
88	018/134	The guy anchor is buried

5. **General Order 95, Rule 61.3 – Material and Strength** states in part:

   "A. Material

   (1) Tower Members: *Tower members shall have a thickness of metal equivalent to the following: Galvanized steel: Main corner members, 3/16 inch; other members, 1/8 inch.*

   Painted steel: Main corner members, 1/4 inch; other members, 3/16 inch. All iron or steel members of towers and all hardware subject to injurious corrosion under the prevailing conditions shall be protected by galvanizing, painting or other treatment which will effectively retard corrosion."

   ESRB identified mastic degradation and atmospheric corrosion on some steel towers that require protection shown in Table 9.

Table 9 – Towers with Deficient Structure Material

Location	Structure Number	Deficiencies
11	025/128	Mastic degradation and corrosion at the base of the foot.
42	012/066	Mastic degradation
69	000/003	Tower has significant rust on its members
73	000/001	Tower has significant rust on its members
100	000/004	Tower has significant rust on its members and some corrosion at the base of the foot.

6. **General Order 95, Rule 31.1 - Design, Construction, and Maintenance** states:

   "Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

   For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

   Table 10 below shows insulator deficiency:

Table 10: Insulator Deficiency

Location	Structure Number	Deficiencies
21	000/017	The insulator is out of plumb with the pole

7. **General Order 95, Rule 31.1 - Design, Construction, and Maintenance** states:

   "Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

   For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment."

   ESRB identified a leaning pole issue shown in Table 11.

Table 11: Leaning Pole

Location	Structure Number	Deficiency
27	014/199	Leaning Pole at or over 15 degrees. The pole is bowed at the middle, while the lower part is straight or has less lean