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

December 19, 2023 EA2023-1147

Jared Carpenter
Electric Utility Director
Truckee Donner Public Utilities District (TDPUD)
11570 Donner Pass Rd, Truckee, CA 96161

SUBJECT: Electric Substation and Distribution Audit of TDPUD

Dear Mr. Carpenter:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Brandon Vazquez and Thomas Roberts of ESRB staff conducted an electric substation and distribution audit of TDPUD from September 11 to September 15, 2023. During the audit, ESRB staff conducted field inspections of TDPUD's substation and distribution facilities and equipment, and reviewed pertinent documents and records.

As a result of the audit, ESRB staff identified violations of one or more General Orders (GOs). A copy of the audit findings itemizing the violations is enclosed. Please provide a response no later than **January 19, 2024**, by electronic copy of all corrective actions and preventive measures taken by TDPUD to correct the identified violations and prevent the recurrence of such violations. Please note that ESRB will be posting the audit report and your response to our audit on the CPUC website. If there is any information in your response that you would like us to consider as confidential, we request that in addition to your confidential response, you provide us with a public version (a redacted version of your confidential response) to be posted on our website.

If you have any questions concerning this audit, please contact Brandon Vazquez at (628) 249-2867 or brandon.vazquez@cpuc.ca.gov.

Sincerely,

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

Enclosure: CPUC Electric Substation and Distribution Audit Report for TDPUD

Cc: Lee Palmer, Director, Safety and Enforcement Division (SED), CPUC

Nika Kjensli, Program Manager, ESRB, SED, CPUC
Nathan Sarina, Senior Utilities Engineer (Supervisor), ESRB, SED, CPUC
Brandon Vazquez, Utilities Engineer, ESRB, SED, CPUC
Thomas Roberts, Senior Utilities Engineer (Specialist), ESRB, SED, CPUC

TRUCKEE DONNER PUBLIC UTILITIES DISTRICT (TDPUD)
ELECTRIC SUBSTATION & DISTRIBUTION AUDIT FINDINGS
September 11-15, 2023

Part 1 – Electric Substation Audit

I. Records Review

During the audit, ESRB reviewed the following TDPUD standards, procedures, and records:

- Map showing all TDPUD substations.
- Last two routine substation inspection checklists for selected substations.
- Inspector training PowerPoint.

II. Records Violations

ESRB observed the following violations during the records review portion of the audit:

General Order (GO) 174, Rule 40, Annual Filings states:

> *"40.1 No later than July 1st of each year, each Operator shall transmit to the Utilities Safety and Reliability Branch (USRB)[1] an Inspection Program Summary. Changes to the Inspection Program shall be reflected in the Inspection Program Summary, including the effective date of the change. Should no changes occur since the previous filing, the Operator shall transmit written correspondence confirming that no changes were made to the Program.*
>
> *40.2 No later than July 1st of each year, each Operator shall transmit to the CPSD[2] a report summarizing completed and past due Inspections for the prior calendar year."*

ESRB noted that TDPUD does not annually file an Inspection Program Summary or List of Inspections (completed and past due) as required by GO 174 Rule 40.1 and Rule 40.2.

III. Field Inspection

During the field inspection, ESRB inspected the following substations:

Substation	Voltage	Latitude	Longitude
Martis Valley	120/12 kV	39.3294663	-120.1693814
Truckee	60/12 kV	39.3311704	-120.1817772
Tahoe Donner	60/12 kV	39.3383979	-120.2204841
Donner Lake	60/12 kV	39.3273462	-120.281887
Glenshire	14.4 kV	39.3538881	-120.1158314

[1] Currently Electric Safety and Reliability Branch
[2] Currently Safety and Enforcement Division – Electric Safety and Reliability Branch

IV. Field Inspection – Violations List

ESRB observed the following violations during the field inspection:

GO 174, Rule 12, General states in part:

> *"…Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.*
>
> *Design, construction, and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible."*

1. Martis Valley Substation

1.1. Multiple batteries have oxidation build up.

1.2. The concrete foundation at the 120 kV switch is spalling/crumbling.

2. Tahoe Donner Substation

The logbook is missing an August 2023 monthly inspection.

3. Glenshire Substation (pole substation)

The pole is missing a high voltage sign.

Part 2 – Electric Distribution Audit

I. Records Review

During the audit, ESRB staff reviewed the following records:

- Overhead and underground facilities statistics.
- Reliability metrics and sustained outages for the last 5 years.
- TDPUD Service Territory map.
- New Construction projects for the last 12 months.
- Pole loading and safety factor calculations completed from the last 12 months.

II. Records Violations

1. **GO 95, Rule 18-B, Maintenance Programs** states in part:

   "Each company (including electric utilities and communications companies) shall establish and implement an auditable maintenance program for its facilities and lines for the purpose of ensuring that they are in good condition so as to conform to these rules. Each company must describe in its auditable maintenance program the required qualifications for the company representatives who perform inspections and/or who schedule corrective actions. Companies that are subject to GO 165 may maintain procedures for conducting inspections and maintenance activities in compliance with this rule and with GO 165.

   The auditable maintenance program must include, at a minimum, records that show the date of the inspection, type of equipment/facility inspected, findings, and a timeline for corrective actions to be taken following the identification of a potential violation of GO 95 or a Safety Hazard on the company's facilities."

   ESRB found that TDPUD does not create work orders to document work completed in the field or to track pending maintenance items as required per GO 95, Rule 18-B. TDPUD did not produce any maintenance work orders responsive to ESRB's Pre-Audit Data Request.

2. **GO 165, Section III-D, Reporting** states in part:

   "By July 1st each utility subject to this General Order shall submit an annual report for the previous year under penalty of perjury.

   The report shall list four categorical types of inspections: Patrols, Overhead Detailed, Underground Detailed and Wood Pole Intrusive. The report shall denote the total units of work by inspection type for the reporting period and the number of outstanding (not completed) inspections within the same reporting period for each of the four categories."

ESRB noted that TDPUD does not submit Annual Reports as required per GO 165, Section III-D.

III. Field Inspection

During the field inspection, ESRB staff inspected the following facilities:

Location #	Pole #	Structure Type	Latitude, Longitude
1	44500167	Primary Pole	39.3531961, -120.1157325
2	44380298	Primary Pole	39.3535568, -120.1158049
3	44270602	Primary Pole	39.3543752, -120.1158985
4	43790779	Primary Pole	39.3549373, -120.1159437
5	22868956	Primary Pole	39.3517337, -120.2295192
6	21569074	Primary Pole	39.3519893, -120.2299782
7	21159026	Span Pole	39.3518638, -120.2300462
8	20239159	Primary Pole	39.3523090, -120.2304975
9	18609263	Primary Pole	39.3525325, -120.2309884
10	16589347	Primary Pole	39.3527858, -120.2316911
11	15079400	Primary Pole	39.3530603, -120.2321265
12	13669437	Primary Pole	39.3531460, -120.2326337
13	12049485	Primary Pole	39.3531780, -120.2332981
14	12049485	Primary Pole	39.3531624, -120.2333115
15	10509561	Primary Pole	39.3534129, -120.2338335
16	10019524	Span Pole	39.3532194, -120.2337100
17	08659620	Secondary Pole	39.3535213, -120.2343908
18	09249653	Primary Pole	39.3536944, -120.2342580
19	08139765	Primary Pole	39.3539705, -120.2346855
20	07579725	Secondary Pole	39.3538941, -120.2348159
21	06509853	Span Pole	39.3542593, -120.2352273
22	07219894	Primary Pole	39.3543358, -120.2350006
23	06440012	Primary Pole	39.3546695, -120.2352732
24	75720056	Primary Pole	39.3264307, -120.1761013
25	77160060	Primary Pole	39.3263801, -120.1756296
26	78630063	Primary Pole	39.3263677, -120.1751183
27	80310066	Primary Pole	39.3264130, -120.1745004
28	82010056	Primary Pole	39.3263653, -120.1739090
29	83550049	Primary Pole	39.3263075, -120.1733635
30	84820005	Primary Pole	39.3262019, -120.1728652
31	85150013	Primary Pole	39.3261991, -120.1728223
32	85160000	Primary Pole	39.3261949, -120.1727851
33	86749968	Primary Pole	39.3261257, -120.1722185
34	86930012	Span Pole	39.3262761, -120.1721032
35	88119857	Primary Pole	39.3257841, -120.1718078
36	89309756	Primary Pole	39.3254903, -120.1713595
37	90719659	Primary Pole	39.3252657, -120.1708549
38	92159576	Primary Pole	39.3250263, -120.1703577
39	93589494	Primary Pole	39.3248945, -120.1698189
40	95019412	Primary Pole	39.3245449, -120.1693613

41	66011965	Primary Pole	39.3317112, -120.1793227
42	67501958	Primary Pole	39.3317900, -120.1788781
43	69452048	Primary Pole	39.3319591, -120.1781385
44	70922120	Primary Pole	39.3321655, -120.1775286
45	72242175	Primary Pole	39.3322376, -120.1771752
46	67740946	Secondary Pole	39.3249384, -120.1705971
47	92159576	Primary Pole	39.3250276, -120.1703554
48	93589494	Primary Pole	39.3248554, -120.1698330
49	95019412	Primary Pole	39.3245475, -120.1693482
50	96419330	Primary Pole	39.3243867, -120.1688775
51	97639247/ 97839247	Primary Pole	39.3240991, -120.1683541
52	99029184	Primary Pole	39.3239593, -120.1680550
53	00679075	Primary Pole	39.3236185, -120.1673674
54	02078992	Primary Pole	39.3233827, -120.1668849
55	96969067	Primary Pole	39.3235695, -120.1686693
56	03528907	Primary Pole	39.3231449, -120.1663676
57	04968822	Primary Pole	39.3228785, -120.1658566
58	06368740	Primary Pole	39.3226264, -120.1653229
59	07728660	Primary Pole	39.3224319, -120.1649460
60	09661385	Primary Pole	39.3298522, -120.1640331
61	09501487	Primary Pole	39.3301497, -120.1640994
62	09261649	Primary Pole	39.3305519, -120.1641678
63	11091661	Primary Pole	39.3305945, -120.1635090
64	13031673	Primary Pole	39.3306178, -120.1628975
65	14781685	Primary Pole	39.3306588, -120.1622078
66	15911692	Primary Pole	39.3306585, -120.1618035
67	49136471	Primary Pole	39.3167157, -120.1857412
68	50636474	Primary Pole	39.3167396, -120.1850925
69	52256477	Primary Pole	39.3167645, -120.1845500
70	52226785	Primary Pole	39.3175696, -120.1846066
71	52206868	Primary Pole	39.3177893, -120.1846468
72	54286775	Primary Pole	39.3174996, -120.1839984
73	55316799	Primary Pole	39.3175738, -120.1835220
74	52236701	Primary Pole	39.3172887, -120.1846898
75	54016521	Primary Pole	39.3168488, -120.1840165
76	None	Secondary Pole	39.3169134, -120.1836343
77	55486483	Primary Pole	39.3167014, -120.1835418
78	57276478	Primary Pole	39.3166965, -120.1828246
79	57866619	Primary Pole	39.3170955, -120.1826188
80	58056736	Primary Pole	39.3173800, -120.1825655
81	57796900	Primary Pole	39.3178435, -120.1826469

IV. Field Inspection Violations

ESRB staff observed the following violations during the field inspection:

1. **GO 95, Rule 44.3, Replacement** states:

   "Lines or parts thereof shall be replaced or reinforced before safety factors have been reduced (due to factors such as deterioration and/or installation of additional facilities) in Grades "A" and "B" construction to less than two-thirds of the safety factors specified in Rule 44.1 and in Grade "C" construction to less than one-half of the safety factors specified in Rule 44.1. Poles in Grade "C" construction that only support communication lines shall also conform to the requirements of Rule 81.3–A.. In no case shall the application of this rule be held to permit the use of structures or any member of any structure with a safety factor less than one."

   1.1. Pole #44380298 located at GPS coordinates 39.3535568, -120.1158049 (Location 2) has significant horizontal and vertical cracking.
   1.2. Pole #54286775 located at GPS coordinates 39.3174996, -120.1839984 (Location 72) sounds hollow at bottom and shows signs of decay/rot.
   1.3. Pole #55316799 located at GPS coordinates 39.3175738, -120.1835220 (Location 73) has a woodpecker hole near the primary insulator and has a deteriorated/cracked pole top.
   1.4. Secondary Pole (no #) located at GPS coordinates 39.3169134, -120.1836343 (Location 76) has multiple woodpecker holes.
   1.5. Pole #57796900 located at GPS coordinates 39.3178435, -120.1826469 (Location 81) has 5 woodpecker holes and a deep vertical crack.

2. **GO 95, Rule 56.4-C4, Guys, Clearances from Conductors Passing on same Poles** states in part:

   "The radial clearances between guys and conductors supported by or attached to the same poles or crossarms shall be not less than 3 inches as specified in Table 2, Case 19."

   2.1. The primary anchor guy on Pole #22868956 located at GPS coordinates 39.3517337, -120.2295192 (Location 5) is in contact with a communications line.
   2.2. The primary anchor guy on Pole #18609263 located at GPS coordinates 39.3525325, -120.2309884 (Location 9) is in contact with a communications line.
   2.3. The primary anchor guy on Pole #09661385 located at GPS coordinates 39.3298522, -120.1640331 (Location 60) is in contact with a communications line.
   2.4. The primary anchor guy on Pole #57796900 located at GPS coordinates 39.3178435, -120.1826469 (Location 81) is in contact with a TDPUD service drop.

3. **GO 95, Rule 56.2, Overhead Guys, Anchor Guys and Span Wires, Use** states in part:

   "Guys shall be attached to structures, as nearly as practicable, at the center of load. They shall be maintained taut and of such strength as to meet the safety factors of Rule 44."

   3.1. Span Pole #21159026 located at GPS coordinates 39.3518638, -120.2300462 (Location 7) has two slacked anchor guys.
   3.2. Pole #18609263 located at GPS coordinates 39.3525325, -120.2309884 (Location 9) has a slacked guy causing it to contact a communications line.
   3.3. Pole #12049485 located at GPS coordinates 39.3531780, -120.2332981 (Location 13) has a slacked anchor guy.
   3.4. Pole #08139765 located at GPS coordinates 39.3539705, -120.2346855 (Location 19) has a slacked anchor guy.
   3.5. Pole #66011965 located at GPS coordinates 39.3317112, -120.1793227 (Location 41) has a slacked anchor guy.
   3.6. Pole #69452048 located at GPS coordinates 39.3319591, -120.1781385 (Location 43) has a slacked anchor guy.
   3.7. Pole #70922120 located at GPS coordinates 39.3321655, -120.1775286 (Location 44) has a slacked anchor guy.
   3.8. Pole #55486483 located at GPS coordinates 39.3167014, -120.1835418 (Location 77) has a slacked anchor guy.

4. **GO 95, Rule 54.6-B, Vertical and Lateral Conductors, Ground Wires** states in part:

   "That portion of the ground wire attached on the face or back of wood crossarms or on the surface of wood poles and structures shall be covered by a suitable protective covering (see Rule 22.8)."

   4.1. Pole #85150013 located at GPS coordinates 39.3261991, -120.1728223 (Location 31) has an exposed ground wire.
   4.2. Pole #70922120 located at GPS coordinates 39.3321655, -120.1775286 (Location 44) has an exposed ground wire.
   4.3. Pole #07728660 located at GPS coordinates 39.3224319, -120.1649460 (Location 59) has an exposed ground wire.
   4.4. Pole #58056736 located at GPS coordinates 39.3173800, -120.1825655 (Location 80) has an exposed ground wire.

5. **GO 95, Rule 91.3-C, Stepping** states in part:

   "Where installed, the lowest step shall not be less than 8 feet from the ground line, or any easily climbable foreign structure from which one could reach or step."

   5.1. Pole #70922120 located at GPS coordinates 39.3321655, -120.1775286 (Location 44) has a low pole step.
   5.2. Pole #52236701 located at GPS coordinates 39.3172887, -120.1846898 (Location

74) has a low pole step.

6. **GO 95, Rule 51.6-A, High Voltage Marking** states in part:

   "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."

   6.1. Pole #07728660 located at GPS coordinates 39.3224319, -120.1649460 (Location 59) is missing a high voltage sign.
   6.2. Pole #09261649 located at GPS coordinates 39.3305519, -120.1641678 (Location 62) has two damaged/faded high voltage signs.
   6.3. Pole #14781685 located at GPS coordinates 39.3306588, -120.1622078 (Location 65) has a damaged high voltage sign.

7. **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."

   Pole #09661385 located at GPS coordinates 39.3298522, -120.1640331 (Location 60) has a chipped primary insulator on the bottom crossarm.

8. **GO 95, Rule 56.6-A, Guys in Proximity to Supply Conductors of Less than 35,500 Volts** states in part:

   "All portions of guys within both a vertical distance of 8 feet from the level of supply conductors of less than 35,500 volts and a radial distance of 6 feet from the surface of wood poles or structures shall not be grounded, through anchors or otherwise. Where necessary to avoid the grounding of such portions, guys shall be sectionalized by means of insulators installed at locations as specified in Rule 56.7."

   8.1. Secondary Pole #07579725 located at GPS coordinates 39.3538941, -120.2348159 (Location 20) has vegetation contact above the anchor guy bob.
   8.2. Pole #54286775 located at GPS coordinates 39.3174996, -120.1839984 (Location 72) has vegetation contact above the anchor guy bob.

9. **GO 95, Rule 38, Minimum Clearances of Wires from Other Wires, Table 2 Case 8D** states:

   "The basic minimum allowable vertical separation between 0-750 Volt conductors

and communication cables, on separate crossarms or other supports at different levels on the same pole and in adjoining midspans is 48 inches."

The service drop that goes to the Secondary Pole at GPS coordinates 39.3169134, -120.1836343 (Location 76) is less than 6 inches from a communication service drop at midspan.

10. GO 95, Rule 44.1, Installation and Reconstruction states:

"Lines and elements of lines, upon installation or reconstruction, shall provide as a minimum the safety factors specified in Table 4. The design shall consider all supply and communication facilities planned to occupy the structure. For purposes of this rule, the term "planned" applies to the facilities intended to occupy the structure that are actually known to the constructing company at the time of design.

The entity responsible for performing the loading calculation(s) for an installation or reconstruction shall maintain records of these calculations for the service life of the pole or other structure for which a loading calculation was made and shall provide such information to authorized joint use occupants and the Commission upon request."

10.1. The pole loading calculation for Pole #12049485 located at GPS coordinates 39.3531624, -120.2333115 (Location 14) lists only 1 span of triplex service line; however, ESRB observed 2 spans of triplex service in the field.
10.2. The pole loading calculation for Pole #95019412 located at GPS coordinates 39.3245475, -120.1693482 (Location 49) is missing a metal crossarm, 3 fuses, and 3 surge arrestors. ESRB noted that the pole capacity utilization at installation is 99%.
10.3. The pole loading calculation for Pole #97639247/97839247 located at GPS coordinates 39.3240991, -120.1683541 (Location 51) lists a secondary down guy; however, ESRB observed no secondary down guy in the field.
10.4. The pole loading calculation for Pole #02078992 located at GPS coordinates 39.3233827, -120.1668849 (Location 54) lists a span guy; however, ESRB did not observe a span guy in the field.
10.5. The pole loading calculation for Pole #96969067 located at GPS coordinates 39.3235695, -120.1686693 (Location 55) is missing a transformer and communication equipment box.

V. Observations

1. ESRB staff observed the following third-party potential safety concerns during the field inspection:

   GO 95, Rule 18, Reporting and Resolution of Safety Hazards Discovered by Utilities states in part:

   "For purposes of this rule, "Safety Hazard" means a condition that poses a

significant threat to human life or property…"

GO 95, Rule 18-A, Resolution of Potential Violations of General Order 95 and Safety Hazards states in part:

"(3) If a company, while performing inspections of its facilities, discovers a Safety Hazard(s) on or near a communications facility or electric facility involving another company, the inspecting company shall notify the other entity of such Safety Hazard(s) no later than ten (10) business days after the discovery.

(4) To the extent a company that has a notification requirement under (2) or (3) above cannot determine the facility owner/operator, it shall contact the pole owner(s) within ten (10) business days if the subject of the notification is a Safety Hazard, or otherwise within a reasonable amount of time not to exceed 180 days after discovery. The notified pole owner(s) shall be responsible for promptly (normally not to exceed five business days) notifying the company owning/operating the facility if the subject of the notification is a Safety Hazard, or otherwise within a reasonable amount of time not to exceed 180 days, after being notified of the potential violation of GO 95.

1.1. Pole #22868956 located at GPS coordinates 39.3517337, -120.2295192 (Location 5) has two slacked communication guys and a communication guy missing a guy guard.
1.2. Pole #20239159 located at GPS coordinates 39.3523090, -120.2304975 (Location 8) has multiple loose communication service risers and one communication service riser that is kinked and not covered up to 8 feet.
1.3. Pole #15079400 located at GPS coordinates 39.3530603, -120.2321265 (Location 11) has four loose communication risers.
1.4. Pole #10509561 located at GPS coordinates 39.3534129, -120.2338335 (Location 15) has three loose communication service risers.
1.5. Pole #09249653 located at GPS coordinates 39.3536944, -120.2342580 (Location 18) has multiple loose communication service risers.
1.6. Pole #08139765 located at GPS coordinates 39.3539705, -120.2346855 (Location 19):
    a. Has several loose communication service risers.
    b. Has a loose communication cable touching an AT&T crossarm and AT&T line.
1.7. Pole #66011965 located at GPS coordinates 39.3317112, -120.1793227 (Location 41) has a slacked communication anchor guy.
1.8. Pole #69452048 located at GPS coordinates 39.3319591, -120.1781385 (Location 43) has a slacked communication anchor guy.
1.9. Pole #09501487 located at GPS coordinates 39.3301497, -120.1640994 (Location 61) has a communication line attached with a rope.

1.10. Pole #55486483 located at GPS coordinates 39.3167014, -120.1835418 (Location 77) has a slacked communication anchor guy.