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

January 24, 2025 EA2024-1184

Brandi Benson
Operations Manager
Kirkwood Meadows Public Utility District
33540 Loop Rd
Kirkwood Meadows, CA 95646

SUBJECT: Electric Facilities and Substation Audit of Kirkwood Meadows Public Utility District

Ms. Benson:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Samuel Mandell, Sajjad Mansuri and Nora Nguyen of ESRB staff conducted an electric facilities and substation audit of Kirkwood Meadows Public Utility District (KMPUD) from May 20 through May 23, 2024. During the audit, ESRB staff conducted field inspections of KMPUD's electric facilities and equipment and reviewed pertinent documents and records.

As a result of the audit, ESRB staff identified violations of General Order (GO) 95, GO 128, GO 165, and GO 174. A copy of the audit findings itemizing the violations and observations is enclosed. Please provide a response no later than February 25, 2025, via electronic copy of all corrective actions and preventive measures taken by KMPUD 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 Samuel Mandell at (916) 217-8294 or Samuel.Mandell@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 Audit Findings of Kirkwood Meadows Public Utility District

Cc: Lee Palmer, Director, Safety and Enforcement Division (SED), CPUC
Fadi Daye, Program and Project Supervisor, ESRB, SED, CPUC
Yi ‘Rocky’ Yang, Senior Utilities Engineer (Supervisor), ESRB, SED, CPUC
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Jon Campbell, Electric/Propane Project Manager, KMPUD

CPUC AUDIT FINDINGS OF

KIRKWOOD MEADOWS PUBLIC UTILITY DISTRICT

MAY 20 – MAY 23, 2024

I. Records Review

During the audit, Electric Safety and Reliability Branch (ESRB) staff reviewed the following records:

- KMPUD's maintenance program.
- KMPUD's Facility Statistics as of March 2024, including miles of overhead lines, miles of underground lines, number of poles, and number of customers.
- KMPUD's Facility Maps as of March 2024.
- KMPUD's Substation Inspection Records from March 2019 through March 2024.
- KMPUD's Transformer Test Records.
- KMPUD's Overhead Inspection Data containing data for the inspected facility type and facility location from March 2019 through March 2024.
- KMPUD's overhead and underground work orders created between March 2019 through March 2024.
- Safety Hazards Notifications KMPUD Received from Third Party Utilities from March 2019 through March 2024.
- Safety Hazard Notifications KMPUD Sent to Third Party Utilities from March 2019 through March 2024.
- KMPUD's new construction projects from March 2019 through March 2024.

II. Records Violations

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

1. **GO 128, Rule 17.2, Inspection** states:

> *"Systems shall be inspected by the operator frequently and thoroughly for the purpose of insuring that they are in good condition and in conformance with all applicable requirements of these rules."*

GO 165, Section III-C, Record Keeping states:

> *"The utility shall maintain records for (1) at least ten (10) years of patrol and detailed inspection activities, and (2) the life of the pole for intrusive inspection activities. Such records shall be made available to parties or pursuant to Commission rules upon 30 days notice. Commission staff shall be permitted to inspect such records consistent with Public Utilities Code Section 314 (a).*
>
> *For all inspections records shall specify the circuit, area, facility or equipment inspected, the inspector, the date of the inspection, and any problems (or items requiring corrective action) identified during each inspection, as well as the scheduled date of corrective action."*

KMPUD did not provide records showing that all the underground distribution facilities are receiving detailed inspections per the required 3-year or 5-year cycles in accordance with GO 165.

2. **GO 165, Section III-C, Record Keeping** states:

> *"The utility shall maintain records for (1) at least ten (10) years of patrol and detailed inspection activities, and (2) the life of the pole for intrusive inspection activities. Such records shall be made available to parties or pursuant to Commission rules upon 30 days notice. Commission staff shall be permitted to inspect such records consistent with Public Utilities Code Section 314 (a).*
>
> *For all inspections records shall specify the circuit, area, facility or equipment inspected, the inspector, the date of the inspection, and any problems (or items requiring corrective action) identified during each inspection, as well as the scheduled date of corrective action."*

GO 128, Rule 17.2, Inspection states:

> *"Systems shall be inspected by the operator frequently and thoroughly for the purpose of insuring that they are in good condition and in conformance with all applicable requirements of these rules."*

GO 95, Rule 31.2, Inspection states:

> *"Lines shall be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition so as to conform with these rules. Lines temporarily out of service shall be inspected and maintained in such condition as not to create a hazard."*

KMPUD could only provide one patrol record of its overhead transmission lines from November of 2019. Additionally, KMPUD did not provide records of patrols and inspections for its underground transmission splice cabinets. The KMPUD operation and maintenance procedures indicates that KMPUD does two yearly patrols as well as an inspection on both the overhead and underground sections of the line. KMPUD must document the patrols and inspections and retain the records of those patrols and inspections in accordance with GO 165.

3. **GO 174, Rule 31.1, Inspection Frequency** states:

> *"Substations shall be inspected as frequently as necessary.*
>
> - *Time intervals or other bases shall be specified in the Inspection Program."*

GO 174, Rule 33.2, Records requires:

> *"Electronic or hard copy records of completed Inspections shall be retained for not less than five (5) years."*

KMPUD's operation and maintenance procedures state that its two substations require monthly inspections. KMPUD could only provide five monthly substation inspections from 2021 and 2022. KMPUD must retain the records of its substation inspections in accordance with GO 174.

III. Field Inspection

During the field inspection, ESRB inspected the following facilities:

Location	Structure ID	Structure Type	GIS Coordinates
1	SC 40	Transmission Splice Cabinet	38.683105, -120.120425
2	SC 37	Transmission Splice Cabinet	38.668122, -120.122368
3	SC27	Transmission Splice Cabinet	38.633365, -120.176833
4	SC25	Transmission Splice Cabinet	38.631193, -120.191045
5	N/a	Transmission Splice Cabinet	38.628987, -120.212302
6	SC1	Transmission Splice Cabinet	38.535822, -120.24153
7	Pole 37	Steel Transmission Pole	38.535822, -120.241539
8	Pole 24	Steel Transmission Pole	38.528953, -120.233123
9	Pole 25	Steel Transmission Pole	38.529554, -120.233875
10	Pole 26	Steel Transmission Pole	38.52998, -120.234441
11	KM Green Substation	Substation	38.516691, -120.220099
12	SC13A	Transmission Splice Cabinet	38.581894, -120.254886
13	SC14	Transmission Splice Cabinet	38.58449, -120.250241
14	KM Blue Substation	Substation	38.687007, -120.06478
15	Switch gear breaker	Substation Breaker	38.686656, -120.064806
16	SC 51	Transmission Splice Cabinet	38.686186, -120.066512
17	SC 50	Transmission Splice Cabinet	38.685148, -120.07029

Location	Structure ID	Structure Type	GIS Coordinates
18	TCLP	Padmount Transformer	38.703024, -120.065145
19	TCINN	Padmount Transformer	38.703167, -120.072328
20	TCSCEF	Padmount Transformer	38.702947, -120.073412
21	KMD Switch	Metal Clad Switch Gear	38.698608, -120.077272
22	TC121	Padmount Transformer	38.698436, -120.076593
23	TC124	Padmount Transformer	38.698126, -120.075789
24	TC140	Padmount Transformer	38.697478, -120.076247
25	TC 128	Padmount Transformer	38.697426, -120.075966
26	TC129	Padmount Transformer	38.697099, -120.075725
27	TC002	Padmount Transformer	38.698613, -120.077968
28	TC004	Padmount Transformer	38.698622, -120.07865
29	TC08	Padmount Transformer	38.699164, -120.079596
31	TCSN	Padmount Transformer	38.683609, -120.069
30	TCTR	Padmount Transformer	38.685182, -120.071055
32	TCMS2	Padmount Transformer	38.684405, -120.069296
33	LJEMS2	Junction Box	38.684472, -120.06928
34	TCLCWF	Padmount Transformer	38.684574, -120.069188
35	TCSM1	Padmount Transformer	38.684074, -120.068429
36	TCC6	Padmount Transformer	38.68331, -120.068119
37	TCC5	Padmount Transformer	38.683054, -120.067622
38	TCLD1	Padmount Transformer	38.683453, -120.067291

Location	Structure ID	Structure Type	GIS Coordinates
39	TCLD2	Padmount Transformer	38.683459, -120.067299
40	OSLD	Junction Box	38.683483, -120.067333
41	TCMC	Padmount Transformer	38.683091, -120.066207
42	TCCH10	Padmount Transformer	38.682587, -120.066381
43	TCC1	Padmount Transformer	38.683468, -120.065512
44	VPS2	Splice vault	38.685612, -120.07233
45	TCP4	Padmount Transformer	38.685343, -120.072191
46	TCP3	Padmount Transformer	38.684928, -120.071862
47	TCP2	Padmount Transformer	38.684419, -120.071464
48	TCP1	Padmount Transformer	38.684002, -120.070881
49	VSJR	Metal Clad Switch Gear	38.688364, -120.067322
50	VTGR2	Padmount Transformer	38.688506, -120.06702
51	TC202	Padmount Transformer	38.689222, -120.067317
52	TC204	Padmount Transformer	38.690109, -120.067867
53	TC206	Padmount Transformer	38.690827, -120.068464
54	TC811A	Padmount Transformer	38.690714, -120.067594
55	VTGR1	Padmount Transformer	38.690702, -120.067598
56	TC810B	Padmount Transformer	38.690552, -120.067347
57	TC809C	Padmount Transformer	38.690199, -120.067147
58	TC808	Padmount Transformer	38.689796, -120.066945

IV. Field Inspection Violations

ESRB identified the following violations during the field inspection:

1. **GO 128, Rule 17.1 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 [the] communication or supply lines and equipment."

   ESRB's findings are listed in Table 1:

Table 1: GO 128, Rule 17.1 Findings

Location #	Findings
19	Animal nest inside the transformer
25	The lock is buried below grade
26	Animal nest inside the transformer
28	The interior of the transformer is filled with dirt
35	The concrete pad is buried
38	The concrete pad is buried
39	The concrete pad is buried
54	Animal nest inside the transformer

2. **GO 128, Rule 17.8 Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures** states:

   "Manholes, handholes, subsurface and self-contained surface-mounted equipment enclosures shall be marked as to ownership to facilitate identification by persons authorized to work therein and by other persons performing work in their vicinity."

ESRB's findings are listed in Table 2:

Table 2: GO 128, Rule 17.8 Findings

Location #	Findings
3	Deteriorated ownership sticker
5	Missing ownership sticker
6	Deteriorated ownership sticker
33	Deteriorated ownership sticker
37	Deteriorated ownership sticker
41	Missing ownership sticker
42	Missing ownership sticker
56	Missing ownership sticker

3. **GO 128, Rule 32.7 Covers** states:

"Manholes, handholes, and subsurface equipment enclosures while not being worked in, shall be securely closed by covers of sufficient strength to sustain such loads as may reasonably be imposed upon them and arrangements shall be such that a tool or appliance shall be required for their opening and cover removal. (Also see Rule 17.8, and Appendix B, Figs. 9 and 17.)

If the cover of a subsurface equipment enclosure is a grate a means shall be provided to prevent tampering with the equipment housed therein."

ESRB's finding is listed in Table 3:

Table 3: GO 128, Rule 32.7 Finding

Location #	Finding
21	The top of the padmount is collapsing

4. **GO 128, Rule 34.3 B Self–contained Surface–mounted Equipment, Guarding Live Parts** states in part:

> *"Compartments and enclosures which will, during normal operation, contain exposed live parts shall be designed and installed to prevent a person from passing a wire or other conducting material into such compartment from the outside when it is closed."*

ESRB's findings are listed in Table 4:

Table 4: GO 128, Rule 34.3 B Findings

Location #	Findings
30	Access to interior through gap at base.
31	Access to interior through gap at base.
47	Access to interior through gap at base.

5. **GO 128, Rule 35.3 Marking and Guarding, Warning Signs** states:

> *"Warning signs indicating high voltage shall be installed on an interior surface, or barrier if present, inside the entrance of vaults, manholes, handholes, pad mounted transformer compartments, and other above ground enclosures containing exposed live parts above 750 volts. Such warning signs shall also be installed on an exterior surface of all such pad mounted transformer compartments and other above ground enclosures. Such signs shall be clearly visible to a person in position to open any such access door, other opening, or barrier."*

ESRB's findings are listed in Table 5:

Table 5: GO 128, Rule 35.3 Findings

Location #	Findings
3	Missing high voltage (HV) sign
4	Missing HV sign
5	Missing HV sign

Location #	Findings
6	Missing HV sign
12	Missing HV sign
13	Missing HV sign
31	Deteriorated HV sign
37	Deteriorated HV sign
41	Missing HV sign
42	Missing HV sign

6. **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."*

KM Green Substation

6.1 The on-site eye wash expired in 2017.

6.2 The fire extinguisher is missing an inspection tag.

6.3 The containment pond is full of water.