

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



July 1, 2021

SA2021-893

Mel Stark
Principal Manager, T&D Compliance Integration
Southern California Edison
1 Innovation Way
Pomona, California 91768

SUBJECT: Substation Audit of Southern California Edison Mesa District

Mr. Stark:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Eric Ujiye, Joceline Pereira, Stacey Ocampo and Calvin Choi of my staff conducted a substation audit of Southern California Edison (SCE) Mesa District from March 22, 2021 to March 26, 2021. The audit included a review of SCE's records and field inspections of SCE's facilities.

During the audit, my staff identified violations of one or more General Orders (GOs). A copy of the audit findings itemizing the violations is enclosed. Please advise me no later than August 2, 2021, by electronic or hard copy, of all corrective measures taken by SCE to remedy and prevent the recurrence of such violations in the future.

If you have any questions concerning this audit, please contact Eric Ujiye at (213) 620-2598 or eric.ujiye@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Fadi Daye".

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

Enclosures: CPUC Audit Findings

Cc: Lee Palmer, Director, Safety and Enforcement Division, CPUC
Nika Kjensli, Program Manager, Electric Safety and Reliability Branch, CPUC
Eric Ujiye, Utilities Engineer, ESRB, CPUC

AUDIT FINDINGS

I. Records Review

During the audit, my staff reviewed the following records and documents:

- SCE GO 174 Substation Inspection Practices
- Section 6.9 Substation Inspections, of SCE's Operators Manual
- SCE's Electrical Design Station Layout – Ground Testing
- SCE Substation Ground Grid Testing Technical Manual
- SCE RMP-02, Protection System Maintenance Program.
- SCE SC&M Maintenance and Inspection Manual Sect. 4, 5, and 6 (Oil Testing)
- Summary of SCE Mesa District Substation Operators Training Records
- Summary of Substation Inspections in the Mesa District
- Inspection Checklists and One-Line Diagrams for two selected substations
- Pending and Completed Workorders for the year 2020.
- Summary of results of Infrared Testing in 2020
- Summary of results from substation Dissolved Gas Analysis performed in 2020

II. Records Review – Violations List

My staff observed the following violations during the records review portion of the audit:

GO 174, Rule 12, General, states in part:

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.

SCE's GO 174 Substation Inspection Practices requires Priority 2 work orders to be "Repair(ed) or reassess(ed) by prescribed due date or within 6 years." SCE failed to repair or reassess 7 work orders by the assigned prescribed due dates.

III. Field Inspections

My staff inspected the following substations during the field inspections:

Functional Loc.	Substation	Address	City
ES-5136	Newmark	1319 South Garfield Ave.	Monterey Park
ES-5109	Bicknell	4737 East 3 rd Street	East Los Angeles
ES-5141	Rosemead	8533 East Grand Ave.	San Gabriel
ES-5153	Ivar	4613 North Ivar Ave.	Rosemead
ES-5170	Temple	5911 Encinta Ave.	Temple City
ES-5142	San Gabriel	104 West Broadway	San Gabriel
ES-5126	Granada	904 East Alhambra Road.	Alhambra
ES-5143	San Marino	2701 Huntington Drive	San Marino
ES-5134	Monrovia	818 South Primrose Ave.	Monrovia
ES-5171	Bradbury	1601 South Mountain Ave.	Monrovia
ES-5150	Duarte	1200 Highland Ave	Duarte
ES-5901	Hopeful	1500 East Duarte Rd	Duarte
ES-5551	MacNeil	529 Chandler Blvd.	Burbank
ES-5584	Universal	100 Universal City Plaza	Universal City
ES-5190	Studio	100 Universal City Plaza	Universal City
ES-5130	La Canada	1510 West Verdugo Blvd.	La Canada
ES-5115	Eaton	3131 East Sierra Madre Blvd.	Pasadena
ES-5144	Sierra Madre	102 Bonita Ave	Sierra Madre
ES-5181	Azusa	809 North Angeleno Ave.	Azusa
ES-5148	Aerojet	34.125115, -117.924978	Azusa
ES-5178	Kirkwall	1160 West Gladstone Street	Azusa
ES-5119	Brew	15801 East First Street	Irwindale
ES-5188	Dalton	16016 East Gladstone Street	Irwindale

IV. Field Inspections – Violations List

My staff 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.

Facilities at the following substations were not maintained for their intended use:

Newmark Substation

- A junction box connected to the Mesa No. 2 West 66kV Circuit Breaker had a detached lid that exposed the wiring contained inside.
- A junction box connected to the Laguna Bell Vail West 66 kV Circuit Breaker had a damaged lid that exposed the wiring contained inside.
- A voltage regulator displayed signs of weeping on a bolted access panel door and on the ground below.

Bicknell Substation

- A secondary transformer located near the Hammel 16 kV Circuit Breaker was leaking oil from the bushings and from the lid of the casing.
- A bushing guard on a voltage tap changer was not installed and left on the ground.

Rosemead Substation

- A cooling fan on the No. 2 Bank East Unit was not functioning.

Bradbury Substation

- Three bushings on the 66 kV Potheads SEC Switches had oil level gauge readings that were below the required oil level at the stated temperature.

Duarte Substation

- The substation had two areas at the rear of the property where trenches were dug underneath the perimeter fencing.

Hopeful Substation

- A control display on the Station Light and Power Automatic Transfer Switch panel was damaged and not functioning.

- The Rio Hondo Arcadia Bradbury 66 kV Line Disconnect displayed bird caging on one of the lead wires.

Universal Substation

- The No. 1 66 kV/12 kV Transformer Bank displayed weeping in multiple locations and had oil absorption blankets along with an oil collection pan around the unit.
- The No. 1 66 kV/12 kV Transformer Bank and the No. 2 66 kV/12 kV Transformer Bank both had a cooling fan that was disconnected and inoperable but still attached to a radiator.

Studio Substation

- A battery bank currently being utilized was not enclosed by a cabinet. Instead, it was only covered by a tarp.
- A warning sign was not posted on the entry gate of the substation as required by Cal/OSHA Title 8, Subchapter 5, Group 2, Article 17: Enclosures for Electrical Installations.

La Canada

- The No. 2 Bank 16 kV Bus Disconnect was missing the bonding wire that bonds the top cap to ground.

Dalton Substation

- The ENID 12 kV Circuit Breaker Line A was low on oil as indicated from the sight glass.
- The bushing on the C-Phase of the No.2 Transformer Bank was weeping oil from the base of the bushing.
- The following circuit breakers had leads (wires) that were frayed and/or displayed bird caging:
 - The Bus Tie 66 kV Transfer bus CB
 - The Citrus Kirkwall Circuit 66 kV CB
 - The Finance Rio Hondo Lark Ellen 66 kV CB
 - No. 1 Bank 66 kV Bank CB
- Three bushings on the three No. 2 Capacitor Bank Switches displayed low oil levels on the associated oil level gauges.