



Melvin Stark
Principal Manager
OE-T&D Compliance & Quality

September 22, 2023

Fadi Daye, P.E.
Program & Project Supervisor
Electric and Safety Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission
320 West 4th St., Ste. 500
Los Angeles, California 90013

SA2023-1063

SUBJECT: Substation Audit of SCE's Lugo Switching Center - Hesperia

Dear Mr. Daye:

Your letter, dated June 26, 2023, requested that we advise you of actions taken by Southern California Edison Company (SCE) to address conditions identified during the Safety and Enforcement Division's (SED's) substation audit of Lugo Switching Center from June 12, 2023 to June 16, 2023.

Your letter requested a response by September 22, 2023. Attached are the conditions mentioned in your letter, and our responses and corresponding actions.

A handwritten signature in black ink, appearing to read "Mel Stark", is written over a horizontal line.

Mel Stark
Principal Manager, OE-T&D Compliance & Quality
1 Innovation Way
Pomona, CA 91768

Enclosures: SED Audit Findings and SCE's Responses

Cc: Leslie Palmer, Director, Safety and Enforcement Division, CPUC
Nika Kjensli, Program Manager, ESRB, SED, CPUC
Kyle King, Utilities Engineer, ESRB, SED, CPUC

AUDIT FINDINGS

I. Records Review

During the audit, my staff reviewed the following records:

- SCE GO 174 Substation Inspection Process
- SCE GO 174 Substation Inspection Program
- SCE SOP Protection System Maintenance Program.
- Substation Operators Training Records
- Summary of Substation Inspections
- Inspection Checklists and One-Line Diagrams for ten substations
- Recent open and completed work orders
- Summary of results of Infrared Testing in 2022
- Oil sample testing results
- Infrared inspection records

II. Field Inspections

My staff inspected the following substation facilities during the field inspection:

| No. | Substation ID | Location |
|-----|---------------|--|
| 1 | Aqueduct | Topaz Ave. & Dartmouth St., Hesperia, CA |
| 2 | Savage | 1st Ave. & Jasmine St., Victorville, CA |
| 3 | Hesperia | 8886 G Ave., Hesperia, CA |
| 4 | Apple Valley | 10889 Deep Creek Rd., 1.5 Mi. S/O Bear Valley Rd., Apple Valley, CA |
| 5 | Lucerne | N/W C/O Barstow Rd. And Old Woman Springs Rd., Lucerne Valley, CA |
| 6 | Cottonwood | 36651 Highway 18., Lucerne Valley, CA |
| 7 | Goldhill | TBD 750' E/O Holcomb Valley Rd., Next To County Dump, Big Bear |
| 8 | Wrightwood | Hwy 2. And Lone Pine Cyn Rd., Wrightwood, CA |
| 9 | Phelan | W/O Johnson Rd., 1/4 Mi. S/O Phelan Rd, Phelan, CA |
| 10 | Victorville | N/E C/O Sixth St. & 'B' St., Victorville, CA |
| 11 | Ridgecrest | Argus, Between Sanders and Fairview, Ridgecrest, CA |
| 12 | Downs | C/O Ridgecrest Blvd. And Downs, Ridgecrest, CA |
| 13 | Inyokern | TBD Inyokern Rd., 1/4 Mile E/O Hwy 395., Inyokern |
| 14 | Calgen | TBD West Inyokern Rd, Ridgecrest |
| 15 | Inyokern Town | Orchard Ave., Inyokern, CA |
| 16 | Trona | Athol St. 700 Ft. W/O Trona Rd., Trona, CA |
| 17 | Kerrgen | 83220 Argus., Trona, CA |
| 18 | Searles | 80000 Trona Rd., Trona, CA |
| 19 | Yermo | N/W C/O Yermo, And Dividing Line Rd., Yermo |
| 20 | Harvard | Hwy 91, 10 MI E/O Yermo & 1/2 MI W/O Harvard Off Ramp, Harvard |
| 21 | Gale | National Trails Hwy., 1.25 MI. E/O Daggett, Daggett |
| 22 | Barstow | S/E C/O Sixth St. And Hutchinson., Barstow |
| 23 | West Barstow | S/W C/O W. Main St. & 'H' St., Barstow |

III. Field Inspection - Violations List

My staff observed the following violations during the field inspections portion of the audit:

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:

Savage Substation

- Debris was found inside the substation.
- No. 1 Capacitors had a cracked fitting on a “hot stick bar”.
- No. 2 Bank Transformer 115/12 kV East Unit had loose cables and zip ties that were undone.

SCE Response:

The conditions listed above have been recorded in SCE’s Work Management System and will be addressed in accordance with SCE’s maintenance program.

- *Debris inside the substation. **SCE Response:** Due Date 9/6/2029.*
- *No. 1 Capacitors had a cracked fitting on a “hot stick bar”. **SCE Response:** Due Date 9/6/2029.*
- *No. 2 Bank Transformer 115/12 kV East Unit had loose cables and zip ties that were undone. **SCE Response:** Due Date 9/6/2029.*

Lucerne Substation

- GO Bar 33 kV had a Potential Transformer that was leaking oil.

SCE Response:

The condition listed above has been recorded in SCE’s Work Management System and will be addressed in accordance with SCE’s maintenance program.

- *GO Bar 33 kV had a Potential Transformer that was leaking oil. **SCE Response:** Due Date 9/6/2029.*

Phelan Substation

- 115 kV Transfer Bus needed “High Voltage” signage.
- No. 2 Bank Transformer 115/12 kV West Unit had two fans that were not operating.

SCE Response:

The conditions listed above have been recorded in SCE’s Work Management System and will be addressed in accordance with SCE’s maintenance program.

- *115 kV Transfer Bus needed “High Voltage” signage. **SCE Response:** Due Date 9/13/2024.*
- *No. 2 Bank Transformer 115/12 kV West Unit had two fans that were not operating. **SCE Response:** Due Date 9/13/2024.*

Victorville Substation

- Debris was found inside the substation.
- 33 kV Bus Pot Relay was leaking oil on the B Phase and C Phase.
- No. 1 Bank Transformer 33/4 kV was leaking oil on the B Phase and the C Phase.
- For the 4 kV rack, a cap was missing on the hot stick holder (i.e., the container for storing the hot stick).
- No. 2 Bank Transformer 33/12 kV South Unit was leaking oil.

SCE Response:

The conditions listed above have been recorded in SCE’s Work Management System and will be addressed in accordance with SCE’s maintenance program.

- *Debris inside the substation. **SCE Response:** Due Date 9/6/2029.*
- *33 kV Bus Pot Relay was leaking oil on the B Phase and C Phase. **SCE Response:** Due Date 9/6/2029.*
- *No. 1 Bank Transformer 33/4 kV was leaking oil on the B Phase and the C Phase. **SCE Response:** Due Date 9/6/2029.*
- *For the 4 kV rack, a cap was missing on the hot stick holder (i.e., the container for storing the hot stick). **SCE Response:** Due Date 9/6/2029.*
- *No. 2 Bank Transformer 33/12 kV South Unit was leaking oil. **SCE Response:** Due Date 9/6/2029.*

Ridgecrest Substation

- CAB Hildreth 4.8 kV Line Side Transformer was leaking oil.
- CAB Miracle City 4.8 kV Line Side Transformer was leaking oil.
- CAB Burroughs 4.8 kV Line Side Transformer was leaking oil.
- There wasn’t enough “High Voltage” and “Do Not Enter” signage around the perimeter of the substation.
- No. 1 Bank Transformer 33/4.8 kV Phase A was leaking oil.

SCE Response:

The conditions listed above have been recorded in SCE’s Work Management System and will be addressed in accordance with SCE’s maintenance program.

- *CAB Hildreth 4.8 kV Line Side Transformer was leaking oil. **SCE Response:** Due*

Date 9/6/2029.

- *CAB Miracle City 4.8 kV Line Side Transformer was leaking oil. **SCE Response:** Due Date 9/6/2029.*
- *CAB Burroughs 4.8 kV Line Side Transformer was leaking oil. **SCE Response:** Due Date 9/6/2029.*
- *There wasn't enough "High Voltage" and "Do Not Enter" signage around the perimeter of the substation. **SCE Response:** Due Date 9/6/2029.*
- *No. 1 Bank Transformer 33/4.8 kV Phase A was leaking oil. **SCE Response:** Due Date 9/6/2029.*

Downs Substation

- Debris was found inside the substation.

SCE Response:

The condition listed above has been recorded in SCE's Work Management System and will be addressed in accordance with SCE's maintenance program.

- *Debris inside the substation. **SCE Response:** Due Date 9/6/2029.*

Invokern Substation

- No. 2 B Bank 115/33 kV Transformer was leaking oil.
- No. 1 B Bank 115/33 kV Transformer was leaking oil.

SCE Response:

The conditions listed above have been recorded in SCE's Work Management System and will be addressed in accordance with SCE's maintenance program.

- *No. 2 B Bank 115/33 kV Transformer was leaking oil. **SCE Response:** Due Date 9/6/2029.*
- *No. 1 B Bank 115/33 kV Transformer was leaking oil. **SCE Response:** Due Date 9/6/2029.*

Searles Substation

- There wasn't enough "High Voltage" and "Do Not Enter" signage around the perimeter of the substation.
- The substation fencing needed repairs.

SCE Response:

The conditions listed above have been recorded in SCE's Work Management System and will be addressed in accordance with SCE's maintenance program.

- *There wasn't enough "High Voltage" and "Do Not Enter" signage around the perimeter of the substation. **SCE Response:** Due Date 9/6/2029.*
- *The substation fencing needed repairs. **SCE Response:** Completed on 9/7/2023.*

Gale Substation

- Bug 33 kV 100-0 Step Type 251 Amp Line Regulator was leaking oil.

SCE Response:

The condition listed above has been recorded in SCE's Work Management System and will be addressed in accordance with SCE's maintenance program.

- *Bug 33 kV 100-0 Step Type 251 Amp Line Regulator was leaking oil. **SCE Response:** Due Date 9/6/2029.*

Barstow Substation

- Debris was found inside the substation.
- Need additional "High Voltage" signage to the No. 1 33 kV Transformer Capacitors Fence.

SCE Response:

The conditions listed above have been recorded in SCE's Work Management System and will be addressed in accordance with SCE's maintenance program.

- *Debris inside the substation. **SCE Response:** Due Date 9/6/2029.*
- *Need additional "High Voltage" signage to the No. 1 33 kV Transformer Capacitors Fence. **SCE Response:** Due Date 9/6/2029.*