

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



July 21, 2016

Melvin Stark  
Principal Manager, Maintenance & Inspections/Asset Management  
Southern California Edison  
3 Innovation Way  
Pomona, CA 91768

TA2015-004

**SUBJECT:** Audit of SCE's Eastern Grid

Dear Mr. Stark:

On behalf of the Electric Safety and Reliability Branch of the California Public Utilities Commission (CPUC), Koko Tomassian of my staff conducted an audit of Southern California Edison's (SCE) Eastern Grid from November 2, 2015 to November 6, 2015. 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 22, 2016, by electronic or hard copy, of all corrective measures taken by SCE to remedy and prevent such violations.

If you have any questions, you can contact Koko Tomassian at (213) 576-7099 or [koko.tomassian@cpuc.ca.gov](mailto:koko.tomassian@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

Enclosure: Audit Findings

Cc: Elizaveta Malashenko, Director, Safety and Enforcement Division, CPUC  
Charlotte TerKeurst, Program Manager, Electric Safety and Reliability Branch, CPUC

## **AUDIT FINDINGS**

### **I. Records Review**

During the audit, my staff reviewed the following records:

- Patrol inspection records (emergency and routine) for 12 months prior to the audit
- Construction records and pole load calculations for 10 structures
- Completed and pending work orders from 12 months prior to the audit
- Third party safety hazard notifications sent to and received from other utilities pursuant to GO 95, Rule 18-B
- Insulator washing records from 12 months prior to the audit
- Vegetation management records from 12 months prior to the audit
- Intrusive test results for 10 poles

## II. Field Inspections

The following facilities were inspected during the audit:

| Structure Number | Structure Type | City          |
|------------------|----------------|---------------|
| 2309043E         | Pole           | Lake Elsinore |
| 2312580E         | Pole           | Lake Elsinore |
| 4558657E         | Pole           | Menifee       |
| 4106756E         | Pole           | Perris        |
| 4107064E         | Pole           | Corona        |
| 4107004E         | Pole           | Corona        |
| 4602582E         | Pole           | Perris        |
| 4602581E         | Pole           | Perris        |
| 4602580E         | Pole           | Perris        |
| 4602579E         | Pole           | Perris        |
| 4602578E         | Pole           | Perris        |
| 4602577E         | Pole           | Perris        |
| 4602576E         | Pole           | Perris        |
| 4602575E         | Pole           | Perris        |
| 4602574E         | Pole           | Perris        |
| 4602573E         | Pole           | Perris        |
| 4602572E         | Pole           | Perris        |
| Redlands M01     | Tower          | Redlands      |
| Tennessee M01    | Tower          | Redlands      |
| 2268258E         | Pole           | Redlands      |
| 4503908E         | Pole           | Redlands      |
| 4503907E         | Pole           | Redlands      |
| 4503906E         | Pole           | Redlands      |
| 4503905E         | Pole           | Redlands      |
| 4503904E         | Pole           | Redlands      |
| 4503903E         | Pole           | Redlands      |
| 4503902E         | Pole           | Redlands      |
| 4503901E         | Pole           | Redlands      |
| Redlands M02     | Tower          | Redlands      |
| Tennessee M02    | Tower          | Redlands      |
| Redlands M03     | Tower          | Redlands      |
| Tennessee M03    | Tower          | Redlands      |
| Redlands M04     | Tower          | Redlands      |
| Tennessee M04    | Tower          | Redlands      |
| Redlands M05     | Tower          | Redlands      |
| Tennessee M05    | Tower          | Redlands      |
| V4547            | Vault          | Redlands      |
| 4603125E         | Pole           | Highland      |
| 4526677E         | Pole           | Highland      |

| <b>Structure Number</b> | <b>Structure Type</b> | <b>City</b>  |
|-------------------------|-----------------------|--------------|
| 254513E                 | Pole                  | Highland     |
| 254510E                 | Pole                  | Highland     |
| 254509E                 | Pole                  | Highland     |
| 254508E                 | Pole                  | Highland     |
| 1988160E                | Pole                  | Highland     |
| 1891640E                | Pole                  | Highland     |
| 1891641E                | Pole                  | Highland     |
| 1891642E                | Pole                  | Highland     |
| 4258750E                | Pole                  | Highland     |
| 4295650E                | Pole                  | Highland     |
| 4304077E                | Pole                  | Highland     |
| 4269839E                | Pole                  | Highland     |
| 1891639E                | Pole                  | Highland     |
| Devers-Sentinal M955    | Tower                 | Palm Springs |
| 4632190E                | Pole                  | Palm Springs |
| Devers-Sentinal (No ID) | Tower                 | Palm Springs |
| 4632191E                | Pole                  | Palm Springs |
| 4632192E                | Pole                  | Palm Springs |
| 4431617E                | Pole                  | Palm Springs |
| 4605147E                | Pole                  | Palm Springs |
| 4695929E                | Pole                  | Palm Springs |
| 4695930E                | Pole                  | Palm Springs |
| 4695931E                | Pole                  | Palm Springs |
| 4755596E                | Pole                  | Palm Springs |
| 4755597E                | Pole                  | Palm Springs |
| 4755598E                | Pole                  | Palm Springs |
| 4755599E                | Pole                  | Palm Springs |
| 4534493E                | Pole                  | Palm Springs |
| 4534492E                | Pole                  | Palm Springs |
| 4534491E                | Pole                  | Palm Springs |
| 4534490E                | Pole                  | Palm Springs |
| 4534489E                | Pole                  | Palm Springs |
| 4534488E                | Pole                  | Palm Springs |
| 4534487E                | Pole                  | Palm Springs |
| 4534486E                | Pole                  | Palm Springs |
| 4534485E                | Pole                  | Palm Springs |
| 4534484E                | Pole                  | Palm Springs |
| 4534483E                | Pole                  | Palm Springs |
| 4534482E                | Pole                  | Palm Springs |
| 4534481E                | Pole                  | Palm Springs |
| 4534480E                | Pole                  | Palm Springs |
| 4534479E                | Pole                  | Palm Springs |
| 4534478E                | Pole                  | Palm Springs |
| 4534477E                | Pole                  | Palm Springs |
| 4534476E                | Pole                  | Palm Springs |
| 4534475E                | Pole                  | Palm Springs |

### III. Field Inspections – Undocumented Violations List

We observed the following violations during the field inspection. None of the violations were documented and/or addressed by SCE during its inspections:

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

*Poles which support line conductors of more than 750 volts shall be marked with high voltage signs.*

*Such signs shall be of weather and corrosion-resisting material, solid or with letters cut out therefrom and clearly legible.*

The following poles supported damaged, broken, or illegible high voltage signs:

- 4503908E
- 4503905E
- 4503903E
- 4503901E
- 254513E
- 254508E
- 4304077E

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

*Electrical supply and communication systems shall be of suitable design and construction for their intended use, regard being given to the conditions under which they are to be supported, and shall be maintained in a condition which will enable the furnishing of safe, proper and adequate service.*

The following structures contained steel cross-members or braces which were either damaged or broken:

- Tennessee M03
- Redlands M04

**GO 95, Rule 61.6B, Guarding**, states:

*Where a tower of a design which can be easily climbed supports supply conductors and is located in urban districts, or in rural areas adjacent to schools, dwellings, permanent or seasonal camps, or in orchards, or near roads or trails which are frequently traveled, a suitable barrier shall be installed on or around such towers, or other provisions shall be made to prevent easy climbing.*

The following structures supported climbing guards/discouragers which were damaged or broken, thus not meeting the intent of the above rule:

- Redlands M04
- Redlands M05

**GO 95, Rule 91.3-A1, Poles with Vertical Runs or Risers**, states in part:

*All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers are attached to the surface of such poles...*

The following jointly used poles supported vertical runs or risers, but did not contain pole steps:

- 2268258E
- 4269839E
- 4534476E

#### IV. Field Inspections – Documented Violations

We observed the following violations during the field inspection that were documented and/or addressed by SCE during its previous inspection:

**GO 95, Rule 44.3, Replacement**, states in part:

*Lines or parts thereof shall be replaced or reinforced before the 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...*

The safety factors of lines or parts thereof on the following structures have been reduced to less than two-thirds of the safety factors specified in Rule 44.1:

- 2309043E – Bending safety factor of 2.33 at ground line
- 2312580E – Guy #2 (261° direction, 40’ attachment height) had a safety factor of 0.79
- 4558657E – Bending safety factor of 1.02 at ground line
- 4106756E – Bending safety factor of 2.47 at ground line