STATE OF CALIFORNIA EDMUND G. BROWN JR., *Governor*

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

December 30, 2015 EA2015-014

Melvin Stark
Manager, Maintenance & Inspection
Southern California Edison (SCE)
3 Innovation Way
Pomona, CA 91768

SUBJECT: Audit of SCE's Covina District

Dear Mr. Stark:

On behalf of the Electric Safety and Reliability Branch of the California Public Utilities Commission, Zelalem Ewnetu of my staff conducted an audit of SCE's Covina District from October 19, 2015 to October 23, 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 February 5, 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 Zelalem Ewnetu at (213) 576-7042 or ze1@cpuc.ca.gov.

Sincerely,

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:

- Current and previous detailed inspection records and recently completed work order records.
- Diagnostic test records of oil-filled underground facilities.
- SCE's Distribution Inspection and Maintenance Program (DIMP) manual and current and previous pole intrusive inspection records.
- Pole loading records for recent pole replacements and repair projects.

II. Records Review – Violations List

We observed the following violations during the records review portion of the audit.

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.*

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.*

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

> *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 12.2-A, Maintenance, states in part:

> *An auditable and consistent maintenance program shall be in place to minimize deterioration of underground equipment.*

From 2012 to 2015, there were a total of 24 Priority 2 maintenance work orders for underground and overhead facilities that were completed late.

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

> *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…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.*

GO 95, Rule 44.1, Installation and Reconstruction, requires the minimum bending and buckling safety factor of newly constructed wood poles in Grade A construction to be 4. This rule also requires the minimum tensile strength safety factor of newly installed guy wires in all grades of construction to be 2.

SCE pole loading records revealed that the safety factors of the following poles of Grade A construction did not meet the GO 95 minimum safety factor requirements.

- 1476563E – bending safety factor of 2.18
- 776406E – bending safety factor of 1.86
- 1470353E – bending safety factor of 1.01
- 1074273E – bending safety factor of 2.29
- 952482E – bending safety factor of 1.65
- 1242280E – bending safety factor of 1.03
- 776326E – bending safety factor of 2.61
- 1060461E – bending safety factor of 1.86
- 1886637E – bending safety factor of 1.04
- 1073061E – bending and buckling safety factors of 0.84 and 1, and guy wires with tensile safety factors of 0.65, 0.67 and 0.73
- 1435892E – bending and buckling safety factors of 1.82 and 1.99, and a guy wire with tensile safety factor of 0.59
- 1745260E – bending safety factor of 0.97

III. Field Inspection

The following are the facilities we inspected during the field inspection:

Structure Number (Location)	Type of Structure	City
4181321E	Pole	La Puente
1186545E	Pole	La Puente
1186546E	Pole	La Puente
1412696E	Pole	La Puente
1186706E	Pole	La Puente
2376650E	Pole	La Verne
G14531Y	Pole	La Verne
G14969Y	Pole	La Verne
4711295E	Pole	La Verne
4593695E	Pole	La Verne
4658287E	Pole	La Verne
2376696E	Pole	La Verne
1071490E	Pole	La Verne
1654021E	Pole	La Verne
4110280E	Pole	Pomona
1886732E	Pole	Pomona
1886733E	Pole	Pomona
1886734E	Pole	Pomona
411438E	Pole	Pomona
411439E	Pole	Pomona
411440E	Pole	Pomona
796500E	Pole	Pomona
48774E	Pole	Pomona
4354550E	Pole	Pomona
1144203E	Pole	Pomona
37235E	Pole	Pomona
453848E	Pole	Pomona
G13977Y	Pole	Pomona
1165639E	Pole	Covina
1165638E	Pole	Covina
1165637E	Pole	Covina
1165636E	Pole	Covina
1165635E	Pole	Covina
2010650E	Pole	Covina
4810241E	Pole	Covina
1980307E	Pole	Covina

2129130E	Pole	Covina
2127859E	Pole	Covina
80757E	Pole	Covina
543400E	Pole	Covina
1636344E	Pole	Covina
4626933E	Pole	Covina
1558771E	Pole	Covina
1558776E	Pole	Covina
4796671E	Pole	Unincorporated Covina area
1050999E	Pole	Unincorporated Covina area
4796653E	Pole	Unincorporated Covina area
4796652E	Pole	Unincorporated Covina area
319881E	Pole	Unincorporated Covina area
4153651E	Pole	Unincorporated Covina area
1102206E	Pole	Unincorporated Covina area
4796651E	Pole	Unincorporated Covina area
305645E	Pole	Unincorporated Covina area
1528275E	Pole	Unincorporated Covina area
1636157E	Pole	Unincorporated Covina area
4372249E	Pole	Unincorporated Covina area
607442E	Pole	Unincorporated Covina area
4308800E	Pole	Unincorporated Covina area
1010623E	Pole	Unincorporated Covina area
1150808E	Pole	Unincorporated Covina area
14026Y	Pole	Unincorporated Covina area
952941E	Pole	Unincorporated Covina area
5201141	Pad-mounted Structure	Diamond Bar
5164998	Vault	Diamond Bar
5049351	Sub-surface Structure	Diamond Bar
5198668	Vault	Diamond Bar
5335744	Pad-mounted Structure	Diamond Bar
1073061E	Pole	Hacienda Heights
1435892E	Pole	Hacienda Heights
1290757E	Pole	Hacienda Heights
1074272	Pole	Hacienda Heights

IV. Field Inspection – 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 last inspections.

GO 95, Rule 51.6-A, Marking and Guarding, 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"*

SCE pole number 1071490E supported a high voltage sign that was illegible.

GO 95, Rule 35, Vegetation Management, states in part:

> *When a supply or communication company has actual knowledge, obtained either through normal operating practices or notification to the company, that its circuit energized at 750 volts or less shows strain or evidences abrasion from vegetation contact, the condition shall be corrected.*

SCE pole number 4153651E supported a service drop that was strained by a tree, causing the pole to lean.

GO 95, Rule 31.6, Abandoned Lines, states in part**:**

> *Lines or portions of lines permanently abandoned shall be removed by their owners so that such lines shall not become a public nuisance or a hazard to life or property. For the purposes of this rule, lines that are permanently abandoned shall be defined as those lines that are determined by their owner to have no foreseeable future use.*

An SCE pole adjacent to pole number 4796652E was idle and not supporting any facilities.

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.*

SCE underground vault number 5164998 contained four metallic bolts, not currently in use, attached to and protruding from the floor. These bolts, which are normally used to securely mount equipment, pose a tripping and injury hazard to workers.

Field Inspection – Documented Violations List

We observed the following violations during the field inspection that were documented and/or addressed by SCE during its last inspections.

GO 95, Rule 56.4-C4, Clearance, states in part**:**

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

GO 95, Rule 38, Table 2, Case 19-C, requires three inches of radial clearance between guy wires and communication conductors attached to the same pole.

SCE pole number 1558776E supported an SCE down guy wire and third party communications cables that had less than three inches of radial separation.

GO 95, Rule 51.6-A, Marking and Guarding, 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"*

The following SCE poles supported high voltage signs that were illegible:

- 1412696E
- 453848E
- 1636344E
- 1010623E
- G14969
- 1890307E
- 1558771E
- 411438E
- 1165636E
- 1558776E
- 411439E
- 1165635E
- 4308800E