

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



December 21, 2010

FILE NO. EA-2010-19

Tim Lunt
T/D Superintendent
City of Colton Electric Department
150 South 10th Street
Colton, CA 92324

SUBJECT: Electric Audit of the City of Colton overhead and underground facilities

Dear Mr. Tunt:

On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, I conducted an electric audit of the City of Colton on December 6-9, 2010.

As part of the audit, I inspected areas where the City of Colton Electric Department recently performed inspections of overhead and underground facilities. I found that the City of Colton Electric Department's personnel did not document all of the General Orders (GOs) 95 and 128 violations at the time of inspections, and did not assign a date of corrective action for each violation discovered during the inspections. Furthermore, the City of Colton Electric Department did not have a maintenance program that includes procedures for inspections interval, rejection criteria, and corrective action, to minimize deterioration of underground equipment as required by General Order 128, Rule 12.2 and Rule 22.4. Attached to this letter is a list of the violations I observed during the audit.

Please advise me no later than January 28, 2011, by electronic or hard copy, of all corrective measures taken to correct all of the violations addressed in this report.

If you have any questions, please contact me at (213) 576-7016.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mahmoud Intably", with a long horizontal line extending to the right.

Mahmoud (Steve) Intably, P.E.
Utilities Engineer
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Inspection Report

Inspection Report

List of General Orders (GOs) 95 and 128 violations that were observed during the audit and were not documented in the City of Colton Electric Department's inspection records:

GO 95, Rule 31.1 Design, Construction and Maintenance

Rule 31.1 states:

“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... “

Each of the following poles had a bent or a turned step:

- 706657H
- 5958F
- 587134H

Each of the following poles had damaged visibility strips:

- 706657H
- 5619F
- 706660H
- 706663H
- 581497H
- 581498H
- 438335E

Each of the following poles had a broken ground wire:

- 706656H
- 706662H
- 1056429E
- 1810F

Pole number 5065F and pole west of pole number 4263F had a damaged riser's strap.

Pole number 3205F had Colton's electrical facilities that need to be transferred to a newly installed pole.

Pole number 1714933E had an electrical meter with a damaged panel.

GO95, Rule 31.6 Abandoned Lines

Rule 31.6 states:

“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.”

- Poles numbered 994F, 6145F, 1714937E, and 2625F had an abandoned ground wire.
- Poles numbered 994F, 6145, 1714937E, and 2625 had an abandoned ground molding.
- Pole number 1056438E had an abandoned insulator on a guy wire.
- Pole number 994F had an abandoned secondary-insulator
- Poles numbered 6145F and 2625F had an abandoned breaker panel box.
- Pole number 6145F had an abandoned conduit.
- Pole number 2625F had an abandoned electrical meter.

GO 95, Rule 35 Tree Trimming

Rule 35 states:

“Where overhead wires pass through trees, safety and reliability of service demand that tree trimming be done in order that the wires may clear branches and foliage by a reasonable distance. The minimum clearances established in Table 1, Case 13, measured between line conductors and vegetation under normal conditions, shall be maintained. (Also see Appendix E for tree trimming guidelines...”

Each of the following poles had a service drop or an overhead conductor in contact with trees and showing signs of abrasion:

- 706662H (two service drops)
- 581499H
- 1056428E
- 5063F
- 1714925E
- 857F
- 1058F

GO 95, Rule 51.6A High Voltage Marking

Rule 51.6A states:

“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”, not more than six (6) inches in height with letters not less than 3 inches in height. Such signs shall be of weather and corrosion-resisting material, solid or with letters cut out therefrom and clearly legible.”

Each of the following poles supported line conductors of more than 750 volts and were not marked with high voltage signs:

- 706659H
- 706662H
- 2691F
- 706663H
- 581497H
- 581499H
- 3207F
- 1056430E
- 1056401E
- 4202F
- w/o 6611F
- 4331F
- w/o 4263F
- 4264
- 435363H
- 2552F
- 2553F
- 2554F
- 3208F
- 3200F
- 6148F
- 6147F
- 6146F
- 1714934E
- 1714927E
- 1714928E
- 858F
- 857F
- 1714937E
- 3540F
- 4443F
- 4442F
- 3918F
- 3917F
- 883F
- 5132F
- 1520F
- 1224F
- 5137F
- 2455F
- 1722F
- 1690F
- 4838F
- 5136F
- 883F
- 5139F

GO 95, Rule 54.6B Ground Wires

Rule 54.6B states:

“That portion of the ground wire attached on the face or back of wood crossarms or on the surface of wood poles and structures shall be covered by a suitable protective covering (see Rule 22.8).”

Each of the following poles had a broken ground molding:

- 706656H
- 706657H
- 706662H
- 2691F
- 706663H
- 1056429E
- 2721F
- 5063F
- 4264F
- 2553F
- 2554F
- 3200F
- 5488F
- 3949F
- 3540F
- 4443F
- 4442F
- 3918F
- 123069
- 104463H
- 1520F
- 1690F
- 1810F
- 609757H

GO 95, Rule 54.8C4 Clearances between Supply Service Drops, 0 – 750 Volts and Communication Service Drops

Rule 54.8C4 states:

“The radial clearance between supply service drop conductors and communication service drop conductors may be less than 48 inches as specified in Table 2, Column C, Cases 4 and 9; Column D, Cases 3 and 8, but shall be not less

than 24 inches. Where within 15 feet of the point of attachment of either service drop on a building, this clearance may be further reduced but shall be not less than 12 inches."

Each of the following poles supported a service drop within 15 ft from the point of attachment and had less than 12 inches radial clearance from communications service drops:

- 581499H (two service drops)
- 5064F
- 6611F
- 2554F (two service drops)
- 5139F (two service drops)

Each of the following poles supported a service drop with less than 2 ft radial clearance from communications service drops:

- 5619F
- 1714926E

GO 95, Rule 56.2 Overhead Guys, Anchor Guys and Span Wires

Rule 56.2 states:

"Where mechanical loads imposed on poles, towers, or structures are greater than can be supported with safety factors as specified in Rule 44, additional strength shall be provided by the use of guys or other suitable construction. Where guys are used with poles or similar structures capable of considerable deflection before failure, the guys shall be able to support the entire load, the pole below the point of guy attachment acting merely as a strut.

Guys shall be attached to structures, as nearly as practicable, at the center of load. They shall be maintained taut and of such strength as to meet the safety factors of Rule 44."

Each of the following poles had a loose guy wire:

- 994F
- 587135H
- 6147F
- 1871F

GO 95, Rule 54.8B(1) Service Drops, 0 - 750 Volts Above Public Thoroughfares

Rule 54.8B(1)

"Service drop conductors shall have a vertical clearance of not less than 18 feet above public thoroughfares, except that this clearance may grade from 18 feet at a position not more than 12 feet horizontally from the curb line to a clearance of

not less than 16 feet at the curb line, provided the clearance at the centerline of any public thoroughfare shall in no case be less than 18 feet. Where there are no curbs the foregoing provisions shall apply using the outer limits of possible vehicular movement in lieu of a curb line."

Pole number 1056423E supported two service drops with less than 18 feet of vertical clearance at the centerline of public thoroughfares and two service drops with less than 16 feet of vertical clearance at the curb line.

Pole number 1056424E supported three service drops with less than 18 feet of vertical clearance at the centerline of public thoroughfares and three service drops with less than 16 feet of vertical clearance at the curb line.

GO 95, Rule 54.8B(2)(a) Above Private Thoroughfares Industrial or Commercial Premises

Rule 54.8B(2)(a) states:

"Over private driveways, lanes, or other private property areas accessible to vehicles on premises used for industrial or commercial purposes, service drops shall have a vertical clearance of not less than 16 feet."

Pole number 5488F supported a service drop with less than 16 feet of vertical clearance above a commercial driveway

GO 95, Rule 54.8B(3) Above Ground in Areas Accessible to Pedestrians Only

Rule 54.8B(3) states:

"Over areas accessible to pedestrians only service drops shall be maintained at a vertical clearance of not less than 12 feet."

EXCEPTION: This clearance may be reduced for insulated services that conform with Rule 54.8-A, to not less than 8 feet 6 inches."

Each of the following poles had a service drop with less than 8 feet of vertical clearance above ground in areas accessible to pedestrians:

- 5064F
- 6611F
- 4331F
- 4383335E
- 1058F

GO 95, Rule 38 Minimum Clearances of Wires from Other Wires

38 states:

“The minimum vertical, horizontal or radial clearances of wires from other wires shall not be less than the values given in Table 2 and are based on a temperature of 60° F. and no wind. Conductors may be deadended at the crossarm or have reduced clearances at points of transposition, and shall not be held in violation of Table 2, Cases 8–15 , inclusive.

The clearances in Table 2 shall in no case be reduced more than 10 percent because of temperature and loading as specified in Rule 43 or because of a difference in size or design of the supporting pins, hardware or insulators. All clearances of less than 5 inches shall be applied between surfaces, and clearances of 5 inches or more shall be applied to the center lines of such items.”

Each of the following poles had a triplex cable with less than 3 feet of radial clearance from a communication cable:

- 5619F
- 1346704E
- 5063F
- 994F
- 4383335E
- 1714937E
- 1520F
- 4838F
- Pole number 2721F had conductors in rack construction with less than 4 feet of radial clearance from a communication cable.

Each of the following poles had a guy wire with less than 3 inches of radial clearance from a communication cable:

- 313722E (two guy wires)
- 5958F
- West of 6611F

Pole number 893F had a guy wire with less than 3 inches of radial clearance from a triplex cable.

Pole number 2555F had a guy wire in contact with a supply conductor.

GO 95, Rule 91.3A (1) Use Of Steps

Rule 91.3A(1) states:

“Poles with Vertical Runs or Risers: 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...”

Pole number 4426F had a vertical run attached to the surface of the pole and was not provided with pole steps.

GO 95, Rule 93 Climbing Space

Rule 93 states:

“Climbing space shall be provided on all jointly used poles which support conductors and the provisions of Rules 54.7 and 84.7 are directly applicable to such poles. Climbing space on jointly used poles shall be so correlated between conductor levels that its position in relation to the pole is not changed by more than 90 degrees in a vertical distance of less than 8 feet. Climbing space shall be maintained from the ground level.”

Each of the following poles had an obstruction in climbing space that may pose a safety hazard to Colton Electric’s employees:

- 706656H (telephone drop)
- 706662H (tree)
- 4690F (telephone and cable)
- 5063F (ground wire)
- 4129 (ground wire and service drop)
- 3993F (telephone drop)
- 5153F (tree)
- 5154F (two telephone drops)
- 5133F (tree)
- 1058F (cable)

GO 128, Rule 12.2 Maintenance

Rule 12.2 states:

“Systems shall be maintained in such condition as to secure safety to workmen and the public in general.”

Each of the following aboveground structures contained a transformer that was corroded:

- TP111
- TP379
- TP380
- TP383
- TP404
- TP403
- TP902
- TP405
- TP410

Aboveground structure number TP378 contained corroded hardware.

Vault number LV120 contained cables that were not supported

Aboveground structure number TP410 contained a transformer that was leaking oil.

Aboveground structure number TP408 had a damaged steel plate cover.

GO 128, Rule 12.2 Maintenance

Rule 12.2 states:

“Systems shall be maintained in such condition as to secure safety to workmen and the public in general. Systems and portions thereof constructed, reconstructed, or replaced on or after the effective date of these rules shall be kept in conformity with the requirement of these rules.

A Electric Supply System - An Auditable and consistent maintenance program, see Rule 22.4 , shall be in place to minimize deterioration of underground equipment.”

GO 128, Rule 22.4 A Maintenance Program

Rule 22.4 states:

“Maintenance Program means a written policy that shall include the following key elements:

- 1) Inspection intervals*
- 2) Rejection criteria*
- 3) Corrective actions”*

The City of Colton Electric Department did not have a maintenance program that includes procedures for inspection interval, rejection criteria, and corrective action, to minimize deterioration of underground equipment.

GO 128, Rule 17.8 Identification of Manholes

Rule 17.8 states:

“Manholes, handholes and subsurface 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.”

Each of the following underground vaults did not have Colton Electric markings:

- SV102
- SV104
- SV105
- LV109
- LV110

GO 128, Rule 32.7 Covers

Rule 32.7 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.”

Underground vaults numbered SV103 and LV102 had unsecured cover (missing bolts).

GO 128, Rule 34.3B Guarding live parts

Rule 34.3B states:

“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. This requirement is not intended to prevent normal work operations such as fishing ducts and installing cable.”

The following aboveground structures had openings at the bottom that would allow passing of a wire or other conducting material:

- TP380
- TP407
- TP402

In addition to the GO 95 and 128 violations, the following GO 165 violations were observed during the audit:

GO 165, Section IV, Paragraph 1: Standards for Inspection, Record-keeping, and Reporting

Paragraph 1 states:

“Each utility subject to this General Order shall conduct inspections of its distribution facilities, as necessary, to assure reliable, high-quality, and safe operation, but in no case may the period between inspections (measured in years) exceed the time specified in the attached table.”

The City of Colton Electric Department’s records showed that some of its distribution facilities were not inspected (detail inspection) frequently as required by GO 165.

GO 165, Section IV, Paragraph 3: Standards for Inspection, Record-keeping, and Reporting

Paragraph 3 states:

“Each utility subject to this General Order shall submit an annual report detailing its compliance with this General Order under penalty of perjury...”

The City of Colton Electric Department failed to complete and submit annual reports by the due dates as required by this paragraph.

GO 165, Section IV, Paragraph 5: Standards for Inspection, Record-keeping, and Reporting

Paragraph 5 states:

“For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action. For detailed and intrusive inspections, companies shall also rate the condition of inspected equipment. Upon completion of corrective action, company records will show the nature of the work, the date, and the identity of persons performing the work”

During the audit the City of Colton Electric Department’s records did not include the rated condition of inspected equipment and did not have the intrusive inspection records of its poles for compliance with GO 165.