

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



June 19, 2017

EA2017-780

Pjoy T. Chua, P.E.  
Manager of Regulatory Standards and Compliance  
Regulatory Standards and Compliance Section  
City of Los Angeles, Department of Water and Power (LADWP)  
111 North Hope Street, Room 1246  
Los Angeles, CA 90012

**SUBJECT:** Audit of LADWP's Lincoln Heights District

Ms. Chua:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Derek Fong and Eric Ujjiye of my staff conducted an electric distribution audit of LADWP's Lincoln Heights District from April 24, 2017 to April 28, 2017. The audit included a review of LADWP's inspection and maintenance records and a field inspection of LADWP'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 July 19, 2017, by electronic or hard copy, of all corrective measures taken by LADWP to remedy and prevent such violations.

If you have any questions concerning this audit, you can contact Eric Ujjiye at (213) 620-2598 or [eric.ujjiye@cpuc.ca.gov](mailto:eric.ujjiye@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  
Lee Palmer, Deputy Director, Office of Utility Safety, SED, CPUC  
Charlotte TerKeurst, Program Manager, ESRB, CPUC  
Eric Ujjiye, Utilities Engineer, ESRB

## Audit Findings

### I. Records Review

During the audit, my staff reviewed the following records:

- Overhead and underground detailed inspection records.
- Completed and pending corrective action work orders.
- Pole loading calculations.
- Intrusive test records.
- Diagnostic test records, e.g. infrared thermography inspections and oil insulation testing.
- LADWP's visual inspection program.
- ESRB's interview of two LADWP inspectors.

### II. Records Review – Violations List

My staff 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.*

From 2012 to 2016, LADWP completed 277 overhead repair work orders past their scheduled due date of corrective action.

**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.*

From 2012 to 2016, LADWP completed 2 underground repair work orders past their scheduled due date of corrective action.

**GO 95, Rule 31.2, Inspection of Lines**, states in part:

*Lines shall be inspected frequently and thoroughly for the purpose of insuring that they are in good condition so as to conform with these rules.*

**GO 165, Section III-B, Standards for Inspection,** states:

*Each utility subject to this General Order shall conduct inspections of its distribution facilities, as necessary, to ensure reliable, high-quality, and safe operation, but in no case may the period between inspections (measured in years) exceed the time specified in Table 1.*

From 2012 to 2016, LADWP completed 74,158 overhead patrol inspections late and completed 5,415 overhead detailed-inspections late.

**GO 128, Rule 17.2, Inspection,** states:

*Systems shall be inspected by the operator frequently and thoroughly for the purpose of insuring that they are in good condition and in conformance with all applicable requirements these rules.*

From 2012 to 2016, LADWP completed 8,137 underground patrol inspections late and completed 45 underground detailed-inspections late.

### III. Field Inspection

My staff inspected the following facilities during the field inspection:

No.	Structure ID.	Type of Structure	Location
1	378566M	Pole	El Sereno
2	387850M	Pole	El Sereno
3	438426H	Pole	El Sereno
4	432197H	Pole	El Sereno
5	2153M	Pole	El Sereno
6	407214M	Pole	El Sereno
7	1946M	Pole	El Sereno
8	1945M	Pole	El Sereno
9	1944M	Pole	El Sereno
10	1943M	Pole	El Sereno
11	1942M	Pole	El Sereno
12	1993M	Pole	El Sereno
13	353439M	Pole	El Sereno
14	No tag	Pole	Portola Ave and Oakland Street
15	343458M	Pole	El Sereno
16	85789M	Pole	Cypress Park
17	782234H	Pole	Cypress Park
18	5111M	Pole	Cypress Park
19	5112M	Pole	Cypress Park
20	5113M	Pole	Cypress Park
21	5114M	Pole	Cypress Park
22	5115M	Pole	Cypress Park
23	380191M	Pole	Cypress Park
24	36380M	Pole	Mount Washington
25	36379M	Pole	Mount Washington
26	424939M	Pole	Mount Washington
27	427553M	Pole	Echo Park
28	37310M	Pole	Glendale
29	120013M	Pole	East Los Angeles
30	122M	Pole	Highland Park
31	117956M	Pole	Cypress Park
32	1411875	Manhole	Lincoln Heights
33	1127059	Manhole	Glassell Park
34	1238864	Vault with transformer	Hollywood
35	1533421	Padmount Transformer	Hollywood
36	1382415	Padmount Transformer	Silverlake
37	378566M	Pole	El Sereno
38	387850M	Pole	El Sereno
39	438426H	Pole	El Sereno

#### **IV. Field Inspection – Violations List**

My staff observed the following violations during the field inspection:

**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 95, Rule 51.6-A, Marking and Guarding, High Voltage Marking of Poles**, 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”, not more than six (6) inches in height with letters not less than 3 inches in height. A pair of signs may be stacked to a height of no more than 12 inches. Such signs shall be of weather and corrosion-resisting material, solid or with letters cut out therefrom and clearly legible.*

The high voltage signs on the following LADWP poles were damaged:

- 438426H – both the “HIGH” and “VOLTAGE” signs were sun damaged and illegible
- 380191M – the “HIGH” sign was missing and the “VOLTAGE” was missing the letters “AGE”
- 1944M – the “HIGH” sign was missing from both sides of the crossarm while the “VOLTAGE” sign was missing from one side of the crossarm
- 1946M – both the “HIGH” and “VOLTAGE” signs were deteriorated and illegible
- 1945M – the “HIGH” sign was missing and the “VOLTAGE” sign was missing the letters “OLTAGE”
- 1993M – the “HIGH” sign was missing the letters “GH” and the “VOLTAGE” sign was missing the letters “OLTAGE”

**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.*

Pole number 378566M supported an abandoned meter socket that contained exposed wires and connections.

**GO 95, Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc.**

states in part:

*Clearance between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also clearances between conductors, guys, structures, or other objects, shall not be less than those set forth in Table 1, at a Temperature of 60°F and no wind.*

GO 95, Rule 37, Table 1, Column B, Case 6 requires the minimum vertical clearance of supply service drops of 0 – 750 volts above a walkable surface to be 8 feet. The vertical clearance of an LADWP service drop connected to pole number 5111M from the second story patio of the house it serves was approximately 1 foot.

**GO 95, Rule 38, Minimum Clearances of Wires from Other Wires,** states in part:

*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 dead ended at the cross arm or have reduced clearances at points of transposition, and shall not be held in violation of Table 2, Cases 8–15, inclusive.*

GO 95, Rule 38, Table 2, Column C, Case 19 requires the minimum radial separation between a communication cable and a down guy wire supported on the same pole to be 3 inches. A down guy wire connected to pole number 2153M was touching a communication cable.

**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 95, Rule 54.6-B, Ground Wires,** states in part:

*That portion of the ground wires 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).*

The ground molding on pole number 1945M was missing a section at 7 feet above the ground line.

**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.*

- Pole number 1944M had a split in the pole at the through-bolt near the top of the pole.
- A service drop spool insulator was attached to a crossarm on pole number 5115M by a rope. Additionally, the V-brace of a crossarm on the same pole was secured by tape.
- A Mylar balloon was attached to a down guy wire near primary conductors on pole number 3637M.

**GO 95, Rule 54.8-C.4, Service Drops, 0 - 750 Volts, Clearances between Supply Service Drops and Other Conductors, From Communication Service Drops, states in part:**

*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*

The radial clearance of an LADWP service drop connected to pole number 1944M from 1944M from a communication service drop at over 15 feet from the point of attachment was less than 24 inches.

**GO 95, Rule 54.7, Climbing and Working Space, states in part:**

*Climbing space shall be maintained from the ground level. Climbing space, measured from center line of pole, shall be provided on one side or in one quadrant of all poles or structures with dimensions as specified in the following ...*

The climbing space on an LADWP pole located at the intersection of Portola Ave. and Oakland Street was obstructed by vegetation.

**GO 95, Rule 18.B, Reporting and Resolution of Safety Hazards Discovered by Utilities, Notifications of Safety Hazards, states in part:**

*If a company, while performing inspections of its facilities, discovers a safety hazard(s) on or near a communications facility or electric facility involving another company, the inspecting company shall notify the other company and/or facility owner of such safety hazard(s) no later than 10 business days after the discovery.*

- Communication service drops connected to poles numbered 782234H and 5112M were abandoned and hanging down to the ground. LADWP did not notify the communication company of this condition.
- A communication cable connected to pole number 5115M was obstructing the climbing space. LADWP did not notify the communication company of this condition.