

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



July 26, 2010

FILE NO. EA-2010-12

Joe Armstrong, Power Distribution Crew Supervisor
Overhead Division
City of Pasadena, Department of Water and Power
100 N. Garfield Ave.
P.O. Box 7115
Pasadena, CA 91109

SUBJECT: Electric Audit of Pasadena Water and Power overhead facilities

Dear Mr. Armstrong:

On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, I conducted an electric audit of Pasadena Water and Power facilities on June 21-25, 2010.

As part of the audit, I conducted inspections in areas where Pasadena Water and Power recently performed detailed inspections of overhead facilities. I found that Pasadena Water and Power's personnel did not document all of the General Order (GO) 95 violations at the time of the detailed inspections. Attached to this letter is a list of the violations I observed during the audit.

Within 30 days from the date of this letter, please advise me of the corrective measures your company will take to ensure that GOs 95 and 165 violations are documented and addressed in your detailed inspection records.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Mahmoud Intably", written over a horizontal line.

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 Order (GO) 95 violations that observed during the audit of Pasadena Water and Power (PWP) overhead facilities and were not documented in the detailed inspection records:

GO 95, Rule 18B Notification of Safety Hazards

Rule 18B states:

“If a company, while inspecting its facilities, discovers a safety hazard on or near a communications facility, electric transmission or distribution facility involving another company, the inspecting company shall notify the other company and/or facility owner of such safety hazard no later than 10 business days after the discovery...”

The following poles had broken lashing wires belonging to communication companies. PWP did not notify the communication companies of the broken lashing wires:

- 4875MP
- 4909MP

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.

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of [the] communication or supply lines and equipment.

All work performed on public streets and highways shall be done in such a manner that the operations of other utilities and the convenience of the public will be interfered with as little as possible and no conditions unusually dangerous to workmen, pedestrians or others shall be established at any time.”

The following poles had a sunken insulator:

- 15713MP
- 15705MP
- 15707MP
- 531813H
- 6608MP
- 14764MP
- 6614MP

Each of the following poles had a riser with a damaged casing:

- 20093MP
- 16955MP
- 5864MP
- 7482MP
- 14003MP
- 1357MP
- 15216MP

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

- 15706MP
- 15712MP
- 15717MP
- 5856MP
- 5864MP
- 4909MP
- 14765MP
- 7855MP
- 531811H
- 5346MP
- 5437MP
- 717579H
- 15222MP

Street light at 823 Earham Street had a missing base plate cover.

Street light supported by pole number 2577MP had a broken service insulator.

Street light supported by pole number 6614MP had a missing cover.

Conductor supported by pole number 20946 had a dead palm frond hanging on it.

Pole number 59615H had a damaged riser's support.

Poles numbered 13697MP and 531812H had a damaged primary crossarm.

GO 95, 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...”

The following poles had an abandoned insulator:

- 5713MP
- 17279MP
- 2563MP

The following poles had an abandoned ground wire:

- 20093MP
- Pole located at 703 Orange Grove Blvd.

GO 95, Rule 35 Tree Trimming

Rule 35 states:

“Communication and electric supply circuits, energized at 750 volts or less, including their service drops, should be kept clear of limbs and foliage, in new construction and when circuits are reconstructed or repaired, whenever practicable. When a utility has actual knowledge, obtained either through normal operating practices or notifications to the utility, that any circuit energized at 750 volts or less shows strain or evidences abrasion from tree contact, the condition shall be corrected by slacking or rearranging the line, trimming the tree or placing mechanical protection on the conductor(s). For the purpose of this rule, abrasion is defined as damage to the insulation resulting from the friction between the tree and conductor. Scuffing or polishing of the insulating covering is not considered abrasion. Strain on a conductor is present when there is additional tension causing a deflection of the conductor beyond the slack of the span. Contact between limbs and these conductors, in and of itself, does not constitute a violation of the rule.”

The following poles had service drops in contact with trees and showing signs of abrasion:

- 15713MP
- 15717MP

Pole number 2577MP had street light conductors in contact with a tree and showing signs of abrasion

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

Rule 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.”

Pole number 17543MP had a triplex wire with less than 3 feet of radial clearance from a communication cable.

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.”

The following poles support line conductors of more than 750 volts and were not marked with high voltage signs:

- 15705MP
- 15712MP
- 15713MP
- 15717MP
- 5084MP
- 5864MP
- 14310MP
- 4896MP
- 44898MP
- 17695MP
- 17479MP
- 17533MP
- 17543MP
- 17535MP
- 58574H
- 59615H
- 596213H
- 59685H
- 6681MP
- 6614MP
- 8820MP
- 6682MP
- 14409MP
- 445368H
- 576620H
- 531837H
- 13697MP
- 7844MP
- 7855MP
- 531810H
- 531812H
- 14765MP
- 6608MP
- 14764MP
- 14761MP

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 22.2).”

The following poles had broken ground moldings:

- 20595MP
- 15713MP
- 15706MP
- 15712MP
- 19894MP
- 5856MP
- 5389MP
- 5346MP
- 4901MP
- 17479MP
- 17543MP
- 19966MP
- 585746H
- 7482MP
- 6682MP
- 13689MP
- 7855MP
- 17624MP
- 531813H
- 19823MP
- 14004MP
- 15216MP
- 20712MP

GO 95, Rule 54.6E (2) Risers Covered from 8 Feet Above the Ground Level and Above

Rule 54.6E(2) states:

“All risers from underground cables or other conductors which pass through an unrelated conductor or cable level shall be covered or encased by material as described in Rule 54.6-E1 or by a suitable protective covering as described in Rule 22.8 from a distance of 8 feet above the ground to:

- a) Not less than 18 inches above supply conductors.*
- b) Not less than 36 inches above communication conductors for supply risers of 750 volts or less; and*
- c) Not less than 48 inches above communication conductors for supply risers of 750 - 7500 volts; and*
- d) Not less than 60 inches above communication conductors for supply risers of more than 7500 volts.*

When iron or steel pipe, or other material not meeting the minimum insulating efficiency as specified in Rule 22.8-B is used it shall be terminated or covered by suitable protective covering where within a vertical distance of 8 feet from communication conductors or cables, or unprotected supply conductors”

Pole number 585746H had a riser that pass through a communication cable and was not covered by suitable protective covering.

GO 95, Rule 54.7A(3)(d)3 Allowable Climbing Space Obstructions

Rule 54.7A(3)(d)3 states:

“Allowable climbing space obstructions are:

- a) Crossarms and their supporting members.*
- b) Insulators and their attaching brackets which support line conductors may extend one-half of their diameter into the climbing space.*
- c) Conductors may extend one-half of their diameter into the climbing space.*
- d) Suitably protected (covered only by wood, see Rule 22.8):*
 - 1) Vertical risers; or*

- 2) Vertical runs; or
- 3) Ground wires.

Such risers, runs, and grounds are allowable provided that not more than one is installed in any 4-foot section of climbing space..”

Each of the following poles had a ground wire in climbing space that was not suitably protected (covered only by wood):

- 20594MP
- 19823MP
- 531816H

GO 95, Rule 54.7A Climbing Space (Wood Crossarm Construction)

Rule 57.7A states:

“The climbing space shall be maintained in the same position for a distance of not less than 4 feet vertically both above and below each conductor level through which it passes. To comply with this requirement, the position of the climbing space shall not be changed through conductor levels which are less than 4 feet apart. Where the vertical distance between consecutive conductor levels is 4 feet or more, and less than 8 feet, the position of the climbing space through such consecutive level may be shifted not more than one-quarter (90 degrees) of the distance around the pole.

Where a single level of circuitry is installed at the top of a pole, the climbing space shall extend up to the level of such pole top circuitry and need not be provided through and above such level. Where a conductor is installed at the top of a pole under the provisions of Rule 54.4-D8, the climbing space shall extend up to the level of such pole top conductor but need not be provided through and above such level...”

Pole number 576620H had tree-branches obstructing the climbing space

The following pole had climbing space obstructions caused by Charter Communications’ facilities:

- 5084MP-service drop (2)
- 17695MP-messenger wire
- 7479MP-service drop
- 17533MP-service drop
- 19966MP-vertical run
- 17535MP-vertical run
- 445370H-cable
- 14409MP-riser
- 31837H-riser
- 14169-ground wire
- 17620MP-cable strand
- 531813H-riser
- 16124H-riser
- 19823MP-ground wire
- 14761MP-service drop
- 18787MP-span wire

- 18802MP-riser
- 14004MP-riser
- 1356MP-service drop
- 1355MP-ground wire
- 568083H-riser
- 15165MP-service drop

The following pole had climbing space obstructions caused by AT&T's facilities:

- 5856MP-terminal box
- 5389MP-service drop
- 5084MP-service drop
- 5864MP-service drop
- 5724MP-service drop
- 5437MP-terminal box
- 14409MP-service drop
- 17622MP-wire
- 53182MP-vertical run
- 16124H-riser
- 531815H-service drop
- 1358MP-terminal box

GO 95, Rule 54.9C1 Conductor Material, Urban Districts

Rule 54.9C1 states:

"Conductors in rack construction in urban districts shall have a covering not less than the equivalent of weather-resistant covering."

The following poles had conductors in rack construction with a damaged weather-resistant covering:

- 18809MP
- 5389MP
- 18804MP
- 14310MP
- 7844MP
- 7855MP
- 17625MP
- 6608MP
- 14764MP

GO 95, Rule 54.8B(1) Above Public Thoroughfares

Rule 54.8B(1) states:

"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."

Service drop on pole number 13698MP had less than 16 feet of vertical clearance from ground level at the curb.

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.”

Pole number 15165MP had a loose down guy wire.

GO 95, Rule 54.6E(1) Risers

Rule 54.6E(1) states:

“Risers from underground cables or other conductors shall be encased from the ground level to a level not less than 8 feet above the ground...”

Each of the following poles had a riser that was not encased:

- 20949MP
- 20947MP
- 20945MP
- 20943MP
- 20594MP
- 16077MP

GO 95, Rule 54.6I Attachment of protective covering

Rule 54.6I states:

“Protective covering shall be attached to poles, structures, crossarms, and other supports by means of corrosion-resistant materials (straps, plumbers tape, lags, nails, staples, screws, bolts, etc.) which are adequate to maintain such covering in a fixed position...”

The following poles had ground wire with protective covering that was not attached in a fixed position to the surface of the pole:

- 20949MP
- 20947MP
- 20945MP
- 20943MP
- 20939MP

GO 95, Rule 56.9 Guy Marker (Guy Guard)

Rule 56.9 states:

“A substantial marker of suitable material, including but not limited to metal or plastic, not less than 8 feet in length, shall be securely attached to all anchor guys. Where more than one guy is attached to an anchor rod, only the outermost guy is required to have a marker.”

Each of the following poles had an anchor guy exposed to traffic and did not have a guy marker:

- 20093MP
- 18788MP
- 18287MP

GO 165, Section IV Standards for Inspection, Record-keeping, and Reporting, paragraph five

GO165, Section IV, 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, we discovered that PWP did not document all General Order 95 violations found during its detailed inspections, and it did not assign a date of corrective action for each violation.

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



July 26, 2010

FILE NO. EA2010-12

John Rowbotham, Power Distribution Supervisor
Underground Division
City of Pasadena, Department of Water and Power
100 N. Garfield Ave.
P.O. Box 7115
Pasadena, CA 91109

SUBJECT: Electric Audit of Pasadena Water and Power underground facilities

Dear Mr. Rowbotham:

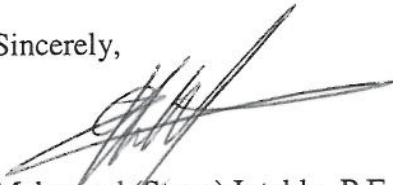
On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, I conducted an electric audit of Pasadena Water and Power facilities on June 21-25, 2010.

As part of the audit, I conducted inspections in areas where Pasadena Water and Power recently performed detailed inspections of underground facilities. I found that Pasadena Water and Power personnel did not perform detailed inspections on all of its underground system as required by General Order (GO) 165. In addition, Pasadena Water and Power personnel did not document all of the GO 128 violations at the time of the detailed inspections. Attached to this letter is a list of the violations I observed during the audit.

Within 30 days from the date of this letter, please advise me of the corrective measures your company will take to ensure that GOs 128 and 165 violations are documented and addressed in your detailed inspection records.

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

Sincerely,



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 Order 128 violations that were observed during the audit of Pasadena Water and Power underground facilities and were not documented in the detailed inspection records:

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.”

Structure number V8771 had cables that were not supported

Structure number V3258 had an abandoned lead cable

Structure number V9255 had corroded hardware (bracket)

GO 128, Rule 17.8 Identification of Ownership

Rule 17.8 states:

“Manholes, handholes, subsurface and self-contained surface-mounted 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.”

The following structures were not marked as to ownership:

- V1151
- V3258
- V1406
- V1291
- V1213
- V1413
- B11232
- V1310

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.”

Structure number V6408 had an unsecured cover (not bolted down)

GO 128, Rule 34.3A Strength

Rule 34.3A states:

“The equipment case or enclosure shall be secured in place and be of sufficient strength to resist entrance or damage to the equipment by unauthorized persons.”

Structure number PM102 was not secured in place (bolted down)

GO 165, Section IV Standards for Inspection, Record-keeping, and Reporting, paragraph five

GO 165, Section IV, 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 period between detailed inspections does not meet the time intervals specified in the table in GO 165 (period between inspections exceed 3 years).

GO165, Section IV, 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, we discovered that PWP did not document all General Order 128 violations found during its detailed inspections, and it did not assign a date of corrective action for each violation.