

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



January 10, 2012

EA2011-027

Kirk D. Tabar
Senior Engineering Technician
TID Water & Power
P.O. Box 949
Turlock, CA 95381-0949

Subject: Turlock Irrigation District Electric Audit

Dear Mr. Tabar:

On behalf of the Utilities Safety and Reliability Branch (USRB) of the California Public Utilities Commission (CPUC), Ivan Garcia and I conducted an audit of the Turlock Irrigation District (TID) electric distribution system from October 17-19, 2011. The audit included a review of TID's records for 2003 through October 2011.

During the audit, we identified violations of one or more General Orders. I have enclosed a copy of our audit summary itemizing those violations. By February 10, 2012, TID must send me a response to this letter detailing its plans to address those violations and when TID expects to complete them. You may email an electronic copy of the response to ryan.yamamoto@cpuc.ca.gov or send a hard copy to:

Attn: Ryan T. Yamamoto
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Should you have any questions concerning this letter I can be reached at by phone at (415) 703-2192 or by email at ryan.yamamoto@cpuc.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Ryan T. Yamamoto".

Ryan T. Yamamoto, P.E.
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division
California Public Utilities Commission

Enclosures: Audit Summary

CC: Ivan Garcia, Utilities Engineer, USRB, CPUC
Alok Kumar, Senior Utilities Engineer, USRB, CPUC
Raymond Fugere, Program and Project Supervisor, USRB, CPUC

AUDIT SUMMARY

I. Violations Identified During Records Review

This section summarizes the General Order (GO) violations that we found during our review of TID's maintenance records.

A. General Order 165

1. Not All Identified Problems Documented During Inspections

GO 165 Part IV states in part:

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.

GO 165 requires utilities to document any problems discovered during an inspection. At the time of the audit, TID did not document all problems discovered on poles or underground facilities.

2. No Diagnostic Equipment Tests

GO 165 Section III: Definitions states in part:

"Detailed" inspection shall be defined as one where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.

GO 165 states the requirements as to the frequency a utility must inspect its facilities. Equipment listed in GO 165 must be diagnostically tested as appropriate, but, at a minimum, the frequency cannot exceed the frequency of detailed inspection cycles contained in GO 165.

B. Overhead Facilities

1. TID Does Not Take Into Account All Working Stresses in Safety Factor Calculations

GO 95, Rule 44, outlines the minimum safety factor requirements for poles. To ensure that those safety factors are met, TID must perform accurate safety factor calculations on its poles and take into account all working stresses including those from attachments.

While in the field we found a pole with safety factor calculations that did not include all facilities, namely service drops. However, during our review of TID's loading calculations, we could not find any records showing that TID considered or estimated service moments. TID must indicate that they have taken into account all facilities, including services, when performing safety factor calculations to show that those calculations are within the requirements of GO 95, Rule 44.

C. Underground Facilities

1. No GO 165 Patrols or Inspections Documented Prior to October 2011

GO 165 Part IV states in part:

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.

GO 165, specifies the frequencies a utility must conduct patrol and detail inspections on its facilities. TID did not have any documented patrol or detail inspections for the period of May 2007 through August 2011, for underground facilities.

II. Violations Identified During Field Audit

This section lists the GO 95 and 128 violations that we identified during our field inspections of TID's facilities. For the field work, we primarily chose locations that TID visited recent to our audit date.

A.	Location:	920 E Springer Drive, Turlock
	Equipment ID:	T-618
	Previous Visit by Utility:	7/15/10
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Equipment Case Not Secured to Pad</u>		
GO 128, Rule 34.3:		
<i>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.</i>		
The padmounted transformer case was not secured (bolted) onto the pad.		

B.	Location:	846 Andino Court, Turlock
	Equipment ID:	T-625
	Previous Visit by Utility:	10/12/11
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Equipment Case Not Secured to Pad</u>		
GO 128, Rule 34.3:		
<i>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.</i>		
The padmounted transformer case was not secured (bolted) onto the pad.		

C.	Location:	16980 Yvonne Drive, Delhi
	Equipment ID:	T-626
	Previous Visit by Utility:	3/16/11
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures</u>		
GO 128, Rule 17.8:		
<p><i>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.</i></p>		
The padmounted transformer shall be marked with ownership.		

D.	Location:	16920 Yvonne Drive, Delhi
	Equipment ID.:	T-627
	Previous Visit by Utility:	3/16/11
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures</u>		
GO 128, Rule 17.8:		
<p><i>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.</i></p>		
The padmounted transformer shall be marked with ownership.		

E.	Location:	16877 Yvonne Drive, Delhi
	Equipment ID:	T-631
	Previous Visit by Utility:	3/16/11
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures</u>		
GO 128, Rule 17.8:		
<p><i>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.</i></p>		
The padmounted transformer shall be marked with ownership.		

F.	Location:	16960 Jeffrey Drive, Delhi
	Equipment ID:	T-628
	Previous Visit by Utility:	3/16/11
	Date Visited by CPUC:	10/18/11
Explanation of Violation(s):		
<u>Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures</u>		
GO 128, Rule 17.8:		
<p><i>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.</i></p>		
The padmounted transformer shall be marked with ownership.		

G.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 120 (#1)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
	Explanation of Violation(s):	
<u>Broken Ground Molding</u>		
GO 95, Rule 54.6 B:		
<i>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</i>		
The ground wire was exposed.		

H.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 119 (#3)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
	Explanation of Violation(s):	
<u>Broken Ground Molding</u>		
GO 95, Rule 54.6 B:		
<i>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</i>		
The ground wire was exposed.		

I.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 118 (#4)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<p><u>Ground Wires</u></p> <p>GO 95, Rule 54.6 B:</p> <p><i>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</i></p> <p>The ground molding needs to be secure to the pole.</p>		
<p><u>Vegetation Management</u></p> <p>GO 95, Rule 35:</p> <p><i>Where overhead conductors traverse trees and vegetation, safety and reliability of service demand that certain vegetation management activities be performed in order to establish necessary and reasonable clearances. The minimum clearances established in Table 1, Cases 13 and 14, measured between line conductors and vegetation under normal conditions, shall be maintained.</i></p> <p>Clearance from bare line conductors from tree foliage seems to be less than 18 inches.</p>		
<p><u>Overhead Guys, Anchor Guys, and Span Wire</u></p> <p>GO 95, Rule 56.2:</p> <p><i>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 .</i></p> <p>The down guy was slack.</p>		

J.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 115 (#5)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<p data-bbox="269 485 440 516"><u>Ground Wire</u></p> <p data-bbox="269 558 532 590">GO 95, Rule 54.6 B:</p> <p data-bbox="350 632 1341 737"><i>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</i></p> <p data-bbox="269 779 886 810">The ground molding was broken at this location.</p>		

K.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 077 (#6)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<p><u>Ground Wire</u></p> <p>GO 95, Rule 54.6 B:</p> <p><i>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</i></p> <p>The ground wire was exposed.</p>		
<p><u>Overhead Guys, Anchor Guys, and Span Wire</u></p> <p>GO 95, Rule 56.2:</p> <p><i>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 .</i></p> <p>The down guy was slack.</p>		

L.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C167 076 (#7)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<p><u>Overhead Guys, Anchor Guys, and Span Wire</u></p> <p>GO 95, Rule 56.2:</p> <p><i>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 .</i></p> <p>The down guy was slack.</p>		
<p><u>Missing Guy Guard</u></p> <p>GO 95 Rule 56.9 Guy Marker (Guy Guard):</p> <p><i>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.</i></p> <p>There was a broken guy guard at this location.</p>		
<p><u>Ground Wire</u></p> <p>GO 95, Rule 54.6 B:</p> <p><i>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</i></p> <p>The ground wire was exposed.</p>		

M.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Equipment ID.:	C171 077 (#9)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<p><u>Ground Wire</u></p> <p>GO 95, Rule 54.6 B:</p> <p><i>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</i></p> <p>The ground molding was broken at this location.</p>		
<p><u>Missing High Voltage Signs</u></p> <p>GO 95 Rule 51.6 A3:</p> <p><i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i></p> <p>The pole at this location was missing high voltage signs.</p>		

N.	Location:	Alley Between S 4 th and S 3 rd Streets, Patterson
	Pole No.:	C171 076 (#10)
	Previous Visit by Utility:	8/16/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<u>Ground Wire</u>		
GO 95, Rule 54.6 B:		
<i>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</i>		
The ground wire was exposed.		

O.	Location:	Alley Between G and H Streets, Newman
	Pole No.:	D216 025 (#1)
	Previous Visit by Utility:	10/4/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<u>Missing High Voltage Signs</u>		
GO 95 Rule 51.6 A3:		
<i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i>		
The pole at this location was missing high voltage signs on top crossarm.		

P.	Location:	Alley Between G and H Streets, Newman
	Pole No.:	D216 026 (#2)
	Previous Visit by Utility:	10/4/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<u>Overhead Guys, Anchor Guys, and Span Wire</u>		
GO 95, Rule 56.2:		
<p><i>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 .</i></p>		
The down guy was slack.		

Q.	Location:	Alley Between G and H Streets, Newman
	Pole No.:	D216 0223 (#5)
	Previous Visit by Utility:	10/4/11
	Date Visited by CPUC:	10/19/11
Explanation of Violation(s):		
<u>Location of Sectionalizing Insulators</u>		
GO 95, Rule 56.7B:		
<p><i>In order to prevent trees, buildings, messengers, metal–sheathed cables or other similar objects from grounding portions of guys above guy insulators, it is suggested that anchor guys be sectionalized, where practicable, near the highest level permitted by this Rule.</i></p>		
A tree branch was touching above the insulator.		

III. Concerns and Recommendations

This section discusses any additional items found during the audit that we have concerns about. These items are not necessarily rule violations.

A. Update Inspection And Maintenance Practices For Overhead And Underground Electric Transmission And Distribution Lines

TID written maintenance program meets or exceeds the minimum requirements contained within General Order 165; however, the written maintenance program has not been approved by TID management nor does TID staff follow the program.

Please provide an updated and approved copy the maintenance programs.

B. Osmose Testing and Inspection of Overhead Facilities

Osmose conducted pole testing and overhead inspections from 2006 to 2010. Currently, TID formal position is that poles needing replacement must be replaced within the same year. However, numerous poles were observed to not meet that requirement.