

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

CONSUMER SERVICES DIVISION
UTILITIES SAFETY BRANCHRESOLUTION SU-44
Date: August 1, 1997R E S O L U T I O N

RESOLUTION SU-44, ORDER APPROVING SETTLEMENT AGREEMENT BETWEEN SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E) AND UTILITIES SAFETY BRANCH (USB) TO RESOLVE INFRACTIONS TO GENERAL ORDER 95 THAT CONTRIBUTED TO INJURIES RECEIVED BY A CUSTOMER

SUMMARY

1. On October 15, 1996, orange grove worker Alquilino Calderon received electrical burns when his ladder contacted an overhead 12 Kv conductor. The incident was the result of SDG&E's failure to maintain adequate aboveground line clearances and post high voltage warning signs.
2. The USB staff investigated the incident and its findings are summarized in its investigation Report dated June 12, 1997
3. This resolution approves a settlement agreement in which SDG&E agrees to an accelerated inspection program to avoid similar incidents and to augment funding for an existing customer safety program

BACKGROUND

1. Section 315 of the Public Utilities Code grants the Commission authority to investigate utility accidents.

DISCUSSION

1. USB's investigation disclosed that SDG&E did not build the 12 Kv line to the standard of 25 feet above ground as required by GO 95 Table 1, Case 4, Column E. There were no high voltage warning signs posted. This is a violation of Rule 51.6-A.
2. SDG&E has been remiss in insuring that high voltage warning signs are posted in rural areas. High voltage signs are important in warning unskilled persons about the hazards of electric lines.

FINDINGS

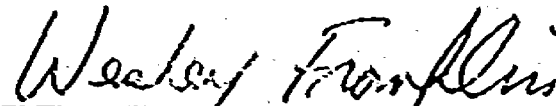
1. SDG&E was in violation of Commission GO 95, Table 1, and Rule 51.6-A. The violations were a significant contributing factor to the accident.

2. To resolve these infractions, SDG&E agreed to immediately inspect its district in which the accident occurred to correct inadequate line clearances and replace missing high voltage warning signs. SDG&E also agreed to add \$40,000 at shareholder expense to its program to replace conductive aluminum handles with nonconductive fiberglass on customers' tools used for working on trees. This program was originally established at shareholder expense and the augmentation will allow the program to continue through the year 2000.

THEREFORE, IT IS ORDERED THAT:

1. The attached settlement agreement between SDG&E and USB is approved.

I hereby certify that this Resolution was adopted by the Public Utilities Commission at its regular meeting on August 1, 1997. The following Commissioners approved it:



Wesley J. Franklin
Executive Director

DANIEL Wm. FESSLER
JESSIE J. KNIGHT, JR.
HENRY M. DUQUE
JOSIAH L. NEEPER
Commissioners

CALIFORNIA PUBLIC UTILITIES COMMISSION

CONSUMER SERVICES DIVISION • UTILITIES SAFETY BRANCH

505 Van Ness Avenue San Francisco, CA 94102-3298



June 20, 1997

Joseph Kloberdanz, Manager
Regulatory Affairs
San Diego Gas & Electric
101 Ash Street
San Diego, CA 92101

Dear Mr. Kloberdanz:

As we discussed in our telephone conference, enclosed is a copy of our final report on the Valley Center Incident and a signed copy of the settlement agreement. Once Mr. Cotton signs the agreement and you send it back, we will prepare a resolution for Commission adoption of the settlement.

If there are any questions please give me a call.

Sincerely yours,

A handwritten signature in cursive script that reads "Mahendra Jhalz".

Mahendra Jhalz, Chief
Utilities Safety Branch

RECEIVED

JUN 23 1997

REGULATORY AFFAIRS

Settlement Agreement between
CPUC Utilities Safety Branch and
San Diego Gas and Electric Regarding
October 15, 1996 Electric Contact Incident

I. INTRODUCTION

The Utilities Safety Branch (USB) of the CPUC Consumer Services Division, and San Diego Gas and Electric (SDG&E) enter into and recommend for approval by CPUC resolution, the following disposition regarding an injury electrical contact incident on October 15, 1996.

II. BACKGROUND

On October 15, 1996, San Diego Gas & Electric Company (SDG&E) reported to the Utilities Safety Branch (USB) an electric contact accident involving orange grove worker, Alquilino Calderon. The incident occurred in Valley Center, a rural agricultural region of San Diego County. Mr. Calderon suffered electrical burn injuries when his ladder made contact with the 12 Kv overhead conductor. USB investigated the incident, issued its report dated June 12, 1997, and found the following:

- 1) SDG&E failed to post high voltage warning signs on the adjacent supporting poles or crossarms in violation of Commission General Order (GO) 95, Rule 51.6-A.
- 2) SDG&E's overhead line was measured at 18 feet, 4 inches above ground where the accident occurred, in violation of GO 95, Rule 37, Table 1, Case 4, Column E requirement of 25 feet for lines above areas capable of being traversed by vehicles or agricultural equipment.

In its report, USB recommends that SDG&E be ordered to conduct an accelerated inspection of its high voltage lines to insure that high voltage signs are posted in accordance with Rule 51.6-A.

III. AGREEMENT

To fully resolve this matter, USB and SDG&E agree that:

- 1) SDG&E accepts USB's findings embodied in its report.
- 2) At Shareholder expense, SDG&E will increase by \$40,000 its program, ordered by D. 95-08-054, dated August 11, 1995, of exchanging new non-conductive fiberglass handles for the existing aluminum handles on customers' tree pruning tools. SDG&E's current conductive handle

exchange program has proven to be very effective in promoting public safety by removing over 200 aluminum poles from customers and workers in SDG&E's service territory. Current expenditure levels indicate that the funding for the conductive handle exchange program could run out by the end of 1997. The \$40,000 will allow SDG&E to extend the conductive tool program until December 31, 2000 or until the funds are exhausted.

- 3) SDG&E will, by December 31, 1997, perform a program of inspection and correction on poles in groves in Northeast district. This will be a visual inspection of all overhead facilities which are associated with the avocado and citrus trees and which have not undergone an inspection as of January 1, 1996. This involves at least 3,118 structures, and may include areas with ornamental trees or trees not in agricultural groves. This inspection program will be conducted in compliance with the SDG&E overhead inspection program and focus on High Voltage signs and low conductors as the high-risk hazards in agricultural groves.
- 4) SDG&E will, by March 31, 1998, provide a report to USB detailing the findings and corrective actions associated with this inspection.

IV. RESERVATIONS

SDG&E and USB respectfully request that the Commission promptly approve the Settlement without modification. Any material change to the Settlement shall render it null and void, unless both SDG&E and USB agree to such changes.

This Settlement represents a negotiated compromise of disputed issues. SDG&E and USB have assented to the terms of the Settlement only to arrive at the agreement embodied herein. With the exception of item III. 1 above, nothing contained in the Settlement should be considered an admission or acceptance of any fact, principle, or position by either SDG&E or USB.

SDG&E and USB agree that the Settlement should not be used as a precedent or admitted into evidence in any Commission proceeding or any court case. If the Settlement is not accepted by the Commission without substantial modification, SDG&E and USB agree that the Settlement should not be admitted into evidence in any proceeding addressing this matter either. Additionally, it is the intention and desire of SDG&E and USB that any Commission order, resolution, or decision regarding this Settlement be subject to the provisions of Public Utilities Code Section 315.

Agreed to by the undersigned parties on the dates indicated below.

Utilities Safety Branch, Consumer Services Division

William R. Schulte
By: William R. Schulte, Director
Consumer Services Division

June 20, 1997
Date

San Diego Gas & Electric Company

Gary D. Cotton
By: Gary D. Cotton
Senior Vice President - Customer Operations

July 7, 1997
Date

California Public Utilities Commission
Consumer Services Division

Investigation of
San Diego Gas & Electric Company Incident
October 15, 1996.
Valley Center

June 12, 1997.

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Acknowledgement

This report was prepared by Byron Shovlain, Associate Utilities Engineer, of the Utilities Safety Branch, of the Consumer Services Division.

EXECUTIVE SUMMARY

On October 15, 1996, San Diego Gas & Electric Company (SDG&E) reported to the Utilities Safety Branch (USB) an electric contact accident involving orange grove worker, Alquilino Calderon. The incident occurred in Valley Center, a rural agricultural region of San Diego County. Mr Calderon suffered electrical burn injuries when his ladder made contact with the 12 Kv overhead conductor. USB investigated the incident and found the following:

1. SDG&E failed to post high voltage warning signs on the adjacent supporting poles or crossarms in violation of Commission General Order (GO) 95, Rule 51.6-A.
2. SDG&E's overhead line was measured at 18 feet, 4 inches above ground where the accident occurred, in violation of GO 95, Rule 37, Table 1, Case 4, Column E requirement of 25 feet for lines above areas capable of being traversed by vehicles or agricultural equipment.

USB recommends that the Commission order SDG&E to conduct an accelerated inspection of its high voltage lines in rural areas to insure that they are in compliance with all GO 95 rules.

I. INTRODUCTION

Commission Decision 96-09-045, requires utilities to provide notice and a written report to the California Public Utilities Commission (Commission) of all electric line accidents which require in-patient hospitalization.

Public Utilities Code, Section 315, grants the Commission authority to "investigate the cause of all accidents occurring within this State upon the property of any public utility or directly or indirectly arising from or connected to its maintenance or operation, resulting in loss of life or injury to person or property and requiring, in the judgement of the commission, investigation by it, and may make such order or recommendation with respect thereto as in its judgment seems just and reasonable".

On October 15, 1996, at 10:10 a.m., SDG&E reported to USB that Al Calderon made contact with 12 Kv circuit number 350, with an aluminum ladder he was holding. The incident occurred in a grove area adjacent to a house at 11105 San Luis Rey Drive in Valley Center.

USB staff conducted an investigation of the incident and its findings are summarized in this report.

II. DESCRIPTION OF THE INCIDENT

On October 15, 1996, Mr. Calderon was preparing to erect his ladder in order to pick oranges. According to his foreman who assisted him, both persons raised the ladder, from the cleared loading area, by tilting it upwards towards the tree from a reverse angle to fully erect and then at a forward angle to lean it against the tree. Mr. Calderon was the only person holding the ladder when it was pushed forward toward the tree and made contact with the line. Thus, the foreman was not injured.

Mr. Calderon was hired by Villa Park Orchards to pick the oranges. Villa Park has contracted with the grove owner, Mr. Sharil Evans, since 1968 when he purchased the grove. According to Mr. Evans, the grove was producing oranges in 1968. He stated that the driveway and the cleared loading area where the lines pass over were also in existence since 1968.

On October 16, 1996 at about 3:45 p.m., Byron Shovlain and Steve Intabli of the USB arrived at the scene to investigate. There they met Mr. John Lovejoy, of the adjacent house and asked him to show where the location of contact was thought to have occurred. He pointed to a tree at the edge of the grove at the corner of the driveway and the cleared loading area. No arc marks were observed on the conductor. According to SDG&E's map, the conductor is number 2 stranded ACSR conductor. The two 12 Kv phases passed over the driveway and the cleared loading area.

The eastern phase was measured at 18 feet, 4 inches above ground, and the western phase was measured at 19 feet, 2 inches above ground at the edge of the grove. The temperature at that time of day was about 70 degrees F. According to sag and tension tables,

the conductors will sag further due to higher temperatures and conductor loadings.

The circuit tapped off from the main line at pole number 213242 at the southern end northward to pole number 713359, a distance of 385 feet, in standard buckarm construction. There was no high voltage sign posted on pole 213242, which is located approximately 72 feet from the contact point. The three inch tall high voltage warning sign letters on pole 713359 were not visible from the contact point. It was also noted that pole number 213241, the eastward pole adjacent to pole 213242 on the main line, was missing high voltage signs. In other words, there was no warning of the high voltage hazard.

On December 16, 1996, Mr. Shovlain met with Villa Park foreman, Juan Nunez, and field representative, Walt Florey, to investigate further. Mr. Nunez, who was present at the time of the accident, verified that the place where the line was measured on October 16th, was the correct spot. He then demonstrated how the ladder was raised and then placed toward the tree. The ladder was raised in the cleared dirt loading area, towards the tree at the corner of the loading area and the driveway. The driveway serves no area but the loading area. Mr. Nunez has worked at that grove for more than 17 years and recalls that the driveway and cleared area existed when he first arrived.

Mr. Florey stated that the cleared area was used for loading fruit from the pickers sacks into 30 inch tall wooden bins. The bins are stacked 3 bins high and then moved by forklift underneath the conductors, down the driveway, to the adjacent serving driveway to the transport truck. The driveway and cleared area are comprised of graded, hard-packed dirt. He also said that tractors travel down the rows trailering bins, in order not to have the workers walk long distances with full

sacks. Mr. Florey stated that tractors and fork lifts have used this area for loading for many years.

According to SDG&E, the contacted line was built in December, 1975 and at that time, the 25 foot aboveground clearance was required. In response to a USB November 13, 1996 data request, SDG&E responded that they thought when the line was built, it was over an area accessible only to pedestrians, which would have allowed an aboveground clearance of 17 feet. SDG&E did not provide evidence to support its assumption.

The Division of Occupational Safety and Health (CAL-OSHA) also investigated the accident for violations of Title 8 work rules. According to CAL-OSHA's investigation report, the aluminum ladder was measured at 20 feet long.

III. APPLICABLE RULES

GO 95 Rule 51.6-A states:

"Poles which support line conductors of more than 750 volts shall be marked with high voltage signs...Optional marking methods are:

b. Crossarms where present may be marked in lieu of marking the pole."

GO 95 Rule 37, Table 1, Case 4, Case 4, Column E requires the following above ground clearance:

"Above ground along thoroughfares in rural districts or across other areas capable of being traversed by vehicles or agricultural equipment...Supply conductors and supply cables, 750-22,500 volts...25 feet"

IV. CONCLUSION AND RECOMMENDATIONS

USB's investigation found the following:

1. SDG&E failed to post high voltage warning signs on poles 213241 and 213242, in violation of GO 95 Rule 51.6-A.
2. SDG&E failed to construct their contacted line at 25 feet above ground in violation of GO 95, Rule 37, Table 1, Case 4, Column E.

High voltage warning signs are important in warning untrained persons about the hazards of high voltage lines particularly when poles carry small diameter conductors, which can be mistaken for low voltage lines. USB recommends that SDG&E be ordered to initiate an accelerated high voltage line inspection program and insure that high voltage signs are present where required and that other GO 95 standards are met, especially in rural areas.