
California Public Utilities Commission

UTILITIES SAFETY BRANCH ELECTRIC SAFETY REPORT FOR 1998



June 1999

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MEMORANDUM

This annual report of Electric Safety presents an account of various activities carried out under the California Public Utilities Commission's (CPUC) electric safety program for the 1998 year.

The CPUC has been entrusted with the safety jurisdiction over all electric and communication overhead and underground facilities in the state by Legislative mandate. It is responsible for enforcing safety regulations, inspecting all work affected by the statutes and making necessary additions and changes to regulations for promoting the safety of the general public. The electric safety program consists of administration of General Orders (G.O.) 95, 128, 165, and Sections 315, 768, from 8026 through 8038, and from 8051 through 8057 of the Public Utilities Code.

The State of California has the nation's largest electric and communication system. Therefore, it is important to maintain an adequate level of inspections and surveillance to ensure that these systems are designed, constructed, operated, and maintained properly in accordance with the regulations for safety of the general public. The CPUC's Utilities Safety Branch (USB) implements the safety program by carrying out accident investigations, follow up investigations, compliance inspections, review of utilities' reports and records, construction inspections, and special studies.

ACKNOWLEDGMENT

This report was prepared by Winnie Ho, Utilities Engineer, under the general direction of Mahendra M. Jhala, Chief of the Consumer Services Division's Utilities Safety Branch. The staff also acknowledges the assistance provided by utilities and agencies in furnishing data necessary for this report and expresses its appreciation for their cooperation.



I. INTRODUCTION

A. PURPOSE OF REPORT

The purpose of this report is to document administration of General Order (G.O.) Number 95, “Rules of Overhead Electric Line Construction”; G.O. No. 128, “Rules for Construction of Underground Electric Supply and Communication Systems”; and G.O. No. 165, “Inspection Cycles for Electric Distribution Facilities” for the 1998 year as reported by utility companies and as accomplished by the Utilities Safety Branch staff. It also provides general information on the utility companies and statistical data on incidents and investigations related to electric lines and other safety activities during the 1998 year.

B. CPUC’S RESPONSIBILITIES

The CPUC is granted the authority to inspect, make further additions or changes as deemed necessary for the purpose of safety to employees and the general public under the Public Utilities Code Section 8037. Inspections are performed by USB staff to enforce G.O. 95, 128, and 165 regulations. An overview of each general order is listed below.

1. General Order 95

G.O. 95, “Rules for Overhead Electric Line Construction”, became effective July 1, 1942. Changes are noted in the order which reflect development of new materials and standards for line construction and changing operational practices. The latest edition is dated 1998.

The purpose of these rules is to formulate, for the State of California, uniform requirements for overhead electrical line construction, the application of which will insure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead electrical lines and to the public in general.

G.O. 95 is also used to regulate cable television (CATV) facilities. Since November 13, 1986, the Commission has had jurisdiction to regulate safety of cable antenna television corporations (PU Code Section 215.5 and 768.5).

2. General Order 128

G.O. 128, “Rules for Construction of Underground Electric Supply and Communications Systems”, became effective December 12, 1967. Changes have been made as noted in the order. The latest edition is dated 1998.

The purpose of these rules is to formulate, for the State of California, uniform requirements for underground electrical supply and communication systems, the application of which will insure adequate service and secure safety to all persons engaged in the construction, maintenance, operation or use of underground systems and to the public in general.

3. General Order 165

G.O. 165, “Inspection Cycles for Electric Distribution Facilities”, became effective March 31, 1997 and it is the latest edition.

The purpose of this general order is to establish minimum requirements for electric distribution facilities, regarding inspection (including maximum allowable inspection cycle lengths), condition rating, scheduling and performance of corrective action, record keeping, and reporting, in order to ensure safe and high quality electrical service, and to implement the provisions of Section 364 of AB 1890, Chapter 854, Statutes of 1996.

4. Incident Investigation & Customer Complaints

In addition to enforcing the general orders, USB staff conduct investigations of reportable incidents from the utility companies. Section 315 of the Public Utilities Code provides that the Commission shall investigate the cause of accidents occurring upon the property of any utility.

Reportable incidents, as stated in Decision No. 94-02-015, Appendix A, Page 4, are those: “(a) resulting in fatality or personal injury rising to the level of in-patient hospitalization and involving utility owned facilities, or (b) are of significant public attention or media coverage and involve utility owned facilities”.

Subsequent to the above decision, the Commission issued Decision No. 98-07-097, Appendix B, which now includes reportable incidents as those that “involve or allegedly involve trees or other vegetation in the vicinity of power lines and result in fire and/or personal injury whether or not in-patient hospitalization is required”.

The USB staff also handles all safety related customer complaints pertaining to G.O. 95 and 128. This may range from answering an inquiry by telephone or correspondence to conducting a formal investigation.

C. CAVEAT

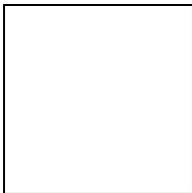
The information contained in this annual report were provided by the various utility companies in California. All reasonable efforts have been made to ensure that the statistical material contained herein is accurate.



II. UTILITY COMPANIES UNDER THE JURISDICTION OF THE CPUC

The CPUC has been granted the authority by the Legislature to adopt and enforce requirements of G.O. 95, 128, and 165 on publicly owned utilities. There are a number of publicly owned power and communication utility companies within the state and those owned by municipalities with districts formed under the provisions of various laws of the State of California and cooperatives.

A. POWER COMPANIES



1. Southern California Edison Company

Edison International's largest subsidiary is Southern California Edison (SCE). SCE provides service to more than 4.1 million customers in a 50,000-square-mile area. SCE serves all or portions of California's central and southern counties.



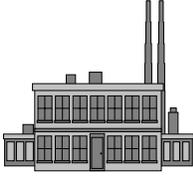
2. Pacific Gas and Electric

Pacific Gas and Electric (PG&E) is one of the largest investor-owned company in the U.S. They provide electric service to about 4.8 million customers in California. Their service area spans 70,000 square miles, including all or portions of 48 of California's 58 counties.



3. San Diego Gas and Electric

San Diego Gas and Electric (SDG&E) became a Sempra Energy company in 1998. They provide electric service for 1.1 million customers in San Diego and portions of Southern Orange County. Their service area covers a total of 4,100 square miles in over 25 cities.



4. Other Investor Owned Companies

These companies also provide electric service to the people of California.

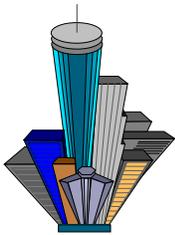
- Bear Valley Electric
- Kirkwood Gas & Electric
- PacifiCorp
- Sierra Pacific



5. Electric Cooperatives

These electric co-operatives provide service to certain California customers.

- Anza Electric Cooperative
- Plumas-Sierra Rural Elect. Coop
- Surprise Valley Electrification Corp.
- Valley Electric Association, Inc.

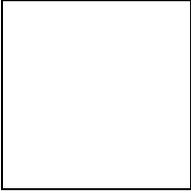


6. Municipalities

These California municipalities provide electric service to their customers.

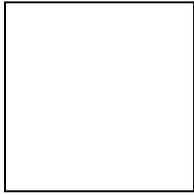
- Alameda
- Anaheim
- Azusa
- Banning
- Biggs
- Burbank
- Colton
- Glendale
- Gridley
- Healdsburg
- Imperial Irrigation District
- Lassen Municipal Utility Dist.
- Lodi
- Lompoc
- Los Angeles
- Modesto Irrigation District
- Needles
- Northern Cal. Power Agency
- Oroville-Wyandotte Irrigation District
- Palo Alto
- Pasadena
- Redding
- Riverside
- Roseville
- Sacramento Municipal Utility District
- San Francisco
- Santa Clara
- Shasta Lake
- So. Cal. Public Power Authority
- Tri-Dam Project
- Trinity County
- Truckee Donner Public Utility District
- Turlock Irrigation District
- Ukiah
- Vernon

B. COMMUNICATION COMPANIES



1. Pacific Bell

PacBell has a total of 17.9 million access lines including residential, commercial, and others. The telephone service area covers approximately 51,000 square miles in California.



2. General Telephone Electronics

In 1998, GTE had a total of 3.96 million residence and business access lines. This total does not include CentraNet/Wats, Circuits and Foreign Exchange Lines.



3. Others

There are 21 other smaller telephone companies in California that are under the jurisdiction of the USB. These companies have overhead equipment that are inspected by the USB for compliance with G.O. 95.

C. CABLE TELEVISION



There are many cable television companies serving California cities. They range from local companies serving one city to larger companies that may serve several cities. A majority of the cable television companies are members of the California Cable Television Association (CCTA). CCTA represents over 250 cable television systems which provide cable television service to over 6 million California homes.



III. ANNUAL ELECTRIC REPORT

The USB is entrusted to enforce the provisions of General Orders 95, 128, and 165. To do so, the USB conducts periodic inspection of both overhead and underground electric and communication lines throughout the state. This involves both field inspection and document audit. Furthermore, the USB investigates accidents involving overhead and underground electric and communication lines as mandated by Public Utilities Code Section 315, to determine utilities compliance with the General Orders. This section contains information and statistical data on the various electric related activities conducted by the USB in 1998.

A. GENERAL ORDER 95 INSPECTIONS



In 1998, USB staff conducted walkout (walking) G.O. 95 overhead line inspections, with utility representatives participating in them. The walkout inspections give us a better impression about the quality of a utility's workmanship and maintenance programs than the windshield (driving) inspections conducted in the past. Staff engineers record all G.O. 95 infractions observed during the inspection, which generally covers 2 miles of pole line per day.

The walkout inspections are conducted over a three-day period. The visual survey is conducted on the first day and walkout inspections are conducted on the other two days. Typically, two staff engineers will use the first day of inspection to conduct a visual survey of two communities/cities selected for the "walkout" inspections that will take place on the second and third days. The engineers will use a vehicle to survey the communities/cities and select areas that have the worse and most G.O. 95 infractions. The staff engineers may also contact the utility company to request information such circuit maps prior to conducting the visual survey.

During the walkout, the staff engineer writes notes about infractions found on the overhead electric system, which includes poles, conductors, and all overhead equipment. We request that all utilities participate in the walkout to foster cooperation between USB and the utilities and to expedite remediation by having their personnel take notes too. After the walkout is completed, the USB sends each utility a letter noting the infractions found and a deadline of 3 months to correct them.

A file is kept on each area inspected for a period of 3 years or more. There are lists kept in both Los Angeles and San Francisco, showing the areas where inspections have occurred for the last several years. This list is used as a basis to determine future inspections. In some years the USB has concentrated more on urban areas, or rural areas, or municipal utilities, depending on complaints, failures, or time since last inspection.

In 1998, USB personnel were divided into basically three units where each unit was assigned specific counties to conduct G.O. 95 inspections in California. The following lists the counties each unit covered.

Northern Unit: Alpine, Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Glenn, Humboldt, Lake, Lassen, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Francisco, San Mateo, Shasta, Sierra, Siskiyou, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo, Yuba, plus portions of Mono that are served by Pacific Gas and Electric.

Central Unit: Marin, Mendocino, Mariposa, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, Santa Clara, Santa Cruz, Stanislaus, plus portions of Fresno, Inyo, Kern, Kings, Madera, Santa Barbara, Tulare and Tuolumne that are served by Pacific Gas and Electric.

Southern Unit: Imperial, Los Angeles, Orange, Riverside, San Diego, San Bernardino, Ventura, plus portions of Fresno, Inyo, Kern, Kings, Madera, Mono, Santa Barbara, Tulare and Tuolumne that are served by Southern California Edison and/or Los Angeles Department of Water and Power.

1. Utility Data

Utilities	Total Miles of Overhead Lines	Transmission Lines (miles)	Distribution Lines (miles)	Number of Poles
PG&E	109,698	18,516	91,182	2,343,963
SCE	72,700	11,700	61,000	1,498,745*
SDG&E	8,666	1,620	7,046	221,052
Sierra Pacific	1,121	383	738	22,767
PacifiCorp	3,146	725	2,421	67,360
Grand Total	195,331	32,944	162,387	4,153,887

Table 1. Summary of the Utility Company's Overhead Equipment (*reflects wood poles only)

Figure 1A.
Percentage of Overhead
Transmission &
Distribution Lines Each
Utility Co. Has in
California

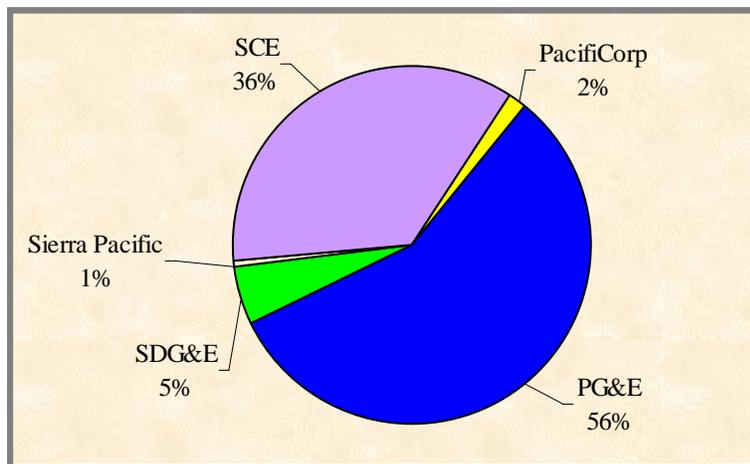
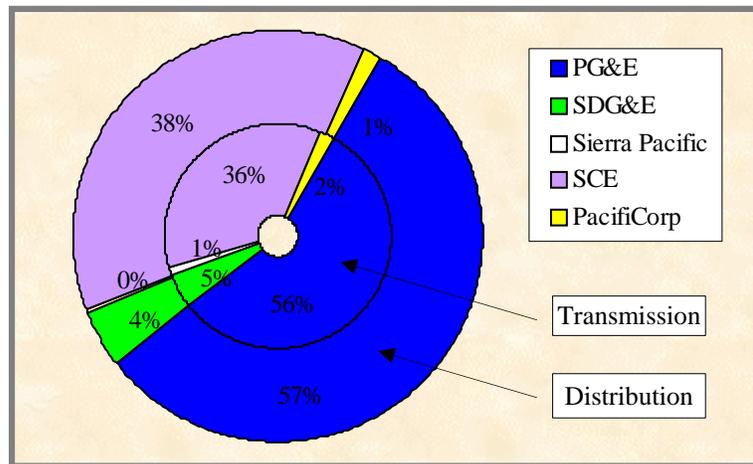


Figure 1B.
Percentage of Poles Each
Utility Co. Has in
California

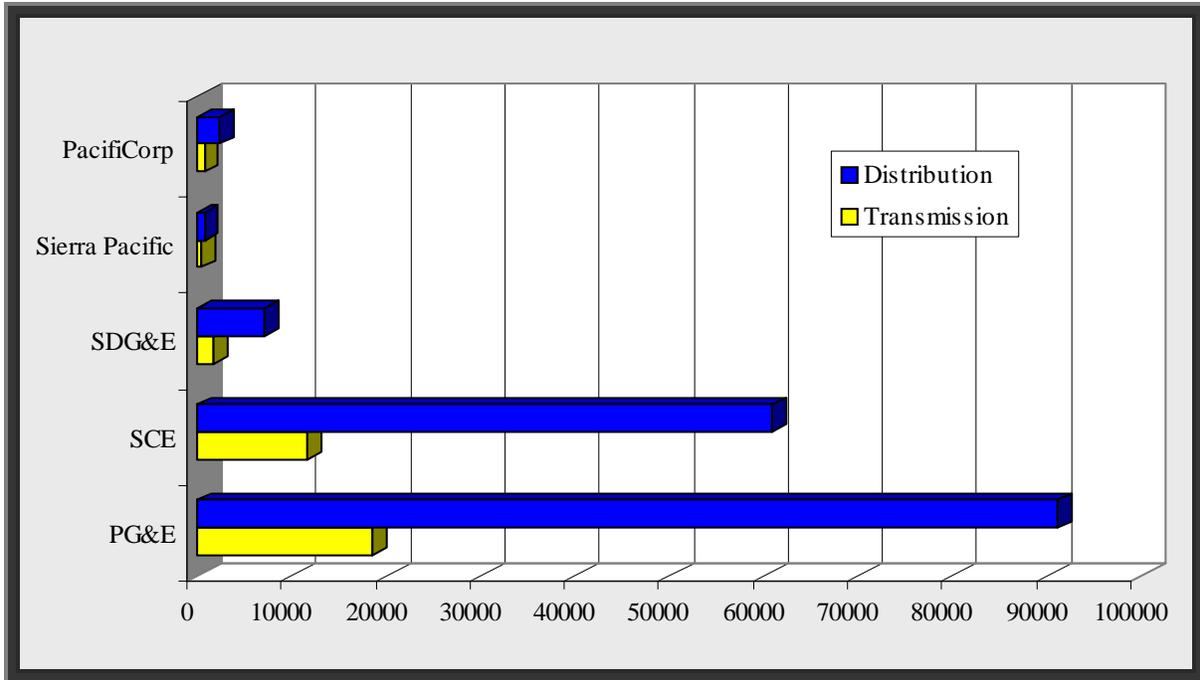


Figure 1C. Number of Miles of Overhead Transmission and Distribution Lines

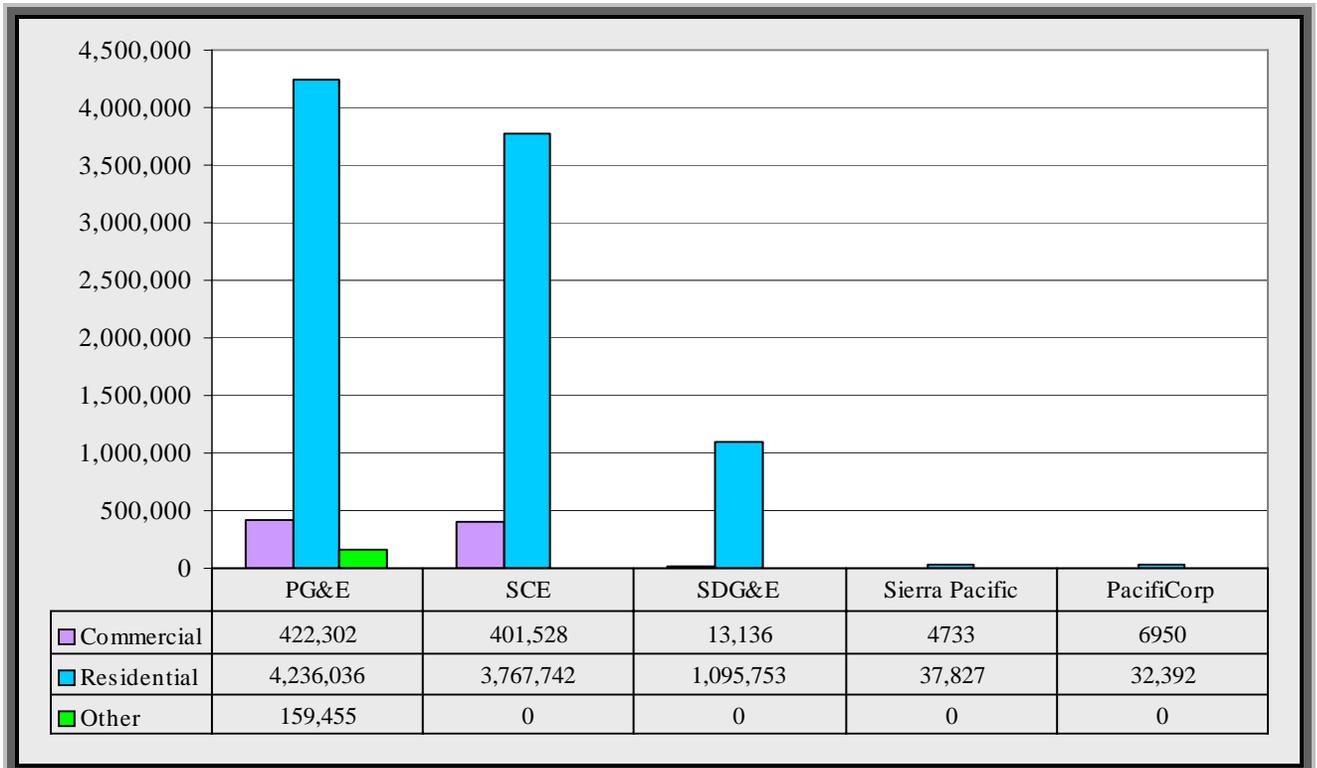


Table 2. Number of California Customers Each Utility Company Serves

2. USB Inspection Statistics

For the 1998 Year	Total
Number of Inspection Weeks	27
Number of Inspection Days	102
Number of Personnel Days Used	214
Number of Pole Line Miles Surveyed	379
Number of Pole Line Miles Cited	82
Number of Poles Inspected	2335
Number of Infractions Cited (See Table 5 for a summary.)	7890

Table 3. Summary of the G.O. 95 Inspections Conducted in 1998

For the 1998 Year	Figures
Average Number of Inspection Days Per Week	3.77
Average Number of Personnel Days Per Inspection Week	7.93
Average Number of Pole Line Miles Surveyed Per Day	3.71
Average Number of Infractions Cited Per Day	77.35
Average Number of Poles Inspected Per Day	22.89
Average Number of Infractions Per Pole	3.38

Table 4. Tabulation of G.O. 95 Inspection Data for 1998

Utility Company	Number of G.O. 95 Inspections	Total G.O. 95 Infractions	Average Number of Infractions Per Inspection
PG&E	5	701	140.2
SCE	15	1176	78.4
SDG&E	2	59	29.5
Muni./Others	6	1360	226.67
Pacific Bell	11	1281	116.45
GTE	16	1179	73.69
Cable TV	26	2134	82.08

Table 5. Summary of G.O. 95 Infractions Incurred by the Utility Companies in 1998

B. GENERAL ORDER 128 INSPECTIONS



General Order 128 underground equipment inspections are usually conducted by one inspector. The areas to inspect are determined similar to G.O. 95 inspections. Staff will also spend a couple of hours reviewing the records required by G.O. 128 for an auditable and consistent program of inspection. The inspection lasts 3 days and usually occurs in one utility operating district. G.O. 128 inspections are conducted only with the electric utilities, as

communication utilities have less hazards associated with their facilities. But the inspector will note problems with the communication facilities and refer them for correction.

The G.O. 128 field inspector joins a qualified utility lineman who opens the live equipment enclosures. The live equipment may be contained inside an underground vault, a walk-in vault, or a subsurface enclosure such as a padmount. The inspector record notes about the infractions and afterwards prepares a formal report. The report details the infractions and directs the utilities to correct them and reply by three months. The records are maintained similar to G.O. 95 inspections and each of the three units was responsible for the same counties as G.O. 95.

1. Utility Data

Utilities	Total Miles of Underground Lines	Transmission Lines (miles)	Distribution Lines (miles)	Surface Mounted Structures	Underground Structures (including BURD*, vaults, handholes)
PG&E	21,077	108	20,969	Not Avail.	Not Avail.
SCE	31,514	236	31,278	104,630	210,323
SDG&E	7,737	45	7,692	92,706	29,934
Sierra Pacific	155	0	155	Not Avail.	0
PacifiCorp	472	0	472	3,076	1,551
Grand Total	60,955	389	60,566	306,105	136,115

Table 6. Summary of the Utility Company's Underground Equipment

* BURD = Buried Underground Residential Distribution transformer

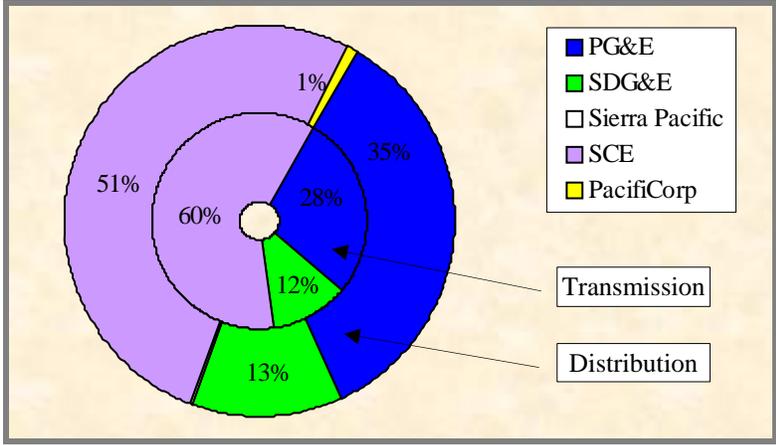


Figure 6A.
Percentage of Underground Transmission & Distribution Lines Each Utility Co. Has in California

Figure 6B.
Percentage of Surface Mounted and Underground Structures Each Utility Co. Has in California.
*Data was not available from PG&E and Sierra Pacific.

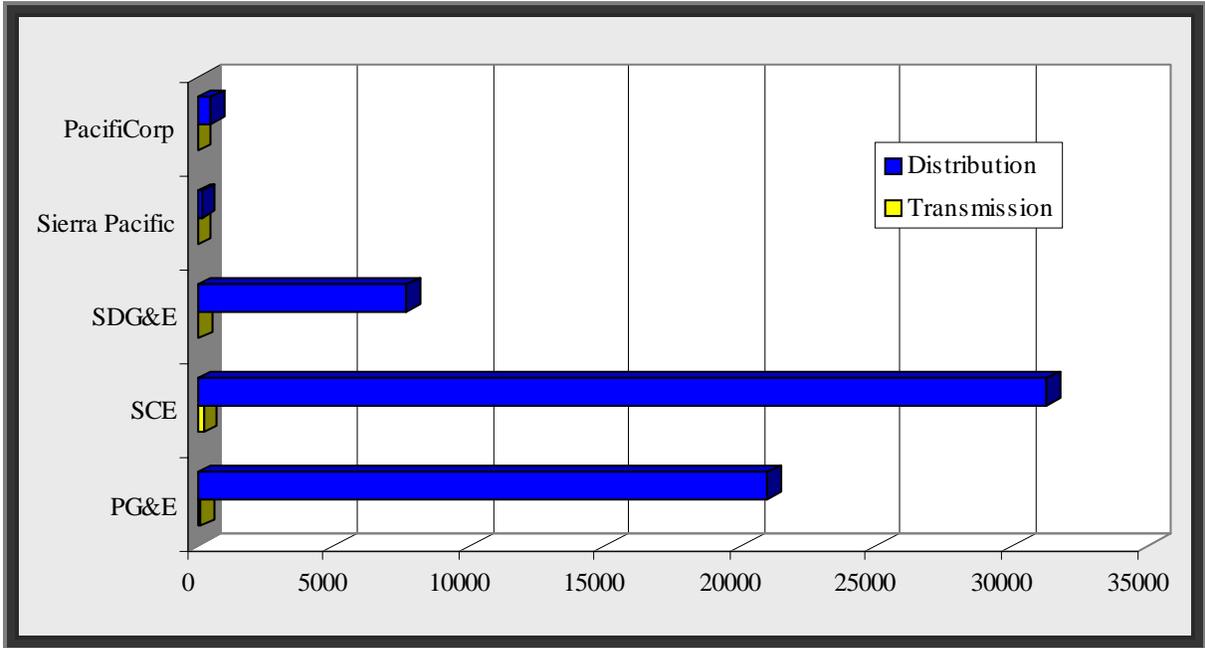
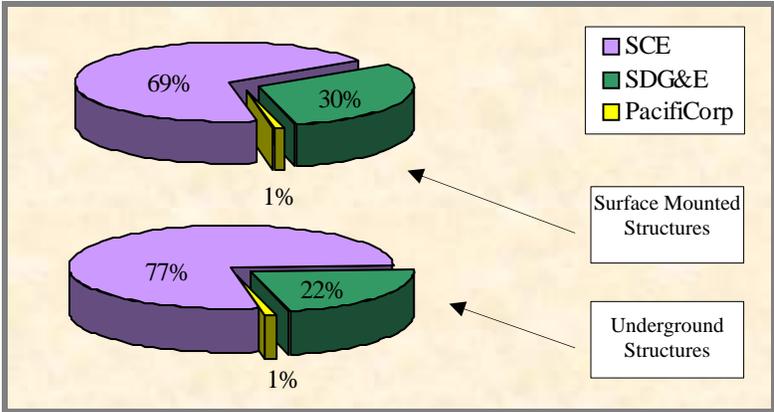


Figure 6C. Number of Miles of Underground Transmission and Distribution Lines

2. USB Inspection Statistics

For the 1998 Year	Total
Number of Inspection Weeks	18
Number of Inspection Days	54
Number of Personnel Days Used	57
Number of Structures Inspected	724
Number of Structures Cited	489
Number of Infractions Cited (See Table 9 for a summary)	686

Table 7. Summary of the G.O. 128 Inspections Conducted in 1998

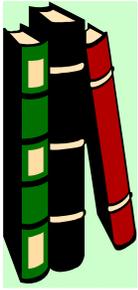
For the 1998 Year	Figures
Average Number of Inspection Days Per Week	3
Average Number of Personnel Days Per Inspection Week	1.06
Average Number of Structures Inspected Per Day	13.41
Average Number of Structures Cited Per Day	9.06
Average Number of Violations Cited Per Day	12.7
Average Number of Violations Per Structure	1.4

Table 8. Tabulation of G.O. 128 Inspection Data for 1998

Utility Company	Number of G.O. 128 Inspections	Total G.O. 128 Infractions	Average Number of Infractions Per Inspection
PG&E	3	81	27
SCE	8	309	38.63
SDG&E	2	43	21.5
Muni./Others	4	254	63.5

Table 9. Summary of G.O. 128 Infractions Incurred by the Utility Companies in 1998

C. GENERAL ORDER 165 INSPECTIONS



General Order 165 became effective on March 31, 1997 for Pacific Gas & Electric, PacifiCorp, SDG&E, Sierra Pacific Power Company, and Southern California Edison. This General Order establishes minimum requirements for electric distribution facilities, regarding inspection (including maximum allowable inspection cycle lengths) scheduling and performance of corrective action, condition rating, record keeping, and reporting. The requirements of this order are in addition to the requirements of G.O. 95 and G.O.128 to maintain a safe and reliable electric system.

The G.O. 165 inspection procedures were being formalized between the USB and the utility companies in 1998. The utility companies had to create additional detailed inspection procedures in their plan for overhead and underground structures in accordance with the requirements of G.O. 165. The USB spent the 1998-year reviewing and advising the utility companies on the adequacy of their plans through a series of meetings.

SCE initiated a G.O. 165 program to conduct detailed inspections for both overhead and underground structures and equipment on December 17, 1998. SCE included procedures for intrusive inspections of wood poles, and detailed inspection of Buried Underground Residential Distribution (BURD) and padmounted transformers. SDG&E is still working on their G.O. 165 procedures. It is anticipated that SDG&E will have a completed plan in 1999.

There were no records available for auditing in 1998 since the utility companies did not complete their plan and begin implementing their G.O. 165 procedures until the end of the year. Therefore, the USB did not perform any G.O. 165 inspections during the 1998 calendar year. The USB will begin scheduling follow-up inspections in 1999 to ensure that utilities are following the inspection intervals, the corrective action criteria, and the record keeping requirements specified in G.O. 165. These inspections will be part of regularly scheduled G.O. 95 and G.O. 128 inspections.

D. ELECTRIC INCIDENTS & CUSTOMER COMPLAINTS



The USB staff receives and investigates reportable electric incidents from regulated utility companies. Per Appendix B of D98-07-097, reportable incidents are those which (a) result in fatality or personal injury rising to the level of in-patient hospitalization and attributable or allegedly attributable to utility owned facilities; (b) are the subject of significant public attention or media coverage and are attributable or allegedly attributable to utility facilities, (c) involve or allegedly involve trees or other vegetation in the vicinity of power lines and result in fire and/or personal injury whether or not in-patient hospitalization is required.

The electric utility companies are required to provide notice to designated USB staff within two hours of a reportable incident. The notice shall identify the time and date of the incident, the time and date of notice to the Commission, the location of the incident, casualties which resulted from the incident, identification of casualties and property damage, and the name and telephone number of a utility contact person.

The designated USB staff is called the On-Call Engineer (OCE). The OCE is responsible for receiving reportable incidents from the utility companies and he or she is available to do so 24 hours per day. The OCE duties are shared amongst the USB staff. Each staff engineer assumes the OCE duties for an entire week (including weekends) several times per year. The OCE or a staff engineer may go out to investigate incidents at any hour, including weekends. If it is determined that a G.O. violation was involved, staff prepares a report and recommend action against the utility.

In addition, the USB maintains a database of outages and accidents to note trends. If there is significant trending, the staff will investigate and work with utilities to correct the problem. The data base has been very useful in noting trends about a manufacturer defect, lack of tree trimming, or lack of preventive maintenance. The Commission has initiated Order Instituting Investigations (OII) based on the supporting data and investigations of USB.

USB staff also handles customer complaints relating to safety issues per G.O. 95 and 128. Besides investigating incidents reported by the utility companies, USB may investigate customer complaints involving alleged violations of the General Orders, sometimes on behalf of Consumers Affairs Branch or through direct referral.

For the 1998 Year	Total
Number of Incidents Reported	191
Incidents Involving Overhead Equipment	156
Incidents Involving Underground Equipment	35
Number of Incidents Investigated*	190
Number of Weeks for On Call Engineer Duties	52
Number of USB Engineers** (not including management)	11

Table 10. Summary of Incident Investigations & Customer Complaints for USB in 1998

* One reported incident did not fall under the CPUC's jurisdiction.

** Average taken since the number of engineers varied throughout the 1998 year.

For the 1998 Year	Figures
Average Number of Incidents Reported Per Month	15.92
Percentage of Incidents Reported Involving Overhead Equipment	81.7%
Percentage of Incidents Reported Involving Underground Equipment	18.3%
Average Number of Incidents Investigated Per Month	15.83
Percentage of Incidents Investigated Per Incidents Reported	99.5%
Average Number of Incidents Investigated Per USB Engineer	17.27
Average Number of Incidents Reported Per OCE Week	3.67
Average Number of OCE Weeks Per USB Engineer	4.73

Table 11. Tabulation of Incident Investigation Data for 1998

1. Overhead Equipment

The following is a summary of leading causes of incidents in 1998 relating to overhead equipment.

Electric Incident Causes	Fatalities	Injuries	Media Attention
Contact by: Aircraft	5	2	4
Animal	0	0	5
Antenna	1	1	0
Booms	0	2	2
Crane	1	3	0
Irrigation Pipe	0	2	0
Ladder	1	1	0
Metal Object	2	3	0
Rain Gutter	0	2	0
Tree	1	1	26
Tree Trimmer	1	0	0
Falling Tree	0	2	13
Fire	0	0	11
Insulator Failure	0	0	4
Line Failure	1	1	6
Natural Cause	0	0	9
Other/Miscellaneous Causes*	2	4	10
Switch Malfunction	0	0	1
Transformer Malfunction	0	0	1
Unknown	0	1	6
Utility Employee Working Overhead	1	8	0
Vehicle	1	3	6
Grand Total	17	36	104

Table 12. Summary of Leading Causes of 1998 Incidents Relating to G.O. 95

* Fatality due to unauthorized third party climbing utility pole/tower

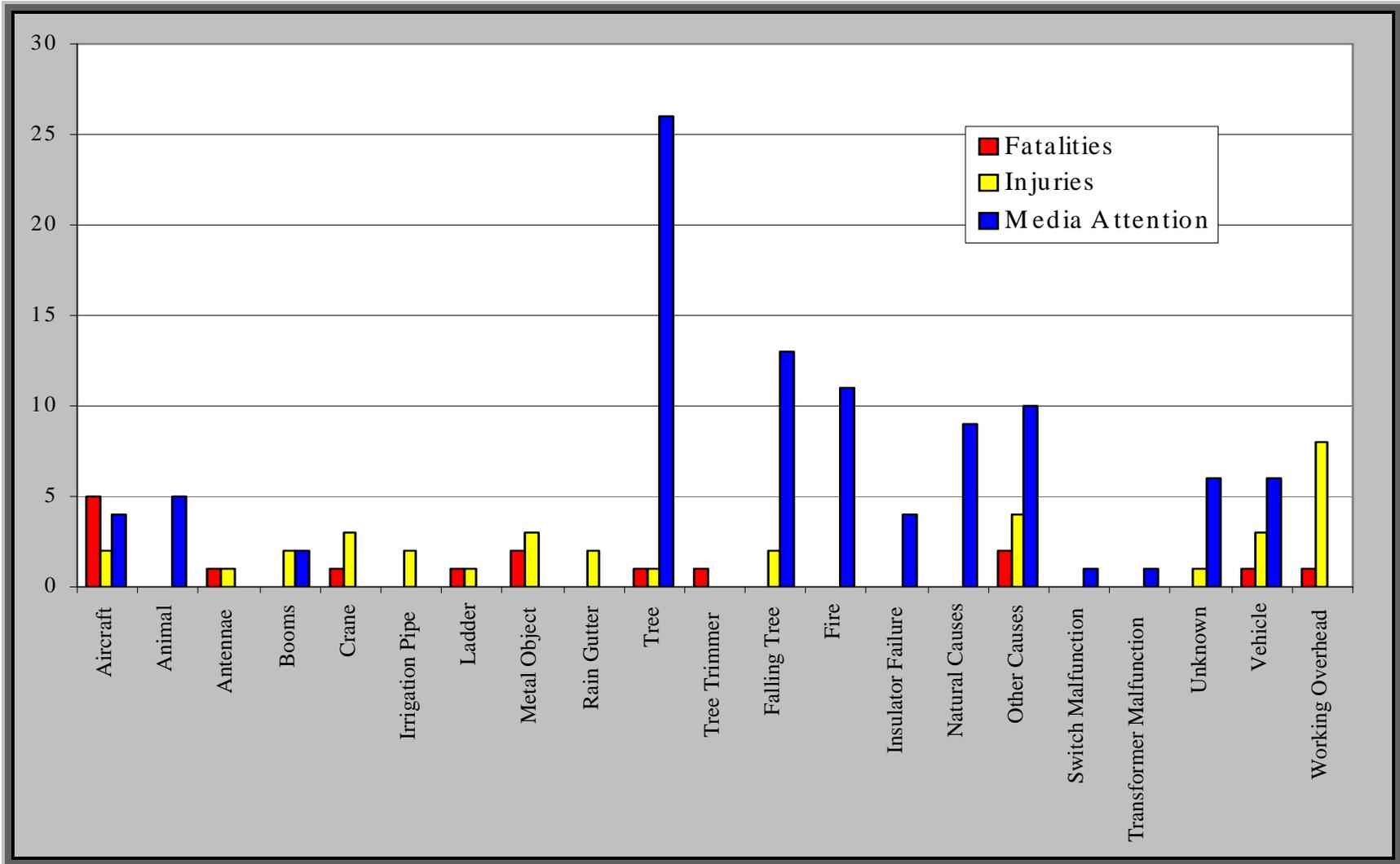


Figure 12A. Graph of Leading Causes of Incidents Involving Overhead Equipment in 1998

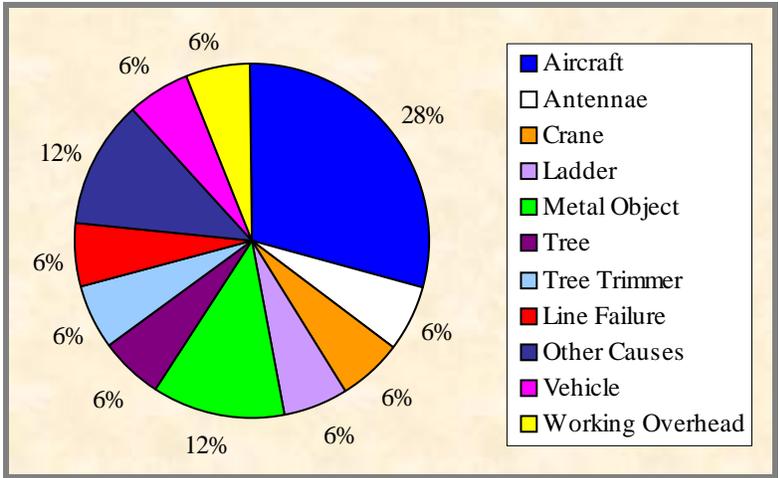


Figure 12B.
Percentage of Overhead Incidents that Resulted in Fatalities.

Figure 12C.
Percentage of Overhead Incidents that Resulted in Injuries.

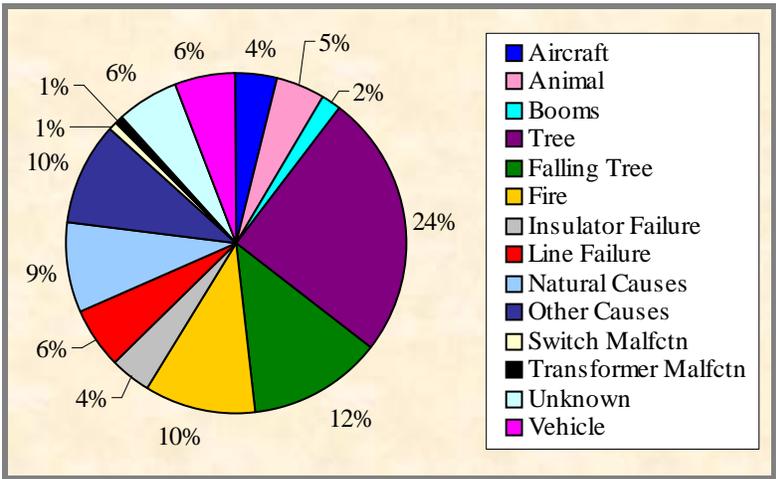
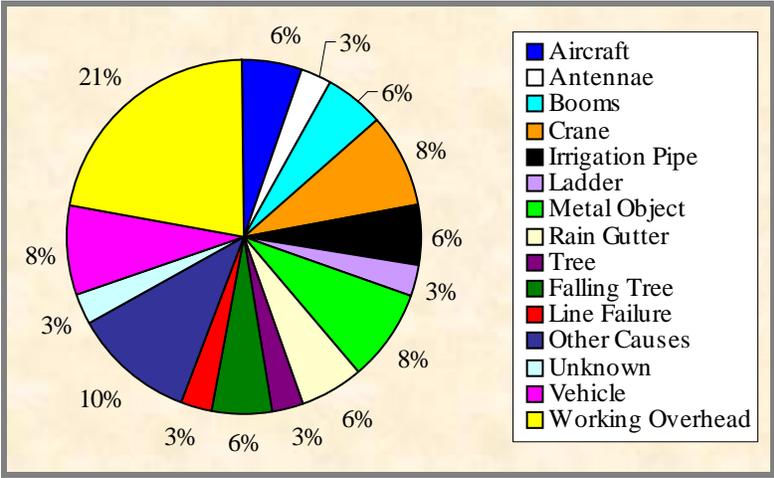


Figure 12D.
Percentage of Overhead Incidents that Resulted in Media Attention.

2. Underground Equipment

The following is a summary of leading causes of incidents in 1998 relating to underground equipment.

Electric Incident Causes	Fatalities	Injuries	Media Attention
Dig In	0	4	1
Fire	0	0	1
Other/Miscellaneous Causes	1	3	4
Switch Malfunction	0	0	2
Transformer Malfunction	0	0	7
Underground Cable Failure	0	0	1
Unknown	0	0	6
Utility Employee Working Underground	0	5	0
Grand Total	1	12	32

Table 13. Summary of Leading Causes of 1998 Incidents Relating to G.O. 128

* Fatality due to drowning at the utility's powerhouse intake grating.

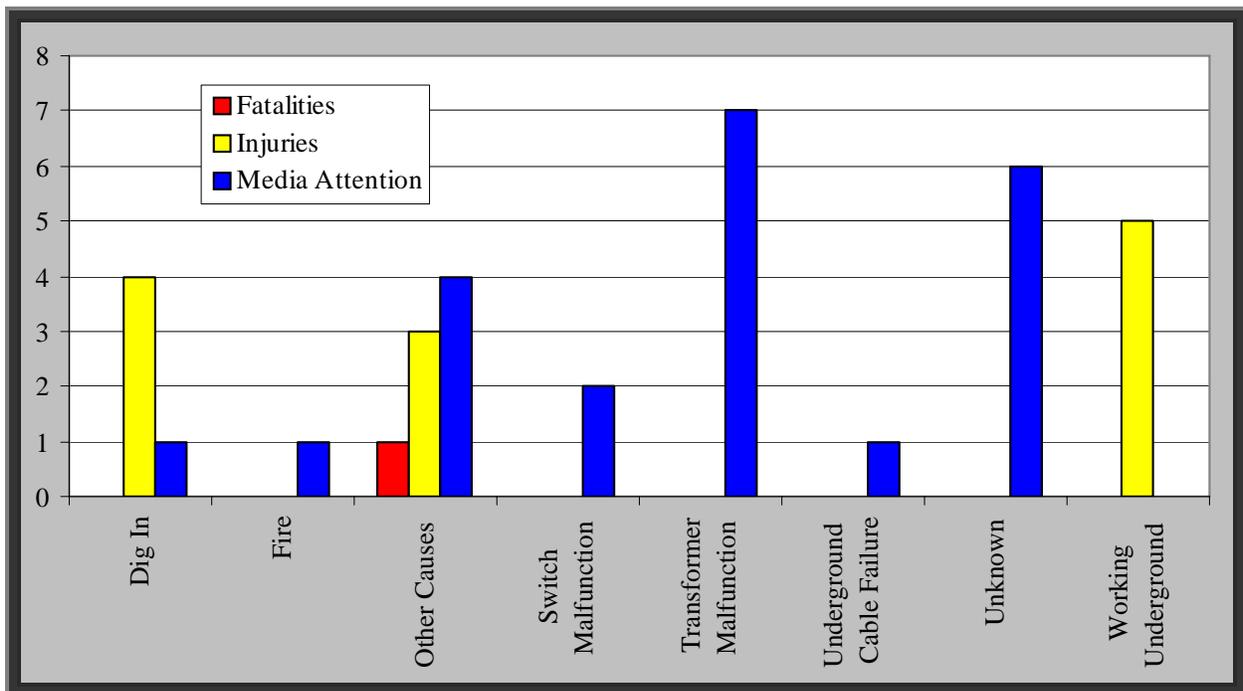


Figure 13A. Graph of Leading Causes of Incidents Involving Underground Equipment in 1998

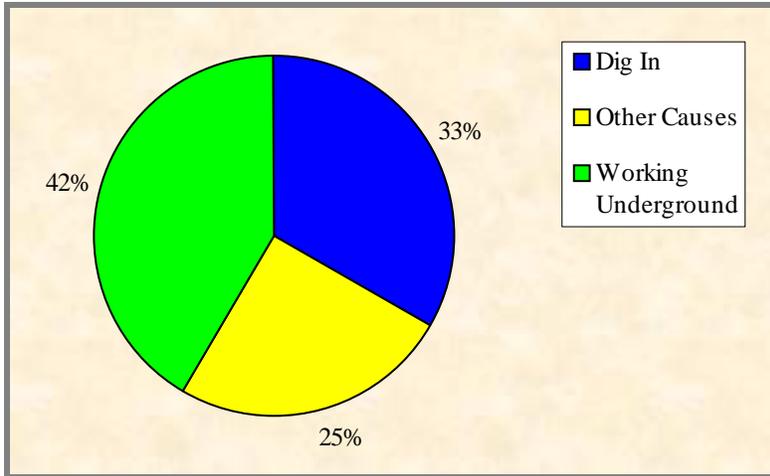
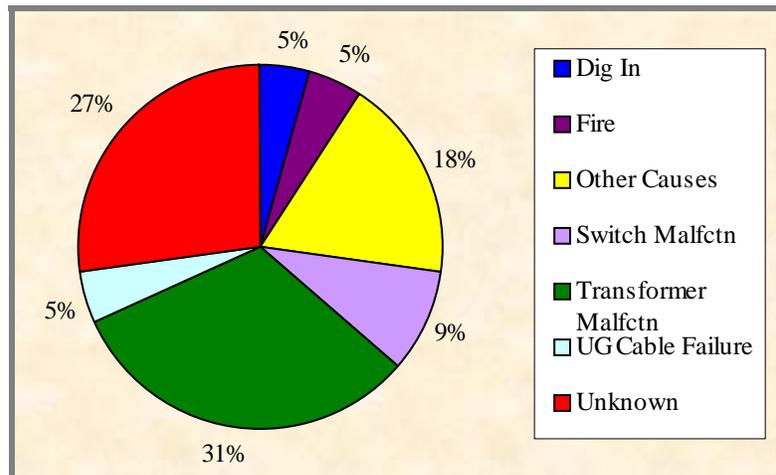


Figure 13B.
Percentage of Underground Incidents that Resulted in Injuries.

Figure 13C.
Percentage of Underground Incidents that Resulted in Media Attention



E. SPECIAL PROJECT - TREE TRIMMING



On January 23, 1997, Commission Decision (D.) 97-01-044 adopted new utility tree trimming standards requiring minimum clearances to be maintained, at all times, between conductors and surrounding vegetation.

D.97-01-044 revised General Order (G.O.) 95, Rule 37 “Minimum Clearances of Wires Above Railroads, Thoroughfares, Buildings, etc.” to

clearances between conductors and vegetation. For conductors of 750 to 22,500 volts, commonly referred to as primary distribution conductors, the specified clearance from vegetation is 18 inches. The revised Rule 37 states that the clearances shall be maintained for normal annual weather variations rather than 60 degrees, no wind. G.O. 95, Rule 35 “Tree Trimming” was also revised to require that the minimum clearances established in Rule 37 between line conductors and vegetation be maintained.

Three exceptions from the minimum clearance requirements between conductors and vegetation were added to Rule 35. Exception 1 addresses conductors or cables, energized at less than 60,000 volts, which are suitably protected from abrasion and from grounding of the circuit through the tree. Exception 2 states that the minimum clearance requirements do not apply where the utility has made a “good faith” effort to obtain permission to trim or remove vegetation but permission was refused or unobtainable. Exception 3 recognizes that unusual circumstances beyond the control of the utility may result in nonconformance with the rules.

D.97-01-044 established an implementation schedule for utilities to comply with the new tree trimming standards. Ordering Paragraph (OP) 3 states that each utility shall comply with the established standards by trimming to the extent of:

- 25% of the total number of trees requiring trimming by the six-month anniversary of the order.
- 50% of the total number of trees requiring trimming by the 12-month anniversary of the order.
- 75% of the total number of trees requiring trimming by the 18-month anniversary of the order.
- 100% of the total number of trees requiring trimming by the 2-year anniversary of the order.

OP 4 of D.97-01-044 states that, within 10 days after the effective date of the decision, each respondent utility shall file a plan specifying how the utility will comply with OP 3. The plan must include a current estimate of the total number of trees requiring trimming in order to comply with the standards adopted.

OP 5 of D.97-01-044 directs Commission staff to monitor utilities' compliance with the adopted standards and take all investigatory and enforcement action it deems appropriate.

On October 22, 1997, Commission D.97-10-056 modified the implementation schedule in D.97-01-044 and established a new schedule directing utilities to comply with the new standards by trimming to the extent of 33 1/3% of the total number of trees requiring trimming by the 12-month anniversary of the order; 66 2/3% by the 18-month anniversary; and 100% by the two-year anniversary. D.97-10-056 did not relieve utilities from their responsibility to comply with the 25% implementation requirement for the 6-month anniversary established in D.97-01-044.

D.97-01-044 directs Commission staff to monitor utilities' compliance with the adopted standards and take all investigatory and enforcement action it deems appropriate. Following the 12-month anniversary of the order, the Utilities Safety Branch (USB) staff conducted random inspections in PG&E and SDG&E's areas identified by them to be in compliance with the new standards. Tables 14 and 15 contain USB's tree trimming inspection data for 1998.

In accordance with the decision, several workshops were held in 1998 for the development and expansion of programs to increase public education and awareness of the hazards of the proximity of trees and vegetation to utility overhead power lines. Utility company and municipality representatives as well as the general public attended these workshops. Several issues were discussed in these workshops including the feasibility of developing a thematic teaching guide; distribution of an educational and informational brochure for the public on why utilities need to prune trees and the hazards trees can represent; and the involvement of the Contractors State Licensing Board in educating tree pruning contractors.

For the 1998 Year	Total
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Number of Inspection Weeks	10
Number of Inspection Days	37
Number of Personnel Days Used	72
Number of Miles Surveyed During the Inspection	2513
Number of Violations Cited	134

Table 14. Summary of Tree Trimming Inspection in 1998

For the 1998 Year	Figures
Average Number of Inspection Days Per Week	3.7
Average Number of Personnel Days Used Per Week	7.2
Average Number of Miles Surveyed Per Week	251.3
Average Number of Miles Surveyed Per Inspection Day	67.92
Average Number of Violations Cited Per Week	13.4
Average Number of Violations Cited Per Inspection Day	3.62

Table 15. Tabulation of Tree Trimming Inspection Data for 1998



IV. ADDITIONAL INFORMATION

A. PUBLICATIONS

Copies of G.O. 95, 128, and 165 are available for the general public to purchase from the CPUC.

1. How to Order



Call or Write
the CPUC at...

Documents, California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
(415) 703-1713



California Public Utilities Commission (most documents available)
320 West 4th Street, Suite 500
Los Angeles, CA 90013
(213) 576-7003

2. G.O. 95, 128, and 165

G.O. 95: “Rules for Overhead Line Construction” book is available for purchase at \$20.00 each.

G.O. 128: “Rules for Construction of Underground Electric Supply and Communication Systems” book is available for purchase at \$5.00 each.

G.O. 165: “Inspection Cycles for Electric Distribution Facilities”, the first copy of the G.O. leaflet is free with additional copies at \$0.50 each.



General Order 95 and 128 may be viewed at the CPUC web site. The URL is:

<http://www.cpuc.ca.gov/divisions/CSD/USB/usb.htm>