

2009 Electric, Natural Gas & Propane Safety Report

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Executive Summary

This report presents an account of the activities carried out under the California Public Utilities Commission's (CPUC's) natural gas, electrical, mobile home park (MHP), and propane safety programs for the 2009 calendar year. The CPUC has been entrusted with the safety jurisdiction over the facilities covered by its programs through legislative mandates. The CPUC is responsible for enforcing state safety regulations, inspecting all work affected by state statutes, and making the regulatory changes necessary to secure the safety of utility workers and the general public.

1. Overview of the CPUC's Gas and Electric Safety Programs

The CPUC's Consumer Protection and Safety Division (CPSD) Utility Safety and Reliability Branch (USRB) is responsible for administering the CPUC's gas and electric safety programs. USRB works to ensure that utility facilities are designed, constructed, operated and maintained to provide safe and reliable service to the public. To do this, USRB:

- Audits utility records and inspects utility facilities
- Investigates incidents involving utility facilities
- Responds to safety and reliability complaints from the public
- Helps develop regulations to improve utility safety and reliability
- Works on special projects intended to improve utility safety and reliability

USRB's gas activities are driven primarily by the regulations in CPUC General Order (GO) 112-E. GO 112-E adopts and supplements the federal natural gas and propane safety regulations in Title 49 of the Code of Federal Regulations (49 CFR) Parts 190, 191, 192, 193, 199 and 40. Investor-owned natural gas utilities, master-metered MHPs, and certain propane systems fall under the jurisdiction of these gas regulations.

USRB's electric activities are driven primarily by the regulations in GO 95 (Overhead Electric Facilities), GO 128 (Underground Electric Facilities), and GO 165 (Utility inspection and reporting requirements). Investor-owned electric utilities and communication infrastructure providers fall under the jurisdiction of these electric regulations.

In addition to the GOs listed above, USRB also administers segments of the California Public Utilities (PU) Code pertaining to gas and electric safety.

USRB is divided into two units based on geographic location. Utilities based in Northern California are mainly overseen by USRB's Northern Unit which has offices in San Francisco and Sacramento. Utilities based in Southern California are overseen by USRB's Southern Unit which has an office in Los Angeles. County lines determine the actual geographic areas overseen by the two units.

2. Gas Program Summary

A. Size and Characteristics of the California Gas System

The California gas system (natural gas and propane) serves approximately 11 million customers with 100,000 miles of gas mains. Table I and Figure I below illustrate the number of miles of different types of pipelines that make up the natural gas distribution systems in California as reported by pipeline operators to the Department of Transportation (DOT). Section IV contains additional information concerning the characteristics of the California gas system.

Company	Steel Pipe				Plastic	Cast Iron	Total
	Unprotected		Protected				
	Bare Steel	Coated Steel	Bare Steel	Coated Steel			
PG&E	211	0	0	20,844	20,937	150	42,142
SCG	3,059	5,363	145	16,930	22,154	0	47,651
SDG&E	0	0	0	3,646	4,699	0	8,345
SWG	0	1	0	609	2,485	0	3,095
SCE	0	0	9	0	0	0	9
Total	3,270	5,364	154	42,029	50,275	150	101,242

Table I. Miles of Gas Distribution Pipeline, by Type and Utility

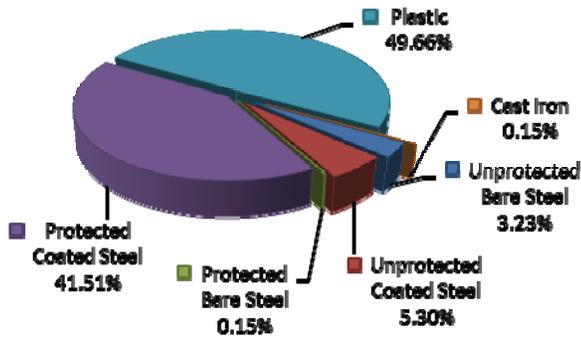


Figure I. Gas Distribution Pipeline by Type

B. Gas Inspections

Table II below presents a summary of GO 112-E gas inspections performed by USRB in 2009. USRB conducts inspections of major utilities generally over a three to five day period. MHP and propane inspections are typically completed within one day. Section I describes the methodologies USRB uses to inspect the gas systems of gas utilities, MHP, and propane entities.

	Major Utilities	MHP	Propane	Total
Inspections	32	584	151	767
Infractions	178	2295	432	2905

Table II. Summary of Gas Safety Inspections

Major gas utilities are generally inspected every two or three years. Inspections may become more frequent if USRB discovers conditions in a service area that are unsafe or that are in non-compliance with GO 112-E. MHP gas systems are inspected every five years. Propane systems are inspected every two, three, or five years depending upon the size and history of the propane system.

C. Gas Incidents

USRB receives and investigates reportable natural gas incidents from regulated utility companies. USRB also investigates gas incidents reported by MHP and propane system operators. GO 112-E defines reportable incidents as those that involve a release of gas and: (a) result in a fatality or personal injury requiring in-patient hospitalization, (b) cause

over \$50,000 in damage including the loss of gas, or (c) become the subject of significant public attention or media coverage. Table III and Figure II provide a summary of reported gas incidents. In 2009, the most common cause of reportable gas incidents was excavations. USRB is active in the California Regional Common Ground Alliance which proactively seeks to reduce incidents caused by excavation.

Cause	Total
Construction/Material Defect	3
Excavation	33
Fire	13
Other	14
Unknown	10
Vehicle	9
Total	82

Table III. GO 112-E Reportable Gas Incidents by Cause in 2009

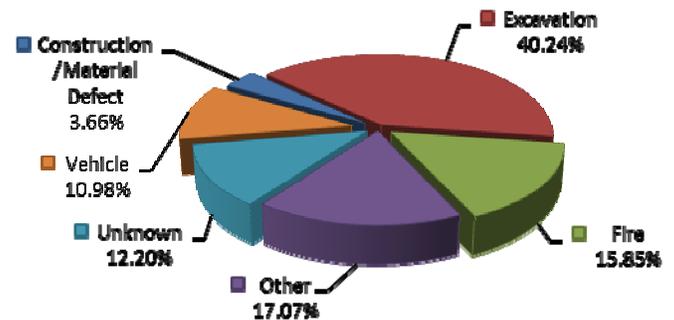


Figure II. GO 112-E Reportable Gas Incidents by Cause in 2009

D. Special Gas Projects

On December 24, 2008, an explosion occurred in Rancho Cordova due to a natural gas leak. In 2009, USRB worked with the National Transportation Safety Board in investigating the incident. USRB plans to release its report in 2010.

3. Electric Program Summary

A. Size and Characteristics of the California Electric System

California has one of the largest electric and communications systems in the United States, serving over 11 million customers. There are over 4 million utility poles in California in addition to over 700,000 underground enclosures and surface mounted structures. The equipment installed on and in these facilities supports close to 300,000 miles of overhead and underground cable. Tables IV and V and Figure III illustrate California's electric system.

Utility Company	Overhead Transmission Lines (miles)	Overhead Distribution Lines (miles)	Total Overhead Lines (miles)	Number of Poles
PG&E	17,960	113,550	131,510	2,450,181
SCE	11,942	52,799	64,741	1,464,158
SDG&E	1,734	6,683	8,417	217,764
PacifiCorp.	825	2,322	3,147	69,467
Sierra Pacific Power	344	1,060	1,404	27,350
Total	32,805	176,414	209,219	4,228,920

Table IV. Overhead Electric Facilities in California, 2009

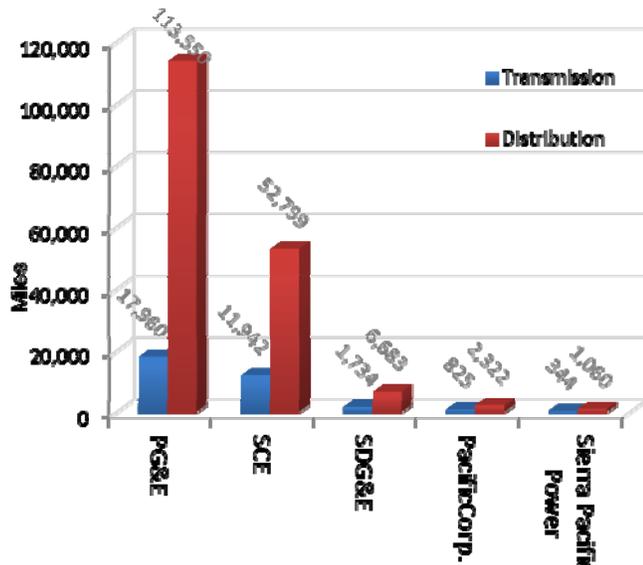


Figure III. Electric Transmission and Distribution Overhead Lines by Utility in 2009

Utility Company	Undergrnd Transmission Lines (miles)	Undergrnd Distribution Lines (miles)	Total Undergrnd Lines (miles)	Surface Mounted Structures	Undergrnd Structures
PG&E	170	27,663	27,833	141,657	210,568
SCE	336	37,633	37,969	170,715	403,372
SDG&E	102	10,062	10,164	112,775	44,312
PacifiCorp.	0	604	604	6,328	257
Sierra Pacific Power	1	439	440	3,297	7,806
Total	599	79,338	79,937	246,266	488,074

Table V. Underground Electric Facilities in California, 2009

B. Electric Audits

USRB engineers conduct combined Audits of overhead and underground electric lines for compliance with GOs 95, 128, and 165. During USRB Audits, USRB engineers survey electric facilities and perform a document review of pertinent utility maintenance records over a three to four day period. The record review is validated by spot checks in the field. Engineers document each violation discovered during the inspection and discuss them with the appropriate utility personnel a procedure which expedites the violation correction process. Table VI summarizes the audits and infractions cited by USRB engineers in 2009.

Utility Company	Audits	Infractions		
		GO 165	GO 95 (overhead)	GO 128 (undergrnd)
PG&E	7	23	40	3
SCE	6	7	81	8
SDG&E	2	1	14	1
Sierra Pacific Power	1	0	0	0
Munis/Others	11	11	409	54
Total	27	42	544	66

Table VI. Summary of Inspections and Infractions in 2009

C. Electric Incidents

USRB engineers receive and investigate reportable electric incidents from regulated utility companies. Reportable incidents are those which (a) result in fatality or personal injury rising to the level of in-patient hospitalization, (b) result in property damage of \$50,000 or more, or (c) are the subject of significant public attention or media coverage.

Utilities reported 93 total electric incidents in 2009. Of these, 68 were related to overhead equipment, and 25 involved underground equipment. Section V contains a detailed breakdown of incidents by type.

D. Special Electric Projects

In addition to the regular activities described above, USRB was active in the following special projects in 2009:

- Heat Storm Investigation and Transformer Loading Study - continued study of electric distribution equipment failures during the 2006 and 2007 heat storms.
- Substation General Order – continued to work with utilities to create a draft of the substation GO.
- GO 95 Revisions for Pole Top Antennas – Revised GO 95 to include provisions for antennas attached to utility poles above power supply lines.
- Fire Storm Investigation – continued investigation to determine causes of fires that occurred in Southern California in October 2007.
- Order Instituting Rulemaking (OIR) to Revise and Clarify CPUC Electric Regulations – continued work on an OIR to revise and clarify CPUC electric distribution regulations. This OIR is related to the fire storm investigations and focused on rules relating to issues between communication facilities and power distribution facilities.

4. General Public Complaints and Inquiries

USRB also responds to complaints and inquiries from the general public in all of the areas under USRB's jurisdiction. There were 66 customer complaints and inquiries in 2009. Section VI contains a summary of the complaints and inquiries by type.

Introduction

Purpose of Report and Organization

This Annual Report provides general information about Utilities Safety and Reliability Branch (USRB) activities and summarizes the progress of its safety programs during the 2009 calendar year.

The California Public Utilities Commission (CPUC) monitors the pipeline safety of investor-owned gas utilities, mobile home parks (MHP) and certain propane systems under General Order (GO) 112-E. USRB is charged with enforcing GO 112-E, which adopts Title 49 of the Code of Federal Regulations (49 CFR), Sections 190, 191, 192, 193, and 199. The CPUC also administers GOs 95, 128, and 165 which contain rules for electric supply and communication facility installation, safety, and maintenance.

The mission of USRB is to conduct effective oversight of the safety and reliability of California's electric, telecommunications and gas infrastructure. By enforcing CPUC safety and reliability regulations on jurisdictional gas and electric entities, USRB attempts to secure utility operational safety and reliability for the protection of the public and the utility employees.

Section I of this report provides a discussion of USRB's gas safety compliance and inspection programs. Section II provides a description of USRB's electric supply and communication safety inspections, reports, and programs. Section III lists the utilities operating in California by type. Section IV provides statistical data regarding gas facilities, USRB inspection results, and gas incidents reported and investigated by USRB. Section V provides statistical data regarding electric systems, inspection results, and electric incidents reported and investigated. Section VI summarizes general public complaints and inquiries received and addressed by USRB.

Section I: Gas Safety Compliance Inspection, Reports, and Programs

1. General Order 112-E

In 1995, the CPUC adopted the sections of 49 CFR pertinent to gas safety in GO 112-E. Subsequent changes to the Federal Pipeline Safety Regulations, 49 CFR, Parts 190, 191, 192, 193, and 199 are automatically updated in GO 112-E with the effective date being the date of the final order as published in the Federal Register.

The Federal Department of Transportation (DOT) has jurisdiction for enforcing the regulations in 49 CFR. In November 2004, Congress authorized the partial reorganization of the DOT. Part of this reorganization created the Pipeline and Hazardous Materials Safety Administration (PHMSA), which replaced the Research and Special Programs Administration. The intent of this reorganization was to place a clear emphasis on the importance of pipeline and hazardous materials safety. DOT also oversees the PHMSA Office of Training & Qualifications (T&Q). Both PHMSA and T&Q play a role in enforcement and education with regard to federal regulations pertaining to gas pipeline safety.

USRB conducts audits and inspections of gas facilities owned and operated by investor-owned utilities and master metered MHP operators for compliance with GO 112-E. USRB also audits and inspects propane gas distribution systems.

2. Description of a Typical GO 112-E Inspection

Investor-owned utilities are made up of a number of operational units or divisions, each of which is normally audited every two or three years. Some districts, such as those of Southern California Gas Company, are audited annually. When a significant problem is found, the frequency of inspections is increased depending on the severity of the problem.

Once the problem is remedied to the satisfaction of USRB, the unit returns to its normal inspection cycle. Each inspection of a gas utility is documented and maintained in a file for a period of at least 3 years.

USRB engineers review records and pertinent documents and conduct field audits to determine if gas facilities are being properly maintained and operated. As part of the document review, USRB engineers determine if the utility possesses a complete and accurate map of the gas or propane system, an adequate Operation and Maintenance (O&M) Plan, an Emergency Plan, and an Operator Qualification Program (with documentation that the plans and programs are being followed). The engineers review the utility's records to verify that both proper maintenance and appropriate surveys such as cathodic protection, leak detection, and odorant checks are performed in accordance with state and federal regulations. While auditing the written records in the office, USRB engineers select utility facilities to inspect in the field.

The field inspection focuses on verifying the utility's records and maps, physically operating valves, checking regulator set points, testing cathodic protection areas, and verifying that unsafe conditions noted by USRB in past inspections were corrected. Engineers observe the overall condition of the system and how the utility follows its own written procedures. The field inspection also allows engineers to confirm the qualifications of the operator's employees. USRB engineers will cite the utility for non-compliances and specify the time in which corrective action must be taken. USRB engineers will monitor the utility until the non-compliances are corrected. USRB engineers may suggest changes to utility procedures in order to improve gas pipeline safety. USRB engineers also audit records pertaining to the drug and alcohol programs performed by the utilities (propane and MHP operators are exempt from this federal requirement).

3. Mobile Home Park (MHP) Program

Most natural gas customers in California receive gas directly from, and are billed by, the local gas utility. However, residents of some MHPs do not receive gas directly from the local utility, but instead receive gas from, and are billed by, their MHP operator. In this case, the MHP gas system is master-metered. The MHP operator receives natural gas at a discount since the local utility is not responsible for maintaining and operating the MHP gas systems that are master-metered. The MHP operator, in turn, bills its residents at the rates that are prescribed in CPUC's tariffs for the serving utility. The difference between what the master-meter operator pays for gas from the utility and what the operator may charge its residents is used primarily to maintain the gas system.

Under 49 CFR, California Public Utilities (PU) Code (4351-4361), and GO 112-E, the MHP program provides for inspections of MHP master-metered gas systems. USRB engineers are responsible for carrying out this program and have the authority to cite operators who are not in compliance with the federal regulations. Regulations for MHP gas systems have been collected in the "Guidance Manual for Operators of Small Gas Systems" (<http://phmsa.dot.gov/pipeline/tq/manuals>).

Operators are required to have a map of the MHP gas system with key valve locations, adequate O&M and Emergency Plans, and an Operator Qualification Program to assure safe operation of their gas systems. USRB engineers verify that the MHP operators know the requirements of the gas safety code and understand the procedures for operating and maintaining their gas systems. USRB engineers also perform visual inspections of the MHP gas systems to determine if unsafe conditions exist.

In addition to inspections, USRB offers training seminars to MHP master-meter operators to acquaint seasoned operators and introduce new operators to the requirements for operating a gas system. USRB is responsible for inspecting over 2,500 master-metered MHPs in California ranging in size from two customers to over 1,000 customers at least once every five years. Many of the MHPs require special attention to meet the requirements. This requires USRB to conduct follow-up inspections of certain MHP gas systems more than once during the five-year period.

USRB logs the results of each inspection into a database. USRB engineers use the database to follow-up and assure that operators who have been cited take appropriate action. MHP operators are required to submit an annual report to the CPUC regarding their gas systems, which is also entered into the database. The database is also used to identify problem areas which need to be addressed. The program continues to be successful. USRB engineers have discovered and notified MHP operators to correct potentially dangerous situations, which if not corrected, could have resulted in serious gas incidents.

In 2007, PHMSA relaxed the Public Awareness Program (PAP) requirements for operators of small gas systems (i.e., MHP and propane systems). Prior to the new requirements, these operators were expected to develop and implement public education programs similar to the programs implemented by the large utilities. The new rules require the small gas system operators to provide their customers a public awareness message (PAM), twice a year that describes the gas system and related safety issues. In 2009, USRB educated and assisted small gas system operators in developing their PAMs.

4. Propane Safety Program (PSP)

Pursuant to PU Code (4451-4465), the PSP directs operators of jurisdictional propane distribution systems in California to comply with the Federal Pipeline Safety Standards to protect the health and safety of the operators, their employees and the customers they serve. The CPUC oversees the safety of all propane distribution systems serving 10 or more customers in a residential or commercial district, two or more customers in an MHP, and any system with two or more customers in a public place. Under existing PU Code, jurisdictional propane systems serving over 200 customers are subject to an inspection every two years. Propane systems that serve at least 100, but less than 200 customers, are to be inspected every three years. Approximately 95% of the propane systems serve less than 100 customers and are to be audited at least once every five years.

USRB engineers work with the propane industry, mainly through the Western Propane Gas Association, to improve the PSP. Many propane system operators are also the propane suppliers. These operators are usually knowledgeable about

their propane systems, safety requirements, and the federal regulations. Federal regulations that apply to propane distribution systems are contained in the Guidance Manual for Operators of Small LP Gas Systems (<http://phmsa.dot.gov/pipeline/tq/manuals>).

Based on its experience to date with the PSP, USRB is working at solving several problems. One problem that USRB has experienced since the inception of the PSP is identifying jurisdictional propane systems. USRB maintains a database of propane systems similar to the MHP database, but there is no requirement that operators of new propane systems must report the establishment of these systems to the CPUC. As a result, when out in the field conducting routine inspections, USRB engineers are constantly looking for jurisdictional propane systems that are not included in the database. The PSP database must be continuously updated to reflect the addition of new jurisdictional, and removal of non-jurisdictional, propane entities. USRB also collects information from propane suppliers, especially concerning new construction.

USRB has occasionally found it difficult to persuade propane operators to correct common problems discovered during routine inspections. Cathodic protection and record keeping are prime examples. USRB is trying to educate the small propane system operators and suppliers to help them better understand the gas safety regulations and what they need to do in order to achieve compliance at a minimal expense. In 2007, USRB developed citation procedures similar to those in the MHP program to help USRB engineers enforce the PSP. USRB drafted a resolution presented to the CPUC for approval to cite individual operators without seeking additional CPUC action. USRB will meet with propane operators and propane service providers to inform them of the potential consequences for regulatory noncompliance.

PU Code § 4458 requires jurisdictional propane system operators to pay an annual user fee to the CPUC. At present, the fee is set at twenty-five cents per unit per month or \$3.00 per unit per year. In accordance with the legislation enacted to implement the PSP, every operator of a propane system serving ten or more units in a commercial or residential area or two or more units in an MHP must prepare and submit to the CPUC a completed Annual Report form and pay the annual user fee.

Collecting the user fee can be problematic due to the changes in propane system ownership,

operators, propane suppliers or maintenance staff. This is the only program for which USRB is obligated to invoice and collect a user fee.

5. Gas Incident Reports

USRB monitors and investigates gas incidents which occur in the service territory of utilities under CPUC jurisdiction. The purpose is twofold: first, to determine the cause and whether the utility was negligent or violated GO 112-E; and second, to determine if measures can be taken to prevent similar incidents from occurring. USRB maintains a database of all reportable gas related incidents. The Incident Database helps USRB monitor the gas incidents and track trends. Tracking leak histories and incident occurrences have led to the "Pipeline Replacement Program", "Meter Protection Program" and the "Above Ground Pipeline Inspection Program". These programs are discussed in more detail in subsections 9, 12, and 14, respectively.

Each utility is required to report any incident which involves a release of gas and (a) results in death or injury requiring in-patient hospitalization, (b) results in \$50,000 or more of damage to property, including loss of gas, or (c) in the operator's judgment is significant, to the CPUC and DOT. These incidents are to be reported to the CPUC within two hours (during working hours) and four hours (during non-working hours) of utility personnel arriving on the scene. The CPUC also requires an operator to report an incident if there is significant media attention. Most incidents are reported because they involve damage over \$50,000. In 2009, there were 4 fatalities and 13 injuries related to reportable natural gas incidents. Most injuries were to third parties rather than utility employees. USRB determined that 82 gas incidents were CPUC reportable in 2009.

GO 112-E requires the utility to file a quarterly report listing all reportable and non-reportable incidents that involve the escape of natural gas. This report includes all incidents caused by excavation or that involve fire or explosion, regardless of the amount of property damage. On average, it includes between 400 and 500 gas events each year. This data is tabulated, analyzed, and used to evaluate the need to develop new gas safety programs or modify existing ones.

USRB engineers investigate all reportable incidents. This may be done by visiting the site, making written

data requests, interviewing the gas operator and witnesses of the incident, or a combination of these activities. Leading causes of gas incidents for 2009 are presented in Table 8. Homeowners and small contractors digging near gas pipelines cause many incidents. Most of these incidents are not immediately reportable because they do not meet the criteria established by the CPUC or DOT but should be included in the quarterly report.

6. Safety Related Condition Reports

Safety Related Condition Reports are required by the DOT to monitor situations that could affect public safety if not repaired in a timely manner. These reports are generally required in the event of a natural disaster, or physical damage (e.g., dig-in), corrosion, material defect and operating error causing the integrity of a gas pipeline to be compromised or when repairs to the affected pipeline must be delayed. It usually results in the utility reducing pressure or shutting down the line. The complete definition is found in 49 CFR, Parts 191.23 and 191.25. Repairs are often done by utilities before reaching the requirement for safety-related condition reporting. As a result, California utilities typically file a small number of these reports (less than five) during the calendar year.

7. Drug and Alcohol Testing Program

Utility Drug Testing Programs were required by DOT in 1990. Alcohol testing was incorporated in 1995. Each utility is now required to have a drug and alcohol testing program that conforms to the guidelines set forth by DOT in 49 CFR, Parts 40 and 199. In essence, each utility is required to randomly test utility employees who perform "emergency response functions" in accordance with DOT's procedures. USRB audits these drug and alcohol programs at the headquarters of each utility, to determine compliance with DOT requirements. USRB audits the procedures, which include the collection process and the chain of custody of the sample in the drug testing laboratory. The audits are supplemented by information gathered in periodic GO 112-E audits of the operator's field offices where questions are asked concerning the Drug and Alcohol Programs.

Propane operators and MHP master-meter operators are exempt from the drug and alcohol testing programs (49 CFR 199.2).

8. Underground Service Alert (USA)

USA was established to minimize the damage caused to underground facilities by excavation in California and Nevada. USA is funded by its member utilities (gas, electric, water, telephone, cable, etc.) that are at risk. Each USA member pays dues based on either miles of facilities in the ground or population with some weight given to the importance of the buried facilities (e.g., a fiber optic cable or large high pressure gas line has more importance than a 2 inch water line). There are two USA call centers in California (USA North which covers central and northern California and DigAlert which covers southern California) and each provides a toll-free number for excavators to call two business days before beginning excavation activities. USA notifies utilities that have facilities in the area to locate and mark them so the excavator will be aware of their location prior to digging.

Calls made to their respective toll-free numbers are directed to one of two USA call center organizations in California. However, since May of 2007, national number 811 automatically directs callers to the nearest one-call center. Over 500,000 calls are made annually to California's USA call centers. Excavators are much less likely to cause pipeline damage when they call before they dig. USRB has endeavored to promote legislation to increase penalties for not calling USA, especially for repeat offenders. State Contractor's License Board may revoke a contractor's license if it is determined that the contractor is negligent. USRB maintains a database to record excavation damage to pipelines and uses it to monitor the effectiveness of the program.

In 2008, USRB received a grant of \$40,500 to advertise the 811 one-call number. A vendor was selected, and large posters displaying the one-call number were prepared and placed at bus shelters close to stores such as Home Depot and Orchard Supply in Alameda, Contra Costa, Sacramento, and Santa Clara counties. These counties were identified by PG&E as having a high number of dig-in damage by contractors. The posters were in place for 60 days.

The Common Ground Alliance (CGA) is a nationwide member-driven association dedicated to ensuring public safety, environmental protection, and the integrity of services by promoting effective damage prevention practices. In recent years, the association has established itself as the leading organization in an effort to reduce damage to all underground facilities in North America through shared responsibility among all members. Members include representatives from both regulatory agencies and industry. CGA has various regional organizations such as the California Regional Common Ground Alliance (CARCGA). USRB is an active participant in the CARCGA.

9. Gas Pipeline Replacement Program (GPRP)

The GPRP is of paramount importance to gas utilities. Its purpose is to replace old gas pipelines, which are technologically obsolete and prone to leakage or failure, with new pipelines. Pacific Gas and Electric Company (PG&E) and Southern California Gas Company (SCG) have implemented programs which evaluate the numerous factors that must be considered in determining the priority of replacement. In general, the age, condition, location, proximity of known faults, population density, leak history, and material of the pipeline are major considerations in setting the priority. As a result of the Loma Prieta earthquake in 1989, seismic effects were added as a major consideration in the formula. A seismic factor is assigned to each pipeline segment by using four components: (1) the probability of strong ground shaking, (2) the probability of surface faulting, (3) the susceptibility to soil liquefaction, and (4) the susceptibility to slope failure or landslide.

PG&E and SCG presently use all these factors to develop a priority list for pipeline replacement. Both programs are well designed and appear to be an accurate method for planning and financing future replacements systematically. Each utility tracks the progress of its program, detailing what has been accomplished and what remains to be completed. The priorities may be modified with substantial cause, which provides a utility with program flexibility. For example, when a utility learns of a planned re-paving project, it may rearrange priorities so that scheduled pipeline replacement can be accomplished just before the start of the re-paving.

In 2009, PG&E removed approximately 27.4 miles of GPRP main from service. Cast iron pipeline and pre-1940 steel replacement has always been at or near the top of SCG and PG&E's priority lists. As of the end of 2009, PG&E has 80 (IN TABLE 2, PG&E HAS 150 MILES CAST IRON) miles of the original 828 miles of cast iron pipeline (9.6%) and 127 miles of the 1,491 miles of pre-1940 steel (8.5%) remaining in its system. PG&E is systematically replacing these pipelines as well as other high priority pipelines.

Southwest Gas Corporation (SWG) and San Diego Gas and Electric Company (SDG&E) do not have cast iron pipe in their systems. SCG completed replacement of the last of its existing cast iron pipeline during 2005.

Beginning in 2007, PG&E started to focus its pipeline replacement program on copper services. As of the end of 2009, PG&E had replaced approximately 14,600 of the 38,000 copper services initially identified for replacement, about 38.4%. PG&E projects that it will complete its pipeline replacement program by 2014.

Leak surveys and evaluations regarding the cause of recently repaired pipelines are used to judge the original pipeline replacement priorities. This coupled with unforeseen events, such as natural disasters, changes in operating conditions, city or county re-paving programs, load shifts, and funding all have an impact on the original set of priorities. With proper cause, replacement priorities can and should be modified. USRB monitors these modifications and determines if they are in the best interest of the public's safety.

10. Operator Qualification and Pipeline Integrity Management

In 2005, PHMSA changed its operator qualification regulations to conform to section 49 USC 60131 enacted by the Pipeline Safety Improvement Act of 2002. Among the changes was the required inclusion of training "as appropriate." Persons performing any task on a natural gas facility must be qualified to perform the particular task. DOT clearly recognizes and emphasizes operator qualification as an important component of pipeline safety.

The Pipeline Safety Improvement Act also directed PHMSA to establish a Pipeline Integrity

Management Program (IMP). To address the new requirements, PHMSA issued Subpart “O” containing sections 192.903 to 192.949 on May 26, 2004. This Subpart establishes a risk-based assessment program that requires operators of gas transmission pipelines to (1) identify all the segments located in “high consequence areas” (HCAs)—areas containing a defined number of buildings intended for human occupancy, or a single building (or an open area such as a park) that is occupied by a defined number of people for a defined amount of time; (2) develop an IMP to reduce the risks to the public in such areas; (3) undertake baseline integrity assessments at all segments located in the HCAs within 10 years; (4) develop a process to address all anomalous conditions discovered through the assessment process; and (5) develop a reassessment interval for these segments thereafter to verify continued pipeline integrity. One-half of the baseline assessments (of the highest risk segments) were required to have been completed by December 2007 with the remainder required to be completed by December 2012. The threats to be identified and evaluated include time dependent threats, static or resident threats, time independent threats, and human error. As of the end of 2009, major gas operators reported that there were approximately 2342 miles of HCA pipeline in California with approximately 67% of the HCAs inspected. USRB believes that all CPUC jurisdictional gas operators met the December 17, 2007 requirement to assess at least 50% of their highest risk HCA pipeline segments.

11. Pipeline Inspection, Protection, Enforcement and Safety Act

On December 29, 2006, the President signed into law new legislation entitled the Pipeline Inspection, Protection, Enforcement, and Safety Act (PIPES Act). Key elements of the PIPES Act are:

- Improves state programs to reduce excavation damage to pipelines and strengthens federal enforcement of damage prevention laws
- Requires that a Distribution Integrity Management Program be implemented
- Requires excess flow valves to be installed on all new residential natural gas service lines where feasible, beginning June 1, 2008
- Adopts new regulations requiring operators of gas pipeline systems to evaluate and reduce the

risks associated with human factors such as fatigue

- Creates an emergency waiver process
- Implements a pipeline corrosion research program

12. Meter Protection Program

In its 1990 General Rate Case, PG&E introduced a meter protection program because a statistical analysis conducted in cooperation with the CPUC indicated a major cause of gas incidents was vehicles hitting meters and rupturing gas pipelines. The CPUC approved \$5 million for the first year of a 27-year program that required PG&E to file annual reports on the program’s progress similar to the reports it files on its Gas Pipeline Replacement Program. Meter readers identify meters that they feel are vulnerable to being struck by a vehicle. An expert evaluates these meters and many are slated to be protected. The PG&E program is scheduled to run through 2016. Other gas utilities are required to protect their gas meters from vehicular damage by CFR 49 §192.353 without specific CPUC-approved programs for the purpose.

In 2009, PG&E performed 176 corrective actions and determined, through inspection, that 378 previously identified locations do not require action, thereby eliminating a total of 554 locations. As of the end of 2009, PG&E completed 72% of identified corrective work and 100% of gas meter inspections through 74% of the Meter Protection Program (1990-2016).

13. Granting Of Waivers

The process of granting a waiver is initiated by a request from a regulated utility seeking permission to deviate from existing regulations. These requests usually involve new innovations in gas safety technology. USRB evaluates each request for a waiver to determine if it will provide an acceptable level of safety. If USRB supports a request for a waiver, it will prepare a resolution for CPUC approval to grant the waiver contingent upon the DOT’s Office of Pipeline Safety (OPS) approval. If the waiver is granted, the utility may proceed with the project for which the waiver was granted. It

cannot use this technology elsewhere until DOT incorporates the new technology into the regulations or the utility requests and is granted a new waiver to use the technology in another project. A good example of how a request for a waiver could be incorporated into the regulations is SCG's request for a waiver to install polyethylene pipe larger in diameter than allowed by regulations. SCG was convinced that the larger pipe was safe and economical to use in its gas system. Eventually the regulations were changed to allow the larger diameter pipe to be installed.

14. Above Ground Pipe Inspections

Inspections of above ground pipeline were initiated in 1990 after significant corrosion was observed on a major transmission pipeline. Inspections revealed differences in the surface conditions of exposed piping in different districts within the same utility. In some districts above ground piping was in excellent condition while in an adjacent district, there were frequent instances of surface rust and pitting. All utilities are required to keep inspection records for above ground facilities including frequency of inspection and findings. These records are reviewed during the course of normal GO 112-E inspections.

16. Other Duties Required by the Pipeline Safety Act

USRB is required to monitor each of the regulated utility's major construction projects, pipeline pressure uprates, and hydro tests. In addition, USRB reviews the type of project (new or replacement), the location of the project, and the pipeline material being used. It also performs random inspections of these activities. These inspections are usually conducted when time permits or a significant job warrants an inspection.

17. DOT Annual Audit

USRB is audited annually by the DOT to verify its ability to perform as an agent for the federal government. The level of federal funding to USRB for natural gas and propane system inspections

carried out on behalf of the DOT is based upon the results of this audit. The audit consists of reviewing USRB's records of the previous year. Records regarding incident reports, inspections, citations for noncompliance and knowledge of the federal regulations are reviewed. The federal inspector also verifies that each state inspector spends a minimum number of days in the field. The DOT requires USRB to account for its actions and to have its engineers fully trained by attending all the courses provided by the Office of Training and Qualifications.

18. Other Programs

USRB is currently looking at new technology for ways to address needed improvements in gas safety. One need is to improve the existing method for controlling the flow of gas during and immediately after a seismic occurrence. Several types of seismic shutoff valves have been designed. These valves are triggered by the motion or vibration of an earthquake to shut off the gas supply to a building. The City of Los Angeles adopted an ordinance to mandate installation of these valves on all new construction. SoCalGas conducted a pilot program to install these devices but discontinued the program due to concerns about false closures and liability. Numerous valves have been installed in southern California at customer expense by plumbing contractors downstream of the customer meter. It is expected that most of the existing seismic shut-off valves will initially experience some problems.

Seismic shutoff valves can be triggered by vibrations other than from an earthquake, such as vibrations caused by a large passing truck. Also, all the valves in an area will trip during an earthquake even though most of the protected houses do not have gas leaks. Relighting pilots in an area where a majority of houses are protected by seismic shutoff valves can be time consuming and diverts labor from other recovery tasks. Also, homeowners may carelessly attempt to relight their own pilots creating hazardous situations.

Excess flow valves shut off gas when they sense a sudden increase in the rate of flow of gas such as from a pipe break. These valves provide some protection from earthquake damage without the nuisance trip problem. This type of valve has gained greater acceptance among regulatory agencies and utilities. They would not be effective against small

leaks caused by movement of houses in an earthquake though.

Other firms are working on a product that would sense the presence of gas in the air. The sensor would detect the amount of methane (CH₄) in the environment and possibly carbon monoxide (CO), and at preset levels would shut off the gas supply to the building. The device would also sound an alarm much like a smoke detector notifying the occupants with two alarms: first, that there is a problem and the gas is about to be shut off and second, when the gas is automatically shut off.

USRB is also looking at better ways to measure the condition of pipelines. Manufacturers continue to make improvements to magnetic flux leakage detecting devices, often referred to in the industry as "smart pigs," that are inserted into a gas pipeline, travel through it and locate any areas of corrosion, cracks, or signs of third-party damage. These devices allow for high quality inspections of pipelines without unduly curtailing their flow. Other devices such as pipe liners capable of being inserted into existing pipelines may greatly reduce the cost of pipeline replacement especially in highly populated areas. System Control and Data Acquisition (SCADA) systems are being used to remotely monitor critical pipeline facilities and in some cases, work as an early warning system to alert the utility of a potential problem such as overpressurization. Another form of pipeline corrosion direct assessment is guided wave ultrasonic testing. Guided wave technology has been found to be particularly advantageous for assessing pipeline for which a smart pig cannot be used. Programs continue to be enacted as a result of information gathered following a natural disaster (e.g., the water heater strapping program resulted from investigations of the causes of natural gas fires following an earthquake).

19. Current Special Projects

A. Rancho Cordova Investigation

On December 24, 2008, a house located at 10708 Paiute Way, Rancho Cordova, exploded due to a natural gas leak. As a result, one person was fatality injured and five people were injured. The explosion and subsequent fire destroyed one house and severely damaged two neighboring houses. The property damage was estimated to be \$510,000.

USRB worked with the National Transportation Safety Board in investigating the incident. USRB plans to issue its report regarding its incident investigation in 2010.

Section II: Electric Safety Inspections, Reports, and Programs

1. General Orders 95, 128 and 165

As part of its electric program, USRB administers and enforces GOs 95, 128 and 165 on behalf of the CPUC. These GOs govern the construction, maintenance and inspection of electrical facilities owned by investor-owned utilities (IOUs), Municipal Utilities (Munis), Cooperatives (Co-Ops), and communication facilities owned by Communication Infrastructure Providers (CIPs). The CPUC is directly responsible for administering and implementing revisions of and amendments to these GOs through its formal rulemaking processes.

GO 95, adopted by the CPUC on December 23, 1941, formulates uniform requirements for overhead electrical line construction. Facilities covered by GO 95 include utility poles, the communication and power conductors attached to those poles, and the ancillary communication and power support equipment installed on those poles. Amendments to GO 95 in 2009 broaden its scope to include requirements for non-power utility inspections.

GO 128, adopted by the CPUC on October 17, 1967, establishes the construction requirements for underground electric facilities. Facilities covered by GO 128 include underground and pad mounted electrical enclosures and equipment.

GO 165, adopted by the CPUC on March 31, 1997, applies to five major investor-owned electric distribution utilities and requires them to inspect their lines and equipment based on outlined time intervals. GO 165 also establishes the record keeping and reporting requirements for those inspections. Decision (D.) 98-03-036, issued March 12, 1998 by the CPUC, extended the requirements of GO 165 to Munis and Co-Ops.

USRB regularly audits and inspects electrical facilities for compliance with these GOs. USRB also investigates incidents which may involve violations of these GOs. USRB additionally is involved in CPUC projects or proceedings involving these GOs.

2. Description of a Typical Electric Audit

USRB normally conducts audits of electric utilities or, in the case of large utilities, their operational units every three or four years. USRB may increase the frequency of these audits if it finds any significant problems within a utility or utility unit. This frequency is adjusted depending on the severity of the problems discovered. Once the problems are remedied to the satisfaction of USRB, USRB returns the electric utility or unit to its normal inspection cycle. A typical audit lasts three to five days, depending on the utility or unit and its size.

The goal of a USRB electric audit is to ensure that an electric utility is following the construction, maintenance and inspection requirements outlined in GOs 95, 128 and 165. To do this, USRB engineers review utility records and perform field inspections of utility facilities.

As part of the records review, USRB engineers examine facility inspection logs to check if the utility is compliant with the inspection cycles outlined in GO 165. While checking for inspection cycle compliance, the engineer is also scanning those logs for any anomalous findings. If an engineer finds something of interest on those records, he or she may look into that record in more detail by requesting additional paperwork or explanation from the utility. While reviewing records, the engineer is also choosing recently inspected locations, recent repairs and pending work for field verification.

The field inspection focuses on verifying the records looked at during the records review and on performing quality assurance on the work done by utility employees. The engineer does this by checking 1) that utilities are documenting or correcting all problems during their inspections, 2) that problems found during their inspections are correctly prioritized, and 3) that the repairs made by the utility are satisfactory.

Throughout both parts of the audit, the engineer is also taking note of any systemic problems in the utility's compliance procedures.

Within 30 days of the audit, the USRB engineers compile their findings into an audit summary that they send to the utility. The summary includes all violations noted during the audit and an explanation of why the USRB considers each violation valid. The letter may also suggest changes in utility procedures in order to improve the safety and reliability of their electric systems. Utilities typically are given 30 days to respond to the audit summary with a plan to correct all noted violations.

3. Communication Infrastructure Provider Audits

USRB audits CIPs separately from electric utilities. Unlike electric utilities, CIPs are not bound by the inspection requirements outlined in GO 165. Prior to 2009, CIP inspection procedures were instead largely based on GO 95 Rules 31.1 and 31.2 and GO 128 Rules 17.1 and 17.2. These rules required CIPs to inspect their facilities, but did not specify any time intervals for those inspections. On August 20, 2009, CPUC adopted D.09-08-029 which required CIPs to conduct visual inspections of their facilities in high and very high fire threat zones in Southern California by September 2010. D.09-08-029 additionally amended GO 95 to include Rule 18. Rule 18 in part requires CIPs to create a maintenance plan to correct problems discovered on their systems.

As of the end of 2009, CIPs are still developing their maintenance procedures, most of which are significantly different than the power utility procedures. As a result, the logistics of a CIP audit differ slightly from the electric audits, mainly because the engineer is looking at a different set of paper records and at different types of facilities. The engineer, however, is still looking for fundamentally the same things during a CIP audit as they are during an electric audit. During a CIP audit, the USRB engineer continues to check records, verify them in the field, and look for systemic procedural problems.

USRB determines CIP audit cycles based on the severity of non-compliance issues found within a CIP. CIP audits typically last for two to three days.

4. Incident Reporting and Investigation

In addition to conducting audits, USRB engineers, on behalf of the CPUC, conduct investigations of reportable incidents disclosed by the utilities. This authority is granted to CPUC by Section 315 of the PU Code, which requires CPUC to "investigate the cause of accidents occurring upon the property of any utility, or arising from or relating to the maintenance or operation of the utility's system."

Reportable electric incidents are defined in Appendix B to CPUC Resolution E-4184 as those which: (a) result in fatality or personal injury rising to the level of in-patient hospitalization, (b) result in property damage of \$50,000 or more, or (c) are the subject of significant public attention or media coverage.

USRB staff investigates all reportable incidents. An investigation by USRB staff may include, but are not limited to, a visit to the incident site, written data requests to utilities, and interviews of utility representatives and witnesses to the incident.

5. Consumer Complaints

USRB engineers also respond to safety related consumer complaints sent to the CPUC pertaining to GOs 95, 128, and 165. These complaints are generally handled informally through phone calls or correspondence between the consumer, USRB engineers, and the utility. However, if a complaint is considered significant to USRB, USRB engineers may conduct a formal, full-scale investigation into that complaint.

6. Current Special Projects

A. Heat Storm Investigation and Transformer Loading Study

The California Energy Commission defines a heat storm as a weather condition where temperatures exceed 100°F over a large area for three or more consecutive days. In the summers of 2006 and 2007, much of California experienced two separate Heat Storms. During those heat storms, there was a large increase in the demand for electricity which taxed utility electric distribution systems. This led to equipment failures that caused a significant number

of outages in the service territories of PG&E, SCE, and SDG&E.

In 2006, USRB began a study on electrical outages caused by distribution transformer failures during the first heat storm. The focus of the study was to determine if the utilities could have taken any actions prior to the heat storm to prevent the transformer failures. As part of its study, USRB explored actions that could be taken to help minimize outages during future storms. In 2007, USRB expanded its study to include the 2007 heat storm and examine the effectiveness and cost impact of utility transformer replacement programs.

In 2009, USRB met with PG&E, SCE and SDG&E to discuss mitigation measures to reduce outages caused by overloaded transformers. These meetings resulted in agreement between USRB and the utilities on transformer overloading mitigation measures. USRB completed a draft resolution that will formalize the mitigation measures agreed upon during its meetings with the utilities.

B. Substation GO

On December 20, 2003, a fire at the PG&E Mission Substation in San Francisco caused an electric outage in the San Francisco area. On February 16, 2006, the CPUC issued D.06-02-003 based on its investigation into that fire. Part of D.06-02-003 involved a settlement agreement that required PG&E to contribute \$500,000 towards the development of a new CPSD substation inspection program.

Throughout 2007, USRB met with investor-owned utilities (IOUs) in California to gain a better understanding of their substation operation and maintenance programs. USRB engineers also witnessed CASIO audits of SDG&E and PG&E substations and attended training courses covering substation equipment maintenance and high voltage electrical safety.

In October 2007, USRB created a draft of a CPUC GO intended to regulate the operation and maintenance of utility substations. USRB engineers met with California IOUs in 2008 to discuss the drafted General Order. In 2008, USRB also worked with PG&E and representatives from the City and County of San Francisco (CCSF) to develop a list of reliability improvement projects and to create a

method to monitor the implementation of those projects.

As of the end of 2009, USRB was still in the process of meeting with the IOUs in order to refine the Substation GO.

C. GO 95 Revisions for Antennas Attached to Utility Poles

Due to an increase in the number of antennas on utility poles, the CPUC issued an Order Instituting Rulemaking (OIR) on February 24, 2005 to establish uniform construction standards for attaching wireless antennas to jointly used utility poles and towers. Over the course of the OIR, USRB participated in evidentiary hearings and workshops on matters pertaining to the proposed rule. CPUC adopted D.07-02-030 on February 15, 2007 as a result of the proceedings. D.07-02-030 ordered the addition of Rule 20, Rule 94 and Appendix H to GO 95 with the intent of addressing antenna installations on jointly used utility poles.

In July 2007, the California Cable and Television Association, acting on behalf of the GO 95/128 Rules Committee, filed petition P.07-07-020 with the intent to modify GO 95, Rule 94 to allow utilities to place antennas above power supply lines. In December 2007, the CPUC opened rule making proceeding R.07-12-001 to address the petition. R.07-12-001 resulted in the CPUC adoption of D.08-10-017 on October 2, 2008, which became effective on June 29, 2009, which revised Rule 94 to include guidelines for attaching antennas to utility poles above power supply lines.

D. Olls into the 2007 Southern California Fire Storms

In October 2007, several fires erupted in Southern California. The fires caused fatalities and injuries, power outages, evacuations, and millions of dollars in property damage. USRB engineers investigated the fires to determine if they were caused by electric facilities owned and operated by electric utilities providing service to the affected areas. Figure 1 indicates the locations of the fires investigated by USRB engineers. Table 1 summarizes the damage caused by the fires.

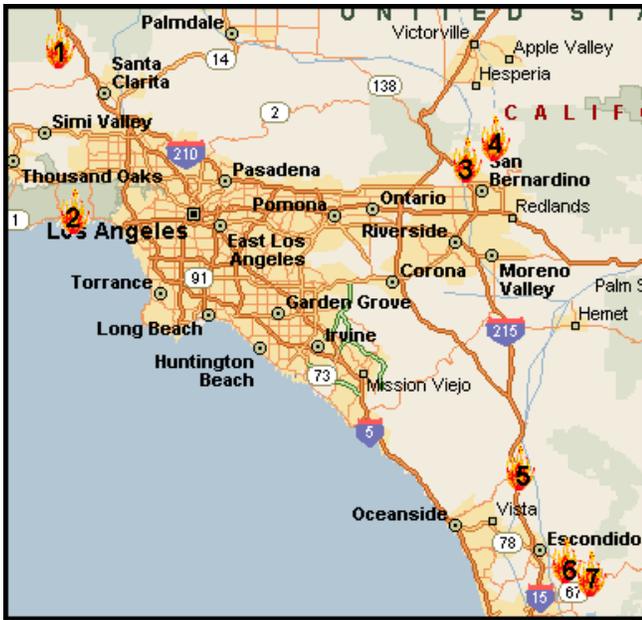


Figure 1. Fire Map

	Name	Fatalities	Injuries	Acres Burned	Destroyed / Damaged
1	Castaic Fire	0	0	58,491	1 home 9 outbuildings
2	Malibu Fire	0	0	3,836	33 structures
3	Cajon Fire	0	0	250	
4	Grass Valley Fire	0	1	1,247	199 homes 2 outbuildings
5	Rice Canyon Fire	0	0	9,472	206 homes 40 outbuildings 2 commercial
6	*Guejito Fire	2	40	197,990	1,218 homes 534 outbuildings 239 vehicles
7	Witch Fire				

* The Guejito and Witch Fires merged into one fire.

Table 1. Fire Summary

The fires occurred in the service territories of SCE (Castaic, Malibu, Cajon, and Grass Valley Fires) and SDG&E (Rice Canyon, Guejito, and Witch Fires). They happened during the presence of the Santa Ana winds, common in Southern California during the summer and early fall. USRB engineers are investigating the fires to determine if the wind conditions contributed to the fires by damaging the electric power lines.

On November 6, 2008, CPUC open an Order Instituting Investigations (I.) 08-11-006 and 08-11-007 and to determine whether any violations of the PU code by utilities contributed to the Rice Canyon, Guejito and Witch Fires. Respondents were SDG&E, and Cox Communications. USRB is assisting in that proceeding. As of the end of 2009, the proceeding was still opens and USRB was still collecting information.

On January 29, 2009, CPUC open I.09-01-18 to determine whether any violations of the PU Code by utilities contributed to the Malibu fire. Respondents were SCE, Verizon Wireless, Sprint Communications Company, LP, NextG Networks of California, and AT&T Communications of California, Inc.). USRB is assisting in that proceeding. As of the end of 2009, the proceeding was still in its early stages and USRB was still collecting information.

E. OIR to Revise and Clarify CPUC Electric Regulations

On November 6, 2008, the Commission opened rule making proceeding R.08-11-005 to revise and clarify CPUC electric safety regulations. The OIR came mainly as a response to the southern California fires described in item D. of this section. The initial investigation into that incident revealed problems associated with improper maintenance between CIP and power utility facilities. Because of those findings, the OIR focused on minimizing public hazards created by issues on communication facilities in relation to high voltage power facilities (e.g. clearance problems causing contact between communication and un-insulated power facilities that may result in wildfires).

Throughout 2009, USRB engineers worked with utilities, fire agencies and the public to amend and add rules to current CPUC GOs. Due to the amount of work required from all parties, the OIR was divided into multiple phases. The first phase was completed in 2009, which resulted in CPUC D.09-08-029. D.09-08-029 included, in part, new CIP maintenance requirements and new requirements for power inspections in high fire risk areas. D.09-08-029 also revised the vegetation management requirements in GO 95.

As of the end of 2009, parties had begun phase 2 of the OIR to work on pending issues not completed during phase 1. The majority of that work involves further refinement of the work done in phase 1.

Section III: Utility Companies

The CPUC has authority under the PU Code to enforce the requirements of GO 112-E on investor-owned gas utilities. The CPUC also has authority under the PU Code to adopt and enforce the requirements of GOs 95, 128, and 165 requirements on all electric and communication utilities. There are a number of investor-owned electric, gas and communication utility companies providing service in California as well as utilities operated by municipalities and cooperatives. This section lists some of the companies that the USBR has audited in the past. This list is not intended to be a comprehensive list of all the companies in California under CPUC jurisdiction.

1. Major Natural Gas and Electric Utilities

	<p>Southern California Gas Company (SCG)</p> <p>Southern California Gas Company serves almost 4.9 million customers in southern California. Southern California Gas Company does not provide electric service.</p>
	<p>Pacific Gas and Electric Company (PG&E)</p> <p>Pacific Gas and Electric provides gas service to about 4.2 million customers and electric service to about 5.3 million customers. Its service area covers 70,000 square miles.</p>
	<p>San Diego Gas and Electric Company (SDG&E)</p> <p>San Diego Gas and Electric provides natural gas service to approximately 840,000 customers and electric service to 1.3 million customers in San Diego and Orange County.</p>
	<p>Southwest Gas Corporation (SWG)</p> <p>Southwest Gas provides natural gas service to approximately 135,000 customers in Victorville, Big Bear and North Lake Tahoe within California. The company also serves Nevada and Arizona (1.8 million).</p>
	<p>Southern California Edison Company (SCE)</p> <p>SCE provides electric service to 4.9 million customers and operates a propane gas system on Catalina Island that serves approximately 1,300 customers. It also transports gas to one of its power plants. Its service area covers 50,000 square miles.</p>

2. Other Natural Gas Companies

Small Companies	
	
Alpine Natural Gas	West Coast Gas

Municipalities			
			
Long Beach	Palo Alto	Susanville	Coalinga

Natural Gas Storage Facilities	
	
Lodi Gas Storage	Wild Goose Storage

3. Other Electric Service Companies

Investor-Owned Companies			
			
Bear Valley Electric	Mountain Utilities	Sierra Pacific Power	PacifiCorp

Electric Cooperatives			
			
Surprise Valley Electrification Corp.	Plumas-Sierra Rural Electric Cooperative	Anza Electric Cooperative	Valley Electric Association

Municipalities

				
Alameda Municipal Power	Anaheim Public Utilities	Azusa Light and Water	Banning	Biggs
				
Burbank Water and Power	Colton Public Utilities	Glendale Water & Power	Gridley	Healdsburg
				
Hercules Municipal Utility	Imperial Irrigation District	Island Energy	Lassen Municipal Utility District	Lodi
				
Lompoc	Los Angeles DWP	Modesto Irrigation District	Needles	Northern California Power Agency
				
South Feather Water and Power	Palo Alto	Pasadena	Redding Electric Utility	Riverside
				
Roseville	Sacramento Municipal Utility District	Silicon Valley Power	Shasta Lake	Southern California Public Power Authority

				
Moreno Valley	Trinity County	Truckee Donner Public Utility District	Turlock Irrigation District	Ukiah
				
Vernon	Victorville			

4. Communication Infrastructure Providers

				
Astound	AT&T	Charter Communications	Comcast	Cox Communications
				
Surewest	Time Warner	Verizon		

Section IV: Gas Statistics

This section describes the California gas system and summarizes 2009 USRB inspection and gas incident data.

1. Size and Characteristics of the California Gas System

The California gas system (natural gas and propane) serves approximately 11 million gas customers with approximately 100,000 miles of gas mains. Table 2 and Figure 2 illustrate the miles by type of distribution pipeline as reported by the operators to the DOT. Table 3 and Figure 3 indicate the number of miles by type of transmission pipeline of each utility. Table 4 and Figure 4 show the number and types of services in each utility's system during 2009. Tables 5a and 5b list the causes of repaired leaks in 2009 determined by each utility on their distribution and transmission systems, respectively.

PG&E and SCG are two of the largest utilities in the United States and serve most of the Northern and Southern portions of California, respectively. SDG&E is significantly smaller and serves the greater San Diego area. SWG is smaller still and serves Lake Tahoe and the high desert near Victorville. SCE also operates a small propane gas system on Catalina Island. SCE upgraded the system in 2005 with the addition of a mixed gas (propane/air) transportation tank and the elimination of a storage tank. Alpine Natural Gas, a small company, takes gas from a PG&E transmission line to serve customers who were previously served by propane. Finally, MHPs and other multi-family residential facilities may be served by a natural gas master-metered or propane system.

California also has independent firms that have developed underground storage to serve California utilities such as Wild Goose Storage and Lodi Underground Storage. Despite their size, these systems fall under CPUC jurisdiction and are required to follow state and federal regulations.

Company	Steel Pipe				Plastic	Cast Iron	Total
	Unprotected		Protected				
	Bare Steel	Coated Steel	Bare Steel	Coated Steel			
PG&E	211	0	0	20,844	20,937	150	42,142
SCG	3,059	5,363	145	16,930	22,154	0	47,651
SDG&E	0	0	0	3,646	4,699	0	8,345
SWG	0	1	0	609	2,485	0	3,095
SCE	0	0	9	0	0	0	9
Total	3,270	5,364	154	42,029	50,275	150	101,242

Table 2. Miles of Gas Distribution Pipeline in 2009, by Type and Utility

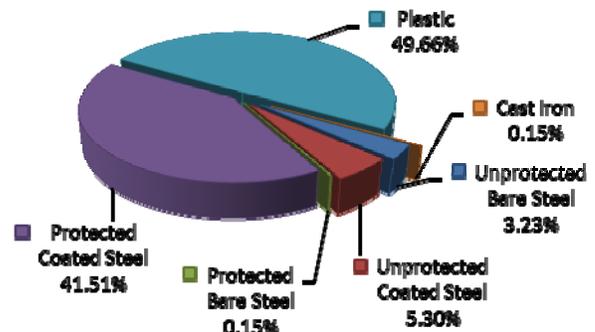


Figure 2. Gas Distribution Pipeline in 2009, by Type

Company	Unprotected		Protected		Total
	Bare Steel	Coated Steel	Bare Steel	Coated Steel	
PG&E	0	0	9	5714	5723
SCG	7	0	2	3980	3989
SDG&E	0	0	0	246	246
SWG	0	0	0	21	21
SCE	0	0	0	0	0
Total	7	0	11	9961	9979

Table 3. Miles of Gas Transmission Pipeline in 2009, by Type and Utility

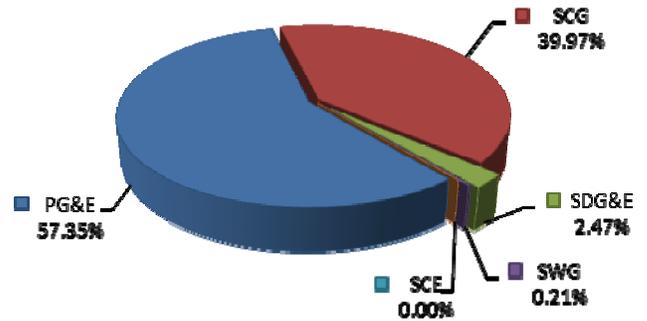


Figure 3. Gas Transmission Pipeline in 2009, by Utility

	Steel Pipe				Plastic	Copper	Total
	Unprotected		Protected				
	Bare	Coated	Bare	Coated			
PG&E	17,037	0	0	1,222,092	2,064,981	26,991	3,331,101
SCG	134	900,056	18	760,688	2,691,181	809	4,352,886
SDG&E	0	0	0	260,477	332,986	0	593,463
SWG	0	0	0	11,223	161,717	0	172,940
SCE	0	0	816	164	0	0	980
Total	17,171	900,056	834	2,254,644	5,250,865	27,800	8,451,370

Table 4. Number of Gas Services in 2009, by Type and Utility

Figure 4. Gas Services in 2009, by Utility

Company	Corrosion	Natural Forces	Excavation	Outside Force	Material or Welds	Equipment	Operations	Other	Total
PG&E	6,111	73	1,725	201	27,953	516	82	21,428	58,089
SCG	4,824	73	3,018	1,587	214	0	0	1,142	10,858
SDG&E	531	27	209	55	140	45	0	109	1,116
SWG	7	1	169	4	56	11	9	4	261
SCE	2	0	0	0	2	0	0	0	4
Total	11,475	174	5,121	1,847	28,365	572	91	22,683	70,328

Table 5a. Gas Distribution (Service and Main) Leaks Repaired in 2009, by Type and Utility

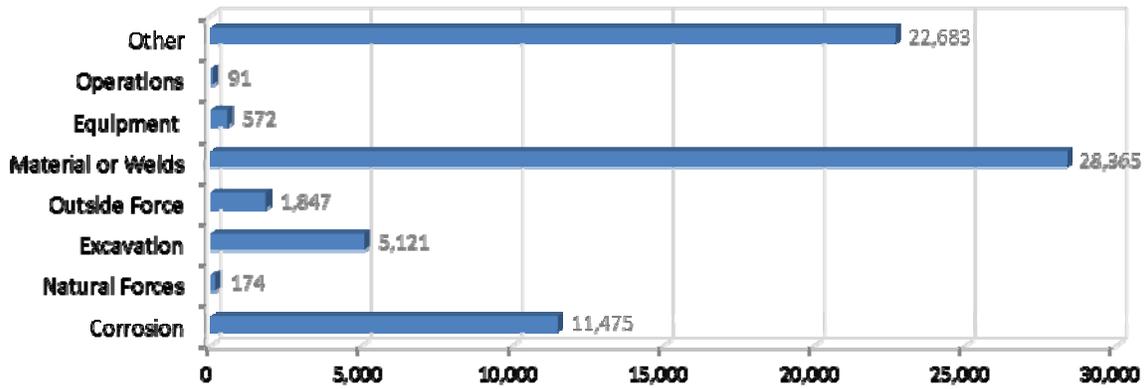


Figure 5a. Gas Distribution (Service and Main) Leaks Repaired in 2009, by Type

Company	Corrosion	Natural Forces	Excavation	Outside Force	Material or Welds	Equipment & Operations	Other	Total
PG&E	4	0	4	0	6	4	44	62
SCG	0	0	1	0	0	0	0	1
SDG&E	0	0	0	0	0	0	0	0
SWG	0	0	0	0	0	0	0	0
SCE	0	0	0	0	0	0	0	0
Total	4	0	5	0	6	4	44	63

Table 5b. Gas Transmission Leaks repaired in 2009, by Utility

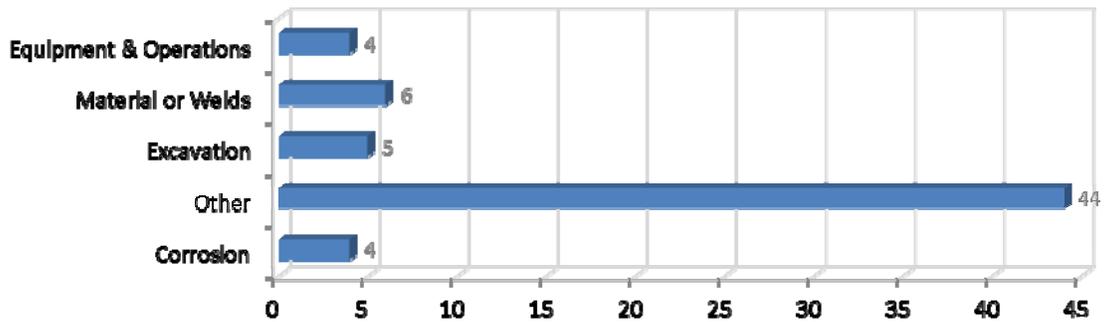


Figure 5b. Gas Transmission Leaks repaired in 2009, by Type

2. USRB Gas Inspection Data

In 2004 and 2005, USRB was divided into two units. Each unit was assigned specific counties in which to conduct GO 112-E inspections in California. The counties to be inspected by each unit were:

Northern Unit: Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Kern, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Mono, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Luis Obispo, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tuolumne, Tulare, Yolo, and Yuba.

Southern Unit: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura.

Section I, Subsection 2, contains a description of a typical GO 112-E inspection.

An overall summary of USRB inspections of the gas utilities and MHP and propane systems is given in Table 6 below. Table 7 presents GO 112-E inspections by utility.

	Major Utilities	MHP	Propane	Total
Inspections	32	584	151	767
Infractions	178	2295	432	2905

Table 6. GO 112-E Inspections and Infractions in 2009

Utility	Inspections
PG&E	12
SoCalGas	8
Southwest Gas	3
SDG&E	2
Sempra (Combined SCG/SDG&E)	1
Lodi Gas Storage	1
West Coast Gas Storage	1
Wild Goose	1
Total	29

Table 7. Gas Utility Inspections in 2009

3. Gas Incidents

USRB staff receives and investigates reports of gas and propane incidents from regulated utility companies and MHP and propane system operators. GO 112-E defines reportable incidents as those which involve a release of gas and: (a) result in a fatality or personal injury rising to the level of in-patient hospitalization, (b) cause over \$50,000 in damage including the loss of gas, or (c) become the subject of significant public attention or media coverage.

The gas utility companies and MHP and propane operators are required to provide notice of reportable incidents to designated USRB staff within two hours during working hours or four hours during non-working hours. The notice must identify the time and date of the incident, the location of the incident, identification of casualties and property damage, and the name and telephone number of a utility contact person.

USRB maintains an incident database which tracks incidents by cause. These causes are divided into construction/material defects, corrosion, excavation, vehicle, unknown, or other. Table 8 summarizes incidents by cause for 2009. Figure 6 shows reportable incidents by cause for 2009. In 2009, 40% of the reportable gas incidents were caused by excavation.

Cause	Total
Construction/Material Defect	3
Excavation	33
Fire	13
Other	14
Unknown	10
Vehicle	9
Total	82

Table 8. Reportable Gas Incidents in 2009, by Cause

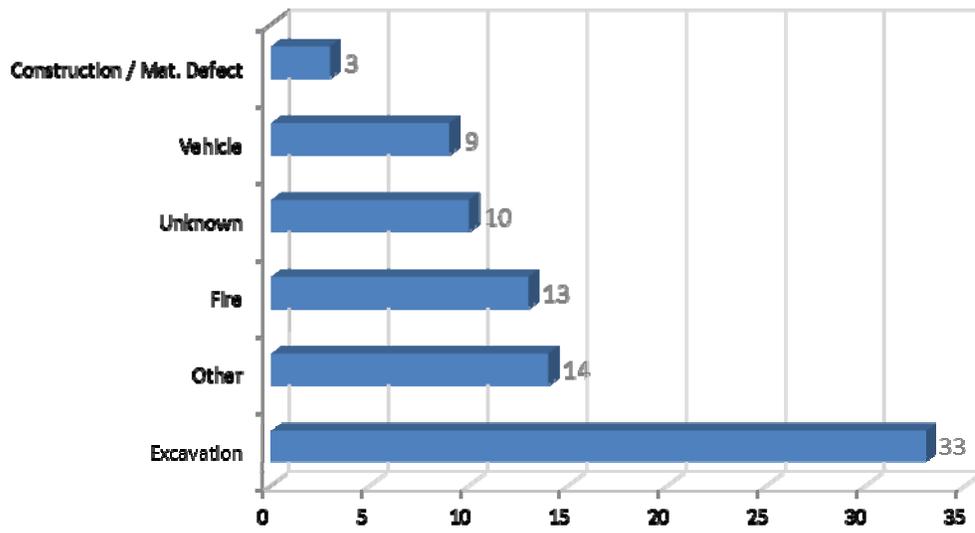


Figure 6. Reportable Gas Incidents in 2009

Section V: Electric Statistics

This section describes the California electric system, summarizes USBR inspection results for 2009, and discusses electric incidents.

1. Size and Character of the California Electric System

California has one of the largest electric and communications systems in the United States, serving over 11 million customers. There are over 4 million utility poles in California in addition to over 700,000 underground enclosures and surface mounted structures. The equipment installed on and in these facilities supports close to 300,000 miles of overhead and underground cable. Table 9 and Figure 7 summarize the characteristics of California’s overhead electric facilities. Table 10 and Figure 8 present similar data for underground facilities. Table 11 and Figure 9 summarize utility customer data.

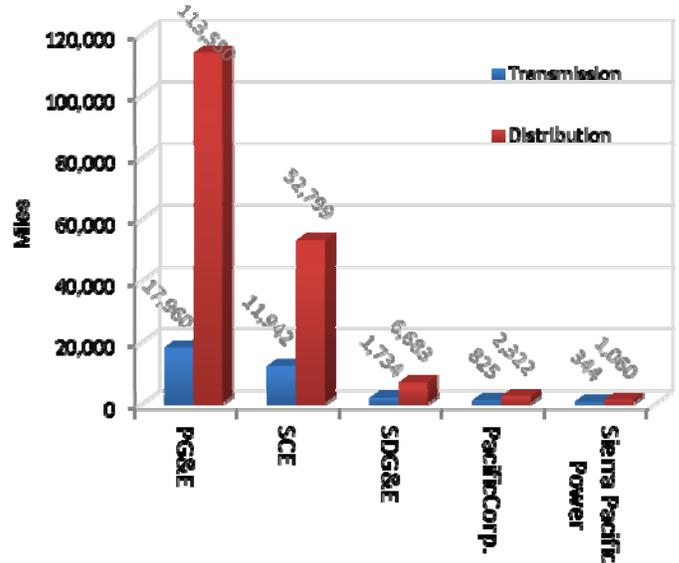


Figure 7. Overhead Distribution and Transmission in 2009, by Utility

A. Overhead Facilities in California

Utility Company	Transmission Lines (miles)	Distribution Lines (miles)	Total Overhead Lines (miles)	Number of Poles
PG&E	17,960	113,550	131,510	2,450,181
SCE	11,942	52,799	64,741	1,464,158
SDG&E	1,734	6,683	8,417	217,764
PacifiCorp.	825	2,322	3,147	69,467
Sierra Pacific Power	344	1,060	1,404	27,350
Total	32,805	176,414	209,219	4,228,920

Table 9. Summary of Utility Overhead Facilities in 2009, by Utility

B. Underground Facilities in California

Utility Company	Undergnd Transmission Lines (miles)	Undergnd Distribution Lines (miles)	Total Undergnd Lines (miles)	Surface Mounted Structures	Undergnd Structures
PG&E	170	27,663	27,833	141,657	210,568
SCE	336	37,633	37,969	170,715	403,372
SDG&E	102	10,062	10,164	112,775	44,312
PacifiCorp.	0	604	604	6,328	257
Sierra Pacific Power	1	439	440	3,297	7,806
Total	599	79,338	79,937	246,266	488,074

Table 10. Underground Electric Facilities in 2009, by Utility

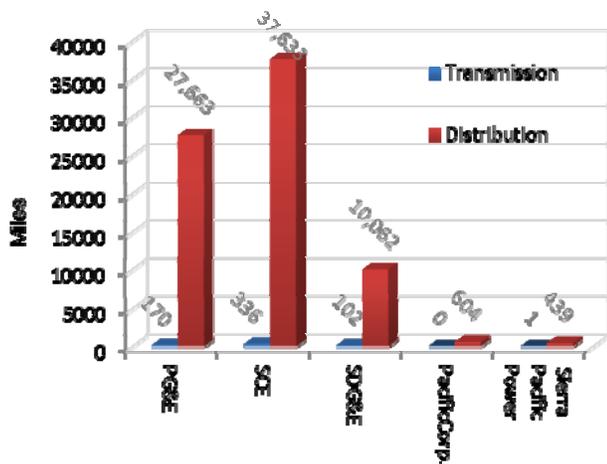


Figure 8. Underground Transmission and Distribution in 2009, by Utility

C. Customer Data

Utility Company	Number of Customers
PG&E	5,359,808
SCE	4,900,000
SDG&E	1,379,247
PacifiCorp.	45,148
Sierra Pacific Power	46,253
Total	11,730,456

Table 11. Customer Data for Major Electric Utilities in 2009

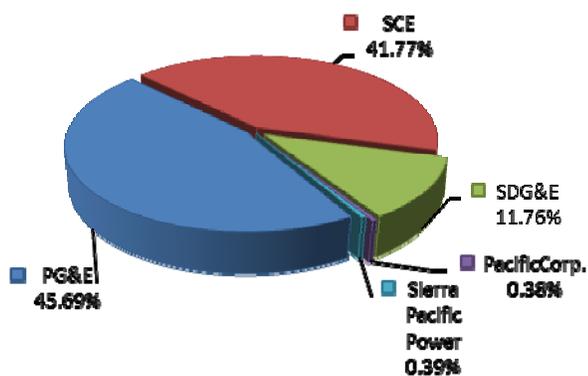


Figure 9. Comparison of Total Electric Customers in 2009, by Utility

2. Electric Inspection Statistics

USRB is divided into two units. Each unit was assigned specific counties in which to conduct Electric (GO 165, 95 and 128) inspections in California. Below is a listing of the counties each unit is responsible for:

Northern Unit: Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Kern, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Mono, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Luis Obispo, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tuolumne, Tulare, Yolo, and Yuba.

Southern Unit: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.

Section 2, Subsection 2, contains a description of a typical electric audit. Tables 12 and 13 summarize the electric power and communication inspections performed by USRB engineers in 2009.

Utility	Inspections	Infractions		
		GO 165	GO 95 (overhead)	GO 128 (underground)
PG&E	7	23	40	3
SCE	6	7	81	8
SDG&E	2	1	14	1
SPP	1	0	0	0
Munis / Others	11	11	409	54
Total	27	42	544	66

Table 12. USRB Electric Power Inspections and Infractions in 2009, by Utility

Communication Provider	Inspections
AT&T	2
Charter Communications	1
Comcast	2
Cox Communications	1
Time Warner	1
Verizon	2
Total	9

Table 13. USRB Communication Inspections in 2009, by Provider

3. Electric Incident Statistics

USRB engineers receive and investigate reports of electric incidents from regulated utility companies. CPUC Resolution E-4184 defines reportable incidents as those which are attributable or allegedly attributable to utility owned facilities and (a) result in a fatality or personal injury rising to the level of in-patient hospitalization, (b) cause over \$50,000 in damage, or (c) become the subject of significant public attention or media coverage.

CPUC requires electric utilities to provide notice of reportable electric incidents to USRB within two hours during working hours or four hours during non-working hours. The notice must identify the time and date of the incident, the location of the incident, identification of casualties and property damage, and the name and telephone number of a utility contact person.

USRB maintains an incident database which tracks electric incidents by cause, location, date, and utility..

Table 14 and Figure 10 show 2009 overhead incidents by cause. Table 15 and Figure 11 show similar data for underground incidents. The leading cause of overhead incidents in 2009 was working overhead. The leading cause of underground incidents in 2009 was cable failure.

a. Incidents Involving Overhead Equipment

Cause	Count	Fatalities	Injuries
Aircraft	1	0	0
Animal	1	0	0
Antennae	1	0	1
Boom	2	0	2
Circuit Breaker Failure	2	0	0
Crane	1	0	0
Fire	6	1	0
Line Failure	6	0	1
Natural Cause	1	0	0
Other	13	2	5
Overhead Splice Failure	1	0	0
Tree Trimmer	2	0	2
Tree/Line Contact	3	0	1
Unknown	9	0	0
Vehicle	6	1	5
Working Overhead	13	4	10
Total	68	8	27

Table 14. Reportable Electric Overhead Incidents with Injuries and Fatalities in 2009

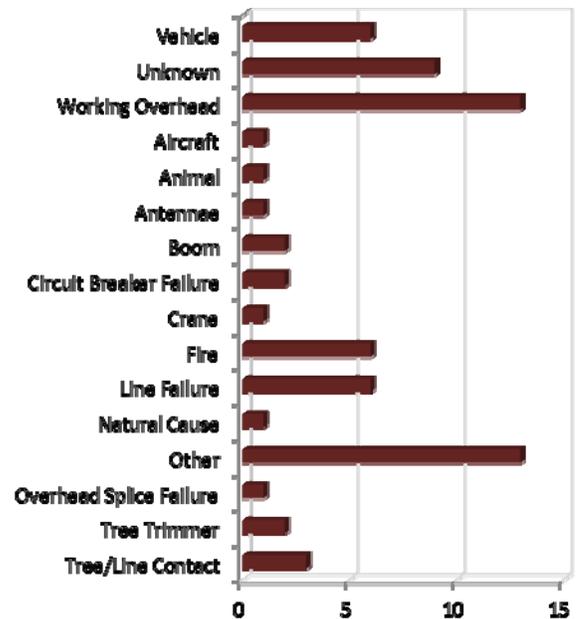


Figure 10. Graph of Reportable Electric Overhead Incidents in 2009 by Cause

b. Incidents Involving Underground Equipment

Cause	Count	Fatalities	Injuries
Excavation	2	0	2
Switch Malfunction	3	0	0
Underground Cable Failure	11	0	5
Underground Splice Failure	3	0	0
Underground Transformer Failure	2	0	0
Unknown	1	0	1
Working Underground	3	0	3
Total	25	0	11

Table 15. Reportable Electric Underground Incidents with Injuries and Fatalities in 2009

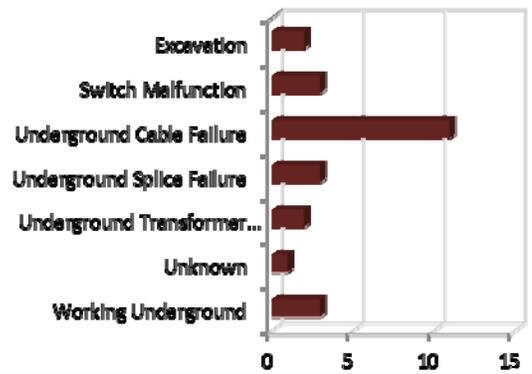


Figure 11. Graph of Reportable Electric Underground Incidents in 2009 by Cause

Section VI: Public Complaints and Inquiries

USRB responsibilities include recording, analyzing, and resolving complaints and inquiries received from the general public for those areas under USRB jurisdiction. Table 16 provides a summary of inquiries and complaints to USRB in 2009. Figure 12 provides a percentage comparison.

The reasons behind customer complaints to USRB vary greatly from complaint to complaint. Examples of safety complaints that may be forwarded to USRB engineers include consumer concerns about utility pole location or condition, vegetation issues around power lines, gas odors, pipeline condition, etc. USRB also fields some service complaints from utility employees.

Inquiries to USRB engineers generally involve questions regarding the rules and regulations that they administer. A master-metered MHP operator, for example, may call USRB for help creating a GO 112-E required Operations and Maintenance Plan for the gas system. Individuals involved in construction projects may call USRB for clarification on the clearance requirements for their building relative to overhead lines.

USRB engineers make an effort, through investigation and necessary fieldwork, to resolve all complaints and inquiries satisfactorily. USRB occasionally receives complaints and inquiries that are often not within USRB jurisdiction to resolve. In these cases, USRB engineers will attempt to forward the complaint to the appropriate group or agency.

Category	Complaints and Inquiries
Electric	24
Telecom	12
Cable	8
Gas	8
Various	7
Propane	3
General	1
Unknown	3
Total	66

Table 16. Select Public Complaints and Inquiries in 2009

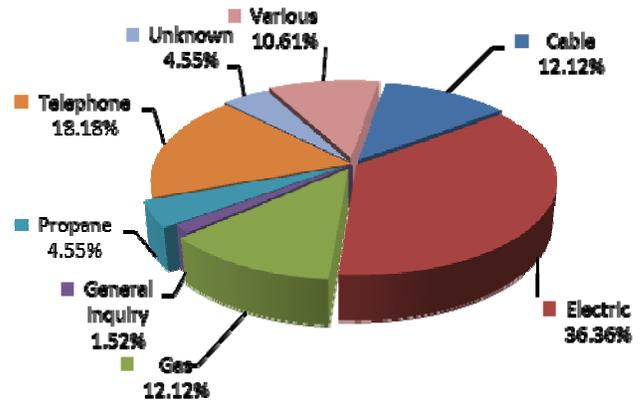


Figure 12. Complaint/Inquiry by Percentage of Total in 2009

