



California Public Utilities Commission

505 Van Ness Avenue, San Francisco, CA 94102

News Release

FOR IMMEDIATE RELEASE

Media Contact: Terrie Prosper, 415.703.1366, news@cpuc.ca.gov

PUC Staff Investigation Finds 2003 PG&E Outage Avoidable

SAN FRANCISCO, Oct. 28, 2004 – The California Public Utilities Commission’s (PUC) Consumer Protection and Safety Division (CPSD) today issued the results of its investigation of a Dec. 2003 Pacific Gas and Electric Company (PG&E) electricity outage, concluding that had PG&E implemented recommendations made by the utility after an outage that occurred in 1996, the electricity failure in 2003 would not have resulted in loss of service to more than 100,000 customers at a cost of more than \$4 million.

On Dec. 20, 2003, a fire occurred at PG&E’s Mission Substation that resulted in the complete shutdown of the substation and left more than 100,000 customers throughout San Francisco without power, including downtown retail stores filled with shoppers on a peak holiday shopping weekend. CPSD discovered soon after undertaking its investigation of this incident that another fire had occurred at the Mission Substation in 1996. CPSD’s investigation team conducted a thorough analysis of that fire and found strikingly similar contributing factors and root causes. CPSD’s team further determined that PG&E had not implemented the recommendations resulting from the utility’s own investigation of the 1996 fire. Key findings of the 2003/2004 investigation draw heavily from the investigation of both events and include:

- The root cause of the incident was a cable failure in a switch cabinet. The cable failed explosively, which caused a bus located above it to catch on fire. Vertically installed cable with oil-impregnated paper insulation loses its insulating property with age, resulting in a short circuit.
- The 1996 Mission Substation fire revealed that the insulation used in the auxiliary buses is flammable and does not self extinguish, but no steps were taken to mitigate this vulnerability. The auxiliary bus above the switch cabinets was normally energized, so

when smoke and debris from a failed cable contaminated the air inside a switch cabinet, arcing occurred and ignited the flammable bus insulation.

- PG&E failed to follow three recommendations made in its 1996 Root Cause Analysis Report, which was issued following the 1996 fire. At that time, PG&E did not have a formal management review process to track recommendations from root cause investigations. Had PG&E implemented the 1996 investigation recommendations, CPSD believes the cable failure on Dec. 20, 2003 would not have resulted in loss of service to customers.

CPSD's probing of the 1996 fire caused PG&E to re-evaluate its own investigation of that fire. As a result, PG&E concluded it had not adequately followed through with recommendations from that investigation.

"CPSD's goal was to conduct a thorough, independent investigation to determine what happened, why it happened, and what could be done to prevent or minimize a recurrence at the Mission Substation and other indoor substations. Our investigation concluded that the fire and outage were preventable," said CPSD Director Richard W. Clark. "I commend PG&E management for ultimately agreeing with us that it was unacceptable for us to have anything other than full access and to be on the inside looking around, not on the outside looking in. We insisted upon this level of cooperation from PG&E and ultimately achieved a new level of access to PG&E's evidence and witnesses."

CPSD's recommended improvements to PG&E include replacing old, vertically installed, oil impregnated paper insulated cables; de-energizing auxiliary distribution buses and conducting periodic testing; installing a smoke detection system and connecting it to PG&E's system that enables remote monitoring and control of equipment; ensuring sufficient staffing is immediately available for investigations of circuit breaker alarms; developing an emergency plan including coordination with the fire department; ensuring executive management accountability for the evaluation and implementation of recommendations resulting from investigations and inspections; establishing methods to evaluate and implement new technologies and methods that can improve the safety, reliability, and effectiveness of system design, equipment, and procedures; and periodic reporting to the PUC on the status of the evaluation and implementation of all recommendations made by CPSD until all recommendations have been addressed.

Background

Although there was substantial smoke at the Mission substation on Dec. 20, 2003, the source of the smoke was not located for almost five hours. PG&E did not call the San Francisco Fire Department (SFFD) until two hours after the first signs of trouble at the Mission Substation. The SFFD arrived within minutes of being called and cleared the smoke, but were unable to locate the fire that was the source of the smoke. PG&E then restored service to about one-half of its affected customers. Approximately one hour after service was restored to these customers, PG&E located the fire and interrupted service to the customers it had just recently restored. The SFFD extinguished the fire and PG&E once again began the task of restoring service to all of its affected customers. PG&E completed that task late in the evening the next day.

CPSD's investigation team worked independently but collaboratively with PG&E personnel to monitor the content and status of PG&E's investigation and related findings. CPSD also issued numerous requests for information to PG&E, conducted in-depth joint interviews of PG&E and SFFD personnel, and conducted site inspections of the Mission Substation and the Golden Gate Control Center.

For more information on the PUC, please visit www.cpuc.ca.gov.

###