



## 2007-2008 SANTA CLARA COUNTY CIVIL GRAND JURY REPORT

# SAFETY AND OPERATIONAL CONCERNS AT SANTA CLARA COUNTY COMMUNICATIONS CENTER

## Introduction

During a tour of the Santa Clara County Communications Center (SCCCC), the 2007-2008 Santa Clara County Civil Grand Jury (Grand Jury) observed various exposures to health, safety, environmental and operational issues including backup battery safety, use of water-based fire extinguishing systems in equipment rooms, and lack of network diagrams.

## Background

The SCCC is the county's communication focal point for public safety, public health, social services and the Valley Medical Center. It is the primary communications support for the Santa Clara County Emergency Operations Center and is the communications facility for County 9-1-1 telephone calls. It is also the emergency dispatch center for County ambulance services, fire, parks and the Sheriff's Department. The 9-1-1 dispatchers operate in this facility 24 hours a day, 365 days a year.

The SCCC is the hub of a communications system that interconnects emergency communications from Santa Clara County north to Vallejo and south to Monterey with total system value estimated at \$127 million. The SCCC site houses both the electronic equipment and the personnel necessary for operation and maintenance of the site.

## Discussion

Three areas of concern were identified by the Grand Jury: (1) the use of lead acid-type batteries without proper ventilation, and with no posted instructions on the safe handling of the batteries; (2) ceiling water-based fire extinguishing systems in rooms housing electronic connections and equipment; and (3) lack of network diagrams.

## **Backup Battery Safety Issues**

The SCCCC facility has three battery storage areas. Although two of these areas lack the quantity of acid needed to fall within fire code guidelines, one of the storage areas has sufficient acid to fall within code requirements for ventilation to the exterior of the building. However, this location does not have exterior ventilation.

According to SCCCC management, all technical employees are trained in battery safety as they are hired; however, two employees interviewed by the Grand Jury stated that they had not received training.

The Grand Jury conveyed the ventilation issues to the Santa Clara County Fire Marshall's office and, as a result, the Fire Marshall's office conducted an inspection of the SCCCC site. Multiple deficiencies were noted, and SCCCC responded that they are currently being addressed.

## **Water- Based Fire Extinguishing Systems in Equipment Rooms**

The County has no mandated requirement to have any fire extinguishing systems other than water. In case of fire, the data and voice systems are vulnerable to water damage which could potentially disable the systems. Chemical-based fire extinguishing systems are generally used for data processing centers, telephone rooms, switch rooms, and other locations where water damage from sprinklers must be avoided. Pre-action water-based fire extinguishing systems have been installed throughout the SCCCC facility. Pre-action systems delay the release of water for a limited time to enable stopping the release of water in case of a false alarm. The Santa Clara County Fire Marshall determined there are no records indicating the location of the pre-action components.

## **Lack of Wiring Diagrams**

The SCCCC elected to buy "off-the-shelf" components and make modifications and connections to those components to provide a custom-developed network system. There are no wiring diagrams for the custom system; instead, the organization relies on the knowledge of a few individuals.

## **Conclusions**

The SCCCC is the communications focal point for multiple critical services in Santa Clara County. As such, it is essential that this facility remain operational at all times.

The SCCCC has exposures in health and operational issues that need to be addressed to ensure continuity of the services it provides. An emergency at the center could result in significant outages that could have a devastating effect on County emergency communications. In addition, SCCCC organizational procedures and policies, and lack of documentation, have created an atmosphere that is less than efficient and could be hazardous to employees and an impediment to the services they provide.

The SCCCC needs to develop strategies that will result in a safer, more efficient and cost-effective operation.

## **Findings and Recommendations**

Findings have been reviewed with the subject agency.

### **Finding 1**

Lack of battery acid ventilation is in violation of the current fire code. Technical employees have not been trained on handling batteries safely.

### **Recommendation 1**

Ensure that ventilation for batteries is completed immediately or that current batteries are replaced with sealed-type batteries. All technical staff should be trained on the proper handling of batteries.

### **Finding 2**

Ceiling water-based fire extinguishing systems are currently installed in areas where equipment needed to handle emergency calls could be damaged if the extinguishers are deployed.

### **Recommendation 2**

The Communications Center should install ceiling chemical-based fire extinguishing systems for the network/switch room facilities to avoid possible damage to critical electronic equipment if extinguishers are deployed.

### **Finding 3**

There are no wiring diagrams of the current network/switch room.

### **Recommendation 3**

The Communications Center should create a complete set of wiring diagrams to enable any network engineer to fully reconstruct the connections in case of emergency. In addition the wiring diagrams should be updated as changes are made, and copies should be stored both onsite and offsite. The location of the diagrams should be communicated to all SCCC engineers and management to facilitate reestablishment of connectivity in case of disaster.

## Key References

### Documents

“Clean Agent Fire Protection,” PyroChem.com,  
<http://www.pyrochem.com/html/prodfm200.htm> ], (accessed: May 10, 2008).

County of Santa Clara, Office of the Assistant Fire Marshall to Santa Clara County Civil Grand Jury. Email, April 15, 2008.

County of Santa Clara, Office of the Chief Communications Dispatcher to Santa Clara County Civil Grand Jury. Email, May 1, 2008.

County of Santa Clara, Office of the County Executive, Communications Department to Santa Clara County Civil Grand Jury. Email, May 13, 2008.

County of Santa Clara, Office of the Fire Marshall, *Report: 2008 Annual Fire and Life Safety Inspection for County Communications at 2700 Carol Drive, San Jose, CA.* May 5, 2008

### Interviews

March 28, 2008	County of Santa Clara Occupational Safety and Environmental Compliance Manager
April 14, 2008	County of Santa Clara Assistant Fire Marshall, Office of the Fire Marshall
April 21, 2008	Communications Director, County of Santa Clara, Office of the County Executive, Communications Department
April 21, 2008	Senior Management Analyst, County of Santa Clara, Office of the County Executive, Communications Department
April 21, 2008	Assistant Communications Director, County of Santa Clara, Office of the County Executive, Communications Department
April 21, 2008	Administrative Support Officer II, County of Santa Clara, Office of the County Executive, Communications Department
April 21, 2008	Chief Communications Dispatcher, County of Santa Clara, Office of the County Executive, Communications Department
April 21, 2008	Communications Engineer, County of Santa Clara, Office of the County Executive, Communications Department

**PASSED** and **ADOPTED** by the Santa Clara County Civil Grand Jury on this 12<sup>th</sup> day of June, 2008.

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Raymond A. Blockie, Jr.  
Foreperson

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Tim Cuneo  
Foreperson pro tem

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Kathryn C. Philp  
Secretary