TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (CA/FACE) Program

SUBJECT: A hotel maintenance worker died from injuries received from an electrical flash

SUMMARY
California FACE Report #06CA008

A 39-year-old Hispanic hotel maintenance worker died from an inhalation injury and an electrical flash burn to approximately 20 percent of his body, face, and arms. The victim was changing a fuse in an electrical panel when the incident occurred. The garage area of the hotel had lost electrical power and the assistant general manager for the hotel told the victim to "check out" the problem. The victim was not trained to do electrical work. The victim contacted the maintenance supervisor by telephone for guidance. According to the maintenance supervisor, he instructed the victim not to touch the electrical fuses. The victim proceeded to try to change the fuse. The power was not shut off and there was no lockout/tagout applied when the electrical flash occurred. The CA/FACE investigator determined that, in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP) should:

- Ensure workers only perform tasks that are part of their well-defined duties.

INTRODUCTION

On September 2, 2006, at approximately 7:00 a.m., a 39-year-old Hispanic hotel maintenance worker died from injuries he received on August 27, 2006, from an electrical flash burn and inhalation injuries when he attempted to change a fuse in an electrical panel. The CA/FACE investigator learned of this incident on September 6, 2006, through a facsimile from the Los Angeles District Office of Cal/OSHA. Contact with the victim's employer was made on November 2, 2006. On December 13, 2006, the CA/FACE investigator traveled to the hotel where the incident occurred and interviewed company managers, supervisors, and other interested parties. The area where the incident took place was photographed and examined.

The employer of the victim was a national hotel chain with over 575 hotels throughout the United States and Canada. The company had been in business for over 30 years and had approximately 9,000 employees. The hotel where the victim worked had 67 employees. The victim had worked for the hotel for three months. He was hired as a maintenance worker and his duties were to perform janitorial functions, minor repairs, and preventative maintenance. The victim had worked as a welder and computer programmer before taking this job. According to the hotel manager, the victim's past work experience qualified him to perform the duties he had been assigned at the hotel.

The victim's job description did not include changing fuses in the electrical panel. The victim was born in Mexico and had been in the United States for 17 years. The victim was a high school graduate and spoke English and Spanish.

The company had a written Injury and Illness Prevention Program (IIPP) that was printed in English. The program had the elements required by state law. Safety meetings were held on a regular basis and were documented. The company had a documented program that provided general safety training to employees. According to the company's manager, the employee orientation and initial training program consisted of DVD training. Employees would watch DVDs that demonstrated how to complete a specific task. This was followed by a question and answer period and employees' demonstration of what they just learned in order to determine comprehension.

INVESTIGATION

The site of the incident was an enclosed electrical room in the hotel at the top floor of the garage where an electrical panel was housed. The victim had access to this electrical room but only to turn on and off the power to different systems throughout the hotel. The day of the incident was a Sunday and the hotel had limited staff working. The power to the lights in the garage had gone out and the assistant manager for the hotel asked the victim to "check out" the problem. The victim went to the enclosed electrical room and opened a cover on an electrical switch to expose a burned out fuse. The victim then called the maintenance supervisor at home and the supervisor told him not to touch the fuse. Despite the supervisor's warning, he removed the burned 30 amperage barrel-type fuse from the panel and proceeded to replace it with a blade-type fuse of different amperage. When he did this, an electrical flash occurred, burning the victim's arms and face. Although the company had a standard safety electrical procedure for changing fuses, the victim had not been trained in the procedure and consequently did not follow it. The victim was able to exit the electrical room by himself and call for help.

When the paramedics arrived they found the victim conscious and treated his injuries. They then transported him to a local hospital where he was examined and treated. The victim was then transferred to a burn unit where he complained of shortness of breath and was intubated as a precautionary measure. His respiratory status remained unstable and a bronchoscopy was performed and confirmed an inhalation injury. The victim's condition worsened over time and he died on September 2, 2006, five days after the incident.

CAUSE OF DEATH

The cause of death, according to the death certificate, was sequelae of electrical burns.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure workers only perform tasks that are part of their well-defined duties.

Discussion: Well-defined duty lists, when carefully administered, enhance worker safety by making it possible to predict the hazards workers might encounter and so to implement programs that abate or mitigate the hazards. In this incident, the victim was performing a task that was not part of his job description. The maintenance supervisor properly instructed the victim not to perform the task. However, the explicit instruction by the assistant hotel manager to "check-out" the problem, and the implicit permission he had been given to enter the electrical panel room when he was given the keys to the room might have been interpreted by the victim as giving him permission or even a duty to try to change the fuse. Mixed signals regarding employer intent can drastically reduce the effectiveness of any worker safety program.

Company-wide standardized programs and procedures for assigning tasks can help supervisors manage job assignments. Tasks should be discussed and planned for in advance. This decreases misassignments, and employees are less likely to attempt tasks for which they don't have adequate experience or training. Employers can enhance workers compliance with duty-restricted work using programs of task specific training, supervision, recognition, and progressive disciplinary measures.

Reference:

California Code of Regulations, Vol. 9, Title 8, Sections 3314, The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

EXHIBITS:

Exhibit 1. A picture of the electrical panel involved in the incident.

Exhibit 2. A picture of the electrical room where the panel was located.

Exhibit 3. A picture of fuses involved in the incident. The fuse on the left was a 30 amp barrel-type fuse that the victim removed from the panel. The fuse on the right was a blade-type fuse the victim tried to use to replace the fuse on the left.

Hank Cierpich
FACE Investigator

Robert Harrison, MD, MPH
FACE Project Officer

August 31, 2007

Laura Styles, MPH
Research Scientist

****

FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, State-based FACE programs include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

****

Additional information regarding the CA/FACE program is available from:

California FACE Program
California Department of Public Health
Occupational Health Branch
850 Marina Bay Parkway, Building P, Third Floor