TO: Director, National Institute for Occupational Safety and Health

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

SUBJECT: Tree Trimmer Electrocuted by High Voltage Line in California

SUMMARY
California FACE Report #93CA006
November 15, 1994

On July 20, 1993, a 45-year-old Hispanic male tree trimmer (victim) was electrocuted when a branch he cut fell on a high voltage electrical line. He had been instructed by his supervisor to cut the branch, but according to his supervisor had failed to tie it off properly. The branch hit a power line, and the victim was electrocuted when his chain saw became energized. The victim was wearing a harness and lifeline at the time of the incident, but he fell to the ground after being electrocuted. It is unclear whether the worker used the equipment improperly or if the equipment failed. Paramedics were summoned to the scene and the victim was transported to a local hospital. The CA/FACE investigator concluded that, in order to prevent similar future occurrences, employers should:

· provide a written Injury & Illness Prevention Plan (IIPP) so that employees are aware of all workplace hazards and how to avoid them.

· contact the local electric company and have electrical wires de-energized or insulated if employees are going to be cutting or trimming branches near such wires.

· provide employee training in cardiopulmonary resuscitation (CPR) and first aid procedures.

· ensure that all workers inspect all fall protection equipment each day prior to use, and that all equipment is used properly.

INTRODUCTION

On July 20, 1993, a 45 year-old male tree trimmer was electrocuted after indirectly making contact with a high voltage (12000 volts) line. The CA/FACE investigator was informed of this incident by the California Occupational Safety and Health Administration (Cal/OSHA) on July 22, 1993 and went to the site that afternoon. An interview was conducted with the employer and pictures were taken of the incident site. The Cal/OSHA Report and the Sheriff/Medical Examiner's Autopsy Report were obtained by the CA/FACE investigator.

The victim had worked with his employer (landscape contractor) for a year, and the contractor had worked at the incident site off and on for 5 years. There were seven employees

who worked for the company and three had the same job title as the victim. There was a safety officer on staff and safety rules which addressed the work being performed by the victim at the time of the incident. The victim was wearing a harness and lifeline at the time of the incident, but the equipment failed to protect the worker from falling. It is unclear whether the worker used the equipment improperly or if the equipment failed.

INVESTIGATION

The employer in this incident was a landscape contractor. The victim's job title was that of tree trimmer. The crew was working at a location where they had worked on other occasions over the past 5 years. A job site survey had been conducted by the employer and several of his employees on the day prior to the start of the job. There had also been a brief safety meeting on the morning of the incident.

On the day of the incident, at approximately 1:15 pm, the victim had been instructed by his supervisor to cut a branch. The victim was up in a tree approximately 12 to 15 feet and was wearing a harness and lifeline (see exhibit 1A). The branch the victim cut fell on a high voltage (12000 volts) line. The victim was using a chain saw (Echo 038) to cut the branch. The saw became energized and the victim was electrocuted and fell to the ground. The victim's supervisor stated that there were company safety guidelines for cutting a branch near a high voltage line. These guidelines addressed the procedures necessary for tying off branches. The victim in this incident had not tied off the branch before cutting it. Consequently, the branch fell and hit the high voltage line. After the incident, co-workers called 911 and paramedics arrived at the scene. The paramedics arrived at approximately 1:30 pm and transported the victim to the hospital. The victim was pronounced dead a short time later.

The written safety rules of the company were directly related to the incident which occurred, but did not cover all of the seven points required under Title 8 of the California Code of Regulations (CCRs) Injury and Illness Prevention Program (IIPP). Issues which were covered under the company safety plan included written documentation of safety meetings (tailgate meetings) where topics such as electrical exposure (both direct and indirect) were discussed. Other areas discussed in these safety meetings included the specific safety training required for any employees before trimming trees within a certain distance of high voltage lines.

CAUSE OF DEATH

The Sheriff-Coroner's Autopsy Report stated the cause of death to be high voltage electrocution.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should provide a written Injury & Illness Prevention Plan (IIPP) so that employees are aware of all workplace hazards and how to avoid them.

Discussion: The employer in this incident did have written safety guidelines in place which related specifically to this incident, however, it is required that employers also maintain a specific Injury and Illness Prevention Plan under Title 8 of the California Code of Regulations (CCRs) section 3203. Under section 3203, a seven point Injury and Illness Prevention Program

(IIPP) must be in effect for all companies in California and must include the following:

1. identified persons with the responsibility for implementing the program;
2. a system for ensuring that employees comply with safe and health work practices;
3. includes a system for communicating with employees matters relating to occupational safety and health;
4. procedures for identifying and evaluating workplace hazards;
5. procedures for investigating occupational injuries and illnesses;
6. procedures to develop and implement the correction of unsafe working conditions based on the severity of the hazard;
7. employee training and instruction.

Recommendation #2: Employers should contact the electric company and discuss the options for protecting workers, either having the electrical wires d-energized or insulated if any employees are going to be cutting or trimming branches near such wires.
Discussion: This incident may have been prevented if the electrical wires near where the victim had been working had been de-energized or insulated. Under Title 8 of the California Code of Regulations (CCRs) section 2948 Notification to the Operators of High-Voltage Lines and Responsibility for Safeguards, when any operations are to be performed, tools or materials handled, or equipment is to be moved or operated within the specified clearances of any energized high-voltage lines, the persons or persons responsible for the work to be done shall promptly notify the operator of the high-voltage line of the work to be performed and shall be responsible for the completion of the safety measures as required by Section 2946 (b) before proceeding with any work which would impair the aforesaid clearance.

Recommendation #3: Employers should have employees trained in cardiopulmonary resuscitation (CPR) and first aid procedures.
Discussion: Under Title 8 of the CCRs section 3421 (j) employers must have rescue procedures in place and provide first-aid and CPR training to employees. If CPR had been performed immediately, the victim may have been saved.

Recommendation #4: Employers should ensure that workers inspect all fall protection equipment for defects each day prior to use and that workers properly use equipment at all times.
Discussion: This worker would not have fallen had either safe equipment been used or safe procedures followed. Tree trimmers should always use appropriate fall protection equipment, inspect all equipment before use to ensure that it is not damaged or defective, and use safe work procedures to prevent accidental cutting of climbing ropes, lanyards, and safety belts or straps.

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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: Alaska, California, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, and Wisconsin.

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

California FACE Program
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