

**California Department of Public Health
Occupational Health Branch**

**FATALITY ASSESSMENT AND CONTROL EVALUATION
PROGRAM (CA/FACE)**

**A Tree Trimmer is Electrocuted While Trimming a Palm Tree
Case Report: 18CA001**

SUMMARY

A tree trimmer was electrocuted while trimming palm trees in the back yard of a private residence. The trees were located in the northwest corner of the back yard and in close proximity to the utility power pole and high voltage lines. The victim was working alone when the incident occurred. Although unwitnessed, it is likely that a trimmed palm frond contacted the high voltage line and conducted electricity to and through the victim. The CA/FACE investigator determined that, in order to prevent similar future incidents, tree trimming companies and palm tree trimmers should:

- Ensure that a proper job hazard assessment and briefings are performed prior to starting work by a qualified tree worker who can assess the hazards, including electrical hazards.
- Ensure that a qualified line clearance tree worker is used when tree trimming is within 10 feet of energized high voltage power lines.

In addition, homeowners and property management companies who need palm trees trimmed or removed should:

- Hire only tree workers who are trained or certified by organizations such as the Tree Care Industry Association (TCIA) or the International Society of Arboriculture (ISA).

INTRODUCTION

On March 15, 2018, at approximately 2:30 p.m., a 29-year-old Hispanic male tree trimmer was electrocuted while trimming a palm tree in close proximity to primary voltage electrical lines. The CA/FACE investigator received notification of this incident on March 21, 2018, from the Cal/OSHA Region 4 District 3 office. On April 2, 2018, contact was made with the owner of the business who employed the victim. On April 11, 2018, the CA/FACE investigator traveled to the incident scene and interviewed the resident renting the home where the incident occurred. Photographs were taken of the incident scene. Later that same day, the investigator traveled to

the business owner's place of residence and interviewed him, the supervisor, and co-worker who were with the victim on the day of the incident. The interviews were conducted with the help of a Spanish interpreter. On April 16, 2018, the CA/FACE investigator interviewed a representative of the property management company that contracted with the employer of the victim to trim the palm tree. The coroner, fire department, and sheriff's department incident reports were also obtained and reviewed.

EMPLOYER

The employer of the victim was a family-owned and operated business that specializes in tree trimming and removal. The employer had a business license but was not a State-licensed tree service contractor, and no one was a certified tree trimmer. The owner had purchased the business just three months prior to this incident. There were six employees (including the victim), all of whom had worked for the previous owner. They all spoke Spanish as their primary language and two spoke some English but not fluently.

WRITTEN SAFETY PROGRAMS AND TRAINING

The business did not have a written safety or injury and illness prevention program (IIPP). None of the employees had ever received formal training in tree trimming or were certified tree trimmers; they all learned their trade through observation and on-the-job training (OJT). None were trained in first aid, CPR, or electrical hazard identification.

WORKER INFORMATION

The victim was a 29-year-old Hispanic male who had been working for this owner for three months. He had been an employee of the former owner doing the same work for eight years. The victim was born in Mexico and his primary language was Spanish.

INCIDENT SCENE

The incident scene was a private residence located on a short cul-de-sac street. The home was managed by a property management company that rented the residence to a private party. This property management company hired the employer of the victim to remove a pepper tree and trim all the palm trees in the front and back of the residence. The residence was a single-story building with an attached garage. The front of the house faced east and the back faced west. The back yard was rectangular in shape with a grass lawn bordered by flower beds and different planted vegetation of shrubs and trees. In the northwest corner of the back yard were three palm trees that had grown to different heights. The tallest tree (the tree involved in the incident) exceeded 50 feet in height and its fronds extended outward within 10 feet from high

voltage power lines. Also located in that corner of the yard was a utility pole that contained numerous communication lines as well as primary and secondary high voltage electrical lines.

WEATHER

The weather on the day of the incident was partly cloudy and overcast, with a slight breeze of 7 mph and an average temperature of 65 degrees F.

INVESTIGATION

On the day of the incident, the victim was assigned to a crew of four, including three tree trimmers and a foreman/supervisor. The crew had just completed two other jobs that morning before reporting to the residence where the incident occurred. They arrived at the location at approximately 12:30 p.m. and evaluated the worksite. The supervisor looked over the palm trees in the front and back of the house and then assigned the victim to trim the palm trees in the back yard and another member of the work crew to the front yard. When a crew member asked about the utility lines, the supervisor stated that he saw them but thought they were a safe distance from the trees and wouldn't be a problem. The supervisor and one of the other workers then left the site to drive to another jobsite.

The victim donned his climbing spurs and safety belt, attached a chain saw to his work belt, and climbed the tallest palm tree to begin trimming. The worker in the front yard did the same and both continued working until they stopped for lunch. After lunch, both workers went back to their respective areas to continue their work assignments. At approximately 2:15 p.m., the worker in the front yard finished trimming the palm trees. He then started picking up the palm fronds when he heard a chainsaw idling. When it continued to idle for a long period of time (approximately 15 minutes), the co-worker thought that was unusual and went to the back yard to check on the victim. He looked up and saw the victim arched backwards in his safety belt and noticed he was not moving or responding when he called out to him. The co-worker then called 911.

The fire department and paramedics arrived within five minutes of the call and surveyed the situation. They observed the victim hanging from a palm tree about 40 feet up. The victim's body was in a reverse arch position and was being held in place by his safety harness and climbing gaffs attached to his feet. They also observed an idling chainsaw dangling from the victim's tool belt. Fire department personnel were able to reach the chain saw and turn it off. When they saw the electrical lines in close proximity to the tree, they immediately contacted the electrical company and explained the situation to them. The electrical company came out and turned off all the power to the area to ensure the safety of the fire department personnel who were to retrieve the victim. The power lines were rendered safe at approximately 4:57

p.m. About 20 minutes later, the victim was lowered to the ground and placed on his back. The paramedics pronounced the victim dead at 5:20 p.m. The body was released to the county medical examiner at 5:57 p.m. The resident of the home stated that when he came home on the day of the incident he was unaware tree work was going to be performed that day. He stated that the property management company had notified him that the trees were going to be trimmed, but was not given a specific date.

CAUSE OF DEATH

The cause of death according to the death certificate was electrocution.

RECOMMENDATIONS

The CA/FACE investigator determined that, in order to prevent future incidents, tree trimming companies and palm tree trimmers should:

Recommendation #1: Ensure that a proper job hazard assessment and briefing are performed prior to starting work by a qualified tree worker who can assess the hazards, including electrical hazards.

Discussion: In this incident, the supervisor was not a qualified tree worker and did not recognize the electrical hazard in close proximity to the palm trees. A qualified tree worker is a person who, through related training and on-the-job training experience, has demonstrated familiarity with the techniques and hazards of tree maintenance, removal, and the equipment used in the specific operations involved. This individual should have the knowledge and training to assess the presence of high voltage electrical lines and take appropriate steps to safely trim the tree. If high voltage electrical lines are within 10 feet of the tree, tree trimming work should be performed by a qualified line clearance worker or the utility company notified prior to starting work. The utility company can de-energize or ground the power lines, or cover them with insulating hoses or blankets prior to starting the work. If the employer had a qualified tree trimmer who conducted a proper hazard assessment prior to starting work, the high voltage line would have been identified in close proximity to the palm tree and this fatal incident prevented.

Recommendation #2: Ensure that a qualified line clearance tree worker is used when tree trimming is within 10 feet of energized high voltage power lines.

Discussion: In this incident, the victim and his co-worker did not identify the high voltage electrical lines and were not aware of the dangers associated with working in close proximity to these lines. A qualified line clearance tree worker has knowledge about hazard recognition and

safety procedures when working in the vicinity of high voltage power lines.¹ They are aware that utility lines energized with potentially fatal voltages should never be touched (contacted) either directly or indirectly. They also are aware that electrical shock will occur when a person, by either direct or indirect contact with an energized electrical conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself and will result in serious or fatal injury. Safe procedures when working in close proximity to energized lines include:

- Wearing insulated gloves and using insulated tools to prevent the flow of electricity if accidental contact is made.
- Using an insulated bucket truck to gain access to the work area, thereby preventing the direct path for electricity to the ground if accidental contact is made.
- Calling the utility company to have the line covered with insulated tubes or blankets or have the line de-energized for the duration of the job.

If a qualified line clearance worker performed this work, he would have chosen proper safety procedures and this incident may have been prevented.

Recommendation #3: Hire only tree workers who are trained or certified by organizations such as the Tree Care Industry Association (TCIA) or International Society of Arboriculture (ISA).

Discussion: In this incident, the property management company hired a tree trimming company that had employees who were not certified tree trimmers. A certified tree trimmer is an individual who has met specific qualifications and has demonstrated an acceptable level of skill and proficiency. When hiring a company or a contractor with certified tree trimmers, property management companies and homeowners are more likely to ensure a standard of professionalism that protects consumers by:

- Having policies that promote the health, safety, and general welfare of the public.
- Ensuring that tree trimming is performed in a safe, competent, and professional manner.
- Adhering to the laws, regulations, and standards governing tree trimming.
- Providing resolution to disputes that arise from tree trimming activities.

¹ Qualified line clearance workers have received additional training about electrical hazards and the special techniques used to work safely near electrical conductors. This training is available through several organizations, including the Tree Care Industry Association (<http://www.tcia.org/EHAP/@/TCIA/SAFETY/EHAP/TCIA/SAFETY/EHAP/EHAP.aspx?hkey=bc8b307-f70a-4153-8466-442c728f7153>).

- Educating consumers so that they make informed choices.

Had the property management company hired a company with certified tree trimmers, this incident may have been prevented.

GLOSSARY:

Palm frond skirt: One or more year's accumulation of dead and drooping palm fronds at the bottom of the palm's canopy and along its trunk.

Proximity: An area within 10 feet (3.05 meters) of energized overhead electrical conductors rated 50 kilovolts (kV) phase-to-phase or less. For overhead electrical conductors rated more than 50 kV phase to phase, the distance is increased 4/10 inch (10 millimeters) for each additional kV.

Qualified tree worker: An employee who, through related training and on-the-job experience, has demonstrated familiarity with the techniques and hazards of tree maintenance, removal, and the equipment used in the specific operations involved.

Line clearance tree trimming operations: Operations which include the pruning, trimming, repairing, maintaining, chemical treatment, removal or clearing of trees, or cutting of brush and miscellaneous vegetation, that is within the vicinity of electric supply lines and equipment.

Competent person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

REFERENCES:

California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Group 3. Tree Work, Maintenance or Removal §3421. General §3423 Electrical Hazards, General §3427 Safe Work Procedures. §3428 Operating Rules.

California Code of Regulations, Title 8, Subchapter 5. Electrical Safety Orders, Group 2. High-Voltage Electrical Safety Orders Article 38. Line Clearance Tree Trimming Operations (Formerly Article 87) §2950. Application. §2951. Line Clearance Operations.

[Tree Care Industry Association: Pruning Palm Trees Safely](#)

(See: tcia.org/TCI-publications/tci-magazine/2013/06/TCI_Mag_June_2013_Digimag.pdf)

[NIOSH: Preventing Falls and Electrocutions During Tree Trimming](#)

(See: <https://www.cdc.gov/niosh/docs/92-106/default.html>)

EXHIBITS:



Exhibit #1: The palm tree involved in the incident, and its close proximity to the high voltage electrical lines. *Photo used with permission.*

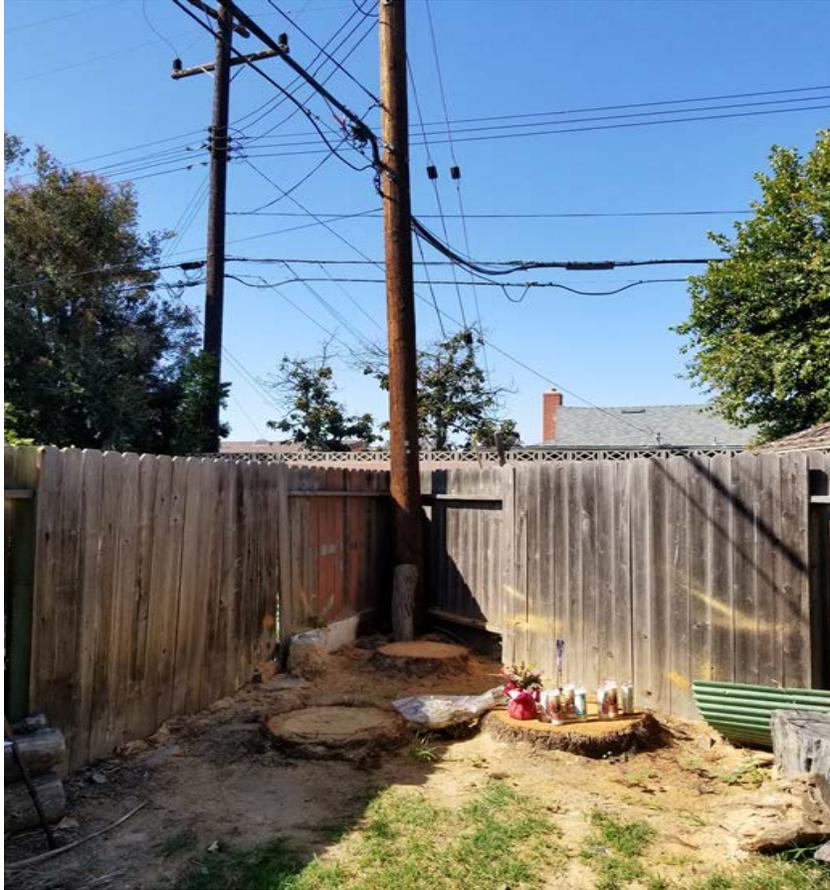


Exhibit #2. The incident scene showing the utility pole, and stumps where palm trees were cut down after the incident. The stump with the candles and flowers on it (a memorial to the victim) is the one involved in the incident. *Photo used with permission.*

Hank Cierpich
FACE Investigator

Robert Harrison, MD, MPH
FACE Project Officer

Laura Styles, MPH
Research Scientist

September 5, 2018

FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Public Health, 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 the CA/FACE program is to prevent fatal work injuries. 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, Kentucky, Massachusetts, Michigan, 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
Richmond, CA 94804
www.cdph.ca.gov/face**