

Tree Trimmer Dies After Contacting Energized Powerlines

DATE: March 10, 1992

SUMMARY

On October 12, 1991, a 35 year-old tree trimmer was electrocuted while in the process of trimming tree branches and contacted a 7,600 volt primary electrical powerline. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, the following safety guidelines should be followed:

- *A minimum clearance of ten feet must be maintained between the worker, equipment, and energized powerlines to prevent inadvertent contact;*
- *employers should develop a written employee training program in safe tree trimming techniques and electrical hazard recognition.*
- *employers and employees should be aware of the dangers of drugs and substances that may impair judgment or alertness at work.*

INTRODUCTION

On October 15, 1991, NJDOH FACE investigators were informed of this work related electrocution by the area OSHA safety supervisor. A site visit was conducted on October 21, 1991 after the victim's employer consented to participate in the FACE project. We also met with the OSHA compliance officer on October 21 to discuss details of the fatality. Information contained in report was derived from the police report, county medical examiner's report, and OSHA. We discussed the incident with the employer and the victim's co-worker, both by telephone.

The employer was the owner of a small tree trimming company that employed less than ten workers. Training was done on-the-job; there were no written instructions. The company had been contracted by a home owner to trim a large tree with branches overhanging the property line. The victim was a 35 year-old male who had been employed part time by this company for several years. He was reported to have had more than ten years experience as a tree trimmer.

INVESTIGATION

On the day of the incident, a two-man crew arrived at the home to trim a tree on the property, located at the edge of a residential street. They arrived at 11 a.m. The company owner was present to issue verbal instructions to the victim. He stated that his instructions to the victim included a warning to avoid any branches within ten feet of the powerlines, that those branches would be taken care of by the local utility

company (the utility company contracts with another tree company to trim trees within the vicinity of the high voltage lines). The employer left after instructing the tree trimmer. The second man of the crew said he was not included in the verbal instructions but stated that standard practice was to stay ten feet away from powerlines. His job was to work on the ground, feed cut branches into a chipping machine, and watch for traffic.

The victim climbed the tree to a height of approximately 40 feet. He wore boots, climbing spikes, and a safety harness which was tied to the tree with a lifeline. They worked for about two hours trimming branches and chipping them. Shortly after 1 p.m., the victim positioned himself to cut a branch off the distal end of a large limb which was twisted and curved upward. This limb was oriented parallel to and above a powerline and had a bend in it which passed to within three feet of the powerline. As he stood on the limb, he had to lean forward and reach upward to make the cut. Where he stood was approximately three feet above the powerline. The co-worker stated that the victim did not bottom cut the branch first and that the branch did not separate from the tree and fall right away. The branch fell and hit the power line (approximately three feet below his work area) before it completely separated from the tree.

No one witnessed the actual incident. After cutting the branch, the victim apparently slipped or fell from the tree limb. The co-worker stated that after he saw the branch hit the ground, he looked up to see the victim dangling by his lifeline in contact with both the high voltage line (7,600 volts) and the secondary ground wire. Rescue was possible only after the utility company arrived and de-energized the lines. The victim was pronounced dead at the scene.

CAUSE OF DEATH

The medical examiner stated that the cause of death was high voltage electrocution. The current appears to have entered on the right side of the back of the neck, traveled through the body, and exited at the bottom of the left boot. According to the medical examiner, the victim's judgment was impaired due to the combination of drugs found in his system at autopsy.

RECOMMENDATIONS AND DISCUSSIONS

Recommendation #1: A minimum clearance of ten feet must be maintained between the worker, equipment and energized powerlines to prevent inadvertent contact.

Discussion: In this situation, the victim contacted the energized powerlines because he was working too closely to the energy source. The OSHA Electrical Safety-Related Work Practices Standard 29 CFR 1910.333 (c)(3)(i) requires that persons unqualified to work on electrical circuits must maintain a minimum clearance of ten feet from power lines, a clearance which is also required under the ANSI Standard Z133.1-1988. In addition, the NJ High-Voltage Proximity Act N.J.S.A. 34:6-47.1 requires a minimum clearance of six feet from powerlines exceeding 750 volts. According to the company owner and victim's co-worker, the standard procedure is to maintain a distance of ten feet from energized sources.

Recommendation #2: Employers should develop a written employee training program in safe tree trimming techniques and electrical hazard recognition.

Discussion: Even though workers may have many years of experience, it is recommended that a written, on-going training program should be developed for safe tree trimming practices. This program must also include training in the recognition and avoidance of electrical hazards as required by the the OSHA Electrical Safety-Related Work Practices Standard 29 CFR 1910.332. One local source of information for small tree trimming companies is the New Jersey Shade Tree Federation which offers training sessions on safety. The NJ Shade Tree Federation is located at Rutgers University, Cook College, P.O. Box 231, New Brunswick, NJ 08903. The phone number is (908) 246-3210.

Recommendation #3: Employers and employees should be aware of the dangers of drugs and substances that may impair judgment or alertness at work.

Discussion: According to the medical examiner, the victim's judgment was impaired due to the combination of drugs found in his system. The FACE investigation did not determine if this was a factor in the incident or the extent that it may have contributed to it. However, it is recommended that both employers and employees should be aware of the dangers that drugs (including prescription, non-prescription, legal, and illegal) may present while working with machinery, at heights, or around other potentially hazardous conditions. Training in safe tree trimming should also include strong warnings about the use of any drugs or substances that may impair a worker's judgment or alertness.

REFERENCES

1. Code of Federal Regulations 29 CFR 1910, 1991 edition. US Government Printing Office, Office of the Federal Register, Washington DC. Pg 733-736.
2. American National Standards Institute (ANSI), Standard for Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush-Safety Requirements Z133.1-1988. ANSI, New York NY.
3. New Jersey Statutes Annotated 34:6-47.1 et seq., amended May 20, 1987. Reprinted by the NJ Department of Labor, Division of Workplace Standards, Trenton, NJ. pp 1-4

FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (FACE) PROJECT

Staff members of the FACE project of the New Jersey Department of Health, Occupational Health Service, perform FACE investigations when there is a work-related fatal fall or electrocution reported. The goal of these investigations is to prevent fatal work injuries in the future by studying: the working 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.

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