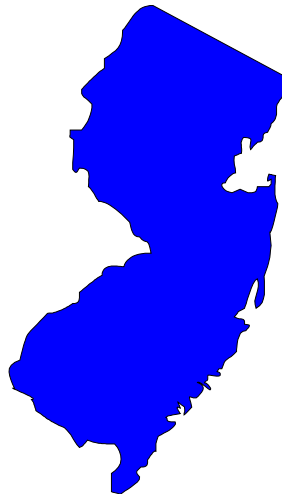


F.A.C.E. INVESTIGATION REPORT

Fatality Assessment and Control Evaluation Project

FACE #98-NJ-025-01

Sign Company Owner and Helper Electrocuted
When a Sign Post Contacts an Overhead Power Line



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TO: Division of Safety Research
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FROM: Fatality Assessment and Control Evaluation (FACE) Project
New Jersey Department of Health & Senior Services (NJDHSS)

SUBJECT: FACE Investigation #98-NJ-025-01
Sign Company Owner and Helper Electrocuted When a Sign Post Contacts an
Overhead Power Line

DATE: August 21, 1998

SUMMARY

On March 24, 1998, the 41-year-old owner of a sign company and his 60-year-old helper were electrocuted when the sign post they were raising struck a 7,200 volt overhead power line. The company was hired to raise a sign at a gas station that was being renovated. Setting their truck-mounted crane near the corner of the lot, the owner stood on the truck to operate the crane controls. His helper (who was not employed by the company) was on the ground to guide the sign post over a concrete pad. As the owner extended the crane boom, the pole struck a 7,200 volt overhead power line, electrocuting the helper. The owner saw his friend fall and jumped from the truck to help him. He was electrocuted when he contacted the energized truck while on the ground. The NJDHSS FACE program recommends following these safety guidelines to prevent similar incidents:

- A minimum clearance of 10 feet must be maintained between equipment and power lines to prevent inadvertent contact.
- Employers should conduct a job hazard analysis of all work activities with the participation of the workers.
- Cranes should be posted with signs warning of contact with overhead power lines.
- Employers should become familiar with available resources on safety standards and safe work practices.

INTRODUCTION

On March 24, 1998, federal OSHA notified NJDHSS FACE of the electrocutions of two workers who were raising a sign with a crane. On the following day, a FACE investigator visited the site to photograph the scene and interview a witness. Additional information on the incident was obtained from the OSHA investigation file and the police and medical examiner reports.

The victim was a 41-year-old self-employed owner and operator of a company that painted and erected signs. His helper, 60-year-old heating and air-conditioning technician, was reportedly not employed by the company.

INVESTIGATION

The incident site was a vehicle gas and service station on a corner lot facing a busy four lane roadway. In early March 1998, work had begun on renovating the station after it had changed ownership and was to sell a different oil company's products. This was a major renovation that included replacing the old underground storage tanks, removing contaminated soil, and repaving the pumping area in front of the station. Work on the site was expected to be completed in April.

The incident occurred on a cloudy Tuesday morning. At this point the underground storage tanks had been installed and the site was being prepared for repaving. Several concrete pads had been completed, including two circular pads near the front corner of the lot for the new oil company sign. The victim's company had been contracted to raise two metal sign poles to the concrete pads and mount the oil company sign to the poles. This was the first time the sign company had been to the site and they expected to set the sign and leave. Two men arrived in a flatbed truck equipped with a boom crane. The crew consisted of the company owner and his helper, a friend who was reportedly not employed by the company. They parked the truck near the corner where the sign was to be raised and set the truck's outriggers. At the street corner was a utility pole that carried power lines along the streets bordering the front and side of the station's lot. The crew attached the crane hook to a 25-foot long steel sign pole and hoisted it above the concrete pad where it was to be mounted. At 11:30 a.m., the helper was kneeling on the ground to guide the pole to the bolts set in the concrete pad. The company owner stood on the flatbed truck to operate the crane controls. As the owner extended the crane boom, the pole contacted a 7,200 volt primary power line running almost directly over the concrete pad. The power raced down the pole, electrocuting the helper who was holding on to it. The owner saw his friend fall and jumped from the truck to help him. As he was trying to pull him away from the truck, the owner was electrocuted when he touched the energized truck's outrigger.

A pole-mounted line fuse blew within seconds after the contact, shutting off the power to the pole and surrounding neighborhood. A gas station employee reported hearing the fuse blow and went to the front of the building where she saw two men down and a utility pole on fire. Another person started to pull a victim away from the truck as workers from a nearby medical center came out to investigate the noise and blackout. The police and EMS arrived and started CPR on both victims. Despite efforts to resuscitate the victims, both were pronounced dead at the scene.

CAUSE OF DEATH

The county medical examiner found that the cause of death for both victims was due to electrocution.

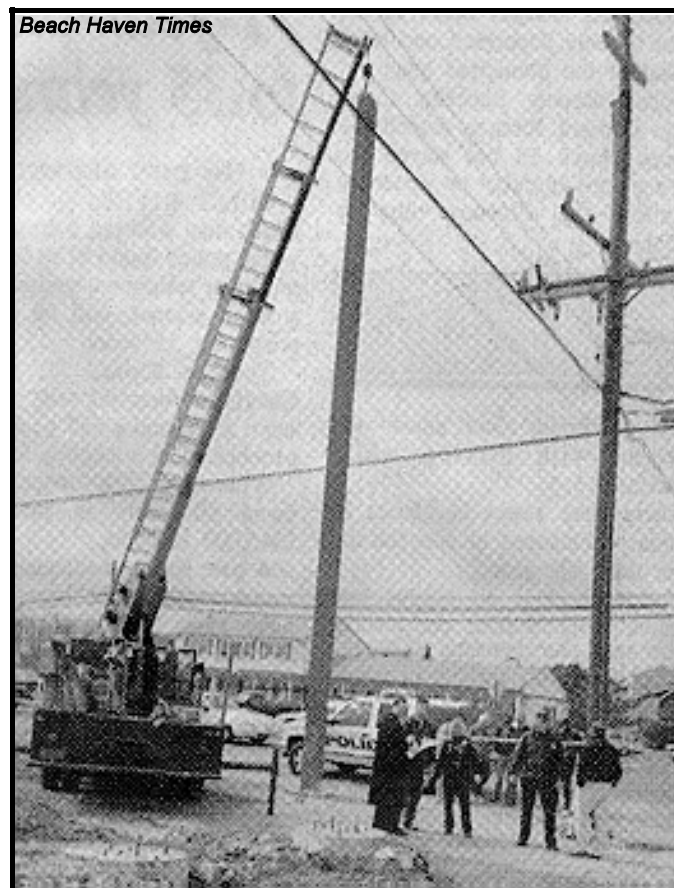


Figure 1

Newspaper Photo of Incident Site

RECOMMENDATIONS AND DISCUSSION

Recommendation #1: A minimum clearance of 10 feet must be maintained between equipment and power lines to prevent inadvertent contact.

Discussion: This incident occurred due to inadequate clearance between the crane and the power lines. This is addressed in the federal OSHA standard 29 CFR 1926.550(a)(15) (construction industry) and 29 CFR 1910.333 (general industry) which requires a minimum clearance of ten feet from power lines up to 50,000 volts and greater distances for lines with higher voltages. The NJ High-Voltage Proximity Act (N.J.S.A. 34:6-47.1) requires a minimum clearance of six feet from power lines exceeding 750 volts. If contractors cannot keep a safe distance from the power lines, they must call the utility company for assistance.

Further information is included in the attached *NIOSH Alert: Preventing Electrocutions of Crane Operators and Crew Members Working Near Overhead Power Lines*.

Recommendation #2: Employers should conduct a job hazard analysis of all work activities with the participation of the workers.

Discussion: The victims were apparently unaware of the extreme danger in working so close to the power lines. To prevent future incidents, FACE recommends that employers conduct a thorough job hazard analysis of the work site before starting work. This should be done by examining the worksite for power lines and safety hazards such as trip and fall hazards, loose debris, weather conditions, and other common hazards the workers may encounter. After finding the hazards, the workers can take action to correct or avoid them.

Recommendation #3: Cranes should be posted with signs warning of contact with overhead power lines.

Discussion: The crane did not have signs warning against contact with overhead power lines. As a reminder to employees, cranes should be posted with electrical warning signs. This is also a requirement of the NJ High-Voltage Proximity Act that requires signs on all equipment that can contact high-voltage lines. FACE recommends showing the maximum boom height and extension on the sign.

Recommendation #4: Employers should become familiar with available resources on safety standards and safe work practices.

Discussion: The victims were apparently unaware of the safety procedures and regulations for safely working near power lines. It is extremely important that employers get good training and accurate information on working safely and following all OSHA standards. The following sources of information may be helpful:

U.S. Department of Labor, OSHA

On request, OSHA will provide information on safety and health standards. OSHA has several offices in New Jersey that cover the following areas:

- Hunterdon, Middlesex, Somerset, Union, and Warren counties.....(732) 750-4737
- Essex, Hudson, Morris, and Sussex counties.....(973) 263-1003
- Bergen and Passaic counties.....(201) 288-1700
- Atlantic, Burlington, Cape May, Camden, Cumberland, Gloucester,
Mercer, Monmouth, Ocean, and Salem counties.....(609) 757-5181

NJ Public Employees Occupational Safety and Health (PEOSH) Program

The PEOSH act covers all NJ state, county, and municipal employees. The act is administered by two departments; the NJ Department of Labor (NJDOL) which investigates safety hazards, and the NJ Department of Health and Senior Services (NJDHSS) which investigates health hazards. Their telephone numbers are:

- NJDOL, Office of Public Employees Safety(609) 633-3896
- NJDHSS, PEOSH Program..... (609) 984-1863

NJDOL Occupational Safety and Health On-Site Consultative Program

Located in the NJ Department of Labor, this program provides free advice to private businesses on improving safety and health in the workplace and complying with OSHA standards. For information regarding a safety consultation, call (609) 292-0404, for a health consultation call (609) 984-0785. Requests may also be faxed to (609) 292-4409.

New Jersey State Safety Council

The NJ Safety Council provides a variety of courses on work-related safety. There is a charge for the seminars. Their address and telephone number is: NJ State Safety Council, 6 Commerce Drive, Cranford, NJ 07016. Telephone (908) 272-7712

Internet Resources

Information and publications on safety and health standards can be easily obtained over the internet. Some useful sites include:

www.osha.gov -The US Department of Labor OSHA website.

www.cdc.gov/niosh/ - The CDC/NIOSH website.

www.state.nj.us/health/eoh/peoshweb/peoshome.htm -The NJDHSS PEOSH website.

www.dol.gov/elaws -USDOL Employment Laws Assistance for Workers and Small Businesses.

ATTACHMENTS

NIOSH ALERT: Preventing Electrocutions of Crane Operators and Crew Members Working Near Overhead Power Lines. DHHS (NIOSH) Publication 95-108, May 1995. NIOSH Publications Dissemination, Cincinnati OH. Phone 1-800-356-4674.

REFERENCES

Code of Federal Regulations 29 CFR 1926 and 29 CFR 1910. U.S. Government Printing Office, Office of the Federal Register, Washington DC. pg 204

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

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