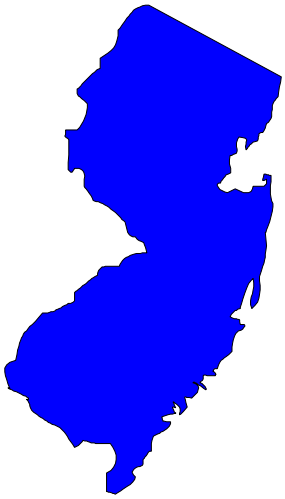
F.A.C.E.
INVESTIGATION REPORT

Fatality Assessment and Control Evaluation Project

FACE #96-NJ-003-01
Laborer Dies After Falling 30 Feet
Through a Fire-vent Skylight



New Jersey Department of Health and Senior Services
Occupational Disease and Injury Services
P.O. Box 360
Trenton, New Jersey 08625-0360
(609) 984-1863

TO**:** Division of Safety Research
National Institute for Occupational Safety and Health
Morgantown, West Virginia

FROM**:** Fatality Assessment and Control Evaluation (FACE) Project
New Jersey Department of Health (NJDOH)

SUBJECT**:** FACE Investigation #96-NJ-003-01
Laborer Dies After Falling 30 Feet Through a Fire-vent Skylight

DATE: June 27, 1996

SUMMARY

On January 15, 1996, a 57-year-old day laborer was critically injured after falling 30 feet through a plastic dome fire-vent while working on a warehouse roof. The victim and 16 other workers had been hired as temporary laborers to shovel snow from the roof of a large warehouse following a blizzard. On the roof were a number of plastic-domed fire-vents, which closely resemble skylights but are designed to melt away in a fire and allow smoke to escape from the building. At about 1:40 p.m. on their third day of work, the laborers were shoveling snow when the victim decided to take a break. He sat down on the edge of one of the fire-vents, which collapsed under his weight. The victim went through the plastic dome, falling 30 feet to the warehouse floor below. He was airlifted to the local trauma center, where he died of his injuries the next day. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, these safety guidelines should be followed:

o Read and follow the recommendations in the attached publication, *NIOSH Alert: Preventing Worker Deaths and Injuries From Falls Through Skylights and Roof Openings*.

o Be aware of the OSHA regulations requiring the guarding of fire-vents and other roof openings.

INTRODUCTION

On January 16, 1996, the county medical examiner's office notified FACE personnel of the death of a worker who fell one day earlier. A FACE investigator contacted the employer and arranged for a site visit, which was conducted on January 26, 1996. During the site visit, FACE investigators interviewed a company representative, examined and photographed the incident site, and briefly met with federal OSHA investigators. At the company's request, FACE investigators did not interview any employees due to the stress of the incident. Additional information was obtained from the OSHA compliance officer, the police report, and the medical examiner's report.

The employer was a manufacturer of flavoring and food ingredients that had been in business for 150 years. The company had been at this site since 1987 and employed 160 workers at the time of the incident. The victim was a 57-year-old male laborer who had worked for the company for three days. He had been hired as a temporary day-laborer to shovel snow from the roof.

INVESTIGATION

The incident occurred outdoors on the roof of a large warehouse located in a suburban area. The 102,000 square foot, single-story building held the production, warehousing, and office areas for the manufacturing plant. Access to the roof was gained by climbing a stairwell to a vertical steel ladder leading to a roof hatchway. The roof was an expansive flat tar roof with no parapets along the sides. There were 34 pairs of plastic-domed fire-vent skylights on the roof, each pair measuring 8 feet 11 inches long by 56 inches wide by 12 inches high. The fire-vents closely resembled skylights except that they were opaque and designed to melt away in a fire to allow smoke to escape from the building. Each vent carried a small warning sticker (in English) on the frame stating that the unit could not support body weight. A large warning notice was posted on the inside of the roof hatch, warning of the danger in both English and Spanish.

On January 7, 1996, a blizzard swept across the east coast, depositing large amounts of snow on the area. New Jersey declared a state of emergency, shutting down the roadways and closing most businesses. When the company reopened two days later, they found that 36 inches of snow had accumulated on the plant roof, which is only rated to hold 30 inches. With another storm predicted to strike the following weekend, the company tried to rent snowblowers to clear the roof but were only able to obtain one. This snowblower was not adequate for such a large area, so the company tried to hire temporary workers to shovel the snow. No temporary workers were available, so the word was passed among the plant employees that the company needed day-laborers to shovel snow.

On Thursday, January 11, the first crew of nine day-laborers (including the victim) was brought to the roof. Two company maintenance mechanics were assigned to supervisor the crew and instructed them not to sit on the plastic-domed fire-vents. One company supervisor demonstrated the weakness of a nearby fire-vent by pressing against the plastic with his hand. They were also instructed to keep the fire-vents to their sides at all times. The warnings were then repeated in Spanish. The crew shoveled snow into wheelbarrows, which were dumped in piles near the roof edge. The snow was then pushed off the roof with shovels. The crew was expanded to 15 workers the next day, and all the warnings and instructions were repeated. The crew worked for four hours until it started to snow, and were dismissed for the weekend. A supervisor stated that all the fire-vents were clearly visible through the snow.

The incident occurred the following Monday, January 15. The crew had increased to 17 laborers, including the victim who was returning for his third day. All were again given the warnings on the fire-vents before starting work. The morning passed uneventfully, and the crew returned to work at 1:30 p.m. after finishing lunch. The victim asked the supervisor if he could leave at 2:00, and the supervisor left the area to get the laborer's sign-in sheet from the other maintenance mechanic. After the supervisor left, the victim told another worker that he was tired and was going to take a break. He stuck his shovel into the snow and walked over to a fire-vent. Some of his co-workers saw him start to sit down on the vent and yelled for him to stop, but were too late. The plastic dome collapsed under his weight, and the victim went through the vent, crashed through a suspended ceiling, and struck the cement floor 30 feet below. The company emergency medical team immediately attended to the victim, who was semiconscious and bleeding badly. The police and paramedics arrived and had the victim airlifted to the local trauma center where he was admitted. His condition worsened overnight and he was placed on life support. He died of his injuries the next day at 5:45 p.m.

CAUSE OF DEATH

The county medical examiner determined the cause of death to be from multiple fractures and injuries.

RECOMMENDATIONS & DISCUSSIONS

Recommendation #1 Employers should read and follow the recommendations in the attached publication, *NIOSH Alert: Preventing worker Deaths and Injuries from Falls Through Skylights and Roof Openings.*

Discussion: After studying a number of fatalities involving falls through skylights and fire vents,

NIOSH published an alert with case studies and recommendations for preventing future incidents. These recommendations include:

* Guarding skylights and other roof openings with railings or screens before starting work, or providing fall protection devices such as lifelines and lanyards.
* Training employees to recognize the dangers of sitting or stepping on skylights.
* Affixing decals on skylights warning against sitting or stepping on them.
* Redesigning skylights to support the weight of a person who falls on it.

It should be noted that the company installed wire mesh safety guards over all the skylights following the incident.

Recommendation #2: Employers should be aware of the OSHA regulations requiring the guarding of fire-vents and other roof openings.

Discussion: In this situation, the employer recognized the hazard of the fire-vents but was apparently unaware of the OSHA regulations for guarding them. To help prevent future incidents, FACE recommends that employers have a comprehensive safety program to reduce or eliminate hazardous situations. The safety program should include, but not be limited to, the recognition and avoidance of fall hazards and use of personal protective equipment.

It is extremely important that employers obtain accurate and up-to-date information about ensuring safe working conditions and adhering to OSHA standards. The following sources of information may be helpful:

U.S. Department of Labor, OSHA

On request, OSHA will provide information on safety standards and requirements for fall protection. OSHA has four offices in New Jersey which cover the following areas:

Hunterdon, Middlesex, Somerset, Union, and Warren counties...(908) 750-4737
Essex, Hudson, Morris, and Sussex counties.....(201) 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

NJDOL OSHA Consultative Services

The New Jersey Department of Labor will provide free advice for business owners on improving health and safety in the workplace and complying with OSHA standards. Their telephone number is (609) 292-3922.

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

ATTACHMENTS

NIOSH ALERT: Perverting Worker Deaths and Injuries from Falls Through Skylights and Roof Openings. DHHS (NIOSH) Publication 90-100, National Institute for Occupational Safety and Health, Cincinnati OH (513) 533-8287.

REFERENCES

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

DISTRIBUTION LIST

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