

TO: Director, National Institute for Occupational Safety and Health

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

SUBJECT: Construction Worker Dies When He Falls Through the Ceiling of a Refrigerator Freezer Unit.

SUMMARY
California FACE Report #08CA004

A 47-year-old Hispanic construction worker died when he fell 13 feet through the ceiling of a refrigerator freezer unit to the concrete floor below. The victim had been on the job for two days and was working alone. He was in the process of checking the top of the refrigerator freezer unit for any loose debris at the time of the incident. The panels were supported by brackets attached to the freezer walls. The victim fell through a panel from which the wall bracket had been removed earlier. The victim was not wearing any fall protection. The CA/FACE investigator determined that in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP), should:

- Minimize the risk of employee falls during maintenance, disassembly, or demolition activities by performing a hazard analysis and ensuring fall prevention work practices are used.
- Provide task-specific safety training for employees who are at risk of falls when performing maintenance, disassembly, or demolition.

INTRODUCTION

On March 20, 2008, at approximately 8:40 a.m., a 47-year-old Hispanic construction worker fell 13 feet through a ceiling panel of a refrigerator freezer unit to the concrete floor below. The victim died on March 26, 2008, as a result of his injuries. The CA/FACE investigator was notified of this incident on March 28, 2008, by the West Covina District Office of Cal/OSHA. On May 8, 2008, the CA/FACE investigator inspected the incident site and interviewed the company owner, two co-workers, and the owners of the property where the incident occurred.

The employer of the victim was a company that specialized in the installation and maintenance of industrial freezers and coolers. The employer had been in business for seven years and had eight employees. The victim had been employed with the company for two days. According to the owner, the victim had worked for other contractors at this same facility performing freezer maintenance and repair for the past six years. The victim was born in Mexico and had been in the United States for seven years. According

to his employer, he spoke only Spanish and had a 12th grade education. The victim's supervisor was bilingual, and instructions to the victim were in Spanish.

The employer of the victim had a written Injury and Illness Prevention Program (IIPP). There were no written task-specific safe work procedures for employees to follow. Safety meetings were held bi-weekly in both English and Spanish and were documented. There was no employee training on fall protection. The employee had not attended safety training prior to beginning work.

INVESTIGATION

The site of the incident was a large industrial warehouse. A portion of the interior of the warehouse had refrigerator freezer units that stored frozen foods for food service and general consumer markets. The warehouse owners contracted with the employer of the victim to remodel the refrigerator freezer units. Each freezer unit had multiple ceiling panels each measuring approximately six feet long by four feet wide and eight inches in depth. Each ceiling panel was held in place with "L" shaped and "T" shaped brackets secured to the outer steel frame and walls of the freezer unit.

Prior to beginning work on the day of the incident, the victim and his supervisor reviewed the process for disassembly of one of the freezer unit ceiling panels. The victim was instructed to check the top of a freezer unit for debris and then remove the ceiling panels. According to the victim's supervisor, the victim was informed that a support bracket had been removed from one of the ceiling panels. This bracket had been removed as part of the process of dismantling the freezer unit. The victim reached the top of the refrigerator freezer unit from a rear stairway, and then moved across the top of the refrigerator freezer unit to check for loose debris. As the victim moved onto the ceiling panel with the missing L-shaped bracket, he fell through the panel approximately 13 feet to the concrete floor below. A nearby co-worker witnessed the event and summoned emergency response personnel to the incident scene. The victim was transported to a local hospital where he died from his injuries six days later.

CAUSE OF DEATH

The cause of death according to the death certificate was multiple blunt force traumatic injuries.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Employers should minimize the risk of employee falls during maintenance, disassembly, or demolition activities by performing a hazard analysis and ensuring fall prevention work practices are used.

Discussion: In this incident a bracket had been removed, creating a risk of falling in the event an employee placed weight on that section of the freezer ceiling. An employee who performs work activities at a height of 13 feet is at risk of serious injury and death in

the event of a fall. In this case, the risk of a fall would have been minimized if the ceiling bracket had been reinstalled prior to beginning work activities. A hazard analysis and abatement of the fall risk prior to beginning work would have prevented the victim from falling through the ceiling panel.

Recommendation #2: Employers should establish and implement a fall protection plan for employees who are at risk of falls while performing maintenance, disassembly, or demolition.

Discussion: In this incident, the employer did not have a fall protection plan or procedures on how to safely remove debris from freezer ceiling panels, or on the risk of falling from heights. Employees who perform maintenance, disassembly, or demolition at heights greater than 7½ feet need to be trained about the risk of falls and the appropriate methods for fall protection. Even if the work surface had been secured by reinstalling the ceiling bracket, the victim was at risk of falling from the edge of the freezer unit. If the victim had been trained and equipped with personal fall protection (such as a safety belt, harness, lanyard, or drop line), his fall and subsequent death may have been prevented.

References:

California Code of Regulations, Vol. 9, Title 8, Subchapter 4. Construction Safety Orders Article 24. Fall Protection §1670. Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices.

Indiana FACE Investigation #95IN14701:

<http://www.cdc.gov/Niosh/face/stateface/in/95in147.html>

New Jersey FACE Investigation #93-NJ-087-01:

<http://www.cdc.gov/Niosh/face/stateface/nj/93nj087.html>

Ohio FACE Investigation #99OH022:

<http://www.cdc.gov/niosh/face/stateface/oh/99oh022.html>

Wisconsin Case Report 03WI048:

<http://www.cdc.gov/Niosh/FACE/stateface/wi/03wi048.html>

Hank Cierpich
FACE Investigator

Robert Harrison, MD, MPH
FACE Project Officer

Laura Styles, MPH
Research Scientist

April 9, 2009

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, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, 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**