NJ FACE

INVESTIGATION REPORT

Fatality Assessment & Control Evaluation Project

FACE 03-NJ-020 **April 6, 2004**

Forklift Operator Killed When His Forklift is Overturned by a Backing Truck

On April 9, 2003, a 19-year-old forklift operator was killed when a dump truck backed into, and overturned, his forklift. The incident occurred at a steel mill in the yard outside the melt shop where hot slag is collected from the furnace. The victim, a full-time plant employee who was also a part-time college student, was using a forklift to transport a large bag of bulk material into the plant. He was driving across an unmarked dirt roadway where a large dump truck was waiting to collect a load of slag. As the victim drove behind the truck, the driver backed his truck, unaware that the forklift was behind him. The truck struck and overturned the forklift, and the victim was crushed under the body of the forklift. To prevent future incidents, NJ FACE investigators recommend following these safety guidelines:

- **Employers should ensure that employees are properly trained and supervised to operate industrial trucks.**

- **Employers should have clearly outlined traffic lanes for vehicles and industrial trucks.**

- **Operators should always wear a seat belt while using a forklift or other industrial truck.**

- **Employers should consider installing devices to increase the truck driver's range of vision.**

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INTRODUCTION

On April 17, 2003, the NJ FACE Project received a report from a county Medical Examiner regarding a forklift fatality that occurred on April 9, 2003. A FACE investigator contacted the area OSHA office and later contacted the employer. Arrangements were made to conduct a FACE investigation, which took place on August 28, 2003, at which time FACE investigators interviewed the company human resources officer. Investigators also viewed and photographed incident site and a similar forklift and dump truck. Additional information was obtained from the company's internal accident investigation report, the police and medical examiner's reports, and the OSHA investigation file.

The victim's employer was a large steel manufacturer that specialized in the production of coiled rod steel and reinforcing bar (SIC 3312). The plant produced approximately 11,500 tons of steel per month. This international company owned a number of facilities, including 18 reinforcing steel plants in the eastern United States, and employed approximately 4,000 employees. The current owner purchased this plant in 2002 and employed 285 employees at the time of the incident. Prior to this, the plant had been producing copper products but was sold in 1979 to a steel company that replaced most of the buildings on the site. The new management was in the process of updating their job and safety procedures, with current practices included monthly safety meetings and a joint union-management safety committee. Plant management conducted a comprehensive internal investigation following the incident.

The victim was a 19-year-old white male general utility worker who was hired by the company on March 14, 2003. His father, a company electrician, referred him to the company. He was working there full-time while going to college part-time for a law enforcement degree. His job duties required him to operate a forklift to bring supplies into the plant and to use an indoor crane to move materials in the plant. He had received two weeks of job training.

INVESTIGATION

The incident site was a steel mill located on a 94-acre property near an urban area. The mill specialized in manufacturing coiled steel rod used in making reinforcing bar and drawn wire products. The

company purchased scrap steel which was melted in an electric arc furnace. Additional ingredients were added to make a specified alloy, and the steel was made as a continuous rod which was coiled into rolls. A second, separate company also operated on the site to collect the furnace slag. Furnace slag consisted of impurities from the melting process that rise to the top of the molten steel. This material is skimmed off and cools to a hard, rock-like waste product. In this process, the slag was collected in an area under the furnace accessed by a tunnel leading to the yard outside the melt shop. The slag recovery company used a front-end loader to collect the hot slag and transfer it to a large industrial dump truck in the yard outside. This company removed and collected the slag from the furnace, separated it by size, and sold it as aggregate, road filler, or landfill.

The incident occurred on Wednesday, April 9, 2003 in the yard outside the melt shop. The victim arrived for his usual 3:00 p.m. to 11:00 p.m. work shift. He was working with a 9,000-pound capacity, counterbalanced forklift truck to transport materials stored outside into the plant. At approximately 4:00 p.m., he drove his forklift into the yard to get a palletized, 3,000-pound industrial bag (supersack) of bulk material stored about 100 yards away from the plant. The yard was a large area of packed dirt with railroad tracks running into the plant. The area also had unpaved dirt roadways running through it to allow access for the large industrial dump trucks to collect slag from the furnace. The weather was drizzling and the yard was wet with large puddles of standing water. The victim drove his forklift to the storage area, picked up a supersack, and started driving back to the plant. As he drove across the yard, he crossed over the train tracks and approached a large industrial dump truck owned by the slag recovery company. Dump trucks routinely park and operate in the area to collect slag, and the victim chose a path that crossed behind the truck to return to the plant.

No one directly witnessed the incident. The driver of the slag truck was standing nearby on fire-watch, waiting for a front-end loader to emerge from the melt shop tunnel with a load of slag. When the loader appeared, the driver went back to his truck, reportedly seeing the victim's

Photo 1
Incident Site
(Concrete dividers installed after the incident)

forklift approaching from the yard. He entered the truck, which was parked across his view of the victim, checked his mirrors, and started backing. He moved about three to five feet when he felt the truck stop. Thinking that something was wrong, he got out of the truck and found the victim's forklift behind the truck, tipped over on its side. The victim, who was not wearing his seat belt, was trapped under the body of the forklift. The truck driver tried to lift the forklift off the victim and was joined by the operator of the front-end loader who had just driven into the area. A crane operator within the plant saw the tipped forklift and called for assistance. On the ground, the front-end loader operator went back to his machine and used it to partially lift the forklift. The truck driver went to get a second forklift and the two men used both machines to upright the victim's forklift. At this time, the plant's emergency response team arrived and started resuscitation efforts on the victim. The police and Emergency Medical Service arrived and found the victim unresponsive. The victim was pronounced dead at the scene by telemetry at 4:14 p.m.

Photo 2
Identical Forklift Truck

Photo 3
Identical Dump Truck

Investigations by OSHA and the police found that the backup alarm on the dump truck and the flashing light on the victim's forklift were both operating normally. Tests found no evidence of alcohol or drug involvement with the dump truck operator or victim. OSHA later cited the employer for violation of seat belt and employee training regulations.

RECOMMENDATIONS/DISCUSSIONS

Recommendation #1: Employers should ensure that employees are properly trained and supervised to operate industrial trucks.

Discussion: In this incident, the victim was an inexperienced operator who apparently took a short cut back to the plant by driving out of the normally used traffic lanes and behind the dump truck. Federal OSHA noted that the victim was not under direct supervision while operating the forklift during his training period. NJ FACE recommends that employers ensure that all employees are properly trained and supervised before being allowed to work on their own. It was noted that the employer sent ten employees to a "train-the-trainer" forklift-training course after the incident.

Recommendation #2: Employers should have clearly outlined traffic lanes for vehicles and industrial trucks.

Discussion: To help prevent incidents such as this, NJ FACE recommends that employers create a traffic control plan including traffic lanes for vehicles, industrial trucks, and pedestrians. The lanes

should be clearly marked and well lit, and all vehicles should be required to travel within the lanes. It was noted that the employer installed concrete dividers after the incident.

Recommendation #3: Operators should always wear a seat belt while using a forklift or other industrial truck.

Discussion: The forklift operator in this incident was not using a seatbelt, which would have secured him to the seat and prevented him from being crushed under the forklift. NJ FACE recommends that all forklift owners train their employees to use seat belts and enforce a policy requiring seat belt use. Federal OSHA also requires that all operators use seatbelts in forklifts or other industrial trucks that are equipped with them. Although not a factor in this case, it should also be noted that OSHA may cite an employer who has not taken advantage of a manufacture's retrofit program to install seatbelts on older industrial trucks that are not equipped with seatbelts.

Recommendation #4: Employers should consider installing devices to increase the truck driver's range of vision.

Discussion: In this incident, the driver of the dump truck initially saw the victim but lost sight of him when he was directly behind his truck. NJ FACE recommends that the employer consider installing devices that would allow greater visibility, such as parabolic mirrors and/or video cameras that display images in the operator's cab. The truck's manufacturer should be contacted to see if they recommend any specific devices and to discuss any proposed methods. Other devices such as proximity detectors that sense objects near the vehicle are also available.

RECOMMENDED RESOURCES

It is extremely important that employers obtain accurate information on health, safety, and applicable OSHA standards. NJ FACE recommends the following sources of information which should help both employers and employees:

U.S. Department of Labor, Occupational Safety & Health Administration (OSHA)

Federal OSHA will provide information on safety and health standards on request. OSHA has four

area offices in New Jersey that cover the following counties:

☎ Hunterdon, Middlesex, Somerset, Union, and Warren counties.....(732) 750-3270

☎ 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.....(856) 757-5181

🖷 Federal OSHA Website: *www.osha.gov*

U.S. Department of Labor, Mine Safety & Health Administration (MSHA)

Federal MSHA regulates safety and health in metal and non-metal mines. The MSHA website has a great deal of useful safety and health information including detailed reports on fatality investigations. New Jersey mines are under the jurisdiction of the Wyomissing PA field office.

☎Telephone: (610) 372-2761 🖷 Website: *www.msha.gov*

NJ Public Employees Occupational Safety and Health (PEOSH) Program

The PEOSH act covers all NJ state, county, and municipal employees. Two state departments administer the act; the NJ Department of Labor (NJDOL), which investigates safety hazards, and the NJ Department of Health and Senior Services (NJDHSS) which investigates health hazards. PEOSH has information that may also benefit private employers.

NJDOL, Office of Public Employees Safety

☎Telephone: (609) 633-3896

🖷 Website: *www.nj.gov/labor/lsse/lspeosh.html*

NJDHSS, Public Employees Occupational Safety & Health Program

☎Telephone: (609) 984-1863

🖷 Website: *www.state.nj.us/health/eoh/peoshweb*

NJDOL Occupational Safety and Health On-Site Consultation 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.

☏Telephone: (609) 984-0785

🖷 Website: *www.nj.gov/labor/lsse/lsonsite.html*

New Jersey State Safety Council

The NJ State Safety Council provides a variety of courses on work-related safety. There is a charge for the seminars.

☏Telephone: (908) 272-7712.

🖷 Website: *www.njsafety.org*

Internet Resources

Other useful internet sites for occupational safety and health information:

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

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

www.nsc.org - National Safety Council.

www.state.nj.us/health/eoh/survweb/face.htm - NJDHSS FACE reports.

www.cdc.gov/niosh/face/faceweb.html - CDC/NIOSH FACE website.

REFERENCES

1. *Job Hazard Analysis*. US Department of Labor Publication # OSHA-3071, 1998 (revised). USDOL, OSHA/OICA Publications, PO Box 37535, Washington DC 20013-7535.

DISTRIBUTION LIST

NIOSH
Employer
Incident Site Owner
Labor Union(s)
NJ State Medical Examiner
County Medical Examiner
Local Health Officer
NJDHSS Occupational Health Service Internet Site
NJDHSS Census of Fatal Occupational Injuries (CFOI) Project

Fatality Assessment and Control Evaluation (FACE) Project
Investigation # 03-NJ-020

Staff members of the New Jersey Department of Health and Senior Services, Occupational Health Service, perform FACE investigations when there is a report of a targeted work-related fatal injury. The goal of FACE is to prevent fatal work injuries by studying the work environment, the worker, the task and tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. FACE gathers information from multiple sources that may include interviews of employers, workers, and other investigators; examination of the fatality site and related equipment; and review of OSHA, police, and medical examiner reports, employer safety procedures, and training plans. The FACE program does not seek to determine fault or place blame on companies or individual workers. Findings are summarized in narrative investigation reports that include recommendations for preventing similar events. All names and other identifiers are removed from FACE reports and other data to protect the confidentiality of those who participate in the program.

NIOSH-funded state-based FACE Programs include: Alaska, California, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, and Wisconsin. For further information, visit the NJ FACE website at www.state.nj.us/health/eoh/survweb/face.htm or the CDC/NIOSH FACE website at www.cdc.gov/niosh/face/faceweb.html.

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