

# NJ FACE INVESTIGATION REPORT



*Fatality Assessment & Control Evaluation Project*

FACE 01-NJ-118-01

April 24, 2002

## **15-Year-Old Youth Crushed While Cleaning a Dough Mixing Machine**

On October 21, 2001, a 15-year-old male pizzeria worker was killed when he became entangled in a machine used to mix pizza dough. The victim had arrived in the United States from Guatemala one month before the incident and had been working at the family-owned pizza restaurant for two weeks. He was paid to do odd jobs at the restaurant, mostly sweeping and cleaning. On the night of the incident, he was cleaning the pizza dough mixer as the restaurant was closing for the evening. He was working alone in the kitchen as the remaining staff cleaned the adjoining dining room. He apparently lifted the cover of the mixer, uncovering the 32-inch -diameter mixing bowl, and started the machine. As he reached in to the bowl to clean it, he became entangled on a large mixing fork (beater) that rotated inside the mixing bowl. His co-workers heard him scream, but were unable to reach him in time. NJ FACE investigators concluded that, to prevent similar incidents in the future, these safety guidelines should be followed:

- **Employers should ensure that all equipment, including manufacturer's safety devices, is maintained in safe operating condition.**
- **All machines should be de-energized before cleaning or performing other maintenance.**
- **Employers should conduct a job hazard analysis of all work activities with the participation of the workers.**
- **Employers should know and comply with all state and national laws dealing with child labor.**
- **Employers should become familiar with available resources on safety standards and safe work practices.**



## **INTRODUCTION**

On October 22, 2001, a federal OSHA compliance officer notified FACE staff of a youth who was killed in a machine-related incident. A FACE investigator conferred with the compliance officer and arranged to conduct a concurrent investigation that was done on October 25, 2001. During the visit, FACE investigators were permitted to watch OSHA interview witnesses and to examine the pizza dough mixer. The area was photographed and a FACE investigator privately interviewed the restaurant owner. Additional information was obtained from the police report, the medical examiner's report, and the OSHA investigation file.

The victim's employer was a family-owned pizza restaurant that had been purchased by the owner about 18 months before the incident. The restaurant employed five people at the time of the incident. Most of the workers spoke Spanish as their primary language, with the owner being bilingual in Spanish and English. Employee training was entirely on-the-job. The victim was a 15-year-old male youth who had recently emigrated from Guatemala. He had reportedly crossed the border illegally in California and had been detained by Customs before being released to relatives in New Jersey. After arriving in the state, he went to work for his uncle, the owner of the pizza restaurant. He had worked at the restaurant for two weeks.

## **INVESTIGATION**

The incident occurred at a pizza restaurant located in a suburban strip mall. The recently constructed restaurant was part of a local chain and had been purchased by the present owner about 18 months prior to the incident. The clean and orderly establishment was well equipped with newer ovens and kitchen appliances. One of these appliances was an Italian-made fork mixer used to mix the pizza dough. This mixer had a rotating 32-inch-diameter stainless steel bowl and was equipped with a large, heavy-duty stainless steel fork that rotated within the bowl (see photo). The machine's manufacturer listed the mixer's capacity at 220 pounds (100 kg) with dimensions of 47.3 inches by 33.5 inches by 39.4 inches (120 cm x 85 cm x 100 cm). It was equipped with a stainless steel cover that swung on hinges to cover the mixing bowl. In normal operation, the mixer was filled with flour and other ingredients and the cover placed over the bowl. The machine was started by turning the power switch

on, manually resetting the emergency stop button (which the employees used to stop the machine), and pressing one of the two start buttons that determined the machine's speed. Extra material could be added to the bowl through a grated section of the cover. The mixer was operated only by the



restaurant owner, and occasionally the cook if the owner was away.

**Photo 1** **Photo 2**  
**Photos of dough mixing machine, cover lowered (1) and raised (2)**

The incident occurred on Sunday, October 21, 2001. The victim arrived for work at 11:00 a.m. to help clean the restaurant. The owner explained that the 15-year-old youth had been hanging around the restaurant since arriving from Guatemala and that he had given him a job to give him something to do and earn some money. He described him as eager and quickly learned his chores. The day passed uneventfully until closing time when the victim was asked to clean the mixing machine. This was usually done by cleaning the bowl with soapy water and sopping the excess water out of the bowl with a towel. No one directly witnessed the incident. The victim went into the kitchen alone and started the machine. Shortly after 9:30 p.m., he apparently leaned into the bowl to clean it and became entangled on the rotating mixing fork. He screamed for help as he was pulled into the machine, and one of the other workers ran into the kitchen and hit the machine's emergency stop button. Responding police and EMS reported finding the victim unresponsive with his neck under the mixing fork. Attempts to cut the thick steel fork with a Hurst tool (Jaws of Life) were unsuccessful, and the machine had to be partially dismantled to free the victim. The county Medical Examiner pronounced the victim dead at the scene at 11:04 p.m.

On October 25, 2001, FACE staff accompanied federal OSHA investigators in an examination of the fork mixer. OSHA found that the mixer cover was equipped with a safety interlock activated by a pin pressed by the hinge of the cover. In normal operation, this interlock would activate when the cover was lifted, shutting off the machine. The cover would need to be closed before the machine could be reactivated. On this mixer, the weight of the open cover flexed the hinge enough to disengage the interlock, allowing the machine to activate with the cover open. In this incident, the youth first opened the cover, which disengaged the interlock. He then started the machine and was crushed while cleaning it.

### **RECOMMENDATIONS/DISCUSSIONS**

**Recommendation #1: Employers should ensure that all equipment, including manufacturer's safety devices, is maintained in safe operating condition.**

**Discussion:** An inspection of the fork mixer by OSHA found that the safety interlock on the cover had failed, allowing the machine to operate with the cover open. The restaurant owner and staff were unaware of this fault. To prevent future incidents, NJFACE recommends that equipment be maintained in safe operating condition. Machine owners should carefully read the machine's manual for proper instruction for operation, safety devices, and routine maintenance. If the manual is not available, then the machine manufacturer or their distributor should be contacted to get a copy. Interlocks and other safety devices should be tested on a periodic basis.

**Recommendation #2: All machines should be de-energized before cleaning or performing other maintenance.**

**Discussion:** The cover on this mixer was an important machine guard necessary for the safe operation of the machine. Cleaning the machine required lifting the cover, potentially exposing the worker to the mixing fork inside. To prevent future incidents, NJ FACE recommends disconnecting the power to all machines before cleaning and servicing them. With a plug-in machine such as this, removing the plug is a simple and effective way to de-energize the device. Machines permanently wired into the electrical system must be de-energized with a formal lock-out, tag out system as required by OSHA regulations.

**Recommendation #3: Employers should evaluate each job for hazards with the participation of the workers.**

**Discussion:** To prevent incidents such as this, we recommend that employers evaluate all work areas and job tasks with the employees. This hazard analysis should begin by reviewing the work activities that the employee is responsible for and the equipment that is needed. Each task is further examined for mechanical, electrical, chemical, or any other hazard the worker may encounter. Additional information on conducting a job hazard analysis is included in the appendix.

**Recommendation #4: Employers should know and comply with all state and national laws dealing with child labor.**

**Discussion:** Although the victim was a relative working in a family restaurant, the employer was still responsible for following the child labor standards for minors under 18 years of age, and additional regulations for workers under 16 years of age. A brief summary of these rules is included in the appendix. They include:

- Completing an Employment Certificate (working papers) showing the hours the minor will be working and the wage that he/she will be earning.
- Prohibiting minors from working in specified dangerous occupations. Federal and NJ State regulations specifically prohibit minors less than 18 years of age from working with bakery dough mixing machines, even if the machine is turned off.
- Ensuring that the minor works the appropriate amount of hours as per their age and status in school (if school is in session). It should be noted that minors are never allowed to work before 7:00 a.m. or after 9:00 p.m.

This is only a partial listing of the regulations. Please consult the New Jersey Child Labor Laws and Regulations for a complete listing. This is available from the NJ Department of Labor, Division of Wage and Hour Compliance, PO Box 389, Trenton NJ 08625-0389, telephone (609) 292-2337 or (609) 777-3200. The federal regulations are available from the US Department of Labor, Wage-Hour Division at (609) 989-2247.

**Recommendation #5: Employers should become familiar with available resources on safety standards and safe work practices.**

**Discussion:** It is extremely important that employers obtain accurate information on safety and applicable OSHA standards. The following sources of information may be helpful:

**U.S. Department of Labor, OSHA**

Federal OSHA will provide information on safety and health standards on request. OSHA has several 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](http://www.osha.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. Their telephone numbers are:

- ☎ NJDOL, Office of Public Employees Safety .....(609) 633-3896
- 🌐 Website: [www.state.nj.us/labor/wps/psosh/peosh/peosha.htm](http://www.state.nj.us/labor/wps/psosh/peosh/peosha.htm)
- ☎ NJDHSS, Public Employees Occupational Safety & Health Program.....(609) 984-1863
- 🌐 Website: [www.state.nj.us/health/eoh/peoshweb](http://www.state.nj.us/health/eoh/peoshweb)

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- ☎ NJDOL, Office of Public Employees Safety .....(609) 633-3896
- 🌐 Website: [www.state.nj.us/labor/wps/psosh/peosh/peosha.htm](http://www.state.nj.us/labor/wps/psosh/peosh/peosha.htm)
- ☎ NJDHSS, Public Employees Occupational Safety & Health Program.....(609) 984-1863
- 🌐 Website: [www.state.nj.us/health/eoh/peoshweb](http://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. For information on how to get a safety consultation, call ☎(609) 292-3923.

🌐 Website: [www.state.nj.us/labor/wps/psosh/onsite/onsite.htm](http://www.state.nj.us/labor/wps/psosh/onsite/onsite.htm)

### **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. Their telephone number is: ☎(908) 272-7712.

🌐 Website: [www.njsafety.org](http://www.njsafety.org)

### **Internet Resources**

Other useful internet sites for occupational safety and health information:

[www.cdc.gov/niosh](http://www.cdc.gov/niosh) - The CDC/NIOSH website.

[www.dol.gov/elaws](http://www.dol.gov/elaws) -USDOL Employment Laws Assistance for Workers and Small Businesses.

[www.nsc.org](http://www.nsc.org) – National Safety Council.

[www.state.nj.us/health/eoh/survweb/face.htm](http://www.state.nj.us/health/eoh/survweb/face.htm) – NJDHSS FACE reports.

### **REFERENCES**

*Job Hazard Analysis*. US Department of Labor Publication # OSHA-3071, 1998 (revised).

USDOL, OSHA/OICA Publications, PO Box 37535, Washington DC 20013-7535.

*NIOSH Alert: Preventing Deaths and Injuries of Adolescent Workers*. DHSS (NIOSH) Publication 95-125, NIOSH Publications Dissemination, Cincinnati, OH (800) 356-4674.

*New Jersey State Child Labor Laws and Regulations*. NJ Department of Labor, Division of Wage and Hour Compliance, PO Box 389, Trenton NJ 08625-0805.

*Reference Guide: Labor Laws for Kids*. NJ Department of Labor, Division of Wage and Hour Compliance, PO Box 389, Trenton NJ 08625-0805

## **DISTRIBUTION LIST**

### Immediate Distribution

NIOSH

Employer

NJ State Medical Examiner

County Medical Examiner

Local Health Officer

NJDHSS Occupational Health Service Webmaster

NJDHSS Census of Fatal Occupational Injuries (CFOI) Project

### General Distribution

USDOL-OSHA New Jersey Area Offices (4)

NJDOL Office of Public Employees Safety

NJDHSS Public Employees OSHA

NJDOL OSHA Consultative Service

NJ Institute of Technology

University of Medicine & Dentistry of NJ

Rutgers University

Stevens Institute of Technology

NJ Shade Tree Federation

NJ Utilities Association

NJ School Boards Association

Public Service Electric and Gas Company

Liberty Mutual Insurance Company Research Center

Private Consultants (2)

Private Employers (3)

Public Employers (4)

Other Government Agencies (2)



**Fatality Assessment and Control Evaluation (FACE) Project**  
**Investigation # 01-NJ-118-01**

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 the FACE Program is to prevent future injuries by studying and identifying the risk factors that contribute to workplace fatalities, by recommending intervention strategies, and by disseminating information to employers and employees. NJ FACE data is reported to NIOSH for trend analysis. All identifiers are removed from the 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, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin.

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