

TO: Director, National Institute for Occupational Safety and Health

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

SUBJECT: Two maintenance mechanics died when a suspended steel dock plate fell on them.

SUMMARY
California FACE Report #04CA013

Two 53-year-old Hispanic male maintenance mechanics died when a suspended steel dock plate fell on them. The steel dock plate was part of a dock leveler that was being replaced. The steel dock plate was being suspended by a chain that ran through a pipe welded to the top of the dock plate and attached to the hook of a deck crane. The weld connecting the pipe to the dock plate broke while both victims were working under the suspended load. The loading dock leveler had a safety bar underneath the dock plate to hold it when in the raised position, but the safety bar was not used at the time of the incident. The method used to perform the lift was not the one that the company recommended. The CA/FACE investigator determined that in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP), should:

- Ensure employees never place themselves under a suspended load.
- Ensure employees follow recommended procedures when replacing the dock levelers.

INTRODUCTION

On Friday, October 15, 2004, at approximately 10:30 am, two 53-year-old Hispanic males died when the dock plate they were working underneath fell on them. The CA/FACE investigator learned of this incident on October 28, 2004, through the Division of Occupational Safety and Health (Cal/OSHA). On February 1, 2005, the CA/FACE investigator traveled to the business where the incident occurred and interviewed the company's management and co-workers. The loading dock leveler involved in the incident was photographed and the area where the incident took place was also photographed and inspected.

The employer of the victims was a large producer of recycled lead. The company had been in business for over 40 years and had 650 employees nationwide. The facility where the incident occurred had 184 employees. Both victims were born in Mexico and had been in the United States for over 30 years. Both victims spoke English and Spanish. One victim had been employed by the company for 30 years and the other for 14 years.

The company had a written Injury and Illness Prevention Program (IIPP). Safety meetings were held monthly at the beginning of the shift and were documented. The company had a

training program that included an initial three-day mandatory training when hired. Annual eight-hour training courses were available for all employees on required elements that were job related. The training and safety program emphasized the behavioral science technique (BST) approach where behavior was stressed as an important safety factor. Both victims were trained in their respective fields and were also skilled welders, however, they were not certified. It is not known if they had received training specific to the dock levelers.

INVESTIGATION

The site of the incident was a loading dock at the rear of the business. The mechanical device involved in this incident was a piece of machinery referred to as a “dock leveler.” Dock levelers allow forklifts to enter and exit the beds of trucks and trailers by bridging the gap between the loading dock and truck beds and trailers. The hydraulic mechanism that raised and lowered the dock plate was underneath the plate. The plate also had a safety bar attached to its underside that, when engaged, supported the plate.

On the day of the incident, one of the dock levelers was being returned to service after being removed for repairs. The victims were assigned the task of placing the dock leveler back in service. They had performed this task many times in the past. The company’s written procedures for this task followed the manufacturer’s recommended procedures which were that a forklift would elevate the dock plate, the safety bar would then be engaged, and then any work would proceed. On the day of the incident, these procedures were not followed. Instead, the victims welded a piece of pipe to the top of the dock plate. A chain was placed through the pipe and then attached to the hook of a small deck crane. The dock crane was then used to move the plate into position. It is not known if the victims had used this method to raise a dock plate in the past.

While the dock plate remained suspended, the victims moved under the dock plate and started connecting the hydraulic hoses without first engaging the safety bar or blocking the plate in the raised position. The weld that attached the pipe to the top of the dock plate broke and the dock plate fell, striking both victims in the back. One victim was struck but fell away from the dock plate while the other remained trapped underneath. Another employee working in the vicinity heard the loud noise and came over to investigate. The employee used a forklift to raise the dock plate off the trapped victim. The paramedics responded and administered CPR to both victims. One victim was transported to the hospital via ambulance in full cardiac arrest. The other victim was air lifted to the hospital. Both victims died as a result of their injuries.

CAUSE OF DEATH

The cause of death of one victim, according to the death certificate, was traumatic injuries. The cause of death of the other victim was traumatic asphyxia with crush injuries.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure employees never place themselves under a suspended load.

Discussion: Employees should never place themselves under a suspended load without first securing the load to ensure it will not move or fall. The dock leveler had a safety bar that could have been used to support the dock plate in a raised position. Blocks, chocks, cribbing, and safety bars are all devices used to accomplish this goal. Had the victims used any one of these devices, this incident might have been prevented. Safe work practices can be enhanced through programs of task-specific training, supervision, rewards, and progressive disciplinary measures.

Recommendation #2: Ensure employees follow recommended procedures when replacing the dock levelers.

Discussion: The company had a standard procedure for the removal, repair, and replacement of the dock levelers. The replacement portion of the procedure required the use of a forklift to raise and hold the dock plate until it was secured in place with the built-in safety bar. This procedure was one that had been developed by the dock leveler manufacturer and had been used in the past without incident. If a standard procedure is going to be changed, a thorough analysis of the changes should be performed prior to implementation to ensure that any hazards are abated.

References:

California Code of Regulations, Vol. 9, Title 8, Sections 3337(d), 5002, 5158

<http://www.cdc.gov/niosh/face/In-house/full9624.html>

EXHIBITS:



Exhibit 1

The dock leveler involved in this incident



Exhibit 2

The dock leveler in the raised position supported by a forklift showing the area underneath the dock plate.



Exhibit 3

The safety bar used to hold the dock plate in the raised position when access is needed underneath.

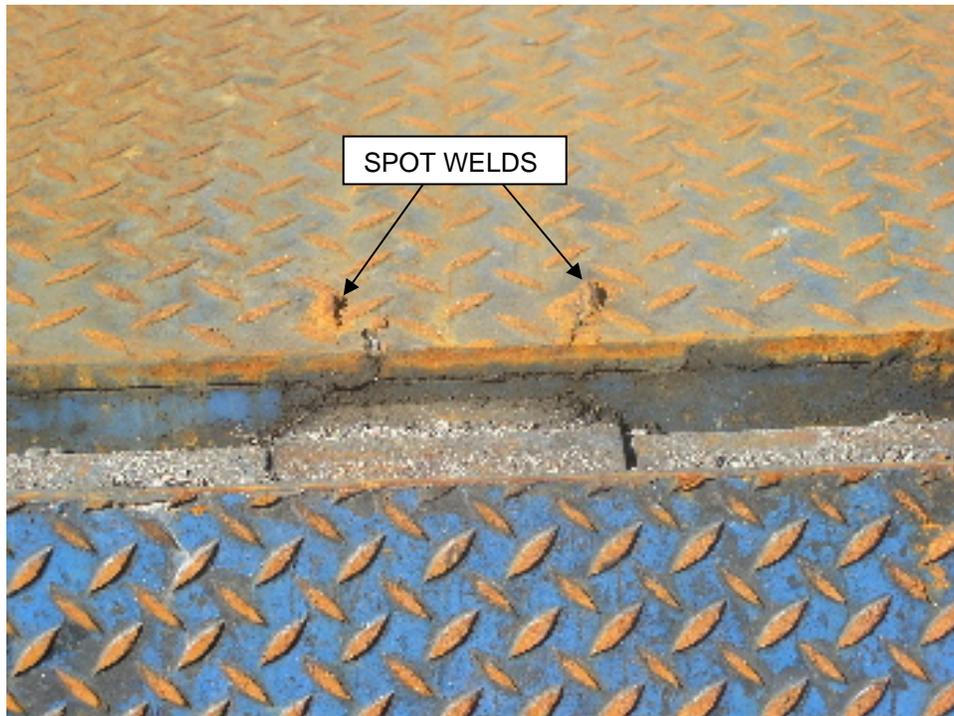


Exhibit 4

The spot welds on top of the dock plate where the pipe was welded.

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations on work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. 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: Alaska, California, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, and Wisconsin.

Additional information regarding the CA/FACE program is available from:

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