The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research

Worker Dies in Mining Equipment Repair Facility

FACE 8612

Summary

The National Institute for occupational Safety and Health (NIOSH), Division of Safety Research (DSR) is currently conducting the Fatal Accident Circumstances and Epidemiology (FACE) Project which is focusing primarily upon selected electrical-related fatal injuries and confined space fatalities. By scientifically collecting data from a sample of fatal accidents it will be possible to identify and rank factors which influence the risk of fatal injury for selected employees.

On December 24, 1985, a welder working in a mining equipment repair facility received severe internal injuries when a large block of frozen material fell from a coal car and pinned him against a grinder.

Contacts/Activities:

The Deputy Chief Medical Examiner for the North Central Region of West Virginia notified NIOSH of this fatality and requested technical assistance. This case has been included in the FACE Project. On January 2, 1985, the DSR research team (a safety specialist and a medical officer) conducted a site visit, met with an employer representative and a co-worker, and photographed the accident site.

Overview of Employer's Safety Program:

The victim worked for a mining equipment repair facility that employs seven people; he was one of three welders employed at the facility.

The company has no safety program and no formal job training.

Synopsis of Events:

The day prior to the accident the wheel assemblies of a 20 ton coal car were removed. The bolts were "frozen" and cutting torches were used to remove the wheels on both ends of the car. Usually, these assemblies can be removed without cutting. On December 24, 1985, the victim (a 50 year-old male welder) was grinding a small metal plate. As he faced the grinder, the coal car (26 feet by 7 feet) was lying lengthwise behind him on its side, so that the open bed of the car was facing his back (see Figure 1). The car was approximately three feet behind him. The "bottom" of the car contained frozen material (ice mixed with dirt, coal, and slag).

As the victim worked, a large (3.5 X 4.5 X 1 ft) piece of the frozen material weighing approximately 1000 pounds became dislodged from the upper half of the car (above the bed's center rib), fell and struck his back, and forced him forward into the grinder. The frozen material pinned him against the grinder and pushed him below it.

The supervisor heard the grinder "chatter". Thinking the victim might have caught his hand in the wheel, he ran to see what was happening. He found the victim pinned against the body of the grinder by the large block of frozen material. The supervisor and two co-workers were able to raise the block from his back and extricate him from the machine. His supervisor estimated that he was pinned by the block of material for approximately 30 seconds.

An ambulance was called and arrived in approximately ten minutes. The supervisor went to the local hospital in a separate vehicle and estimates that the trip took the ambulance approximately fifteen minutes. The supervisor told the emergency physician that the block of material weighed approximately 300 pounds (underestimation). The victim was referred to a regional medical center where he was found to have severe internal injuries. On December 27, 1985, he died from these injuries and complications arising from them.

Cause of Death:

The medical examiner determined the cause of death to be heart failure and overwhelming infection associated with the interruption of the intestinal blood supply. This resulted from blunt abdominal trauma.

Recommendations/Discussion:

Recommendation #1: If a coal car is to be turned on its side for any reason, all debris in the bottom of the car should be safely removed.

Discussion: The welder was working with the open bed of the car to his back (see Figure 1). If the car had been emptied prior to turning it on its side, there would have been no exposure to falling material and this accident would have been prevented.

Recommendation #2: The employer should initiate a safety program that identifies hazards, promotes hazard awareness, addresses specific tasks, and stresses safety training.

Discussion: The company did not have a safety program that addressed safety training and procedures specific to the repair work performed at the facility. The company should identify the hazards associated with the tasks being performed and written procedures should be developed and implemented that minimize or eliminate hazards. The use of a cutting torch on the car and leaving it inside (temperature between 50 and 60 degrees) overnight led to an identifiable hazard, if the car were left on its side (i.e. melting and falling of debris). Once these procedures and safety training are developed the employer should assure that they are implemented and enforced.

Return to In-house FACE reports

Last Reviewed: November 18, 2015