The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research

Truck Driver Suffocates in Sawdust Bin in Pennsylvania

FACE 8619

Introduction:

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 and confined space-related fatalities. By scientifically collecting data from a sample of fatal accidents, it will be possible to identify and rank factors that influence the risk of fatal injuries for selected employees.

On February 21, 1986, a 22 year-old self-employed truck driver died after entering the top of a 22 foot high by fifteen foot square sawdust bin. He was suffocated when the sawdust inside the bin collapsed and buried him.

Contacts/Activities:

This case was discussed with the State Police and the County Coroner and NIOSH agreed to provide technical assistance. This case has been included in the FACE Project. A researcher (a safety specialist) visited and photographed the site of the fatality. An interview was conducted with the owner of the facility.

Background/Overview of Employer's Safety Program:

The facility at which the fatality occurred has been in operation for the past 115 years and has been under the present ownership for the past four years. The facility employs six full-time workers. Fifty percent of the business at the facility involves the manufacturing of wooden gauge (measuring) poles for the local oil industry while the other fifty percent of the business is devoted to surfacing lumber for the local lumber industry. Safety rules exist that cover the work performed in the wood shop. No written safety rules exist that outline precautions to be taken when entering the sawdust bin; however, when the victim began hauling sawdust away from the facility one and one-half years ago, the owner and the victim discussed the hazards that might be encountered upon entering the sawdust bin. Both men were aware of the potential hazards. A safety line was present in the sawdust bin, but was not utilized by the victim on the day of the incident.

Synopsis of Events:

The victim had hauled sawdust away from the facility for the past one and one-half years. The owner did not receive payment from the victim for the sawdust, nor did the victim bill the owner for hauling the sawdust away from the facility. The only stipulation in the agreement was that the victim would keep the level of sawdust inside the bin at such a level that production would not have to be interrupted. The sawdust bin was located outside and to the rear of the facility. At 10:30 a.m. on the day of the incident, the victim pulled his truck underneath the auger that dispensed the sawdust. This auger was mounted five feet above ground level on the side of the sawdust bin at approximately a forty-five degree angle from ground level. The control switch was mounted adjacent to the auger. The victim turned the auger on, but very little sawdust came out of the auger. The victim then turned the auger off. It was not unusual for the sawdust to accumulate on the sides of the bin. When this occurred the victim or the owner (the only two workers allowed in the bin) would climb a ladder to the entrance, which was located on the side of the bin twenty-two feet above ground level. The owner or victim would then utilize a section of pipe to knock sawdust from the sides of the sawdust bin into the auger attachment. Since it was sometimes necessary to enter the sawdust bin to accomplish this task, a safety line was present inside the entrance. The owner stated that he had to remind the victim to use the safety line on several occasions.

At approximately 11:00 a.m. the victim entered the sawdust bin and was in the process of knocking the sawdust down into the auger attachment when the surface beneath him gave way and he was buried by the sawdust. He had not attached the safety line to himself. To compound the problem, sawdust from the wood planers in the shop continued to be blown into the sawdust bin.

At 11:15 a.m. the owner had to move the victim's truck so that a truck hauling gravel could pass through. The owner was not alarmed when he did not see the victim since it was commonplace for the victim to ride into town with someone to get coffee or something to eat. The owner then left for a doctor's appointment. When the owner returned from his doctor's appointment at 1:15 p.m. he noticed that the victim's truck had not been moved. He climbed the ladder and saw that the sawdust bin was filled to capacity. The owner also saw the end of the pipe protruding from the sawdust in the center of the bin. The owner descended the ladder, entered the facility, and asked the workers if they had seen the victim; they hadn't. The owner ordered all operations to be stopped. He then exited the facility with one of the workers and turned the auger on. The owner and worker then climbed the ladder. The owner entered the sawdust bin without utilizing the safety line and quickly sunk into the sawdust up to his chest. The worker was able to rescue the owner. As the level of sawdust in the bin dropped, the victim was uncovered. At approximately 1:30 p.m. the victim was removed from the sawdust bin and was pronounced dead at the scene by the county coroner.

Cause of Death:

The county coroner listed asphyxiation as the official cause of death.

Recommendations/Discussion:

Recommendation #1: All safety equipment provided at a worksite should be utilized.

Discussion: The owner and the victim in this case both realized the inherent dangers of the unstable material inside the sawdust bin. For this reason a safety line was installed inside the upper entrance of the sawdust bin. Workers should not allow themselves to be lulled into a false sense of security when working in a confined space containing unstable material (i.e., sawdust). Had the victim used the provided safety line in this instance, the likelihood of a fatality occurring would have been greatly reduced.

Recommendation #2: When work is being performed in a confined space containing unstable material, a standby person must be utilized.

Discussion: A standby person stationed outside the confined space containing unstable material (i.e., sawdust) should maintain constant communication with the worker inside the area. If visual contact cannot be maintained, the standby person should at least maintain voice contact. The use of a standby person by the victim might have prevented the fatality;

the use of a standby person by the owner prevented a rescue attempt fatality.

Recommendation #3: The feasibility of installing an electrical interlock system in the facility should be examined.

Discussion: An electrical interlock system could be installed in the facility. This system would disconnect the power to the auger, the blowers, and the planers inside the facility when the entrance to the sawdust bin was opened. This would eliminate the possibility of sawdust being drawn down into the auger causing the surface beneath a worker to collapse, and without the blowers and planers operating, additional sawdust would not be blown into the bin. In addition, this safeguard would alert plant personnel that someone was entering the storage bin.

Recommendation #4: Facilities whose operations include entrance into a confined space should develop comprehensive policies and procedures for confined space entry and emergencies.

Discussion: Prior to confined space entry, a hazardous operation should be explained by written procedures that address the hazards associated with entry. Several areas normally addressed by procedures such as this are permit systems (notification of other personnel), standby personnel, and procedures to be followed in an emergency. In this case all of the above areas were not initiated in accordance with generally accepted and established procedures. (The NIOSH Confined Space Document, “Working in Confined Spaces”, Publication 80-106, discusses these procedures in detail.)

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