

Public Health
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Subject: Worker Killed in Fall From Oil Tank

SUMMARY

A 50-year-old male was killed when he fell from the top of a 12-foot high oil tank. The victim was an oil gauger for a company that transports crude oil. His job was to obtain samples of the oil to check its quality. On the day of the incident he was to check the oil at a site located about 100 miles from his office. He was an experienced gauger and had been to this site many times before. This company owned four cylinder-shaped oil tanks. Three of the tanks were 15 feet high and one was 12 feet high with a diameter of 8 feet; each tank had a ladder welded to the side. There were no guardrails or other safety devices on the tops of the tanks, and the victim was not using any fall protection equipment. As was his usual practice, the victim was working alone and had ascended the ladder of the 12-foot tank to take a sample of oil through a 12-inch opening on the top of the tank. The owner of the company, who had been indoors while the victim was working, went outside and found him lying on the ground beside the tank. Although there were no witnesses to the fatal incident, evidence of fresh oil on the bottom of one of his boots and an oil smear on the top of the tank suggest that he slipped on the oily residue, lost his balance and fell. Upon finding the victim the owner called 911. Rescue personnel arrived within five minutes. The victim was pronounced dead at the scene. Toxicology results later revealed that the victim had a blood alcohol concentration of 0.17.

In order to prevent similar incidents from occurring, FACE investigators recommend:

- ▶ Employers should follow the OSHA guidelines for personal protective equipment
- ▶ Sites should be equipped with safety devices such as nonskid surfaces and railings on top of the tanks, and the surfaces on top should be kept free of oily residue
- ▶ Employers should develop, implement, and enforce a written safety program which includes worker training in recognizing, avoiding and abating hazards in the workplace

- ▶ Workers should refrain from drinking alcoholic beverages while on the job, as it may hinder judgment, affect balance and thus contribute to injury

INTRODUCTION

On March 6, 1996, KY FACE was informed of a fatality that occurred on March 5. An investigation was initiated and a visit to the area was made on March 12. Interviews were conducted with the deputy coroner and the emergency medical services (EMS) personnel who had been present at the scene. Photographs were taken of the site. The Occupational Safety and Health (OSH) inspector who investigated the case was later interviewed via telephone. Copies of the autopsy, toxicology report, and the death certificate were obtained.

The business employing the victim had about 20 employees; four of the workers were employed as gaugers, doing the same type of work as the victim. This business had no formal safety training program and only occasionally held meetings which covered topics related to safety on the job.

The victim had been employed with the business for about 22 years. He had held several different jobs within the establishment during his tenure and had many years of experience as a gauger. In addition, his father had done this type of work so he had been around the oil industry most of his life. He had been in generally good health.

INVESTIGATION

The victim in this case was a gauger for a business which transports crude oil. His job was to check the quality of the oil by taking samples through an opening on the top of the holding tank. Oil is checked for water content and other contaminants before the product is transported. His job involved carrying an instrument weighing approximately 15-20 pounds to the top of the tank to obtain a measured quantity of oil. This process takes about 5-10 minutes. The samples are then checked on the site using a portable device that is kept in the truck. A site visit of four tanks usually takes about one hour. Gaugers employed at this establishment complete about 50 site visits per month.

On the day of the incident, the weather was clear and cool, and the victim traveled about 100 miles to the first site, an oil company where he often did work. Over the years he had become friends with the husband and wife who were the owners of this company. This site had four oil tanks, situated side-by-side, parallel to an access road. Three tanks were 15 feet high and had a capacity of 210 barrels; one was 12 feet high with an 8-foot diameter and a capacity of 115 barrels. Each tank had a ladder attached to the side and a 12-inch opening in the top through which the oil samples were taken. The surface on top of the tanks was smooth metal and was slightly rounded upward toward the center, where the opening was located. There were no guardrails around the tops of the tanks.

As usual, the victim was working alone on the day of the incident. He arrived on the

property about noon and after talking with the owners for a few minutes, he proceeded with his job while the owners remained in their house, which was located about 40-50 feet from the oil tanks. He climbed the ladder to the top of the 12-foot tank to begin taking the samples. About 1:00 pm the owner went outside and found the victim lying on the dirt ground. Oil on the bottom of his boot and an oil smear on top of the tank suggest that the victim slipped in the oily residue on top of the tank and fell off. Upon finding the victim, the owner immediately called 911. The call was dispatched at 1:04 pm and rescue crews arrived at 1:09 pm. The coroner was called and the victim was pronounced dead at the scene. The death certificate indicates time of death as 1:10 pm.

CAUSE OF DEATH

The cause of death as given on the death certificate is non-displaced cervical spinal fractures due to injuries sustained in a fall from height. Toxicology results revealed that the victim had a blood alcohol concentration of 0.17.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should follow the OSHA guidelines for personal protection.

Discussion: Employers that are under OSHA jurisdiction are required to follow the OSHA safety standards for personal protective equipment (PPE), and routine inspection of worksites can help identify potential hazards. In this case, OSHA standards for use of PPE in general industry (29 CFR 1910.132) would apply. This includes 29 CFR 1910.132 (d)(1) which states that the employer should assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment. Written documentation should be completed that verifies the employer has performed the workplace hazard assessment [29 CFR 1910.132 (d)(2)]. Worksites should have both scheduled and unscheduled inspections.

Appropriate personal protection, such as fall protection equipment, can then be implemented, potential hazards can be removed when possible, or extra precautions taken, such as not working alone. In this case, using fall protection equipment could have prevented the fatal injury. In addition, an inspection of the tanks could have alerted the site owner and the worker to the oil spilled on top of the tank and then the area could have been cleaned.

Because this is not a construction site, the employer is not bound by the OSHA fall protection standard. However, a hazard evaluation might have identified a need for anchorage points, lanyards, and a safety harness.

Recommendation #2: Sites should be equipped with safety devices such as nonskid surfaces and railings on top of the tanks, and the top surfaces should be kept free of oily residue.

Discussion: Oil tanks should be required to have nonskid surfaces on top and railings

around the edges of the tanks to provide protection for gaugers and others who must do work on top of the tanks and are at risk of injury due to slips and falls. Regular cleaning of the surfaces of tanks after oil samples are taken can decrease the risk of slipping in oily residue. In addition, employers should consider equipping gaugers with a small container of an oil absorbent product to spread on top of the tank in the event of oil spillage.

Recommendation #3: Employers should develop, implement, and enforce a written safety program which includes worker training in recognizing, avoiding and abating hazards in the workplace.

Discussion: In this case, the employer did not have a formal written safety program to address safety procedures regarding work performed in the field. Implementation and enforcement of a comprehensive written safety program would reduce or eliminate worker exposures to hazardous situations. The program should include recognition of and avoidance of fall hazards, and proper use of safety equipment such as a harness and lanyards. Employees should be required to participate in regularly scheduled training and safety sessions that are conducted by competent personnel. Employees should be encouraged to actively participate in workplace safety.

Recommendation #4: Workers should refrain from drinking alcoholic beverages while on the job, as it may hinder judgment, affect balance and thus contribute to injury.

Discussion: Working while intoxicated puts the employee and others working at the site at risk of injury. Also, in this case the victim was most likely driving while intoxicated, which is unlawful and puts others in danger.

REFERENCES:

29 CFR 1910.132 General Requirements, Personal Protective Equipment. Code of Federal Regulations. US Department of Labor, Occupational Safety and Health Administration.