

Worker Killed While Dismantling Oil Tank in Wyoming

SUMMARY

A 53 year old truck driver died from injuries suffered when he was buried under debris from the roof cave-in of an empty oil tank. The victim had been sleeping inside a camper trailer while his co-workers were cleaning oil residue from tanks being dismantled for transportation to a location out of state. Earlier, the victim and a co-worker had removed some bolts from the roof of an empty tank.

When the victim awoke, he apparently went to the tank from which the roof bolts had been removed. It is uncertain whether he went inside the tank or climbed to the roof of the tank. He was found buried among the debris inside the tank that occurred when the unbolted roof caved in. The co-workers returned and searched for the victim, then noticed that the roof was missing from the tank they had prepared. Looking inside, they found the victim under the debris. They attempted to dislodge the victim with a winch truck which was at the location. A worker from another oil field came by and called 911.

The victim was unconscious at the time he was found, and had no pulse according to rescuers. He was pronounced dead at the scene as a result of injuries received from the roof cave in. Post-mortem blood testing indicated a BAC level of 0.24.

Employers may be able to minimize the potential for occurrence of this type of incident through the following precautions:

- **Establish and enforce policy that workers not conduct potentially dangerous tasks alone**
- **Prohibit the use of alcohol and other drugs on work sites**
- **Provide a system of communication (i.e. log book or check-off schedule to inform co-workers of work completed.**

INTRODUCTION

On a late Thursday afternoon, September 2, 1993 a truck driver who was employed by a friend to help dismantle and move some empty oil tanks from an oil field to a farm location outside the state was asleep at a table in a camper trailer at the site. He had been eating lunch with two co-workers and reportedly fell asleep at the table after finishing lunch. The three workers had driven together to the oil field to begin dismantling some 10000 barrel oil tanks that were to be transferred to the employer in exchange for moving them off of the oil field site.

The employer discovered that the tanks needed to be cleaned of oil residue and an oil field employee ordered a clean-up crew to clean out the tanks. While the employer and his two workers waited for the clean-up crew to arrive, they went into the camper to eat a late lunch. The truck arrived in the late afternoon. The victim had fallen asleep at the table so the employer and the other worker went with the

clean-up truck to clean out the empty tanks. After about 2 hours spent cleaning two tanks, the clean-up crew started on a third tank, and the employer went to inspect a fourth tank. He then went past his camper and went inside to see if the victim had awakened. Not finding the victim in the camper, he went outside to look around and saw an aluminum ladder propped up against a tank near the camper. Closer investigation showed that the roof of the tank was missing.

Before stopping for lunch, the employer and the victim had removed bolts from the roof of the tank so that it would be ready to dismantle later. When the employer saw that the ladder had been placed against the tank and that the roof was missing, he thought that the victim might have tried to lower the roof alone. He went around to the clean-out door of the tank and saw the victim lying against the wall with sections of the roof pinning him to the wall.

INVESTIGATION

Through a reciprocal notification agreement with the Director of the Occupational Safety and Health Division of the Department of Employment, the WY- Wyoming FACE Project was notified on September 7, 1993. Reports were requested and received from coroner's and enforcement offices and an investigation was conducted.

The victim's employer/co-worker was an employee of an out-of-state service which was under contract with an in-state oil field to dismantle and move empty oil tanks in exchange for ownership of every other tank removed. The victim was a friend of his employer/ co-worker who had come along to help with the work. There was no contracted or documented employer-employee relationship, but the person identified here as the employer was the person legitimately in charge of the operation. The victim received his instructions from the person identified herein as the employer. That person, and the second co-worker were both under the employ of the out-of-state service company.

There were no witnesses to the actual incident. Evidence at the scene, including the existence of a ladder propped against the side of the tank where the roof caved in, suggest that the victim may have climbed up onto the roof where the bolts had been loosened or removed, and his weight may have caused the roof to fall into the tank. When he was discovered, he was inside the tank, pinned to the wall by sections of the roof, and was unconscious.

The victim and his employer had worked on that roof earlier and had either removed some or all of the bolts, or had removed the nuts from the bolts leaving some or all of them intact. After the incident occurred bolts and nuts were found in the surrounding area with at least one bolt that had been partially stripped. Several areas of the tank appeared to be bent upward as if bolts had been attached to the roof and were pulled loose as it fell. Whether the victim fell with the roof or was inside when the roof fell has not been determined.

When the employer discovered the victim, he drove his pickup to where the clean-up crew was working and called them to help him. His co-worker joined him in his pickup and they drove back to where the victim was pinned inside the tank. While the workers tried to free the victim, the driver of the clean-up truck radioed for help. The employer tried to back a winch truck close enough to use it to lift the roof pieces, but the winch was too short. The co-worker tried to find a pulse on the victim but could not find one, and it appeared that the victim was not breathing. Through the efforts of the employer and co-

worker, they were able to lift the roof pieces enough to drag the victim out through the tank clean out hole.

Since neither of the workers was wearing a watch and no other witnesses were present, it is difficult to determine times. The workers were told in the late afternoon that the clean-up crew had arrived and approximate that they spent around two hours working with the clean-up crew before returning to the tank where the victim was found. The report called in for emergency response generally corroborates that time period, as does the coroner's determination of the time of death. It appears that the victim died approximately an hour after the co-workers had left him asleep at the table.

No citations were issued by Wyoming OSHA, as the victim appeared to have acted on his own without direction or control from other parties. There was no documented employer/employee relation between the victim and the other workers, or between the victim and the company that employed the other workers. However, OSHA did note that "All employees, whether volunteers along for the ride or are paid employees must remain in an alert condition and not let alcohol become a factor in any endeavor."

Post-mortem blood test results showed that the victim had a Blood Alcohol Content (BAC) level of 0.24. This is an excessively high level (more than twice the legal limit for driving in Wyoming) and undoubtedly contributed to the incident's occurrence.

CAUSE OF DEATH

The Medical Examiner listed the cause of death as suffocation due to sudden traumatic compression of the chest.

RECOMMENDATIONS/DISCUSSION

This incident could have been prevented by the victim himself by maintaining a condition of awareness while conducting a task that, of itself, requires clear thinking and coordination. The use of alcohol to a degree that caused him to pass out at the table, and to register such a high level of alcohol in the blood stream at the time of death, deprived the victim of the alertness necessary to conduct the task in a safe manner. If the victim did, in fact, climb onto the roof and fall with the roofing materials, he had apparently not remembered that he had helped loosen the roof at an earlier time.

In this instance, it may not have been practical for the employer/co-worker to have remained on the scene to guard against the victim's awakening and attempting to work on the tank without supervision. The duties of the task required the co-workers to go with the clean-up crew to prepare the tanks for dismantling. The co-workers obviously knew what condition the victim was in, but might reasonably supposed that the best solution was to let him "sleep in off" while they did the job that they were hired to do.

Employers would be well reminded that certain tasks require more than one worker for the safety of the worker involved. It appears that, in this instance, the workers (with the exception of the victim) understood the need to not work alone on the task that the victim was attempting to complete - that of

dismantling the roof of the tank. The victim's attempt to do the job alone showed a lack of clear-headed regard for safety.

While it may not have made a difference in this instance, the use of check-off schedules or log-book entries when there are more than one task being conducted, or where a task is left uncompleted for future completion, is a good way for workers to know or to be reminded of the status of a particular task. Most workers would remember that they had partially dismantled a tank roof and would take precautions before climbing on or under that roof. However, with multiple workers doing multiple jobs, there is the potential that a worker might unknowingly attempt to do a job that another had partially completed. In that instance, documentation of what has already been done could be life-saving.

A part of the tragedy of an incident like this one is that it subjects innocent people to indulge in self-blame. The victim died from his own lack of judgement; but his friends are left feeling that they could have, or should have, watched him more closely, or left him at home, or stopped him from drinking. The incident would not have occurred if the victim had not been intoxicated. Out of friendship, or safety, or professionalism, the co-workers would have been better off had they kept the victim from drinking. Other than that, there is little they could have done to prevent the incident and its tragic results.

FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (Wyoming FACE) PROJECT

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (Wyoming FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working 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.

States participating in this study include: Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

NIOSH Funded/State-based Wyoming FACE Projects providing surveillance and intervention capabilities to show a measurable reduction in workplace fatalities include: Alaska, California, Colorado, Georgia, Indiana, Iowa, Massachusetts, New Jersey, Minnesota, Missouri, Wisconsin and Wyoming.

Additional information regarding this report is available from:

Wyoming Occupational Fatality Analysis Program
522 Hathaway Building - 2300 Capitol Avenue
Cheyenne, WY 82002
(307) 777-5439

Please use information listed on the Contact Sheet on the NIOSH FACE web site to contact [In-house FACE program personnel](#) regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.