Colorado Fatality Assessment and Control Evaluation (FACE)
and
Sentinel Event Notification System for Occupational Risk (SENSOR)

SUBJECT:
FACE/SENSOR Investigation 94CO007

A welder was killed as a result of a spinal cord injury that occurred when the 12,600 gallon capacity sheet metal crude oil tank on which he was working collapsed.

SUMMARY:
In January 1994, a welder was killed when the 12,600 gallon capacity sheet metal crude oil tank on which he was working collapsed, the top of which crushed his spinal cord. The welder was a contractor of an oil and gas field equipment company, working alone in a storage area salvaging parts of one tank to use on another. He was using an oxyactylene torch to cut a section of the top of the 12-foot by 15-foot tank. The tank was laying on its side; two railroad ties had been placed under the body of the tank (parallel to the tank, perpendicular to the top) to allow the welder access to the entire rim of the flat top portion of the tank. The welder had freed the side portions of the top from the body of the tank, and was cutting the metal lowest to the ground when the injury occurred. He was laying with his head under the elevated tank body, his neck even with the top of the tank. While he was in this position, the tank collapsed around the railroad ties; the top separated from the body of the tank and lowered onto the welder's neck, crushing his spinal cord. The body was discovered approximately four hours after the estimated time of death.

The Colorado Department of Health (CDH) investigator concluded that to prevent future similar occurrences, employers should:

- Ensure that all employees are provided with the proper equipment to accomplish the assigned task.

- Develop, implement, and enforce a comprehensive written safety program.

- Conduct a job-site survey on a regular basis to identify potential hazards, implement appropriate control measures, and provide subsequent training to employees that

specifically addresses all identified hazards.

INVESTIGATIVE AUTHORITY:
The Colorado Department of Health (CDH) performs investigations of occupational fatalities under the authority of the Colorado Revised Statutes and Board of Health Regulations. CDH is required to establish and operate a program to monitor and investigate those conditions which affect public health and are preventable. The goal of the workplace investigation is to prevent work-related injuries in the future by study of the working environment, the worker, the task the worker was performing, the tools the worker was using, and the role of management in controlling how these factors interact.

This report is generated and distributed to fulfill the Department's duty to provide relevant education to the community on methods to prevent severe occupational injuries.

INVESTIGATION:
The investigation of this work-related fatality was prompted by a report of the incident from a review of death certificates. The investigation included interviews with the contracting employer, and an on-site workplace investigation. The site was photographed and the police report was obtained from the local police department.

The contracting company employs seven permanent employees and had only one contractor working at the time of this incident. The company does not conduct safety training and does not have a designated safety officer. The company did not have a safety program. The firm has been in business for 34 years and has been located at the present site for 22 years.

CAUSE OF DEATH:
The cause of death was listed on the death certificate as crushed spinal cord and hypovolemic shock.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: Ensure that all employees are provided with the proper equipment to accomplish the assigned task.

Discussion: The welder in this case was removing a large tank top and did not have a readily available means of supporting the top when it had been cut free from the rest of the tank. Supporting the tank top with a cable attached to a boom truck could have prevented the resulting injury

Recommendation #2: Develop, implement, and enforce a comprehensive written safety program.

Discussion: Employers should emphasize safety of their employees by designing, developing, implementing and enforcing a comprehensive safety program to prevent incidents such as this.

Recommendation #3: Conduct a job-site survey on a regular basis to identify potential hazards, implement appropriate control measures, and provide subsequent training to employees that specifically addresses all identified hazards.

Discussion: According to the "General Duty Clause" of the Occupational Safety and Health Act (Section 5 (a) 1), employers are required to provide a safe and healthy workplace for employees. To do so, employers must regularly survey the workplace to identify hazards. All identified hazards must be adequately addressed through engineering control measures or changes in work practices. Employers should instruct each employee in the recognition and avoidance of unsafe conditions, and to control or eliminate any hazards or other exposure to illness or injury. In this and similar situations the employer may need to provide additional training to ensure that employees understand the hazard and how properly use safety equipment to protect themselves.

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