

**Case 87. 38-year-old male mechanic died from hypoxia after entering a tanker that had been pressurized with nitrogen.**

On Tuesday, November 30, 2004, a 38-year-old male working as a mechanic for a truck carrier company was discovered by a co-worker unconscious inside a tanker. He had apparently entered the tanker to repair a valve or seal that was leaking. Approximately two weeks prior to this incident, the tanker had been used to deliver methylene diisocyanate (MDI) to a chemical company. After the delivery, it had been washed and water-blasted to clean out MDI residue to prepare it for accepting and transporting toluene diisocyanate. Nitrogen under pressure was fed into the tanker to check it for its integrity. The nitrogen pressure check revealed a seal or valve leak. The tanker was returned to the truck carrier company for repair of the valve or seal leak. Apparently the mechanic, not aware that the tanker had been pressurized with nitrogen, entered it to make the repairs and passed out because of the lack of oxygen in the tanker. He was removed from the tanker by appropriately attired rescue personnel. He was transported to the hospital where he was pronounced dead at approximately 6:00 p.m. The cause of death was recorded as death due to hypoxia due to the environmental conditions in which the body was found, coupled with the absence of any other explanation for sudden death.

MIOSHA issued the following eight Serious citations to the employer:

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(c)(3).

The employer did not take effective measures to prevent its employees from entering the permit spaces.

The employee entered the tanker trailer, which contained nitrogen gas. He was found inside the trailer unresponsive and died.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(c)(4).

The employer did not develop and implement a written permit space program.

Develop and implement a written permit space program which meets the requirements of 29 CFR 1910.146. As an alternative, the employer may implement alternate entry procedures in accordance with section (c)(5) or the employer may classify the space as a non-permit required confined space in accordance with section (c)(7). In either case, the basis for controlling or eliminating all the hazards must be documented and the space must be certified as safe for entry.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(d)(2).

The employer did not identify and evaluate the hazards of a permit space.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(d)(3).  
The employer did not develop and implement the means, procedures, and practices necessary for safe permit space entry operation.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(d)(4).  
The employer did not provide air testing and monitoring equipment, ventilating equipment, communication equipment, personal protective equipment, ladders for safe egress, etc., needed for safe entry into a permit space.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(d)(9).  
The employer did not develop and implement procedures for preventing unauthorized personnel from attempting a rescue. The shop foreman attempted to enter the trailer to rescue the decedent.

Serious:

PERMIT REQUIRED CONFINED SPACES, PART 490, 1910.146(g)(1).  
The employer did not provide training so that all employees whose work is regulated by 29 CFR 1910.146 acquired the understanding, knowledge, and skills necessary for the safe performance of the work.

Certify that the training required by paragraphs (g)(1) through (g)(3) has been accomplished. The certification should contain each employee's name, the signatures or initials of the trainers, and the dates of training.

Serious:

RESPIRATORY PROTECTION, PART 451, 1910.134(c)(1).  
The employer did not develop and implement a written respiratory protection program where respirators are necessary to protect the health of the employee.

Develop and implement a written respiratory protection program with work-site specific procedures for shop mechanics and other employees who will use self-contained breathing apparatus (SCBA). The written program must include the requirements outlined in subsection (c)(1) of 1910.134.