North Carolina Department of Labor
Division of Occupational Safety and Health

Raleigh, North Carolina

Field Information System Standards Notice 67

Subject: 1910.146; Applicability of the Permit Required Confined Spaces Standard to Concrete Mixing Trucks

A. **Purpose**.

This SN provides North Carolina interpretation relating to the application of the Permit Required Confined Spaces Standard, 29 CFR 1910.146, to Concrete Mixing Trucks.

B. **Discussion**.

The North Carolina Department of Labor, OSH Division has received several inquiries about whether and how the Permit-Required Confined Spaces standard is applicable to a Concrete Mixing Truck.

The interior of a concrete mixer truck drum is, by definition, a confined space. The drum has a limited or restricted means of entry or exit, it is large enough and so configured that an employee can bodily enter and perform assigned work, and it is not designed for continuous employee occupancy.

Additionally, a concrete truck is also considered to be a permit-required confined space because it contains recognized serious safety and health hazards in addition to containing a potential for or an actual hazardous atmosphere.

Concrete is a mixture of cement, water, and aggregates. Aggregates include silica sand, gravel or rock depending upon the type of concrete being manufactured. Fly ash or blast furnace slag may also be used. Cement dispersing agents are typically added to the concrete mixture as well. Additionally, the cement may also contain hexavalent chromium.

Concrete can be poured into the mixer drum of the truck in a wet or dry form. The drum contains a mechanical device that mixes and/or maintains the consistency of the concrete until it is poured. Depending upon the type of mixer on the concrete truck, the drum may be fixed with moving blades and/or scrapers, the drum may rotate and the blades may be fixed, or there may be some other configuration.

On occasion, the mixer drum or blades/scraper must be cleaned of residual concrete or repaired. This usually requires employees to enter the drum and chip out the concrete with a tool such as a pneumatic chipping hammer or organic cleaning products. With an appropriate lock out-tag out program in accordance with 29 CFR 1910.147, *Control of Hazardous Energy (Lock Out-Tag Out);* the employer can effectively eliminate the mechanical hazard. However, during the cleaning operation, the employees can be exposed to several other hazards that are not as easily controlled or eliminated. These include, but are not limited to, silica exposure, chemical exposures and heat stress, all of which have the potential to cause acute illness or injury depending upon the extent of exposure. The drum configuration and visibility and noise issues during cleaning may interfere with the employee's ability to self-rescue. Repair work on the mechanical device may create additional exposures such as welding fumes. The employee may also come into contact with the blades and scrapers.

The employer does not have the option of reclassifying the space when an actual or potential hazardous atmosphere exists.

Additionally, Federal OSHA considers the interior of concrete trucks to be permit-required confined spaces. Statistics from federal OSHA's website also indicate that the Permit-Required Confined Space standard was the most frequently cited standard in federal fiscal year 2001 for SIC code 3273: Ready-mixed concrete.

C. **Conclusion**.

Concrete mixer trucks are permit-required confined spaces covered by 29 CFR 1910.146 because they have the potential to contain hazardous atmospheres as well as mechanical hazards. CSHO's will evaluate the hazards in the work environment in relation to the standard and the guidance provided in CPL 2.100 when documenting hazards associated with permit-required confined spaces.

D. **Expiration**.

This SN is effective on the date of signature. It will remain in effect until revised or canceled by the Director.

Signed on Original
Susan Haritos
Health Standards Officer

Signed on Original
Allen McNeely
Director

9/02/03
Date of Signature