New Crystalline Silica Rule: Tom Huetter (Harbor) Arkansas Environmental Federation Convention Presentation

Arkansas Environmental, Energy, and Water Law Blog

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Mr. Tom Huetter, P.G., undertook a presentation at the Arkansas Environmental Federation Convention titled *New Crystalline Silica Rule.*

Mr. Huetter is a licensed Professional Geologist with Harbor who provides support to multiple industries including land construction, drilling, completions and production.

Mr. Huetter's presentation addressed issues associated with the final rule promulgated on March 25th by the United States Occupational Safety and Health Administration ("OSHA") revising OSHA's standards for crystalline silica.

The rule is currently being challenged by eight trade associations (including Mississippi Roadbuilder's Association and the Louisiana General Contractors) who filed a Federal Court of Appeals Petition for Review. A link to the Federal Court of Appeals Petition and OSHA rule can be found here.

OSHA's rationale for promulgation of the rule was its concern that employees exposed to respirable silica at the previous permissible exposure limit ("PEL") are at significant risk of material impairment to their health.

Silica is a compound composed of the elements of silicon and oxygen. It exists in crystalline and amorphous states.

The compound is found in the natural environment and is also produced during manufacturing or other processes. It is described as odorless solids, has no vapor pressure and creates non-explosive dust when particles are suspended in the air. In crystalline silica, silicon and oxygen atoms are arranged in a 3-dimensional repeating pattern. The substance is used in a variety of industry applications such as foundries, dental laboratories, concrete products and paint and coating manufacturer and construction activities.

Mr. Huetter's presentation included information detailing silica. He noted that the crystalline form is the second-most abundant element in the earth's crust. Quartz, cristobalite, and tridymite are the three most common crystalline forms of free silica – SiO_2 . Further, he stated that silica as quartz is the primary constituent of most sand.

As to respirable crystalline silica, Mr. Huetter stated:

- The finer particles (dust) can be respirable

- Crystalline silica is the portion that is small enough to enter the gas-exchange regions of the lungs if inhaled
- Includes particles with aerodynamic diameters less than approximately 10 micrometers

Industrial/construction deaths associated with silicosis from the late 1920s to early 1930s are referenced and resulted in a National Silicosis Conference. Also addressed was the creation of OSHA and its role in setting standards and enforcing safety.

OSHA statistics are cited as stating that 2.3 million workers are exposed to respirable crystalline silica in the workspace and the relevant industries:

- Brick manufacturing
- Foundries
- Dimensional stone/countertop installation
- Hydraulic fracturing

NIOSH field studies in regards to frac locations and worker exposure to respirable crystalline silica and industry exposure monitoring at frac locations were reviewed. This included a discussion of the ways in which individuals are exposed to silica at these locations and the seven primary sources of dust. Also, the health hazards of silica were discussed along the three types of silicosis:

- Chronic/classic
- Accelerated
- Acute

Each type of silicosis was reviewed.

Mr. Huetter discussed the previous PEL limits that had been set by OSHA, NIOSH and the American Conference for Government Industrial Hygienists.

The history of OSHA and NIOSH efforts to revise the silica standards were addressed. The motivation is stated to have been the agency's concern that the standards were outdated and did not adequately protect workers from silica-related diseases. Further, workers were believed to be exposed to silica in new industries such as stone or artificial stone countertop fabrication as well as hydraulic fracturing.

The revised rule's two standards were identified as:

- Construction industry
- General Industry and Maritime

The primary revision to the rule consists of:

- Reducing the PEL for respirable crystalline silica to 50 mg/m3 of air, averaged over an 8-hour shift

The other provisions of the rule addressing engineering controls, medical exams, and the compliance schedule were also considered.

A copy of the presentation can be downloaded here.