

TESTIMONY

Before

**The United States House of Representatives
Committee on Education and the Workforce
Subcommittee on Workforce Protections**

Hearing on

Reviewing Recent Changes to OSHA's Silica Standard

Washington, DC

April 19, 2016

Presented by

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Honorable Chairman Walberg, Ranking Member Wilson, and other members of the Subcommittee. I greatly appreciate the opportunity to appear before you at this hearing.

I am James Melius, an occupational health physician and epidemiologist, who currently works for labor-management organizations (the Laborers' Health and Safety Fund of North America and the New York State Laborers' Health and Safety Trust Fund) focusing on health and safety issues for union construction laborers in the United States and Canada. I have over forty years of experience in occupational and environmental health including fifteen years with federal and state agencies. For the past twenty years, my work has focused mainly on construction safety and health issues. I also currently serve as Chair of the Advisory Board on Radiation and Worker Health which oversees the federal cancer compensation program for former workers at Department of Energy nuclear facilities and as chair of the Steering Committee for the World Trade Center Responder Compensation Medical Program which advises the federal medical monitoring and treatment program for WTC responders.

I have followed the development and public review of the recently released OSHA silica standard. I submitted comments on the proposed standard, testified at the public hearings, and submitted post-hearing comments.

One of my first patients while working in an occupational medicine clinic in Chicago in the 1970's was a young man with severe and rapidly progressive silicosis caused by his work in a foundry. He died while still in his early 30's from this disease. Throughout my career, I have continued to encounter cases of silicosis among foundry and construction workers. Most recently, I have encountered many cases of silicosis among tunnel workers from our union. A recent small medical survey that we did of younger tunnel workers found that nearly 40% of them had developed early stages of silicosis (report submitted to OSHA). I have sitting behind me three union bricklayers or family members of bricklayers who have developed silicosis from their work. Information on their work histories and illnesses have been submitted for this hearing. Silicosis is not just a disease

of the past. Many workers continue to develop this illness from their work, and the illness can have a serious impact on their health, on their ability to work, and on their families.

Silicosis has been recognized as work-related disease since Roman times, and major epidemics were recognized in the early half of the last century in the United States among foundry, quarry, and tunnel workers. However, despite this history and methods to prevent silica exposure, silicosis and other silica-related illnesses continue to be a serious health problem in the United States. Available surveillance data are incomplete due to limited recognition and reporting of silicosis. Even in the absence of complete data on the extent of these silica-related diseases in our country, we know that many hundreds of workers are found with silicosis every year. In Michigan, which has a very good silicosis surveillance program, African American workers have been found to have a much higher rate of silicosis probably because of their higher rate of employment in jobs with high silica exposure .

I believe that OSHA has done an excellent job in developing the new silica standard including their review of the available scientific information on silica and in crafting regulations that will provide better protection for workers exposed to this dangerous material. The implementation of these regulations will lead to a significant reduction in silicosis, cancer, and other diseases related to silica exposure in the workplace. These regulations also provide employers in many different industries with the structure to comply with these new regulations. I would like to outline the major reasons why I believe that this regulation is a significant step forward in addressing a major occupational health problem in our country:

1. **The New Standard Will Significantly Reduce the Incidence of Silicosis and other Silica-related Diseases in the United States.**

OSHA's review of the available scientific data and the additional scientific studies presented during the rulemaking process provide a sound scientific basis for the new standard. Over the last 25 or so years, there have been many new studies published on

health risks from silica exposure including silicosis, other lung disease, kidney disease, and lung cancer. These studies have also provided critical information on these health risks including much better data on the health risks at different levels of exposure. The resulting synthesis of these studies provides the scientific underpinnings for the health risk estimates that OSHA has performed in developing the new standard.

The current OSHA standards are based on recommended limits (and hence the available science) from the 1920's which then formed the basis for the respective recommended limits for construction and general industry adopted by OSHA in 1971. In the 1920's when those standards were first recommended, the United States Public Health Service recognized that those standards were not adequate to prevent silicosis. However, those standards have remained unchanged by OSHA since 1971 at essentially 100 micrograms per cubic meter for general industry and 250 micrograms per cubic meter for construction. Extrapolating from some of the recent individual scientific studies of workers exposed to silica, exposure at these levels could lead to a cumulative risk of developing silicosis from a working lifetime exposed at these levels of up to 100% if exposed at the former construction standard and up to approximately 75% if exposed at the former general industry standard. While these are extrapolations and vary depending on the study used (some of the extrapolations were significantly lower), they demonstrate the potential for a clearly unacceptable risk of developing silicosis at the previous regulatory limits.

For lung cancer, the OSHA estimates at the previous exposure limits were for 11 to 54 excess cancers per 1000 workers if exposed at the former general industry limit and 24 to 657 excess cancers per 1000 workers if exposed at the former construction industry standard. Even with the reduced risk of lung cancer at the exposure level in the new standard, the risk of lung cancer among silica exposed workers will remain significantly higher than for most other OSHA health standards. Simply leaving in place the current standards with improved enforcement would lead to thousands of more silica exposed workers developing silicosis, lung cancer, and other silica-related illnesses. The major

problem is not enforcement. It is that the current standard is not adequate to prevent most silica-related illnesses.

These health risk assessments show a significant reduction in health risks if exposures are reduced to the levels required in the new standard. OSHA estimates that the new regulation will save more than 600 lives each year and prevent nearly 1000 cases of moderate to severe silicosis each year. However, there will still be significant health risks including silicosis even at the exposure level set by the new standard. Further reductions in exposure could prevent those illnesses. However, OSHA found that overall further reduction was not feasible at the present time.

2. The New Silica Standard is Comprehensive

The previous OSHA silica standard was essentially just a number – levels of exposure needed to be controlled to a specific level as measured over an 8 hour work day. There were no other requirements or guidance directly attached to the standard such as training, exposure monitoring, medical surveillance, and specific control requirements that would help to better protect the exposed workers and also assist the employer in complying with the standard. OSHA provides some regulation and guidance for silica control through their other standards (e.g., regulations for respirator use) and through their silica enforcement initiatives, but these are not an adequate replacement for a more comprehensive standard.

The new comprehensive silica standard provides guidelines for an approach to controlling silica exposures including monitoring, medical surveillance, training, and other requirements. The regulations are supplemented by appendices in the current standard providing additional guidelines on certain aspects of the regulation. As the standard goes into effect, I am certain that OSHA will publish more guidance on key aspects of the new standard to employers in different industries affected by the regulation. Industry associations, unions, and other groups will also develop and

distribute additional materials and provide consultation. Our organization and others have already started to do that.

3. The Standard Includes Control Options for Employers

OSHA standards generally require employers to implement measures to control exposures, to regularly monitor exposures, and to adjust their controls, based on the monitoring. The new standard also includes the option for construction industry employers to comply with the new standard by employing specific control measures when conducting certain construction tasks rather than having to regularly monitor exposures from that work and adjust their controls based on this monitoring. This is a major assistance to the construction industry in controlling silica exposures for their workers and for complying with the new standard.

A construction worker may do many different tasks in a given day or week. Some may involve significant silica exposure over the current limit (without controls) while others may not. The current regulation includes a list of 18 construction tasks (along with different circumstances for how that task is performed and the nature of the equipment being used) along with specific control requirements for that task depending on how long that task will be done on a given day. For example, a person working with a handheld grinder (with an integrated water delivery system or dust collector meeting certain specifications) for uses other than mortar removal would be considered compliant with the new standard as would a person working on a drivable milling machine equipped with a specific ventilation system. I have with me pictures of some of this equipment demonstrating the visible reductions in dust (hence silica exposure) when these controls are being used.

To my knowledge, this is the first time that OSHA has used this approach on such a large scale in a health standard. The approach will provide assistance to our employers in complying with the standard and protecting their workers. My understanding is that the task list covers the vast majority of construction tasks involving silica exposure. Those left out include such tasks as tunnel work where conditions leading to significant silica

exposure may vary greatly depending on the type of work, geological conditions, ventilation, etc. Those types of work will still require exposure monitoring to help guide proper controls measures in order to comply with the new standard. Construction employers are not required to use the controls included in the list of tasks set forth in the standard. However, if they do not, they will be required to monitor the work environment and demonstrate that the control measures that they use are adequate to comply with the standard.

There are many examples in the construction industry of efforts to develop effective and feasible silica controls for specific tasks. I will describe a few that I am familiar with, but there are many more.

Our union and other construction unions have worked closely with people in the industry and equipment manufacturers to develop better controls. Several years ago, in parallel to similar work on asphalt paving exposures, our union and the Operating Engineers union began an effort with the National Asphalt Pavement Association (NAPA), the milling machine equipment manufacturers, and NIOSH to better control silica exposures from the milling machines used to remove old pavement from highways in preparation for laying down new pavement. This project led to the development of better ventilation controls on these machines and the demonstration that silica exposures from milling machines with the new ventilation will fall below the new standard. This work helped to provide the basis for the inclusion of milling machines in the list of tasks included in the new standard.

The construction industry has the capability to develop and implement practical controls for many situations where there may be silica exposures that are difficult to control. For example, our Health & Safety Fund in New Jersey has developed a portable system to provide a water spray system for jackhammer operations on road construction projects. This system reduces exposures by over 90% and allows this control to be used in locations where a direct water supply is not available. The low cost system has been supported by the transportation agencies in the state and is being utilized by many highway contractors.

One of the industry groups concerned about the impact of the new silica standard represented companies involved in hydraulic fracturing. Studies have shown the potential for very high exposures to silica during certain operations in that industry, and the industry testified at the OSHA hearings that they were having difficulty controlling those exposures. NIOSH staff at the OSHA hearings with knowledge of hydraulic fracturing operations testified that there were commonly used dust control methods that could be adapted to that industry. In the final standard, OSHA gave this industry additional time (5 years) to develop, evaluate, and implement control measures to comply with the new standard. Based on similar efforts in the construction industry, I believe that such control measures can be successfully put in place in that industry within the time frame allowed.

4. OSHA Incorporated Public Input into the New Standard.

Based on participation in the hearings, reviewing many of the written submissions, and reviewing the final rule publication, it is clear that OSHA modified their original proposal based on the public input from the regulatory process. Even when they did not make the changes recommended by the persons testifying or submitting comments, OSHA reviewed the rationale for these decisions in the publication of the final regulation. Compliance schedules were extended, and significant parts of the standard were rewritten.

As one example of this, the original OSHA proposal would still have required respirator use if the highway milling machine operator was working over 4 hours in a given day. However, NAPA and the partnership described above were able to demonstrate to OSHA that this was unnecessary as the exposure monitoring that they had done on the “ventilated” milling machines demonstrated exposures below the proposed standard even when the exposure was over 4 hours. Based on their analysis of this and other information, OSHA modified the requirement and no longer requires respirator use in that situation.

There were also concerns raised about the sampling methods being proposed to monitor silica exposures could adequately and accurately measure silica exposures at the levels required by the new standard. In the final standard, OSHA has provided a lengthy evaluation supporting that monitoring at such levels is feasible. Industry was also concerned about whether an adequate number of laboratories would be available the increased exposure monitoring stimulated by the new standard. OSHA evaluated these issues and provided a two year extension for meeting the laboratory requirements in the new standard.

There are many other examples of modifications of the proposed standard by OSHA in response to the public comments. I believe that the proposed standard has been significantly improved by OSHA's efforts to obtain public comment and then review and incorporate that input into their final rule.

In summary, I believe that the new OSHA silica standard is a major milestone in preventing a significant occupational health problem in the United States. The new exposure standard for silica is comprehensive, and the regulations implement is feasible to implement, and OSHA has incorporated some new approaches into the standard that will make compliance less burdensome for many employers. Most importantly, the over two million workers in the United States exposed to silica will be at much lower risk of developing silicosis and other silica related diseases.

