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The Honorable David Michaels
Assistant Secretary
Occupational Safety and Health Administration
U. S. Department of Labor
200 Constitution Avenue, NW
Washington, DC 20210

By <http://www.regulations.gov>

RE: ASSE Comment on the OSHA Proposed Rule
Occupational Exposure to Crystalline Silica
(Docket No. OSHA-2010-0034)

Dear Assistant Secretary Michaels:

The American Society of Safety Engineers (ASSE) is pleased to submit the following comments concerning the Occupational Safety and Health Administration's (OSHA) Proposed Rule *Occupational Exposure to Crystalline Silica* published in the September 12, 2013, Federal Register (78 Fed. Reg. 56273). This is an issue that will significantly impact the ability of workers to return home from work each day healthy, of employers to be able to reasonably carry out their business without unnecessary burdens, and of safety, health and environmental (SH&E) professionals to be able effectively to assist both in achieving effective protections from crystalline silica risks.

As you know, ASSE is the oldest and largest society of safety professionals in the world. Founded in 1911, ASSE represents over 35,000 dedicated safety, health, and environmental (SHE) professionals. Our members are experts in managing workplace safety and health issues in every industry, in every state and across the globe. They belong to one or more of ASSE's 20 practice specialties, many of which will be affected by this rulemaking. ASSE is also the Secretariat for various voluntary consensus standards related to best practices in occupational safety and health, including the Z10 standard for Safety and Health Management Systems.

ASSE commends OSHA for addressing this issue through rulemaking in an effort to further reduce the incidences of occupational illnesses such as silicosis and cancer in general industry, maritime and construction work. While some may debate the science underlying the findings set forth in the proposed rule, overexposure to crystalline silica has been linked to occupational illness since the time of the ancient Greeks, and reduction of the current permissible exposure limit (PEL) to that recommended for years by the National Institute for Occupational Safety and Health (NIOSH) is long overdue. In 2011, ASSE formally requested to the Office of Management and Budget's Office of Information and Regulatory Affairs (OIRA) that it release the pending silica proposal for public comment so that all stakeholders could participate in the discussion about appropriate rulemaking, including safety and health professionals who are already working with employers to protect workers from silica risks in cost-effective, practicable ways.

In short, requiring implementation of feasible engineering and administrative controls, improved medical surveillance and proactive exposure monitoring in situations where exposures above the PEL can be anticipated is a reasonable approach and is generally consistent with the recommended best practices established in the ASTM E1132 *Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica*, (general industry) and the ASTM E2625 *Standard Practice for Controlling Occupational Exposure to Respirable Crystalline Silica for Construction and Demolition Activities*.

ASSE supports the goals for this rulemaking and will remain involved throughout the hearing and post-hearing period when further technical comments may be offered. In this, our initial submission, ASSE provides specific comments that we urge OSHA to take into consideration in drafting a final rule. The agency has posed nearly ninety questions for commenters to consider, and many of these are beyond the scope of ASSE's ability to respond because they seek site-specific information and data that only can be provided by individual employers or employee representatives.

Similarly, although OSHA has provided a great deal of scientific and epidemiological information on the potential health effects of overexposure to crystalline silica, we will not be commenting at this time on the validity of these studies. While commenters on both sides will no doubt argue about which studies should be given more or less weight, it is indisputable that overexposure to respirable crystalline silica presents risks of silicosis. In 1997, the International Agency for Research on Cancer (IARC) classified silica as a Group One human carcinogen. Despite ongoing emphasis inspection programs conducted by OSHA since that time, and education of workers through the hazard Communication Standard (29 CFR 1910.1200), employees are still being diagnosed with silica-related occupational illnesses and overexposures to the current 100 µg/m³ limit continue to occur with disturbing frequency. More is needed to protect the health of our nation's workers.

The proposed rule would lower the PEL to 50 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), which is 50% of the current PEL and consistent with the NIOSH REL. OSHA has also proposed an action level of 25 $\mu\text{g}/\text{m}^3$, which is consistent with the Threshold Limit Value (TLV) set by the American Conference of Governmental Industrial Hygienists (ACGIH). The proposed rule covers the three forms of crystalline silica – quartz, cristobalite, and tridymite – and applies to general industry, maritime, and construction. According to the OSHA proposed rule, the final rule would affect over 2 million workers, and the agency’s risk assessment links overexposure to respirable crystalline silica to health conditions that include lung cancer, silicosis, chronic obstructive pulmonary disease, and autoimmune disorders.

The proposed rule not only aims to enforce significantly lowered action and permissible exposure levels (PEL) but also places on operators increased requirements for administrative and engineering controls as well as exposure monitoring, medical surveillance, and implementation of “best practices.” A key issue surrounds currently utilized sampling methods, which may not have precision down to the 25 $\mu\text{g}/\text{m}^3$ action level – the level that triggers many of the rule’s requirements – but OSHA indicated that the standard is intended to be “technology forcing.” We support OSHA’s position of providing some lead time for laboratories to obtain necessary accreditation. Doing so will help ensure the accuracy of the sampling and analysis of silica samples that will be used to benchmark compliance and trigger some of the rule’s requirements. A failure in this area could leave the rule susceptible to legal challenge and could result in further delays in worker protections.

Under the proposed standard for general industry, employers must perform initial monitoring of employees “who are, or may reasonably be expected to be” exposed to crystalline silica at or above the action level of 25 $\mu\text{g}/\text{m}^3$. For those general industry operators already testing for crystalline silica exposure, the previous testing may suffice for the proposed initial monitoring proposed above, and we agree with this approach. The requirement for initial monitoring is satisfied if the employer has monitored employee exposures in the twelve months before the standard’s effective date or has “objective data” that demonstrates that respirable silica “is not capable of being released at or above the action level under any expected conditions of processing, use or handling.” “Objective data” is defined as “monitoring data from industry-wide surveys or calculations based on the composition or chemical or physical properties of a substance.”

However, where the initial monitoring shows that exposure is above the action level but below the PEL, the monitoring must be repeated every six months. If the initial monitoring shows exposures above the PEL, repeat monitoring must be done every three months until two consecutive tests show exposure below the action level. Additional assessments are required “whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level.” This is a reasonable approach, consistent with sound industrial hygiene practices.

The proposal for construction provides for a similar assessment of employee exposure but provides an alternative approach – “task based control strategies” – for certain operations that ASSE believes should similarly be allowed in general industry. For these operations, the employer, instead of assessing employee exposure, may implement specified equipment safeguards and work practices. If the equipment and work practices are implemented, the employer is not required to assess employee exposure. ASSE urges OSHA to consider taking a similar approach, perhaps in a non-mandatory appendix, for common job classifications in general industry and maritime that are known to have historically high silica exposures so that smaller employers can be guided as to what types of controls will be most efficacious.

In the proposal, OSHA proposes a hierarchy of mandating engineering and workplace controls over simply providing personal protective equipment (PPE) such as respirators, and it specifically bars job rotation as a method of attaining compliance. For tasks that involve some levels of silica exposure but are performed in an infrequent basis, job rotation may be warranted as an alternative to other, more burdensome, engineering or administrative controls. We urge OSHA to reconsider this issue, especially given the fact that every person on earth is exposed to some degree to crystalline silica as a main constituent of the planet's crust and due to its presence in so many construction materials. While ASSE appreciates the goal of limiting the number of employees exposed to toxic chemicals generally, crystalline silica provides a unique situation when compared to chemicals such as benzene and toluene.

The proposed rule states that “the employer shall use engineering and work practice controls to reduce and maintain employee exposure ... to or below the PEL unless the employer can demonstrate that such controls are not feasible.” The employer is responsible for implementing the controls to reduce exposure to the “lowest feasible level” and supplementing with use of respiratory protection. In addition, both the general industry and construction standards require that, whenever an employee’s exposure “is or can reasonably expected to be in excess of the PEL,” the employer must establish either a “regulated area” or have a “written access control plan” to limit persons who may enter, and require certain protections (e.g., respirators, protective clothing or removal of dust from contaminated clothing) for any persons who do enter the restricted area. While ASSE generally supports this concept, there will be practical issues with implementation on small short-term construction worksites, and ASSE urges OSHA to take into consideration the comments of construction employers in determining how best to address this issue.

OSHA has included in the proposed rule medical monitoring requirements for any worker exposed to heightened levels of crystalline silica. The proposed rule states that medical surveillance must be provided for each employee who will be exposed above the PEL for 30 days or more per year at no cost to the employee. The surveillance program includes an initial baseline exam within thirty days of initial assignment and repeat exams every three years or more frequently if recommended by a health care provider. ASSE supports this requirement but urges the agency to address in a final rule how this requirement addresses contingent workers

who may move from one job to another, never staying for a full 30 days, but consistently having silica exposure.

The proposed rule stipulates requirements and provisions regarding laboratory testing and record keeping of exposure data. The proposed rule requires operators to retain accredited laboratories to analyze samples. Additionally, operators will also be required to maintain complete records and materials such as samples, reports, and medical surveillance records related to respirable crystalline silica exposure. This is appropriate, and exposure and surveillance data should be readily available to workers and, where applicable, to employee representatives. Records should be permitted to be stored electronically to ease paperwork burdens.

The rule's preamble makes quite frequent reference to the American Society for Testing and Materials (ASTM) standards for general industry (E1132) and construction (E2625), which dictate best practices but do not include an occupational exposure level. It may be beneficial to incorporate by reference one or both of these consensus standards, consistent with the OMB Circular A119 and the Technology Transfer Act of 1995, or at least include relevant portions in OSHA guidance information.

To the specific questions OSHA poses in the Proposed Rule, ASSE provides the following comments:

1. Has OSHA adequately identified and documented all critical health impairments associated with occupational exposure to respirable crystalline silica?

OSHA has done a thorough job of compiling and reviewing key studies as part of its risk assessment, and identifying potential health effects related to occupational exposure to respirable crystalline silica, but it is clear that more research will be needed to scrutinize the correlation in some areas (e.g., the link between silica and autoimmune disorders). Because NIOSH is designated in the Occupational Safety and Health Act of 1970 as the agency to conduct research on occupational health to guide OSHA's regulatory decisions, this would be the logical governmental entity to conduct further studies in this area. Adequate funding should be made available to NIOSH for this purpose.

17. Is the proposed rule technologically feasible?

As written, the proposed rule is probably not entirely technologically feasible for all employers. OSHA itself admits that even following the steps in Table 1 may not result in construction exposures below the rule's limits. Given the number of employers who currently do not meet the 100 ug/m³ PEL, many will likely have trouble complying with the new PEL, much less the action level, from an economic standpoint as well. However, given that the proposed rule is viewed as a technology forcing standard, OSHA should continue to monitor new technological advances to determine ultimately this issue. Technological and

economic infeasibility is likely to be the subject of many affirmative defenses to silica citations in the future.

23. Are there particular outreach materials that would make compliance easier?

Including non-mandatory appendices in the final rule will be useful in providing guidance for employers on subjects such as exposure monitoring and medical surveillance, but more will be needed. OSHA has done a commendable job so far in its outreach efforts for the GHS/HazCom final rule, and this same approach can be used for silica. Web-based materials in a number of languages will be needed, but written collateral materials (also multi-lingual) also will be needed to reach and assist the smallest employers who may not have ready access to electronic technology, particularly in the construction sector. Outreach alliance partners should be actively sought by OSHA in advance of promulgating the final rule.

26. Do you believe that improved outreach and enforcement of the existing PELs would be sufficient to reduce significant risks of material health impairment in workers exposed to respirable crystalline silica?

ASSE is aware that there is a line of argument that the incidence of disease is due to employers' failure to comply with current PELs and/or OSHA's failure to enforce these limits. The issue is further complicated by the long latency period of chronic silicosis and lung cancer, which suggests that current cases predate many of the existing and common control methodologies now in use to lower exposures. ASSE believes that the body of scientific literature lends support for reducing the PEL to the proposed limit. However, during the years to come as this rule is finalized, potentially adjudicated and phased in, OSHA should continue educational outreach and reasonably considered enforcement through ongoing silica-based emphasis programs for affected industry sectors.

31. Should OSHA modify the scope to limit the construction standard to specific construction operations, as opposed to covering all occupational exposures in construction work?

ASSE supports the proposal to cover all silica exposures in construction work rather than limiting compliance to specific operations.

35. Should there be specific requirements for training of a competent person relating to establishment of an access control plan?

ASSE urges the development of specific competent person training for persons who design and implement an access control plan that exempts prior relevant training (e.g, an OSHA 30-hour course) or persons holding nationally accredited occupational safety and health

certifications such as the Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH).

38. Is the proposed PEL appropriate, given that it will reduce but not eliminate significant risk of material health impairment?

Yes, as this is the lowest limit currently feasible for enforcement purposes.

40. Is the action level of 25 ug/m³ appropriate to be included in the final rule?

Yes.

43. Has OSHA defined "objective data" sufficiently for an employer to know which data can be used?

The qualitative data that employers should be able to use to meet the "objective data" criterion, should include: information from manufacturer/distributor Safety Data Sheets (SDSs) for the silica-containing product or material; prior sampling information for the affected job classifications; likelihood of dust generation in light of the processes used and environmental factors (wind strength and direction, etc.); proximity of airborne dust to the workers; and the nature of the industrial process, and whether it is wet or dry. In some cases, an employer should be permitted to use historical aggregated sampling data throughout the company for pertinent job classifications where there is a commonality in terms of processes and equipment. Where such objective data indicate that a risk of overexposure is present, sampling of tasks or representative worker exposures should be conducted.

44. Should periodic exposure assessment be done on a fixed schedule or should it be performance-based?

Periodic exposure assessment should be performance-based to avoid imposing added expenses for what might be unnecessary testing on a fixed schedule.

50. How would the regulated areas and access control provisions apply at multi-employer worksites?

The host employer or general contractor should have primary responsibility for ensuring compliance with these provisions. If a subcontractor is solely responsible for generating silica exposures that trigger these requirements, that employer must notify the host employer or general contractor in advance of commencing work of the need for regulated areas or access control so that both employers can work cooperatively to ensure compliance

and also to notify any other employers on site whose employees may be affected by these requirements.

51. Is protective clothing needed for silica exposures?

No special clothing should be required as crystalline silica does not present a chemical hazard when applied to the skin. Only respiration or inhalation of crystalline silica is a significant health concern. However, employers need to implement programs to assure employees whose clothing is contaminated with crystalline silica do not create exposure issues off the job.

53. Should OSHA require employers to develop and implement written exposure control plans, and what should be in those plans?

Employers with suspected or documented exposures above the PEL should be required to have written exposure control plans, preferably developed by a Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH). The plan should implement engineering and administrative controls to reduce silica exposures to below the PEL. A root cause analysis should be part of the plan to identify the sources/causes of overexposures. Follow up sampling to ensure the efficacy of further controls should be required.

54. Is the approach taken in Table 1 for construction appropriate and should changes be made?

This is an effective approach and should also be considered for the general industry/maritime standard for commonly performed tasks involving high levels of silica exposure. See also, Tables 1 through 5 in ASTM E2625-09 and Tables 2-6 of ASTM E1132-13 as examples.

56. Should construction employers who comply with table 1 be viewed as in compliance even if they do not ensure compliance with the PEL?

Yes, because following the protective measures in this table can be viewed as akin to implementing all technologically feasible controls and employers who do this should not be cited if exposures remain above the PEL, as OSHA predicts may be the case for tasks such as tuck pointing. In such cases, employee rotation should be permitted to further reduce exposures once the other controls and PPE are utilized.

66. Should the use of compressed air and dry sweeping for cleaning of surfaces and clothing be prohibited?

Generally yes, except where dry sweeping is the only option available. OSHA should also be aware of mobile air shower technology developed for the mining and oil/gas industry in conjunction with NIOSH that is designed to permit safely the use of compressed air for cleaning of employee clothing. Such emergent technology should be deemed compliant in the future under this rule rather than requiring a variance.

68. Should employee rotation be prohibited as a means of achieving compliance with the PEL?

No. See our comments *supra*.

72. Is the requirement for latent TB testing appropriate?

The requirement for latent TB testing is appropriate, given OSHA's role as a public health agency and considering the potential benefits from early diagnosis and treatment of TB and its impact on the spread of this contagious disease. This requirement is also appropriate given the studies that suggest an increased risk of adverse health effects from silica exposure to workers with TB.

73. Is the requirement for pulmonary function testing initially and at three-year intervals appropriate?

Yes, this requirement is consistent with most credible occupational health programs related to respirable crystalline silica exposure.

74. Is the requirement for chest x-rays initially and at three-year intervals appropriate?

Yes. However, OSHA should also consider what will constitute a finding that is recordable or reportable to the agency as constituting a diagnosis of silicosis. The Mine Safety and Health Administration (MSHA) requires reporting of a 1/0 reading by a B-reader to be a presumptive diagnosis, although the employer can get a second opinion at its own expense.

77. Is exposure for 30 days from initial assignment, at or above the PEL, the appropriate number of days to trigger medical surveillance?

For stable workforces, this would be appropriate. However, ASSE is concerned that many contingent or temporary workers as well as workers misclassified as contractors may be deprived of full protection under such a system.

80. Should there be medical removal provisions in the final rule?

No, we agree with OSHA's position that this would provide little benefit.

81/82. Should additional training beyond HazCom training be required for those working with respirable crystalline silica? Should warning labels be changed?

No, full compliance with the newly revised GHS/HazCom rule should be adequate.

84. Are the record keeping requirements for air monitoring, objective data, and medical surveillance appropriate?

ASSE supports consistency with the ASTM silica standards, which provide for retaining these records for at least 40 years or for the duration of employment plus 20 years, whichever is longer, due to the long latency periods of some silica-related illnesses.

Finally, ASSE appreciates the opportunity to comment on this proposed rule. We look forward to continued participation in the process that we hope, in the end, can result in a standard that is consistent with the success our member safety and health professionals have had in helping employers protect workers from respirable silica risks so that all employees can enjoy the same protections.

Sincerely,

Kathy A. Seabrook CSP, CMIOSH, EurOSHM
President