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Subcontractor Requirements Manual

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1. PURPOSE

This document provides requirements for controlling employee exposure to airborne respirable dust containing crystalline silica. This document lists requirements from 29 Code of Federal Regulations (CFR) 1926.1153, “Respirable crystalline silica,” “2016 TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices,” 10 CFR 851, “Worker Safety and Health Program,” and subcontractor requirements.

2. APPLICABILITY

This document applies to all subcontractors working at the Idaho Cleanup Project Core that perform activities that pose an occupational exposure to airborne dust containing crystalline silica. Stricter requirements may be imposed by subcontractors on their employees or subtier contractors. Implementation may be by any effective means determined by the subcontractor.

3. REQUIREMENTS

3.1 Code and Standard Requirements

3.1.1 Specific requirements for controlling worker exposure to airborne *respirable crystalline silica* (see def.) during construction activities are listed in 29 CFR 1926.1153. The requirements listed in this document supplement those requirements, but do not replace them. Code requirements must be met.

3.2 General Requirements

3.2.1 Subcontractors shall ensure that no employee is exposed to respirable crystalline silica above the American Conference of Governmental Industrial Hygienists (ACGIH) *threshold limit values* (TLV; see def.) of 25 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) as an 8-hour time-weighted average.

3.2.2 Subcontractors shall evaluate employee exposure to respirable crystalline silica on the basis of any combination of air monitoring data or *objective data* (see def.) that are sufficient to accurately characterize employee exposure.

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- 3.2.3 If objective data are relied upon for determining employee exposure, it shall contain the following information:
- A. The crystalline silica-containing material in question
 - B. The source of the objective data
 - C. The testing protocol used
 - D. The results of the testing
 - E. A description of the process, task, or activity on which the objective data were based
 - F. Other data relevant to the process, task, activity, material or exposure on which the objective data were based.

3.3 Exposure Control Methods

- 3.3.1 For each task listed in 29 CFR 1926.1153(c), Table 1, “Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica,” subcontractors shall fully and properly implement the engineering controls, work practices, and respiratory protection specified in Table 1 for the work task(s) performed.
- 3.3.2 When respirators are used, they must be in accordance with PRD-2109, “Respiratory Protection.”
- 3.3.3 When implementing the control measures specified in Table 1 of 29 CFR 1926.1153, subcontractors shall ensure that the requirements of 29 CFR 1926.1153(c) are followed, as applicable.
- 3.3.4 For tasks not listed in Table 1 of 29 CFR 1926.1153, exposure control methods, such as *high-efficiency particulate air (HEPA)-filtered* (see def.) dust collection and wet methods, shall be implemented to reduce employee exposure to respirable crystalline silica to the lowest feasible level.
- 3.3.5 Where abrasive blasting is conducted using crystalline silica-containing blasting agents or where abrasive blasting is conducted on substrates containing crystalline silica, subcontractors shall ensure compliance with other applicable contractor and Occupational Safety and Health Administration (OSHA) standards.
- 3.3.6 When ventilation systems are used to control exposure to airborne respirable crystalline silica, systems shall be maintained in accordance with manufacturer’s recommendations to ensure continued effectiveness.
- 3.3.7 If air is recirculated into the workplace, subcontractors shall ensure that the returned air passes through a HEPA filter that is monitored to ensure effectiveness.

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- 3.3.8 Dust capture/filtration system maintenance and filter change-out shall be conducted in a manner that uses engineering controls, work practices and respirators to minimize employee exposure to respirable crystalline silica.
- 3.3.9 Where subcontractors choose to monitor employee exposure to airborne respirable crystalline silica instead of fully and properly following the engineering, work practice, and respiratory protection requirements in Table 1 of 29 CFR 1926.1153, employee exposure monitoring must be used to demonstrate that exposures do not exceed the TLV.
- 3.3.10 When exposure to respirable crystalline silica is determined through air sampling, exposure monitoring shall be conducted in accordance with National Institute of Occupational Safety and Health methods; analysis of samples shall be by an American Industrial Hygiene Association-accredited laboratory.
- 3.3.11 Subcontractors shall select workers with the highest potential for exposure to respirable crystalline silica for exposure sampling and ensure that exposure determinations reflect each employee's 8-hour time-weighted average exposure to respirable crystalline silica at the frequency and pattern needed to ensure that sampling data reflect typical exposure levels given the variability of tasks, work practices, and environmental conditions.
- 3.3.12 Subcontractors shall repeat exposure sampling at the appropriate interval specified in 29 CFR 1926.1153(d), or when changes in the activity occur that could result in employee exposures to respirable crystalline silica at or above the TLV of 25 µg/m³.
- 3.3.13 Subcontractors shall notify monitored and represented employees and their supervisor(s), in writing, of the results of employee exposure monitoring within 5 working days.
- 3.3.14 When monitoring results indicate that employee exposures exceed the TLV, subcontractors shall ensure the written notice includes a statement that the TLV has been exceeded and a description of any corrective actions being taken to reduce exposures to the TLV or below.
- 3.3.15 Subcontractors shall provide affected employees or their designated representative an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.
- 3.3.16 If needed, subcontractors shall provide observers with necessary respiratory protection, clothing, equipment, and briefing on applicable safety and health procedures.

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3.4 Housekeeping

- 3.4.1 Subcontractors shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to airborne respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming, or other methods that minimize exposure are not feasible.
- 3.4.2 Subcontractors shall ensure that compressed air is not used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica, unless the compressed air is used in conjunction with a HEPA-filtered ventilation system that effectively captures any dust generated by the compressed air.

3.5 Written Exposure Control Plan

- 3.5.1 Subcontractors shall designate a *competent person* (see def.) to supervise work involving respirable crystalline silica and make frequent and regular inspections of the job site(s), materials, and equipment to ensure compliance with this document.
- 3.5.2 Subcontractors shall complete FRM-3053, “Construction Activity-Specific Control Plan for Respirable Crystalline Silica,” or another method to document the following information:
- A. A description of the tasks(s) involving exposure to respirable crystalline silica
 - B. A description of the engineering controls, work practices, and respiratory protection from Table 1 of 29 CFR 1926.1153 to be used to limit employee exposure to respirable crystalline silica for each task
 - C. A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica
 - D. Verification that employees have received the required training on hazards associated with exposure to respirable crystalline silica
 - E. Date and time of inspection(s) performed by the competent person, including the activity (ies) observed and any corrective actions needed to be taken.
- 3.5.3 Subcontractors shall ensure copies of the completed FRM-3053 or equivalent documentation are available to employees or authorized employee representatives upon request.

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3.5.4 Subcontractors shall ensure that the completed FRM-3053 or equivalent documentation is updated as often and as promptly as necessary to reflect significant changes in compliance status or significant changes in the airborne respirable crystalline silica level.

3.5.5 Upon completion of the activity, ensure that a copy of the completed FRM-3053 or equivalent documentation is provided to the contractor representative/point of contact.

3.6 Medical Surveillance

3.6.1 Subcontractors shall ensure that employees who are required to wear a respirator for 30 or more days per year for protection from respirable crystalline silica are enrolled in a medical surveillance program that meets the requirements of 29 CFR 1926.1153(h) and that it is provided at no cost to employees.

3.7 Hazard Communication and Training

3.7.1 Subcontractors shall ensure that employees have access to safety data sheets for materials containing crystalline silica and are trained in accordance with PRD-2101, "Hazard Communication."

3.7.2 Subcontractors shall ensure that containers of hazardous chemicals containing crystalline silica are labeled in accordance with 29 CFR 1910.1200.

3.7.3 Subcontractors shall ensure that persons performing work or who are assigned competent person responsibilities for work involving respirable crystalline silica that could result in exposure to respirable crystalline silica in excess of the action level receive training prior to the work assignment that addresses the following:

- A. The health hazards associated with respirable crystalline silica exposure, which are cancer, lung effects, immune system effects, and kidney effects
- B. The tasks that could result in exposure to respirable crystalline silica
- C. Measures that the subcontractor has implemented to protect employees, including engineering controls, work practices, and respiratory protection
- D. Measures employees can take to protect themselves from exposure to respirable crystalline silica, including engineering controls, work practices, respiratory protection, and other personal protective equipment

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- E. The purpose and a description of the medical surveillance program required by OSHA
 - F. The contents of the OSHA regulation for occupational exposure to respirable crystalline silica in construction, 29 CFR 1926.1153, and how to obtain/access a copy of the regulation
 - G. Employee rights of access to exposure and medical surveillance records.
- 3.7.4 Subcontractors shall ensure that employees required to participate in respirable crystalline silica training demonstrate knowledge and understanding of the concepts presented in the training.
- 3.7.5 Subcontractors shall ensure that employees receive additional training under the following conditions:
- A. Employees are observed to perform activities that contradict knowledge gained through training regarding respirable crystalline silica
 - B. There is a change in assigned work, operation of engineering controls, or other changes that could result in increased exposure to respirable crystalline silica.

3.8 Recordkeeping

- 3.8.1 Subcontractors shall make and maintain accurate and complete records as required by 29 CFR 1926.1153(j).

4. DEFINITIONS

Competent person. A person designated by the employer who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace, and who has authorization to take prompt corrective measures to eliminate or control such hazards.

High efficiency particulate air (HEPA) filter. A filter that is 99.97% efficient in removing monodispersed particles of 0.3 micrometers (μm) in diameter.

Objective data. Information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling, or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions that are present in the current operations.

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Respirable crystalline silica. Respirable crystalline silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995, “Air Quality—Particle Size Fraction Definitions for Health-Related Sampling.”

Threshold limit value (TLV). A concentration of airborne respirable crystalline silica of 25 µg/m³ of air, calculated as an 8-hour time-weighted average.

5. REFERENCES

“2016 TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices,” American Conference of Governmental Industrial Hygienists

10 CFR 851, “Worker Safety and Health Program”

29 CFR 1926.1153, “Respirable crystalline silica”

FRM-3053, “Construction Activity-specific Control Plan for Respirable Crystalline Silica”

ISO 7708:1995, “Air Quality—Particle Size Fraction Definitions for Health-Related Sampling”

PRD-2101, “Hazard Communication”

PRD-2109, “Respiratory Protection”

5.1 Related Requirements

The following documents contain requirements applicable to this activity:

PRD-2030, “Occupational Medicine”

PRD-2111, “Exposure Assessments”

PRD-5001, “Training and Indoctrination”

6. APPENDIXES

None