



# Silica Standard Overview

Presentation to:

Petroleum Equipment & Services  
Association

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# Overview

- ◆ Brief summary of OSHA's respirable crystalline silica standard for general industry.
- ◆ OSHA Enforcement issues.
- ◆ Exposure assessment – the key to achieving compliance.
- ◆ Common Q/As.

# Silica Standard for General Industry 29 CFR 1910.1053

## ◆ Para (a) Scope

Applicable to all exposures to respirable crystalline Silica except in:

- ✓ Construction work
- ✓ Agriculture



## Silica Standard for General Industry Para (B) Definitions

- ◆ Permissible Exposure Limit: **50  $\mu\text{g}/\text{m}^3$**
- ◆ Action Level: **25  $\mu\text{g}/\text{m}^3$**
- ◆ Regulated Area: An area, demarcated by the employer, where an employee's exposure to airborne concentrations of respirable crystalline silica exceeds, or can reasonably be expected to exceed, the PEL.

# Silica Standard for General Industry Para (B) Definitions

- ◆ Objective Data
  - ◆ Information such as air monitoring data from industry-wide surveys
  - ◆ The data must reflect workplace conditions **closely resembling** the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

## Silica Standard for General Industry Para (c) Permissible Exposure Limit (PEL)

- ◆ The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of  $50 \mu\text{g}/\text{m}^3$ , calculated as an 8-hour TWA.
- ◆ OSHA's analysis shows that there is significant residual risk of silica-related morbidity and mortality at the new PEL and Action Level. The additional requirements are designed to address that residual risk.

# Silica Standard for General Industry

## Para (d) Exposure Assessment

- ◆ The employer is required to
  - ◆ Assess the exposure of employees who are or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level
  - ◆ Assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data
  - ◆ Re-assess exposures whenever a “change in process, control equipment, personnel or work practices may reasonably be expected to result in new or additional exposures at or above the action level.”
  - ◆ Notify employees of their exposure levels within 15 days.

## Silica Standard for General Industry Para (d) Exposure Assessment

**There are two general methods to comply with Para (d):**

◆ Scheduled monitoring option:

- ✓ If exposures exceed PEL → monitor every 3 months
- ✓ If exposures exceed Action Level but remain at or below the PEL → monitor every 6 months

◆ Performance option:

- ✓ Employers may rely on exposure monitoring data or objective data sufficient to characterize exposures.



# Silica Standard for General Industry Para (d) Exposure Assessment

## The Performance option:

### ◆ Objective data advantages:

- ✓ More protective - Exposure assessments can be done before exposures occur rather than waiting 15-30 days for sample result from laboratory
- ✓ More precise – using big data sets reduce data variation and allows statistical analysis of confidence
- ✓ Less costly – Consultants cost \$7-10,000 for a few days' work. Querying a data base would cost 75 percent less

### ◆ Objective data disadvantages:

- ✓ Must have good quality data with enough context to determine if it meets the “closely resembling” criteria
- ✓ Requires data base management and quality control

# Silica Standard for General Industry Para (e) Regulated areas

Wherever an employee's exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be in excess of the PEL, each employer shall establish and implement either a regulated area or an access control plan.

## ◆ Regulated areas:

- ✓ Must be demarcated such that the boundaries are established
- ✓ Access is limited to authorized employees having duties in the area
- ✓ Protective clothing and equipment must be provided
- ✓ OSHA requires a silica-specific sign to be used at the entrance to regulated areas.



# Silica Standard for General Industry Para (f) Methods of Compliance

## ◆ Hierarchy of controls:

- ✓ All feasible engineering and work practice controls are required to reduce exposures to the PEL
- ✓ Respirators are only allowed when all feasible engineering and work practice controls are implemented and exposures above the PEL remain
- ◆ The proposed prohibition on worker rotation to comply with the PEL was not included in the final rule
- ◆ The obligation to comply using engineering or work practice controls for all general industry begins on June 23, 2108 except for hydraulic fracturing operations (June 23, 2021).

# Silica Standard for General Industry

## Para (f) Methods of Compliance

- ◆ Written Exposure Control Plan:
  - ✓ Description of sources of exposures
  - ✓ Description of engineering controls, work practices, housekeeping, and respirators
  
- ◆ The plan must be reviewed annually and made available for employees.

## Silica Standard for General Industry Para (g) Respiratory Protection

- ◆ Respirators are required when feasible engineering/work practice controls are not available or sufficiently protective.
- ◆ When respirators are required, employers must provide them in accordance with 1910.134.



## Silica Standard for General Industry Para (h) Housekeeping

- ◆ Compressed air and dry sweeping are not allowed to clean contaminated surfaces.
- ◆ HEPA vacuums or wet sweeping are to be used instead
- ◆ Compressed air can be used in conjunction with LEV when vacuuming is infeasible

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## Para (i) Medical Surveillance

- ◆ Medical surveillance required for any employee **will be** exposed above the PEL beginning June 2018 (action level after June, 2020) for 30 days or more per year
- ◆ Initial medical exam:
  - ✓ Medical and work history
  - ✓ Physical exam
  - ✓ Chest X-ray (read by NIOSH Certified "B" Reader)
  - ✓ Pulmonary function test administered by NIOSH certified pulmonary technician
  - ✓ Testing for latent tuberculosis
  - ✓ Other test deemed appropriate by PLHCP
- ◆ Periodic medical exam – required every 3 years




## Silica Standard for General Industry Para (j) Communication

- ◆ Employer shall include respirable crystalline silica in the program required by HAZCOM 1910.1200
- ◆ Each affected employee must be able to demonstrate knowledge of:
  - ✓ Specific operations where exposures may exceed the PEL
  - ✓ Specific procedures for protecting employees from exposure
  - ✓ The contents of the standard
  - ✓ The purpose of medical surveillance
  - ✓ Make a copy of the standard available at no cost to employees
- ◆ OSHA requires a silica specific sign to be used at the entrance to regulated areas.



## Silica Standard for General Industry Para (k) Recordkeeping

- ◆ References 29 CFR 1910.1020 (OSHA's standard on Access to employee exposure and medical records)
  
- ◆ Recordkeeping required for:
  - ✓ Exposure monitoring results
  - ✓ Exposure assessments based on objective data
  - ✓ Medical surveillance records
  
- ◆ Records must be accessible to employees



## Silica Standard for General Industry Para (I) Dates

- ◆ Effective date – **June 23, 2016**
- ◆ All obligations under the standard begin **June 23, 2018**
  - ✓ Includes all general industry workplaces
  - ✓ Includes all oil and gas except hydraulic fracturing
- ◆ Hydraulic Fracturing in the Oil and Gas Industry exception: Obligation to use engineering controls begins **June 23, 2021**
- ◆ NOTE: Requirements for construction activities in general industry and oil and gas became effective September 2017.



## Silica Standard for General Industry Current Status

- ◆ Standard is in force for Construction Industry.
- ◆ Enforcement Directive has not been published.
- ◆ The standard was challenged in the 3rd District Federal Court



# Silica Standard for General Industry

## Current Status

- ◆ Industry made 5 challenges and the court rejected all of them:
  - ✓ OSHA's finding that the rule was needed to reduce significant risk of material impairment,
  - ✓ OSHA's finding that the rule is technologically feasible for the foundry, hydraulic fracturing, and construction industries,
  - ✓ OSHA's finding that the rule is economically feasible for the foundry, hydraulic fracturing, and construction industries,
  - ✓ Whether OSHA violated the Administrative Procedure Act (APA) in promulgating the Rule, and
  - ✓ Whether substantial evidence supports two ancillary provisions of the standard—one that allows workers who undergo medical examinations to keep the results confidential from their employers and one that prohibits employers from using prohibited cleaning methods unless doing so is infeasible.
  
- ◆ The court agreed with union petitioners that the agency did not support its decision not to include medical removal protection in the rule and remanded this issue back to OSHA.



# OSHA Enforcement Issues

- ◆ Upstream Oil and Gas Enforcement Memo dated December 2, 2016
- ◆ Multi-employer worksite issues
- ◆ Regional Emphasis Programs
  - ◆ Regions 3 and 8
  - ◆ Region 6



# QUESTIONS?

Is OSHA likely to postpone the compliance date for general industry?

**Other Questions?**