Adopting the 2016 ACGIH TLV - Respirable Crystalline Silica

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Agenda

- Background
- Regulatory Requirements Impacts
- Work Practice Challenges
- Path Foreword
- Group Q&A / Discussion
Background

▶ Jan 2006: ACGIH Publishes TLV for Respirable α-Quartz at level that is protective, but not feasible for all.
▶ March 2016: OSHA Publishes Silica Rule; reduces PEL
    ▪ respecting feasibility – provides exemptions from PEL and monitoring if using specified work practices

▶ Jan 2018: DOE Publishes Amendments to 10 CFR 851
  ▪ References the most up-to-date consensus S&H standards and deletes the obsolete DOE directives.
  ▪ Use 2016 Consensus Standards, including ACGIH Crystalline Silica α-Quartz and Cristobalite TLV-TWA
  ▪ Amendment effective 1/17/18 -- Compliance must be achieved by 1/17/2019

ACGIH TLV-TWA protective against lung cancer
Regulatory Impacts
Application and Scope

- Impacts of Applying Silica TWA-TVL
  - OSHA Silica Action Level becomes OBSOLETE
  - OSHA Silica PEL is replaced by ACGIH TLV

- Implementing Controls
  - Use feasible engineering and work practice controls to reduce/maintain employee exposure at or below the PEL (OEL of 25 ug/M3)
  - When engineering and work practice controls are insufficient to reduce employee exposure to the lowest feasible level; continue to apply controls and supplement with the use of respiratory protection

- Establishing an appropriate DOE Action Level
  - Is this necessary?
  - Can we measure below 25 ug/M3 accurately?
  - Requirements for ‘Periodic’ and ‘Final’ monitoring schedules
  - Implications for criteria to implement Exposure Control Methods
    - Engineering Controls
    - Regulated Area
    - PPE/Training/Medical

Not Clear if New DOE Action Level is Feasible
Additional Regulatory Impacts
Expanded Work Controls Implementation

DOE Contractors conducting Silica Work will be required to expend more resources to provide for:

► Work Planning
  - Greater application of “Silica Work” planning

► Engineering Controls
  - Added costs to explicitly reduce silica exposure to 25 ug/M3
  - Demarcating additional Regulated Areas to support work at lower OEL

► Respiratory Protection
  - Assigning respiratory protection (RP) to an increased % of workforce, those who are exposed at AL and below the PEL.

► Medical Surveillance
  - Additional RP triggers medical surveillance for added construction workers required to where respirators for 30 or more days a year.

► Training
  - Training the additional employees required to wear respirators, and work in silica regulated areas.

Exposure Level Reduction will require additional controls
If an employer fully implements the controls in Table 1, but then also performs exposure monitoring as described in paragraph d2, and the results indicate the Permissible Exposure Limit was exceeded, would the Department of Energy consider the employer to be compliant on the basis of fully implementing Table 1 or noncompliant based on the monitoring demonstrating an exceedance of the limit?

The 10 CFR 851 technical amendment includes the 2016 ACGIH™ Threshold Limit Values™ for Chemical Substances and Physical Agents and Biological Exposure Indices which includes a respirable silica Threshold Limit Value. This means that DOE construction contractors will no longer be able to use 29 CFR 1926.1153(c)(1) Table 1 without exposure monitoring because they will be required to conduct exposure monitoring to demonstrate compliance with the 2016 ACGIH™ TLV.

Using TLV-TWA of 25 μg/m³ as OEL -- Basis for Table 1 no longer valid
Specified Exposure Control Methods

DOE Contractors conducting Silica Work could contribute to a DOE “Specified Exposure Control Methods” registry:

- Conduct exposure assessments of each employee (performance option or scheduled monitoring option)
  - Employee breathing zone respirable crystalline silica monitoring
  - Work place observation oversight

- Collect an accurate records of all objective data
  - The crystalline silica-containing material in question
  - The source of the objective data
  - The testing protocol and results of testing
  - A description of the process, task, or activity on which the objective data were based
  - Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

“DOE-Wide” Silica Exposure Control Methods Registry
Managing Regulated Areas

Area needing Discussion

- Barricade and Posting expectations
- Boundary Conditions Monitoring
- Access Controls
- Housekeeping v. Decontamination
- Down Posting Regulated Areas

Comments from Deployed Staff

- Is visual dust allowable?
  - Difficult to control over all task aspects.
  - Implications of silica moving beyond barrier – is ‘real-time monitoring’ at boundary feasible?
  - The competent person must be vigilant in controlling visual emissions and footsteps.

- Should we have a down-posting metric?
  - Sample before dropping Respiratory Protection and Silica Regulated Area signage
  - Have competent person authority to deem task is completed, area house kept, and posting can be removed

Do it Like: Radiological, Beryllium, Asbestos, Lead?
Path Forward

Areas of Discussion

- DOE Respirable Crystalline Silica Action Level
- DOE Sponsored “Specified Exposure Control Methods” Registry
- Regulated Area Controls

Areas for Action

- Registry Development
  - Data Elements
  - Quality Controls
  - User Instructions
  - Query and Reporting

- DOE Guidance Manual?
  - Approached to Monitoring
    - Performance Option
    - Scheduled Monitoring Option
  - Example Written Work Plans
  - Regulated Area Management
  - Training Guidance (standard course content)
  - Medical Surveillance Guidance
That's all Folks!