

**Idaho National Laboratory**

<b>EXPOSURE ASSESSMENTS</b>	Identifier: RD-2111
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Subcontractors	Program Requirements Document	eCR Number: 635984
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Manual: INL Subcontractor Requirements

**1. PURPOSE**

This document provides the requirements for performing and documenting exposure assessments for all subcontracted activities at the INL. Exposure assessments are used to collect necessary information relative to a facility, a task, a project, an experiment, or a portion thereof, to adequately identify and characterize existing or potential hazardous agents. Once hazardous agents are identified and characterized, the information is used to determine employee risk, to prioritize sampling, to determine regulatory compliance, and to make recommendations as appropriate, regarding hazard control measures or hazard abatement.

**2. APPLICABILITY**

This document applies to all subcontractors performing work for Contractor, at the INL as specified in their contract. Stricter requirements may be imposed by subcontractors upon their employees or sub tier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

**3. REQUIREMENTS****3.1 General**

- 3.1.1 Perform initial or baseline surveys of all work areas or operations to identify, evaluate and mitigate potential exposures to hazardous agents through the use of engineering and/or administrative controls and/or the use of personal protective equipment.
- 3.1.2 Perform and document exposure assessment for chemical, physical, biological agents and ergonomic stressors using recognized exposure assessment methodologies.

**Note:** *The requirement for documenting exposure assessments can be satisfied by developing a proper and thorough JSA. The JSA must include the task/job step, the hazards identified with the task, the controls/mitigation/PPE required to perform the task, and identify the sampling that will be performed if any.*

*The sampling identified in the JSA will serve as notice to the Construction/Service Industrial Hygienist that sampling will be performed for a specific task.*

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**Note:** *All necessary sampling equipment will be provided, calibrated and maintained in a serviceable condition by the Subcontractor.*

**Note:** *The Subcontractor shall ensure that all sampling shall be performed by a properly trained employee.*

- 3.1.3 Perform periodic resurveys and/or exposure monitoring as appropriate or as required to comply with 29 CFR 1926.55 and 29 CFR 1926, Subpart Z, Chapters 1101-1148.
- 3.1.4 If sampling is performed the results shall be compared to the American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices" (most recent edition, as specified in the contract), and the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs). When ACGIH TLVs are lower (more protective) than OSHA PELs compliance shall be measured by them. (When ACGIH TLVs are used as exposure limits, subcontractors shall nonetheless comply with the other provisions of any applicable OSHA-expanded health standard.) If none of these organizations have an exposure limit established for a given hazardous agent, then the NIOSH REL, if available, should be used.
- 3.1.5 An AIHA IHLAP accredited laboratory must analyze all personal samples.
- 3.1.6 If sampling results indicate that unprotected personnel exposures were greater than the PEL or TLV (whichever is lower) established for that agent, then the subcontractor shall notify the employee sampled of the results and INL construction management shall be notified within 2 hours of knowledge of that exposure.
- 3.1.7 If sampling results indicate that personnel exposures are above the action level. Construction/ Service Industrial Hygienist shall be notified of exposures.
- 3.1.8 Subcontractor shall provide all relevant sampling data including sampling method, analytical results, and calculations to INL construction management within 2 working days upon request.

#### 4. DEFINITIONS

For definitions of terms used throughout the INL Subcontractor Requirements Manual, refer to LST-359.

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## 5. REFERENCES

29 CFR 1926.55 Gases, vapors, fumes, dusts, and mists.

29 CFR 1926 subpart Z Toxic and Hazardous Substances, Chapters 1101 – 1148

## 6. APPENDIX A

### Appendix A

#### Dealing with Silica, Crystalline Quartz

Silica is a common mineral found in the soil and many building materials at the INL. Silica quartz is a hazardous material because of its link to silicosis and lung cancer. It is generally a chronic hazard, but there have been studies to suggest that in certain situations it can be an acute hazard. Below, are some considerations that may be helpful, when working with silica containing materials.

- The exposure level used at the INL to determine an employee's exposure is 0.025mg/M3.
- This level of exposure is found in the AMERICAN CONFERENCE of GOVERNMENTAL INDUSTRIAL HYGIENISTS, Threshold Limit Values.
- The requirements that direct us to use this value at the INL, come from (1) Department of Energy Order 440.1B,4,m,(9) and (2) the Subcontractors Requirement Manual, RD-2111 (Exposure Assessments),3.1.4.
- A contractor should always consider this exposure whenever the task/job could produce airborne particulates.
- The type of tasks that could present a silica hazard are: using an excavator to break concrete or stone, saw cutting concrete or stone, scabbling concrete or stone, or any other major disturbance of concrete or stone. Also, when trenching or excavating in sandy soil, there is a potential for overexposure to silica quartz.

Remember, that Hazard Exposure Assessments are one of the first critical steps in developing a useful and valid JSA.

### Appendix A