

Section 7

Health Hazard Assessments

7.1 Scope

This section establishes guidelines for Bureau of Reclamation facilities conducting health hazard assessments, identifying hazardous materials and environments, identifying risk factors, analyzing and evaluating the risks associated with the hazards, and providing controls to protect employees from potential exposures.

7.2 General Requirements

Reclamation's goal is to prevent employee occupational injuries and illnesses by anticipating, recognizing, evaluating, and controlling occupational health and safety hazards. Facility health hazard assessments shall be conducted to help:

- create awareness of hazards and risks,
- identify who may be at risk (e.g., employees, visitors, contractors, the public),
- identify the route of entry of hazardous materials to an employee, measure the dose, and evaluate toxicity to an employee over a specified time,
- confirm if existing control measures or newly implemented ones reduce or eliminate the hazard, and
- prioritize hazards and their control measures.

7.3 Responsibilities

7.3.1 Area Office Managers

- 7.3.1.1** Shall provide the necessary resources to complete health hazard assessments and implement feasible control strategies to eliminate or reduce employee exposures.

7.3.2 First-Line Supervisors

- 7.3.2.1** Shall ensure their employees receive training according to paragraph 7.4, *Training*, of this Reclamation Safety and Health Standard (RSHS) on the health hazard assessment process and ensure their participation.
- 7.3.2.2** Shall coordinate with the regional/local industrial hygienist (IH) and the safety manager/safety specialist to perform health hazard assessments, training, and exposure monitoring as necessary.
- 7.3.2.3** Shall ensure that findings from health hazard assessments are reviewed with affected employees and incorporated into job hazard analyses (JHAs) as appropriate.

7.3.2.4 Shall ensure engineering controls and mitigation techniques are utilized properly and functioning as intended in work areas.

7.3.2.5 Shall ensure their employees complete required medical examinations.

7.3.2.6 Shall notify the IH or safety specialist when there is a significant change to a work process (new work procedures, equipment, or a new hazard) so a health hazard assessment can be completed.

7.3.3 Employees

7.3.3.1 Shall complete the training requirements in paragraph 7.4.

7.3.3.2 Shall actively participate in health hazard assessments by wearing exposure monitoring equipment, providing input on job tasks and operations, and providing information on areas where potential exposures may exist.

7.3.3.3 Shall review the JHA prior to conducting a job task and discuss any unaddressed concerns/hazards with the supervisor.

7.3.3.4 Shall immediately notify their supervisor of any signs or symptoms related to any hazardous materials used in their job tasks or from environmental exposures.

7.3.3.5 Shall immediately notify their supervisor when engineering controls or other methods used for controlling potentially hazardous environments are malfunctioning.

7.3.3.6 Shall immediately notify their supervisor when their personal protective equipment (PPE) is damaged so it may be repaired or replaced.

7.3.4 Regional Safety Managers

7.3.4.1 Shall support a region-wide health hazard assessment program to ensure that an effective process is in place to eliminate or reduce occupational health hazards and employee exposures.

7.3.5 Regional/Local Industrial Hygienists

7.3.5.1 Shall coordinate with first-line supervisors and safety managers/safety specialists to conduct health hazard assessments that includes information provided in paragraph 7.2, *General Requirements*, and paragraph 7.8, *Safe Practices* of this RSHS.

7.3.5.2 Shall use health hazard assessment results to determine additional industrial hygiene program requirements, implementation of control strategies to reduce employee exposures, employee training, and appropriate medical surveillance requirements.

7.3.5.3 Shall conduct or oversee monitoring for employee exposures to hazardous materials or environments.

- 7.3.5.4** Shall ensure employees receive monitoring results within 15 days of receipt of the report and review them with the employee and the first-line supervisor to ensure they understand the results.
- 7.3.5.5** Shall ensure the appropriate human resources officer receive employee monitoring results to place in the employee's medical folder.
- 7.3.5.6** Shall provide input, language, and guidance for occupational health provisions in contracts.
- 7.3.5.7** Shall provide guidance on design, selection, implementation, and testing of engineering controls to limit exposure during job tasks and operations as requested.

7.3.6 Safety Managers and Safety Specialists

- 7.3.6.2** Shall work with first-line supervisors, regional/local IH, and field locations to conduct health hazard assessments.
- 7.3.6.3** Shall complete the training requirements in paragraph 7.4.

7.3.7 Reclamation Industrial Hygienist

- 7.3.7.1** Shall develop strategies to address Reclamation-wide health hazard issues related to harmful or potentially harmful employee exposures.
- 7.3.7.2** Shall provide technical assistance, education, direction, and support to regional/local IHS for health hazard assessments as requested.
- 7.3.7.3** Shall work with the regional IHS to develop a Reclamation-wide electronic system for maintaining health hazard assessment results.

7.3.8 Human Resources Officers

Shall maintain received medical examination results, clearance documentation, and employee exposure monitoring records in the employee's medical folder according to 29 CFR 1910.1020(d)(1), *Access to Employee Exposure and Medical Records*, the Privacy Act of 1974 (P.L. 93-579), and provide the regional/local IH, local safety specialist/manager, and/or first-line supervisor with the clearance results as requested.

7.4 Training

7.4.1 Initial Training

First-line supervisors, in coordination with the safety manager/safety specialist and/or the region IH, shall coordinate employee training for conducting health hazard assessments that includes the following minimum elements:

- benefits of performing health hazard assessments,
- how to identify tasks or environments that have the potential for employee exposure to hazardous materials,
- ways to measure and identify employee exposure and risks associated with job tasks,
- methods prioritizing actions to reduce employee exposures,
- use of the hierarchy of controls to select the appropriate controls to reduce employee exposures,
- methods to assess the performance of the controls as it relates to employee exposures,
- importance of using consistent assessment techniques and maintaining work site data, and
- retention requirements for employee medical records and workplace exposure.

7.4.2 Refresher Training

The first-line supervisor shall determine the frequency of refresher training in consultation with the safety manager/safety specialist and the regional/local IH.

7.4.3 Recordkeeping

The first-line supervisor shall ensure training records are kept in the Department of the Interior's approved repository and managed in accordance with the Information Management Handbook as referenced in Reclamation Manual Directive and Standard, *Information Management* (RCD 05-01).

7.5 Hazard Identification, Assessment, and Safety Measures

7.5.1 Hazard Identification and Assessment

The first-line supervisor, in coordination with the safety manager/specialist and the regional/local IH, shall assess work areas reviewing job tasks and work areas for potential employee exposures to hazardous materials, environments, and determine the appropriate controls, equipment, and PPE to reduce employee exposures.

7.5.1.1 Health Hazard Assessment Process

The assessment process shall include the following minimum elements:

- review processes in work areas,
- anticipate and document any recognized hazards,
- involve employees when reviewing job tasks, processes, and hazardous materials used in work areas,
- identify and monitor exposures and risks,
- evaluate environmental conditions (e.g., heat, cold, noise),
- identify and recommend feasible environmental controls,
- implement hazard controls,
- train employees on new procedures and/or controls,
- develop and implement procedures to evaluate new processes or equipment,

- develop and implement procedures to confirm controls are working to reduce exposures, and
- when and where job plans are utilized, a copy of the health hazard assessment, where required, will be attached to the job plan.

7.5.2 Safety Measures

7.5.2.1 Hierarchy of Controls

The first-line supervisor, in coordination with the safety manager/safety specialist and the regional/local IH, shall implement the appropriate controls, below, to reduce potential employee exposure in their work areas:

- eliminate the hazardous materials used, or reduce quantities or concentrations,
- substitute to a less hazardous material or procedure,
- identify and implement engineering controls to prevent or reduce exposures (e.g., local exhaust ventilation, physical containment, real-time sensors and monitors) and ensure the equipment is functioning properly,
- implement administrative controls and work procedures to prevent exposures (e.g., alter how the job tasks or procedures are done, reduced working times in high exposure areas, install signs, train employees on specific job procedures),
- reduce the work time for tasks with the potentials for exposure to hazardous materials and physical hazards (e.g., noise, vibration, temperature, radiation),
- schedule job tasks where there is a potential for exposing other employees in a way that minimizes exposure, and
- provide PPE, as the last resort, for employees and train them accordingly.

7.6 Pre-job Briefing and Planning Requirements

7.6.1 Job Hazard Analysis

The first-line supervisor, in coordination with the safety manager/specialist and the regional/local IH, shall address the appropriate elements listed in paragraph 7.5.2, *Safety Measures* of this RSHS, in JHAs where employee exposure is a potential risk factor.

7.7 Personal Protective Equipment

First-line supervisors, in coordination with the safety manager/safety specialist and the regional/local IH, shall provide and train employees in the use of required PPE to minimize exposure to hazard in the work area.

7.7.1 Respiratory Protection

Employees shall use respiratory protection and adhere to the requirements in RSHS Section 32, *Respiratory Protection*, when:

- exposure to a Federal OSHA-regulated substance exceeds the action level (AL) or permissible exposure limit (PEL),

- engineering and work practice controls are not adequate to reduce exposures below the AL or below 50 percent of the PEL, and
- when interim protection measures are in place during a health hazard assessment.

7.7.2 Additional PPE Selection

Refer to RSHS Section 8, *Personal Protective Equipment*, for selection, use, and maintenance requirements.

7.8 Safe Practices

7.8.1 Air Contaminant Control Plan

The regional/local IH, in coordination with the first-line supervisor and the safety manager/safety specialist, shall implement an air contaminant control plan when personal or area air monitoring results conducted during a health hazard assessment equal or exceed a Federal OSHA regulated AL or 50 percent of the PEL if an action level does not exist. The plan shall include the following minimum elements:

- means to reduce exposures levels using relevant controls outlined in paragraph 7.5.2.1, *Hierarchy of Controls* of this RSHS,
- periodic air monitoring to ensure the controls implemented are effective,
- procedure or guidelines to ensure JHAs for operations with air contaminant exposure include control measures and PPE, and
- guidelines covering when a medical surveillance program should be implemented.

7.8.2 Noise Control Plan

The regional/local IH in coordination with the first-line supervisor and the safety manager/specialist shall implement a noise control plan when stationary or portable sources expose employees to 85 decibels (dBA) or greater. The plan shall include the following minimum elements:

- conducting noise surveys and identifying sources that expose employees to 85 dBA or greater,
- identifying control measures for sources producing sound levels to 85 dBA or greater,
- periodic noise monitoring to ensure the controls implemented are effective,
- procedures to ensure JHAs for operations with noise levels to 85 dBA or greater include updated control measures and PPE,
- means to reduce exposures levels using relevant controls outlined in paragraph 7.5.2.1, and
- implement a hearing loss prevention program outlined in RSHS Section 31, *Hearing Loss Prevention Program*.

7.8.3 Medical Surveillance

7.8.3.1 Notification of Monitoring Results

The regional/local IH shall notify the first-line supervisor and affected employee(s) and review the monitoring results within 15 days after receiving the report, covering the following elements, as a minimum:

- employee name, job title, and work location,
- job task(s), and duration monitored,
- employee monitoring results compared to the PEL or AL if applicable, and
- explanation of results and recommendations to reduce potential exposure (if applicable).

7.8.3.2 Medical Surveillance Program

The regional/local IH, in coordination with the first-line supervisor and the safety manager/safety specialist, shall review health hazard assessments and monitoring results that would potentially require placing employees in a medical surveillance program when employee monitoring results meet or exceed specific exposure limit requirements outlined in Federal OSHA regulations for medical surveillance (e.g., lead, asbestos, silica, noise, suspect carcinogens).

7.9 Definitions

Action level	A concentration designated in Federal OSHA 29 CFR part 1910 for a specific substance, calculated as an 8-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.
Exposure assessment	A process that determines the magnitude of the dose, toxicity, duration, and the route of entry of potential exposures and their health threat.
Hazardous material	Any substance or chemical which is hazardous to people's health or physical hazard. This includes chemicals such as carcinogens, irritants, corrosives, toxic agents, sensitizers, agents that damage the lungs, skin, eyes, or mucous membranes; chemicals that can combust, explode, are flammable, oxidizers, pyrophorics, unstable-reactive or water-reactive.
Health hazard	A chemical classified as posing one of the following hazardous effects: acute toxicity (any route of exposure), skin corrosion or irritation, serious eye damage or eye irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity (single or repeated exposure), or aspiration hazard (OSHA 29 CFR 1910.1200, Appendix A, <i>Health Hazard Criteria (Mandatory)</i>).
Health hazard assessment	A study of the work area or site that includes identification of potential exposure to hazardous materials, atmospheres, equipment, and work procedures.
Permissible exposure limit	A concentration designated in Federal OSHA 29 CFR part 1910 for a specific substance, calculated as an 8-hour time-weighted average that is the

maximum upper exposure legal limit to a hazardous substance exposure that an employee can be exposed to in an 8-hour period.

Risk factor Behavior, environment, or work conditions that potentially increases the probability of an incident occurring or severity of an incident.

7.10 References

Occupational Safety and Health Administration. *Industrial Hygiene*.

https://www.osha.gov/sites/default/files/training-library_industrial_hygiene.pdf

Occupational Safety and Health Administration. *Industrial Hygienist's Guide to Anticipate, Evaluate, and Manager Occupational Health and Safety Risks with Industrial Hygiene Software*. <https://ohsonline.com/Articles/2018/05/01/Industrial-Hygiene-Software.aspx?Page=2>