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SECTION C - ARS INDUSTRIAL HYGIENE FUNCTION

CHAPTER VIII - ARS CHEMICAL HYGIENE PROGRAM

CHAPTER VIII

ARS CHEMICAL HYGIENE PROGRAM

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CHAPTER CVIII - SECTION C

ARS CHEMICAL HYGIENE PROGRAM

A PURPOSE OF CHAPTER

This chapter

1 State policy and responsibilities for developing, implementing, and managing a Chemical Hygiene Program.

2 Establishes the scope of the program.

3 Establishes the minimum program elements to be included in the program.

B APPLICABILITY

The contents of this chapter are applicable to all missions under the direction of the ARS Administrator whether accomplished by ARS personnel, cooperators, or contractors within ARS. Exceptions to the provisions of this Manual require Office of the Administrator approval. Waivers must be documented and copies furnished to the next higher management level. In all instances, however, program coverage consistent with the intent of the pertinent provisions will be provided.

C SUMMARY

This chapter contains the required criteria and procedures for personnel at ARS Locations to develop, implement, and manage a Chemical Hygiene Program. Specific information is provided on the following minimum program elements:

- o Monitoring

- o Written Chemical Hygiene Plan

- o Employee Information and Training

- o Medical Consultation and Medical Examinations

- o Hazard Identification

- o Use of Respirators

- o Recordkeeping

D ABBREVIATIONS

AAO - Area Administrative Officer

AD - Area Director

ASHM - Area Safety and Health Manager

CEPS - Cluster Environmental Protection Specialist

CFR - Code of Federal Regulations

CHP - Chemical Hygiene Plan

LC - Location Coordinator

OSHA - Occupational Safety and Health Administration

RL - Research Leader

SHEMB - Safety, Health, and Environmental Management Branch

E DEFINITIONS

1 Action Level - A concentration designated in 29 CFR Part 1910 for a specific substance, calculated as an eight (8)-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

2 Chemical Hygiene Officer - An employee who is designated by the employer who is qualified by training or experience in the development and implementation of the provisions of the Chemical

Hygiene Plan. This definition is not intended to place limitation on the position description or job classification that the designated individual shall hold within ARS.

3 Hazardous Chemical - A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skins, eyes, or mucous membranes. Appendices A and B of the Hazard Communication Standard (29 CFR 1910.1200) provides further guidance in defining the scope of health hazards and determine whether or not a chemical is to be considered hazardous for purposes of this chapter.

4 Laboratory Use of Hazardous Chemicals - The handling or use of such chemicals in which all of the following conditions are met:

E DEFINITIONS (Continued)

a chemical manipulations are carried out on a laboratory scale;

b multiple chemical procedures or chemicals are used;

c the procedures involved are not part of a production process, nor in any way simulate a production process; and

d protective laboratory practices and equipment are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

5 Protective Laboratory Practices and Equipment - Those laboratory procedures, practices and equipment accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

6 Select Carcinogen - Any substance which meets one of the following criteria:

a it is regulated by OSHA as a carcinogen; or

b it is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or

c it is listed under Group 1 ("carcinogens to humans") by the International Agency for Research on

Cancer Monographs (IARC) (latest edition); or

d It is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidences in experimental animals in accordance with any of the following criteria:

(1) After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than $10\text{mg}/\text{m}^3$;

(2) After repeated skin application of less than $300(\text{mg}/\text{kg}$ of body weight) per week; or

E DEFINITIONS (Continued)

(3) After oral dosages of less than $50 \text{ mg}/\text{kg}$ of body weight per day.

F SCOPE

This chapter applies to all ARS employees including part-time, seasonal, and temporary who are

identified for inclusion in the program based working in a laboratory environment.

A hazard assessment must be performed for all chemical and biological agents known to be present in the workplace. For the hazard assessment of chemical agents only, it is ARS policy to rely on the physical and health hazard evaluations done by chemical manufacturers and importers, that are written on MSDS prepared by them and provided to ARS.

G POLICY

It is ARS policy to provide information and training to employees on the potential physical and health hazards that may result from exposure to chemical and biological agents in their work environment. Information and training shall be provided to employees by implementing and maintaining the following minimum elements of a Hazard Communication Program:

1 Written program.

2 Chemical and biological agent inventory system.

3 MSDS reference file system.

4 Labeling/warning signs.

5 Training program.

H AUTHORITIES

1 Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.

2 29 Code of Federal Regulations Part 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs.

3 29 Code of Federal Regulations 1910.1450; Occupational Exposure to Hazardous Chemicals in Laboratories.

I RESPONSIBILITIES

1 AD, will:

a Initiate and operate a comprehensive and chemical hygiene program consistent with the requirements set forth in this chapter.

b Provide the necessary qualified subordinate staffing, education/training, equipment, financial resources.

c Comply with responsibilities as found in the chapter on overall responsibilities.

2 Center Directors, Location Coordinators, and Research Leaders, will:

a Implement/manage/monitor and comply with guidance as provided in this chapter and as required by 29 CFR 1910.1450.

b Inform and hold subordinate supervisors responsible for implementing and managing this program. Procedures as provided in this chapter are the responsibility of this level of supervision.

c Comply with responsibilities as found in the chapter on overall responsibilities.

3 FD-SHEMB, will:

a Develop and update as required guidance on the interpretation and application of 29 CFR 1910.1450 for use by ARS supervisors and employees.

b Assure all supervisory personnel and employees know of their responsibilities and rights as provided in 29 CFR 1910.1450.

c Provide assistance in the implementation of this program as requested.

4 ASHM's, CEPS, will:

a Coordinate and provide technical oversight to the implementation of this chapter for all Area employees, cooperators, and visitors.

b Ensure that all Location programs with the Area are consistent with this chapter.

I RESPONSIBILITIES (Continued)

5 All ARS Employees, will:

a Comply with all provisions of this chapter.

b Properly use all applicable safety, environmental, and personal protective equipment and clothing.

J PROGRAM DESCRIPTION/PROCEDURES

1 Monitoring

a Employee exposure determination. The RL will have the work site monitored for any substance regulated by a 29 CFR 1919, subpart Z, which requires monitoring, if there is reason to believe that on a routine basis the action level is exceeded; or in the absence of an action level the PEL is routinely exceeded.

b Periodic monitoring. If the monitoring results indicate the employee is exposed over the action level; or in the absence of an action level the PEL, then compliance with relevant standard must commence immediately.

c Termination of monitoring. Monitoring may be terminated in accordance with the relevant standard.

d Employee notification of monitoring results. Results of any monitoring must be given to the employee. This can be done by individual memorandums or by posting the results in an appropriate location.

2 Chemical Hygiene Plan

a A written chemical hygiene plan must be developed when hazardous chemicals as defined in this chapter are used in an ARS laboratory.

b The plan must be capable of protecting employees from health hazards associated with hazardous

chemicals and capable of keeping exposures below the limits specified in paragraph 6.a.1. above.

c The CHP must be readily available to the employee, employee representatives and upon request, the Assistant Secretary of Labor for Occupational Safety Health Administration or designee.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

d Program elements:

(1) Standard operation procedures which identify safety and health requirements which are to be followed where laboratories use hazardous chemicals.

(2) Criteria which will be used to determine and control hazardous chemicals exposures. Included in the criteria will be engineering controls, the use of personal protective equipment and hygiene practices. Special care will be used in the selection of controls for that are known to be extremely hazardous.

(3) Fume hoods and other engineering controls must function properly. Performance inspections will be performed to ensure such devices will provide the required level of protection.

(4) Guidance on employee information and training will be provided.

(5) Identifying and establishing control measure to restrict laboratory procedures that based on their relative hazard to the employee, equipment, and building, must be accomplished only with written prior approval of the RL.

(6) Establishing procedures for medical consultation and medical examinations.

(7) Assign a responsible personnel who will serve as the Chemical Hygiene Officer and, if appropriate, establish a Chemical Hygiene Committee.

(8) Establish additional employee protection for work with particularly hazardous substance. Included in this group would be select carcinogens, reproductive toxins, and substances which have a high degree of acute toxicity. The additional protection may include:

(a) establishment of a designated area;

(b) use of containment devices;

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(c) procedures for the safe removal of contaminated waste; and

(d) decontamination procedures.

(9) The plan will be reviewed annually and updated if required by changes in research or other program requirements.

3 Employee Information and Training

a The RL will ensure that employees are informed and trained on the hazards of chemicals present in their work environment.

b Information and training shall be provided when the employee is first assigned to the laboratory and when either reassigned to another area or when the hazardous chemicals of the current assignment changes. Refresher training for areas which the hazard remains constant must be accomplished at least

every three years.

c Information to be provided to the employee must include the following:

(1) the contents of 29 CFR Part 1910.1450; Occupational Exposures to Hazardous Chemicals in Laboratories;

(2) the location and availability of the Chemical Hygiene Plan;

(3) the permissible exposure limits for OSHA regulated substances, as found in 29 CFR 1910 subpart Z or when no applicable OSHA standards exist;

(4) signs and symptoms of exposure for the hazardous chemicals used; and

(5) the location and availability of known reference material on hazards which should provide safe handling requirements, storage and disposal methods, and the MSDSs, that were furnished by the chemical supplier.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

d Training shall include the following:

(1) Methods and observations for detecting the presence of hazardous chemicals or the release of such chemicals;

(2) the physical and health hazards of the chemicals;

(3) appropriate protective measures, emergency procedures, personal protective equipment to be used; and

(4) the Chemical Hygiene Plan.

4 Medical Consultation and Medical Examinations

a Employees covered under this chapter will be provided the opportunity to receive medical attention. This is best accomplished through the Occupational Health Maintenance Program. Medical attention will be provided when:

(1) the employee develops signs or symptoms associated with chemicals of the work area;

(2) monitoring results indicate an exposure above the PEL; or

(3) as appropriate after an accident such as a spill, leak, or explosion.

b Medical consultations and examinations shall be performed under the direct supervision of a licensed physician and at no cost to the employee.

c The following information shall be provided to the physician:

- (1) A listing of chemicals the employee may have been exposed to;

- (2) a description of the work environment and under what conditions the exposure may have occurred;
and

- (3) a description of signs and symptoms of the exposure.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

d Physicians written opinion

(1) Written medical opinions are required from the examining physician. The report must include the following:

- (a) any recommendation for further medical follow-up;

(b) results of medical examination and any associated test;

(c) medical conditions which are not a result of the exposure, but may increase the risk as a result of exposure; and

(d) a statement from the physician that the employee has been informed about the examination, what the results were, and any requirement for follow-up examinations.

b The written statement shall not reveal specific findings of diagnosis which are unrelated to the exposure.

5 Hazard Identification

a Labels on incoming containers of hazardous chemicals must not be removed or defaced. MSDS will be maintained for each hazardous chemical and will be readily available for the employee.

b For chemicals developed in the laboratory the following provisions will be followed:

(1) If the chemical produced is for exclusive laboratory use then a determination shall be made to ascertain if it is hazardous, and if found hazardous employees will be informed and trained on its hazards.

(2) If the chemical is produced as a by-product and the hazard is not known it will be treated as a hazardous chemical and provisions of this chapter apply.

(3) If the chemical is for use outside the laboratory then provisions of 29 CFR 1910.1200, Hazard Communication, preparation of a MSDS shall be followed.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

6 Use of Respirators

When respirators are needed and used to provide employee protection the provisions for selection, care, use, and limitations as required by 29 CFR 1910.134, Respirators will be followed.

7 Recordkeeping

a An accurate record of any monitoring measurements results shall be established for each employee.

b A record will established for medical consultations and examinations which will include tests and written opinions as required by this chapter.

c The above records will be maintained, transferred, and made available in accordance with 29 CFR 1910.20.