

## Industrial Hygiene Program

### INTRODUCTION

Fermilab's Industrial Hygiene program has been developed to protect the health and well-being of working people and the public from chemical, microbiological and physical health hazards present at, or emanating from, the workplace.

This chapter describes the process, assessments, databases, reports, reference materials, lessons learned, and subcommittee efforts that are used to assure that the Industrial Hygiene systems established at Fermilab are operating effectively and efficiently.

This chapter is intended to be a summary chapter. Where applicable, more detailed information may be found described in other Fermilab Industrial Hygiene related FESHM Chapters and websites. These chapters and websites will be referenced in the body of this chapter. Please note that many of the IH websites are password protected.

### DEFINITIONS

None.

### RESPONSIBILITIES

**The Laboratory Director** is responsible for assuring that the Industrial Hygiene program is in place and effectively monitoring Industrial Hygiene systems.

**Division/Section Heads** are responsible for

- Fully participating in all of the elements that make up the Industrial Hygiene program.
- Assuring that personnel assigned to Industrial Hygiene activities possess the experience, knowledge, skills, and abilities to perform effectively.

### PROGRAM DESCRIPTION

#### AREC Process

As mentioned above, Industrial Hygiene is primarily concerned with the control of occupational health hazards that arise as a result of or during work. Industrial Hygiene has been defined as "that science and art devoted to the anticipation, recognition, evaluation, and control of those environmental factors or stresses arising in or from the

workplace, which may cause sickness, impaired health and well-being, or significant discomfort among workers or among citizens of the community.”<sup>1</sup> At Fermilab members of the Industrial Hygiene Subcommittee will utilize the AREC process to ensure that employees are not overexposed to physical, chemical or biological agents during the course of their work. The table below lists those items which Fermilab’s Industrial Hygienists use in meeting the objectives of the AREC process.

<i>Anticipation</i>	<i>Recognition</i>	<i>Evaluation</i>	<i>Control</i>
Job Meetings	Injury/Illness Investigations	Health and Safety Walkthroughs	Engineering
Purchase Requisition Reviews	<b><i>Industrial Hygiene Assessment Database</i></b>	<b><i>Industrial Hygiene Sampling Database</i></b>	Administrative
Project Reviews	Job Planning & Hazard Analyses	Negative Exposure Assessments	Personal Protective Equipment
Hazardous Materials Management Program	Product Labels and MSDSs	Professional Judgment	Product Substitution
<b><i>Education, Training &amp; Reference Materials</i></b>	Written Procedures	<b><i>Exhaust System Survey Database</i></b>	<b><i>Respiratory Protection Report</i></b>
<b><i>Industrial Hygiene Subcommittee</i></b>	Medical Surveillance	Environmental Potential to Emit Spreadsheet	<b><i>Hearing Conservation Report</i></b>
<b><i>Industrial Hygiene WAAF Exposure Assessment Tool</i></b>	Fire Department Run Reports	<b><i>Laser Database</i></b>	
Design Reviews & Experiment Reviews	<b><i>Audiometric Database</i></b>		
Tool Box Meetings			
Daily and/or Operational Meetings			
Chemical Hygiene Plans			
<b><i>Lessons Learned</i></b>			
<b><i>Confined Space Database</i></b>			

Those IH specific items in the table above that are bolded and italicized are explained in greater detail in the paragraphs below.

<sup>1</sup> Fundamentals of Industrial Hygiene, Third Edition, National Safety Council, 1988, p. 3.

## Assessments

Industrial Hygiene assessments and other structured operational awareness activities are all part of Fermilab's Industrial Hygiene Program. The Industrial Hygiene assessment database is described by the Industrial Hygiene Assessment Form. Results of the assessments are located in the Industrial Hygiene Assessment Database.

## Databases

There are a number of databases with corresponding data entry forms that assist the lab in maintaining a well-organized Industrial Hygiene program. They include:

Audiometric Database

IH WAAF Exposure Assessment Tool

Exhaust System Survey Database

Confined Space Database

Industrial Hygiene Sample Database

Laser Database

## Reports

Other IH computer databases are utilized to track progress in the areas of Respiratory Protection and Hearing Conservation.

## Education, Training and Reference Materials

In addition to the IH training class in TRAIN, there are a number of FESHM Chapters which describe in greater detail the specific IH related programs at Fermilab. These chapters provide the foundation for the IH program at Fermilab. These chapters include:

- FESHM 5052.4, "Asbestos Management Program,"
- FESHM 5052.5, "Beryllium,"
- FESHM 5072, "Bloodborne Pathogens,"
- FESHM 5063, "Confined Spaces,"
- FESHM 5084, "Ergonomics,"
- FESHM 5051, "Hazardous Communication,"
- FESHM 5061, "Hearing Conservation,"
- FESHM 5062.1, "Lasers,"
- FESHM 5052.3, "Special Toxic Hazards-Lead Containing Materials,"
- FESHM 5053, "Nanotechnology,"
- FESHM 5064, "Oxygen Deficiency Hazards,"
- FESHM 5101, "Personal Protective Equipment,"
- FESHM 5103, "Respiratory Protection,"
- FESHM 5062.2, "Static Magnetic Fields,"
- FESHM 5065.1, "Temperature Extremes,"
- FESHM 5091, "Hazard Control Ventilation."

Imbedded in many of these chapters are procedures and in some instances IH FESHM Forms which help to control and manage the appropriate flow of information needed for

proper program implementation and development. Other forms, called IH Field Forms also assist in this endeavor.

### **Lessons Learned**

Fermilab's Lessons Learned program is described in FESHM 3020, "Incident Investigation." Other references are found in FESHM 3010, "Significant and Reportable Occurrences."

### **Subcommittee Efforts**

The Industrial Hygiene Subcommittee is responsible for assisting line management in the implementation of Fermilab's Industrial Hygiene policies, the Industrial Hygiene portions of the Fermilab ES&H Manual, and the Work Smart standards relevant to Industrial Hygiene. It is charged with meeting on a regular basis to discuss and document Industrial Hygiene issues, lessons learned and to develop and recommend solutions that will not only ensure compliance but also establish sound and standardized Industrial Hygiene practices throughout the Lab for continuous improvement.