Industrial Hygiene: Monitoring and Evaluation of Occupational/Environmental Exposure

1.0 GENERAL

Industrial hygiene is both the art and science of anticipation, recognition, evaluation and control of risk factors that adversely affect physical, mental and social health. The goal of industrial hygiene is to implement preventive intervention(s) to eliminate or reduce unnecessary exposure to potentially harmful substances or conditions. Monitoring, i.e., the method(s) used to quantify the nature and extent of the hazard, is the cornerstone of an effective industrial hygiene program.

The purpose of a monitoring program is to establish consistent sampling, analytical, and evaluation procedures to ensure quality assessment of real or potential health risks resulting from exposure to physical, chemical, biological, illumination, energy and/or ergonomic risk factors.

Harmful exposures are those that exceed recognized exposure limits and other exposures deemed harmful.

2.0 REQUIREMENTS

2.1 Each component with identified harmful exposures should

2.1.1 Document and evaluate harmful exposures in the workplace

2.1.2 Develop and publish standard operating procedures to reduce risk to faculty, staff, students, and visitors

2.1.3 Provide and document training to affected faculty, staff, students, and visitors in standardized safe operating procedures for identified hazards

2.1.4 Provide for appropriate recordkeeping and retention of exposure monitoring records

2.1.5 Develop and implement appropriate control measures to eliminate or reduce exposures

2.2 Monitoring Program

Each component should develop a program to monitor and evaluate harmful exposures, in accord with nationally recognized practices and protocols. A typical monitoring program may include

- Project/job hazard analysis (hazard identification)
- A site sampling strategy/protocol
- Sampling and monitoring
- Chain-of-custody protocols
- Evaluation of results
- Communication of results, in writing, to affected employees
- Initiation of appropriate corrective action
- Recordkeeping and records retention protocols
- Periodic re-sampling and follow-up evaluation(s) should be conducted when monitoring results indicate a risk of potentially harmful occupational exposures. A recommended protocol for periodic resampling is available from the System's Office of Risk Management and Safety.

2.3 Documentation

Each component performing monitoring should develop a standardized monitoring worksheet* and/or a computerized relational database, which includes the following:

- Location identity: System's component, campus, college, school, department, program, laboratory, room, etc.
- Name and job title of individual or area sampled
- Person performing the sampling/monitoring/evaluation
- Description of operation, process and/or job
- Contaminant or condition of concern
- Documented chain-of-custody
- Results compared to appropriate standards
- Sampling and analytical methodology
- Instrumentation, media, etc.
- Pre and post-sampling sampling calibration information

*Sample monitoring worksheet forms are available from the System's Office of Risk Management and Safety.

2.4 Non-Traditional Workshifts

In the event of non-traditional workshift monitoring, assistance in methodology is available from the System's Office of Risk Management and Safety.

2.5 Guidelines for Evaluating Occupational Exposure

2.5.1 In conformance with recognized industrial hygiene practice, each component should evaluate monitoring results against recognized exposure limits such as:

- Permissible Exposure Levels (PELs), at 29 CFR 1910.1000, for air contaminants
- Threshold Limit Values (TLVs), by ACGIH "Threshold Limit Values and Biological Exposure Indices"

2.5.2 Whenever monitoring results indicate exposure levels exceed 50 percent of recognized exposure limits, periodic re-sampling and follow-up evaluation should be conducted. A recommended protocol for periodic resampling is available from the System's Office of Risk Management and Safety.

2.5.3 In cases where exposure limits are exceeded, the affected component should act immediately to eliminate or reduce the harmful contaminant or condition:

- Remove affected individual(s) from exposure. (In some conditions, appropriate personal protective equipment (PPE) may be provided until engineering controls can be implemented)
- Develop and implement control measures to eliminate or reduce the hazard

3.0 INDOOR AIR QUALITY (IAQ) INVESTIGATION PROTOCOL

To ensure indoor air quality is conducive to a productive environment for faculty, staff, students, and visitors, each component should have a procedure for investigating IAQ concerns, including provisions for at least the following:

- Investigating complaints from building occupants
- Performing visual assessments of the workplace, for example water stained ceiling tiles, dust accumulation on horizontal surfaces, poor lighting, etc.
- Conducting appropriate environmental monitoring
- Recommending appropriate corrective measures
- Recordkeeping and retention, for IAQ investigations and evaluations

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Contact for Interpretation	Office of Risk Management and Safety
History	New standard

Recommendation	_____	_____
	Chair, Risk Management and Safety Council	Date
Legal Sufficiency	_____	_____
	General Counsel	Date
Approval	_____	_____
	Director of Office of Risk Management and Safety	Date