REVIEW CRITERIA AND SAMPLE LINES OF INQUIRY FOR CHEMICAL MANAGEMENT FOCUSING ON CHEMICAL HAZARDS MANAGEMENT

The following provides a collection of lines of inquiry that could be used in an assessment of the chemical management functional area. The lines of inquiry are grouped according to the general criteria for a subject matter expert (SME) evaluation recommended in the Integrated Safety Management System (ISMS) Team Leader's Handbook. These lines of inquiry are suitable for use by a chemical management SME within a broader ISMS review or in a "stand-alone" review of a chemical management program.

The lines of inquiry may be used in reviewing requirements' documentation, interviewing personnel, or observing activities. A robust set of lines of inquiry would enable determination that the given criteria are met.

Members of the Chemical Safety Topical Committee and others with experience in reviews and verifications in this functional area are invited to add to these suggested lines of inquiry, so this collection continues to grow as a valuable resource.

OBJECTIVE

Within the Chemical Management area, the planning of work includes an integrated identification and analysis of hazards, and development and specification of necessary controls. There is an adequate process for the authorization and control of work, and a process for identifying opportunities for feedback and continuous improvement. Within the Chemical Management area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence.

CRITERIA AND LINES OF INQUIRY

Criterion 1

Procedures and/or mechanisms for activities involving chemicals require adequate planning of individual work items to ensure that hazards are identified and analyzed, and that appropriate controls are identified and selected for subsequent implementation.

Lines of Inquiry

- What is the process used to identify potentially hazardous chemicals that are used or stored in the facility? What hazard analyses are conducted for such chemicals and for chemical processes in the facility? What is the "driver" for these hazard analyses?

- What are the qualifications of personnel performing chemical hazard analysis? Are "hands-on" employees involved in all chemical hazard analyses conducted by SMEs? Do environment, safety and health (ES&H) professionals conduct walk-downs of facilities in which chemicals are to be used or stored, prior to completing the hazard analysis?

- Do the work packages reflect a well-developed planning process that incorporates potential chemical safety concerns?

- Has the facility adequately implemented a job hazard analysis procedure for work planning? Is chemical safety integrated into this process? Is identification (and reduction) of waste generation integrated into this process?

- Are there procedures or instructions in place to specify when review and approval are needed on project documentation to ensure that any chemical hazards management concerns are addressed?

- Does a facility-specific procedure exist to implement a comprehensive chemical hazard management program? Does it reflect site-wide requirements and all applicable standards?

- Are waste types, quantities, and their associated hazards identified in the job hazard analysis and work planning process?

- Are hazards of legacy chemicals (e.g., abandoned, residual chemicals in tanks and pipes with inadequate controls) properly identified and addressed? Have their potentially degraded storage conditions been considered? Have these chemicals been sampled and characterized? Are there adequate controls to prevent and mitigate adverse consequences? Are the containers of these chemicals periodically inspected and maintained? Are the hazards of these chemicals appropriately and sufficiently addressed in the facility's safety basis?

- What is the regulatory status of the legacy chemicals in the facility? Has the regulatory status of the legacy chemicals as hazardous waste been appropriately determined?

- Has pollution prevention (substitution with a non-hazardous material or reduction in quantity used) been considered, when applicable, as a way to prevent or mitigate chemical hazards?

- Are adequate and appropriate controls for chemical hazards identified through the hazard analysis? Are adequate controls identified for all chemical hazards? Are engineered controls preferred over administrative controls? Are administrative controls preferred over personal protective equipment? Are passive controls preferred over active controls?

- Are hazard assessments essential to emergency response established and maintained?

Criterion 2

Procedures and/or mechanisms for the acquisition, storage, use, and disposal of chemicals contain clear roles and responsibilities. Chemical management is effectively integrated with line support managers to ensure that line managers are responsible for chemical management.

Lines of Inquiry

- Are the responsibilities of line management for chemical safety and chemical management clearly defined, documented, and understood?

- Are the roles and responsibilities of support staff and other personnel associated with the facility's chemical management program/system clearly defined, documented, and understood? Have the primary and secondary points of contacts been identified?

- Are the roles and responsibilities of personnel providing chemical safety expertise and support properly integrated with the line management's responsibilities relative to operations?

- Who is responsible for controlling the hazards arising from chemical storage and use in the workplace? How are they held accountable?

- What processes are in place to ensure adequate input by ES&H and other appropriate professionals in the designation of controls for chemical hazards, and in how they are implemented?

- Are the resources needed for providing an adequate level of chemical safety and management support being communicated to the line management? Is management responsive to the resource needs and concerns identified by ES&H and other appropriate professionals?

Criterion 3

Procedures and/or mechanisms for the acquisition, storage, use, and disposal of chemicals require selected controls to be implemented, that those controls are effectively integrated, and that their readiness is confirmed prior to the performance of work.

Lines of Inquiry

- Do facility and warehouse control procedures properly implement chemical management procedures to ensure safe handling and storage of chemicals?

- Is prevention and source reduction of hazardous materials supported by appropriate procurement and inventory practices?

- Is the chemical inventory at a given storage location being properly updated as the inventory changes? Is the inventory inspection and surveillance conducted at an appropriate frequency? Do all chemical storage areas receive adequate coverage through periodic surveillance?

- Is a database or hardcopy file maintained of Material Safety Data Sheets (MSDSs) for chemicals used and stored at the work-site and at the facility? How is access to MSDS information provided to workers?

- Is there a procedure that ensures that chemicals stored in a given location are compatible? Is it adequately implemented?

- What criteria are used to select appropriate standards and requirements (e.g., Work Smart Standards, Standards/Requirements Identification Documents, or others, as applicable) to address all chemical hazards? What are the qualifications of individuals performing standards selection?

- What processes are in place to ensure adequate input by ES&H professionals in the implementation of controls for chemical hazards?

- What is the process for authorizing a chemical to be used on the site? What pollution prevention practices are conducted at the site? Is there a list of restricted chemicals? How is chemical storage and use policed? How are excess or waste chemicals disposed of? What processes are in place to assure chemicals are not abandoned when work on a project ceases?

- What means are employed to ensure that the identified controls are implemented, and are operable and functioning so long as a chemical hazard is present?

- Is personal protective equipment required to be used for any activity involving hazardous chemicals? Has substitution of a less hazardous chemical been considered? Are engineering controls in place or planned for these operations? What other controls or measures are in place for these operations?

- When and how is a decision made to evaluate employee exposure to a chemical hazard? What is management's role in assuring that chemical exposures are evaluated and properly addressed?

- How does your occupational medicine group become aware of chemical usage and employee exposure to specific chemicals? What are their roles and responsibilities once an employee's exposure has been demonstrated?

- Are changes to mission, operations, and conditions analyzed for needed changes to requirements? How are ES&H personnel involved in this process?

Criterion 4

Procedures and/or mechanisms for acquisition, storage, use, and disposal of chemicals require that personnel who are assigned to the subject area have a satisfactory level of competence.

Lines of Inquiry

- What training is provided to employees on the hazards of chemicals and chemical processes they work with, and on the controls that are most appropriate for those hazards? How frequently is this training provided? Is this training kept current? What is the frequency of refresher training provided for affected employees? Is training effectiveness measured? If so, how?

- What training is provided to supervisors and managers on management of hazards arising from chemical storage and use?

- Are requests for assistance and documents for information or review distributed to appropriately qualified and knowledgeable staff?

- Are chemical safety support staff sufficiently familiar with facility operations? Do they participate in routine inspections, assessments, and audits; in training; and in the categorization, analysis and development of corrective actions for occurrences? Do they participate in overseeing the implementation of selected controls and in followup inspections of those controls?

- Are the managers, supervisors, and support staff sufficiently knowledgeable about pollution prevention and waste minimization (prevention and source reduction of hazardous materials), such that these are incorporated into their chemical hazard prevention and mitigation activities?

- Does the organization (internal or subcontractor) responsible for providing chemical safety support use a training implementation plan to manage staff training and qualifications?

- Do position descriptions for points-of-contact or coordinators responsible for chemical hazards management appropriately reflect their duties and responsibilities relative to chemical safety, as well as their training and subject matter competency?

Criterion 5

Procedures and/or mechanisms require that feedback and continuous improvement occur with regard to chemical management, chemical safety, and pollution prevention.

Lines of Inquiry

- Has the facility performed an assessment and gap analysis to identify significant gaps and deficiencies in its program? Does the facility maintain its corrective action plan up-to-date? Are the action items prioritized? Have the corrective actions completed been properly closed? Are open items being pursued according to their priority?

- Do post-job critiques and reviews reveal that chemical safety concerns were adequately handled, or if identified, they were adequately pursued and resolved? Is there evidence showing that lessons learned are properly used to improve work conditions or performance?

- Are assessment results communicated to senior management for their use in making informed determinations? Do managers routinely use feedback tools, such as performance indicators, reviews, debriefs, and lessons learned?

- Are occurrence reports evaluated for applicability and communicated to the right individuals?

- Are suggestions of employees and other professionals used to improve performance?
