

**HAZARD IDENTIFICATION AND STANDARD SELECTION (HAZ)**

**NOTE:** The primary focus of this section of the review is the identification of hazards and development, review, and approval of Authorization Basis documentation at the facility level. Controls for individual work items or activities will be evaluated by the Operations and Subject Matter Expert functional area.

**OBJECTIVE**

**HAZ.1** The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. (CE II-2)

**CRITERIA:**

1. Procedures and/or mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. These mechanisms ensure direction and approval from line management and integration of the requirements.
2. Procedures and/or mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

**APPROACH:**

**Record Review:** Review the documents that govern the conduct, review, and approval of facility or activity hazard analysis and documentation such as Process Hazards Analysis (PHA), Preliminary Hazards Review (PHR), Preliminary Safety Analysis Report (PSAR), job hazards analysis (JHA), and Work Control Permits (WCP). Verify that these records conform to the hazard analysis requirements. Coordinate the review of work related documents such as Job Hazard Analysis (JHAs), and WCPs with the OP and SME functional area reviewers.

**Interviews:** Interview personnel responsible for the identification and analysis of work hazards. In nuclear facilities, for example, this should include personnel responsible for USQ determination, lock and tag preparation, procedure technical reviews, etc.

**Observations:** If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination (USQD), preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc.

OBJECTIVE

**HAZ.2** An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE II-3)

CRITERIA:

1. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce.
2. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers (see Section 4 for definition) and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.
3. Standards and requirements are appropriately tailored to the hazards.
4. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.
5. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

APPROACH:

Record Review: Review a sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include Authorization Agreements (AAs), Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Health and Safety Plans (HASPs), Radiological Work Permits (RWPs), operating procedures, etc. Review procedures and mechanisms to ensure accurate and effective implementation of Authorization Basis documentation. Sample actual implementing documentation. Coordinate the review of work related documents such as RWPs and operating procedures with the OP and SME functional area reviewers.

Interviews: Interview personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR preparations and implementation, ALARA review requirements, Process Hazard Analysis activities, etc.

Observations: Observe the actual processes development, review, approval, and implementation of SAR/TSR, AA, and other Authorization Basis Documents as available.

## MANAGEMENT (MG)

### OBJECTIVE

**MG.1** An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. (CE II-1)

### CRITERIA:

1. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and utilized by personnel.
2. Procedures and/or mechanisms are in place and utilized by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items. Personnel assigned to the roles are competent to execute these responsibilities.
3. Procedures and/or mechanisms are in place and utilized by personnel that ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work, etc.) can be accomplished within the standards and requirements identified for the facility.

### APPROACH:

Record Review: Review the facility or activity long-range planning documentation. This should include such items as: summary schedules, plan of the week, long-range maintenance schedules, modification schedule, etc. Review the procedures and mechanisms that line managers utilize to identify and prioritize mission-related tasks and processes, modifications, and work items.

Review organizational documentation to determine the personnel positions with responsibility associated with this objective. Review the position description for those positions. Review the personnel records that identify the individual qualifications that meet the elements of the position descriptions.

Review any training or qualification material including in training and qualification manuals that support gaining or verifying competence to fill the positions.

Review the procedures and/or mechanisms that are utilized by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements.

Interviews: Interview management personnel responsible for the identification and prioritization of work. This should include personnel such as those responsible for long-range planning documentation, schedule preparation, etc.

Observations: Observe work definition and planning activities such as plan of the week meetings, long-range scheduling meetings, etc.

OBJECTIVE

**MG.2** Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

CRITERIA:

1. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.
2. Facility or activity procedures specify that line management is responsible for safety.
3. Procedures and/or mechanisms are in place that ensure that personnel who supervise work have competence commensurate with their responsibilities.
4. Procedures and/or mechanisms are in place that ensure that personnel performing work are competent to safely perform their work assignments.

APPROACH:

**Record Review:** Review facility or activity manuals of practice that define roles and responsibilities of personnel responsible for safety. Review position descriptions and other documentation that describe roles and responsibilities related to ensuring safety is maintained. The review should consider personnel in line management and staff positions and should evaluate whether line managers are responsible for safety. Review the procedures established to ensure that managers and the work force is competent to safely perform work. Review the records of qualification and certification as applicable.

**Interviews:** Interview selected personnel at all levels of facility or activity management who are identified by the record review above. Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity. Interview a selected number of supervisors and workers (see definition) to determine their understanding of competency requirements and their commitment to performing work safely.

**Observations:** Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with decisions affecting safety, and that managers and workers are competent to perform their duties. Activities such as weekly planning meetings, plans of the day, event critiques, safety training, and safety meetings are typical events that may provide good examples of the safety training and decision making process.

OBJECTIVE

**MG.3** An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-5)

CRITERIA:

1. Procedures and/or mechanisms are in place and utilized by personnel to collect feedback information such as self assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.
2. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.
3. Procedures and/or mechanisms are in place and utilized by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational information into improvement processes and appropriate lessons learned.
4. Procedures and/or mechanisms are in place and utilized by managers to consider and resolve recommendations for improvement, including worker suggestions.
5. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained.

APPROACH:

**Record Review:** Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, shift orders, deficiency reports, post-job reviews, safety observer reports, employee concerns programs, and reports of self assessments. Review procedures for work to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level. Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

**Interviews:** Interview personnel responsible for administering the feedback and continuous improvement progress. This should include personnel such as those responsible for occurrence reporting, lessons learned preparation, shift orders preparation, worker concerns program, self assessment, and oversight. Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities.

Observations: Observe development and utilization of feedback and continuous improvement activities. This should include such things as conducting post-job critiques, monitored evolutions, post ALARA reviews, conducting a self-assessment or independent assessments, etc.

## **OPERATIONS (OP)**

### OBJECTIVE

**OP.1** An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. (CE II-4)

### CRITERIA:

1. Procedures and/or mechanisms are in place to ensure that work planning is integrated at the individual maintenance or activity level fully analyzes hazards and develops appropriate controls.
2. Procedures and/or mechanisms are in place which ensure that there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.
3. Procedures and/or mechanisms are in place which ensure that there is a process used to gain authorization to conduct operations.
4. Procedures and/or mechanisms are in place which ensure that safety requirements are integrated into work performance.
5. Procedures and/or mechanisms are in place which ensure that adequate performance measures and indicators, including safety performance measures are established for the work.
6. Workers (see definition) actively participate in the work planning process.
7. Procedures and/or mechanisms demonstrate effective integration of safety management.

### APPROACH:

**Record Review:** Review documents and/or mechanisms that govern the process for planning, authorizing, and conducting work with emphasis on the individual maintenance or activity level. Evaluate the adequacy of the division of responsibilities, worker involvement, and work authorization process. Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the work is being performed. Review the mechanisms used to prepare authorization agreements and protocols. Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

**Interviews:** Interview personnel responsible for authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining documents such as the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations. Interview personnel responsible for development of maintenance or individual activity procedures and controls. Verify adequate worker involvement at each step of the process.

Observations: Observe the actual authorization and performance of work activities. This should include such items as pre-job briefings, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc. Observe work hazard identification activities. This should include such things as validation of procedures, procedure tracking, compensatory measures determination, etc.



## **SUBJECT MATTER EXPERT INTERACTIONS**

The following CRAD should be adapted as required and utilized by subject matter experts (SME) to assess whether the core functions and guiding principles of ISMS are met for the control of work within the specified discipline. Specific disciplines that have proven useful in past verifications include:

- C Criticality Safety
- C Fire Protection
- C Industrial Hygiene and Safety
- C Radiation Protection
- C Security
- C Training and Qualification
- C Maintenance and Work Control
- C Quality Assurance
- C Configuration Management
- C Environmental Compliance (including pollution prevention/waste minimization)

The evaluation of the maintenance and work control should be considered in every verification since this discipline normally demonstrates the essence of safely conducting work.

## **SUBJECT MATTER EXPERTS**

### OBJECTIVE

**SME.1** Within the individual subject area the planning of work includes an integrated 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 individual subject area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE II-2, CE II-3, CE II-4, CE II-5, CE II-6)

### CRITERIA:

1. Procedures and/or mechanisms for the individual subject area require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.
2. Procedures and/or mechanisms for the individual subject area contain clear roles and responsibilities. The individual subject area is effectively integrated with line support managers to ensure that line managers are responsible for safety.
3. Procedures and/or mechanisms for the individual subject area require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.
4. Procedures and/or mechanisms for the individual subject area require that personnel who are assigned to the subject area have a satisfactory level of competence.
5. Procedures and/or mechanisms for the individual subject area require that within the subject area feedback and continuous improvement results.

### APPROACH:

**Record Review:** Review the manuals of practice and selected records that define the procedures and interactions required for the subject area at the facility or activity. Assess the adequacy of the documents to meet the criteria above and determine that the individual subject area is effectively integrated into the facility or activity procedures. Review any lessons learned that provide an opportunity to assess that lessons learned have been effectively used within the subject area. Review training records of personnel in the subject area to determine that they meet competency standards.

**Interviews:** Interview personnel and responsible managers in the subject area assigned. Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers. Interview personnel assigned to the subject area to assess the level of competence.

**Observations:** Observe events such as the development of a procedure, development of a hazards analysis such as a radiological work permit or job hazard analysis, or the approval process for an individual work item, which includes interactions with personnel of the subject area.