ISMS Training Document
Track 2, Activity 1 – November 2010
Integrated Safety Management System (ISMS)

Activity

Describe the significant requirements of an Integrated Safety Management System (ISMS) as listed in DOE P 450.4, *Safety Management System Policy* and SCMS Procedures or other Oak Ridge Office documents.

At the completion of this activity, fill out the Self-Certification Form certifying that you have read this activity sheet.

Note: When regulations, Department of Energy (DOE) directives, or other industry standards are referenced in this ISMS activity, please use the most recent version. In addition, please note that DOE Guides provide preferred, non-mandatory, supplemental information about acceptable methods for implementing requirements, including lessons learned, suggested practices, instructions, and suggested performance measures. Guides do not impose requirements but may quote requirements if the sources are adequately cited. Alternate methods may be used if it can be demonstrated that they provide an equivalent or better level of performance.

Key Documents

- DOE P 450.4, *Safety Management System Policy*
- DOE P 450.7, *Department of Energy Environment, Safety, and Health Goals*
- DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy*
- DOE G 450.4-1, *Integrated Safety Management System Guide for Use with Safety Management System Policies (DOE P 450.4, DOE P 450.5, and DOE P 450.6); the Functions, Responsibilities, and Authorities Manual; and the Department of Energy Acquisition Regulation* (Two Volumes)
- ORO Directives Management Group, Key Management Documents, http://www-internal.oro.doe.gov/dmg/oro_keymanagementdoc.htm
- ORO Office of Science Federal employees should also refer to the Office of Science Management System (SCMS) Procedures or other Oak Ridge Office documents: Environment, Safety, and Health, Subject Area: *Managing the Integrated Safety Management System*, http://scms.sc.doe.gov/
- ORO Safety First Website, http://www-internal.oro.doe.gov/esq/safetyfirst/index.aspx (Internal)

What's In It For Me

The completion of this activity is expected to help you become familiar with the requirements of DOE ISMS and the Oak Ridge Office (ORO) ISM Program; so that you are better able to apply the ISM concepts to your job, whether it is technical or nontechnical in nature. In so doing, you should be better able to recognize safety concerns and recognize the same ISM requirements apply to the ORO contractors. It is important to note that just as many occupational lost-time accidents in DOE occur in the office environment as in what typically have been perceived as more hazardous work places such

as the plant or field sites.

ISMS Objective

The ISMS is defined in DOE Policies 450.4, *Safety Management System Policy*, 450.7, *Department of Energy Environment, Safety, and Health (ES&H) Goals*, and 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy*. The *ORO Integrated Safety Management Program Description* can be found as a link on the ORO Safety First Web Site on the ORO Home Page.

The objective of an ISMS is to incorporate safety into management and work practices at all levels, addressing all types of work and all types of hazards to ensure safety for the workers, the public, and the environment. The Office of Science ISMS Program Description can be viewed at the following SCMS link, http://scms.sc.doe.gov/OrbitSearch/ProgDesc/ISMS/ISMS_PD.cfm.

To achieve this objective, DOE has established guiding principles and core safety management functions. An effective ISMS must address these principles and functions while considering the following:

- the term "safety" is used to encompass environment, safety, and health (ES&H);
- the planning and performance of all types of potentially hazardous work, including but not limited to the following: office work, construction, operations, maintenance and decommissioning, as well as design, conceptual studies, environmental analyses, safety analyses, hazard reduction analyses, pollution prevention/waste minimization and risk analyses;
- all types of hazards, including chemical, occupational, environmental, nuclear, electrical, transportation, etc.; and
- the identification, analysis, and control of hazards, and the use of feedback for continuous improvement in defining, planning, and performing work.

At ORO, the ISM Program integrates all the elements of quality assurance, the Environmental Management System, safety, and health into one system. This system promotes the full inclusion and integration of environmental, safety, health, and quality assurance into the totality of work, such that it is an integral part of the whole—not a standalone program.

Responsibilities

The ORO Manager is ultimately responsible and accountable for ensuring the safety of operations for the Oak Ridge Office. ORO is committed to conducting work safely and efficiently and to the Secretary of Energy's goal of an ISMS.

DOE employees must comply with applicable Federal, state, and local laws and regulations. ORO establishes standards and requirements as direction to DOE employees when these standards/requirements are necessary to ensure that the work will meet the DOE's expectations and objectives. Moreover, the guiding

principles and core management functions established in DOE P 450.4, facilitates the integration of sound ES&H and selected administrative practices into day-to-day operations.

Further, ORO has formed a Safety Attainment Board (SAB) that is composed of the ORO Manager, the Deputy Manager, selected Assistant Managers, and the Safety Advocacy Group, which consists of the Directors of the Technical Support and Assessment Divisions in AMS and AMESH, the Division Director for the AMEM Facility Operations and Safety Management Division, and the Senior Technical Advisor for AMNFS. The purpose of the SAB is to provide an executive corporate level overview of safety and health performance within and across the ORO areas of purview while promoting program consistency and a safer work environment throughout all levels. The SAB Charter is posed on the Safety First Website. In addition, the ORO Manager has designated an ISM Champion in accordance with SCMS Procedures or other Oak Ridge Office documents.

All ORO Federal employees have authority to stop work when conditions are judged to be an imminent threat to health, safety, or the environment in accordance with DOE O 440.1B, *Worker Protection Program for DOE (Including National Nuclear Security Administration) Federal Employees* and the *Oak Ridge Operations and National Nuclear Security Administration "Stop Work/Suspend Work" Responsibility* declaration of 2010. Contractor employees are also vested with stop work authority through 10 CFR 851, *Worker Safety and Health Program.*

Seven Guiding Principles of ISM

1. **Line Management Responsibility for Safety.** Line management is directly responsible for the protection of workers, the public, and the environment.
2. **Clear Roles and Responsibilities.** Clear and unambiguous lines of authority and responsibility for ensuring safety is established and maintained at all organizational levels and for its subcontractors.
3. **Competence Commensurate with Responsibilities.** Personnel are required to have the experience, knowledge, skills, and capabilities necessary to discharge their responsibilities.
4. **Balanced Priorities.** Managers must allocate resources to address safety, along with programmatic and operational considerations. Protection of workers, the public, and the environment is a priority whenever activities are planned and performed.
5. **Identification of Safety Standards and Requirements.** Before work is performed, the associated hazards must be evaluated, and an agreed-upon set of safety standards and requirements will be established to provide adequate assurance that the workers, the public, and the environment are protected from adverse consequences.
6. **Hazard Controls Tailored to Work Being Performed.** Administrative

and engineering controls are tailored to the work being performed to prevent adverse effects and to mitigate hazards.

7. **Operations Authorization.** The conditions and requirements to be satisfied before operations are initiated are clearly established and agreed upon.

Five Core Functions of ISMS

The following five core functions of ISMS are the key elements that support the program/department ISM plans. All employees must incorporate the core functions into their daily work activities.

1. **Define the Scope of Work.** Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.
2. **Analyze the Hazards.** Hazards associated with the work are identified, analyzed, and categorized.
3. **Develop and Implement Hazard Controls.** Applicable standards, policies, procedures, and requirements are identified and agreed upon; controls to prevent/mitigate hazards are identified; and controls are implemented.
4. **Perform Work within Controls.** Readiness is confirmed and work is performed safely.
5. **Provide Feedback and Continuous Improvement.** Information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified, and line and independent oversight is conducted. A reference for planning and scheduling the three year integrated assessment schedule is discussed below:

Integrated Assessments

Drivers. DOE O 226.1A, *Implementation of DOE Oversight Policy* requires that *DOE field elements must prepare documented program plans and annual schedules for both planned assessments and focus areas for operational oversight.* (DOE O 226.1A, paragraph 4.c.(2))

SCMS →Management System: QA and Oversight -→Subject Area: Assessments→Procedure 1. Analyzing and Scheduling Assessment Needs

Procedure. Provides a 5-Step Required Procedure for Office of Science (SC) Site Office Manager, SC Integrated Support Center (ISC) Manager, and SC HQ Managers:

1. Evaluate assessment needs using a graded approach.
2. Develop a Three Year Site Office Integrated Assessment Schedule (IAS), identifying which assessments are part of the SC IAS, and enters the assessments into either ORION (https://orion.oro.doe.gov/) or SMART (http://chip.ch.doe.gov/smart/) tracking systems. (Note: ORO uses ORION). This step must be completed prior to submittal of the Annual Performance Plan (APP).

Note: Each SC APP POC submits the APP electronically to the SC Deputy Director for Field Operations (DDFO) by the first workday in September unless otherwise directed.

3. SC ISC Management supports the SC Site Office Managers in providing resources necessary for completing the proposed assessments.
4. SC HQ Management in coordination with SC Site Office Managers, review the IAS to determine which SC Site Office initiated assessments SC HQ personnel will be participating on in coordination with SC Site Office Managers.
5. Quarterly, the SC ISC Managers issue the Quarterly SC IAS Report (Wall Chart format) to the SC DDFO with copies to the SC Site Office Managers.

The SC IAS includes, but is not limited to assessments that are:

- Sensitive to mission, organizational, or legal vulnerabilities.
- Mandated by an internal or external entity.
- Independent assessments (Office of Health, Safety and Security [HSS], General Accounting Office [GAO], etc.).
- Startup/restart of a high-visibility or high-risk project/facility.
- Broad-scope assessments that provide information regarding overall program performance.

The following SCMS link connects you with more details on procedure steps and examples in Analyzing and Scheduling Assessment Needs: http://scms.sc.doe.gov/OrbitSearch/SubjArea/AS/AS_Pro1.cfm

Four Supplemental Safety Culture Elements

Supplemental Safety Culture Elements

Based on experience and learning over the past ten years since the inception of Integrated Safety Management, the Department has identified the following four supplemental safety culture elements to be used, along with the existing ISM guiding principles, to help develop the appropriate context or environment for effective implementation of ISM systems within DOE and at its sites and facilities in the future:

1. **Individual Attitude and Responsibility for Safety.** Every individual accepts responsibility for safe mission performance. Individuals demonstrate a questioning attitude by challenging assumptions, investigating anomalies, and considering potential adverse consequences of planned actions. All employees are mindful of work conditions that may impact safety, and assist each other in preventing unsafe acts or behaviors.
2. **Operational Excellence.** Organizations achieve sustained, high levels of operational performance, encompassing all DOE and contractor activities to meet mission, safety, productivity, quality, environmental, and other objectives. High-reliability is achieved through a focus on operations,

conservative decision-making, open communications, deference to expertise, and systematic approaches to eliminate or mitigate error-likely situations.

3. **Oversight for Performance Assurance.** Competent, robust, periodic and independent oversight is an essential source of feedback that verifies expectations are being met and identifies opportunities for improvement. Performance assurance activities verify whether standards and requirements are being met. Performance assurance through conscious, directed, independent reviews at all levels brings fresh insights and observations to be considered for safety and performance improvement.
4. **Organizational Learning for Performance Improvement.** The organization demonstrates excellence in performance monitoring, problem analysis, solution planning, and solution implementation. The organization encourages openness and trust, and cultivates a continuous learning environment.

Worker Knowledge

The critical importance of the worker to the safe accomplishment of ORO's missions means helping workers gain the appropriate level of knowledge, skill, ability, and authority necessary to perform their work safely and effectively. Line managers are accountable for ensuring that their staffs are trained to fulfill their assigned responsibilities safely. ORO employees should have a working knowledge of the ISM principles and functions and to use the ISM process to enhance daily work performance, regardless of whether it is administrative, nontechnical, or technical in nature.

For more safety information including a Bomb Threat Checklist and important emergency information, please check out the Safety First website on the ORO intranet at the following address: https://sharepoint.oro.doe.gov/Pages/Default.aspx.

To Learn More

Click on these links for more information about how ISM is applied at ORO and DOE.

- DOE M 411.1-1C, *Safety Management Functions, Responsibilities, and Authorities Manual*
- DOE M 450.4-1, *Integrated Safety Management System Manual*
- 10 CFR 851, *Worker Safety and Health Program*
- DOE O 440.1B, *Worker Protection Program for DOE (Including National Nuclear Security Administration) Federal Employees*
- The Office of Science ISMS Program Description, http://scms.sc.doe.gov/OrbitSearch/ProgDesc/ISMS/ISMS_PD.cfm.
- ORO Directives Management Group, Key Management Documents,

http://www-internal.oro.doe.gov/dmg/oro_keymanagementdoc.htm

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