

	Title: Environment, Safety, and Health Management System	
	Order Number: O 440.1	
Date of Approval: 3/22/2017	Responsible Organization: Facility Operations	
Approved by: Grace M. Bochenek, Ph.D. Director, NETL	Corresponding DOE Directives: See Section IX	Related NETL Directives: None

I. PURPOSE

To establish NETL’s Environment, Safety, and Health Management System (ES&HMS) that ensures protection of the public, employees, the environment, facilities, and operations.

II. APPLICABILITY

This order is applicable to all NETL federal employees and site support contractors for all programs and activities at the Albany, Morgantown and Pittsburgh sites, including Fairbanks, Alaska and Sugar Land, Texas offices, addressing onsite R&D activities, site operations, and the supporting administrative functions related to these activities and operations.

III. EXEMPTIONS

The Fairbanks, Alaska and Sugar Land, Texas offices and operations not owned or controlled by NETL such as daycare facilities or other potential tenant operations are excluded from the scope of the ISO 14001 and OHSAS 18001 certifications. These locations and entities must still comply with other ES&H requirements.

IV. DEFINITIONS

- A. International Standards Organization 14001, Environmental Management Systems - Requirements with Guidance for Use (ISO 14001) - a voluntary international standard that provides a framework for environmental management systems.
- B. Occupational Health and Safety Assessment Specification 18001, Occupational Health and Safety Management Systems – Requirements (OHSAS 18001) – a voluntary international standard that provides a framework for safety and health management systems.

V. GENERAL REQUIREMENTS

A. ES&H Policy

1. NETL will achieve ES&H quality by proactively, systematically, and fully integrating ES&H considerations into the planning and execution of all work so that the mission is successfully accomplished for the safety and health of the public without detriment to NETL or the environment.
2. NETL is committed to reducing environmental, safety, and health impacts by:
 - i. Complying with all applicable ES&H laws, regulations, and standards through rigorous regulatory compliance programs.
 - ii. Implementing pollution prevention programs to eliminate or reduce waste and implementing emissions and accident/incident reduction programs to eliminate or reduce accidents and incidents.
 - iii. Conserving energy and materials through resource management and recycling/reuse.
 - iv. Using safety analysis and review systems to identify, control, and reduce safety and health risks and environmental impacts through engineering and administrative controls.
3. NETL will work continually to improve environmental, safety, and health systems with the goal of improved ES&H performance. Performance will be measured against stated objectives and targets to demonstrate continuous improvement of ES&H systems and outcomes.
4. NETL will communicate information to employees and seek their involvement in reducing our environmental, safety, and health impacts and communicate our policies to stakeholders and the public.

B. ES&H Programs.

1. The ES&H Management System will comply with the references in Section IX of this order.
2. Facility Operations will develop programs that comply with federal, state, and local laws and regulations. In addition, Facility Operations will determine which consensus standards that are applicable to NETL operations. Applicable laws, regulations, and consensus standards will be linked to on the [ISO 14001/OHSAS 18001 Roadmap](#).
3. The ES&H management system will maintain the following international certification standards and establish the required ES&H objectives and targets to measure performance.
 - i. ISO 14001, Environmental Management Systems – Requirements with Guidance for Use.
 - ii. OHSAS 18001, Occupational Health and Safety Management Systems –

Requirements

4. The ES&H Management System will be implemented in accordance with the DOE Order 450.2, Integrated Safety Management System. Attachment 1 is the ISM System Description Document and Attachment 2 is the Functions, Responsibilities and Authorities Document as required by the DOE Order.

C. Employee Rights and Involvement

1. Employees may request an inspection of an unsafe or unhealthful working condition and Facility Operations will initiate an inspection within one working day.
2. Facility Operations will notify the Union of impending inspections and audits.
3. Facility Operations will notify the Union of any safety reclassification of working areas.
4. Comprehensive health examinations will be offered based on the DOE guidance, budgetary restraints, and an analysis of the hazards to which the employee is exposed, past exposures, and the current health and health history of the employee.
5. Facility Operations, in concert with the Unions, will implement a Safety Committee consisting of management and Union representatives.

D. Employees will:

1. Abide by all ES&H rules, requirements, and standards issued by the Department and Facility Operations.
2. Report work-related injuries and illnesses to their supervisor.
3. Direct ES&H issues, concerns, and questions to their supervisor, the site ES&H Team, the Site Manager, the [ES&H "Hotline"](#) located on the Intranet, or their Union representative.
4. Cooperate with all inspections and investigations by providing information requested.
5. Complete all ES&H training necessary for their position.

E. Supervisors will:

1. Exercise due diligence to ensure that the workplace is safe for employees.
2. Ensure employees have and use safe tools, equipment, personal protective equipment and clothing, and properly maintain these items.
3. Establish or update operating procedures and communicate them to employees.
4. Ensure that training required by their employee is identified and that the employee has completed the required training for their job.
5. Not discriminate against employees who exercise their right to stop work or to report unsafe conditions.
6. Consult with the site ES&H personnel to correct identified safety issues.

- F. Stop Work Authority – All employees have stop work authority to halt work that may be an imminent threat to employees, the public, or the environment without fear of reprisal or retaliation.

VI. RESPONSIBILITIES

A. Chief Operating Officer

Act as the ISMS Champion.

B. Associate Director, Laboratory Operations Center, Facility Operations

1. Act as the ES&H Management System Representative.
2. Determine federal, state and local laws and regulations and other requirements which apply to NETL and link to these on the [ISO 14001/OHSAS 18001 Roadmap](#).
3. Implement the requirements listed on the [ISO 14001/OHSAS 18001 Roadmap](#).
4. Develop and provide required ES&H training or recommend external training and advise supervisors regarding the appropriate training required for their employees.
5. Maintain an anonymous email for employees to report ES&H concerns.
6. Respond to ES&H issues, concerns, and questions.
7. Notify the Unions of impending audits and inspections.
8. Conduct inspections of reported unsafe or unhealthful working conditions.
9. Offer comprehensive health examinations to employees.

C. Finance and Acquisition Center/Contracting Officer's Representatives

Ensure that the appropriate requirements language is included in site support contracts involving ES&H matters.

VII. TRAINING

Laboratory Operations Center, Facility Operations will provide required ES&H training for employees or recommend external training sources in accordance with legal and DOE ES&H requirements.

VIII. RECORD CONTROL

Records of employee concern submissions will be maintained by Facility Operations.

IX. REFERENCES

- A. [DOE Order 210.2, DOE Corporate Operating Experience Program](#)
- B. [DOE Order 225.1, Accident Investigations](#)

- C. [DOE Order 231.1, Environment, Safety and Health Reporting](#)
- D. [DOE Order 232.2, Occurrence Reporting and Processing of Operations Information](#)
- E. [DOE Order 420.1, Facility Safety](#)
- F. [DOE Order 422.1, Conduct of Operations](#)
- G. [DOE Order 436.1, Departmental Sustainability](#)
- H. [DOE Order 440.1, Worker Protection Program for DOE \(including the National Nuclear Security Administration\) Federal Employees](#)
- I. [DOE Order 442.1, DOE Employee Concerns Program](#)
- J. [DOE Order 450.2, Integrated Safety Management](#)
- K. [DOE Order 456.1, The Safe Handling of Unbound Engineered Nanoparticles](#)
- L. [DOE Order 458.1, Radiation Protection of the Public and the Environment](#)
- M. [DOE Order 460.1, Packaging and Transportation Safety](#)
- N. [ISO 14001, Environmental Management Systems – Requirements with Guidance for Use](#)
- O. [OHSAS 18001, Occupational Health and Safety Management Systems – Requirements](#)
- P. Additional requirements are found on the [ISO 14001/OHSAS 18001 Roadmap](#) available on the Intranet.

/s/ Grace M. Bochenek
Grace M. Bochenek, Ph.D.
Director, NETL

Attachment 1: Integrated Safety Management System Description

a. Introduction

This attachment describes NETL's Integrated Safety Management System (ISMS) including the functions, roles, and authorities (FRA) for implementing ISMS as required by DOE Order 450.4, Integrated Safety Management System.

An ISMS consists of following six components which are addressed in this attachment:

- Component 1: Objective of Integrated Safety Management
- Component 2: Guiding Principles for Integrated ES&H Management
- Component 3: Core Functions for Integrated ES&H Management
- Component 4: Integrated ES&H Management Mechanisms
- Component 5: Responsibilities for Integrated ES&H Management
- Component 6: Implementation of Integrated ES&H Management

b. Component 1: Objective of ISMS

An ISMS provides formal, organized processes for planning, performing, assessing, and improving and integrating safety into the work process. An ISMS is the basis for NETL's ES&H Management System (ES&HMS), which is certified to the ISO 14001 and OHSAS 18001 standards.

c. Component 2: Guiding Principles for ISMS

The following are the principles of ISMS by which NETL will operate.

(1) Line Management Responsibility for Safety

Management is responsible for the safety of employees, the public, and the environment and this responsibility cannot be delegated.

(2) Clear Roles and Responsibilities

Management will implement the ISMS per the Functions, Responsibilities, and Authorities listed in Table 1.

(3) Competence Commensurate with Responsibilities

Management will ensure that all employees will have the required competence, training, equipment, and knowledge to conduct their work in such a way as to prevent injury to employees, the public, or the environment.

(4) Balanced Priorities

Management will allocate resources to address ES&H issues and concerns balanced with the mission. No operation will ever be undertaken which endangers employees, the public, or the environment without appropriate mitigation measures.

(5) Identification of Safety Standards and Requirements

Management will identify the safety standards and requirements needed to safely operate. These standards and requirements will be implemented with the following hierarchy: laws; regulations; DOE orders; consensus standards; and best management practices.

(6) Hazard Controls Tailored to Work Being Performed

Management will implement hazard controls in the following order: engineering controls; administrative controls; and personal protective controls.

(7) Operations Authorization

Management will use the safety analysis and review system (SARS), the work control system (WCS), and the work permit system (WPS) to ensure that all operations containing hazards are fully reviewed, appropriate controls are implemented, and formal approval is obtained before beginning the operation.

d. Component 3: Core Functions for Integrated ES&H Management

Five core safety management functions provide the necessary structure for implementing the ISMS.

(1) Define Scope of Work

(a) Translate Mission into Work

Management will translate the mission, which is based on direction from DOE Headquarters and Congress, into plans, directives and work activities. Appropriate plans will document the approaches to accomplishing the mission.

(b) Set Expectations

Management will set expectations by ensuring that requirements are identified for how the work is to be accomplished and communicating these requirements to employees and contractors. Management will ensure that ES&H is integrated into all work associate with all sites, operations, and employees, including contractors. Employees will adhere to ES&H requirements, policies, and procedures, regardless of employer.

(c) Prioritize Tasks and Allocate Resources

Management will prioritize tasks and allocate resources based on the hazards and associated risks of the operations. Hazards and risks are analyzed through the SARS, WPC, and WPS which provide for mitigation strategies and controls to ensure that risk is appropriately managed.

(2) Analyze the Hazards

(a) Identify and Analyze Hazards

All research projects, construction projects, support operations, and facility modification will undergo a full safety analysis and review to ensure that hazards have been identified. For routine work, such as preventive and corrective maintenance activities, the WCS and WPS will be used to identify hazards.

(b) Categorize Hazards

Hazards will be categorized through the SARS, WCS and WPS as to their severity and probability.

(3) Develop and Implement Hazard Controls

(a) Identify Standards and Requirements

Management will maintain a set of ES&H standards by which ES&H programs are implemented and maintained. These standards are implemented through directives, manuals, standard operating procedures, work aids, employee training and other appropriate methods.

(b) Identify Controls to Prevent /Mitigate Hazards

Management will approve the safety envelope documented in the SARS and approval of the operating permit is an approval of this safety envelope. The safety envelope contains the identify controls to prevent/mitigate hazards. For routine activities, the WCS and WPS establishes the safety envelope.

(c) Establish Safety Controls

Management will implement engineering controls during the design and construction of the project or facility. Administrative controls and personal protective controls will be implemented through procedures and training.

(d) Implement Controls

Management will implement controls through procedures and will oversee operations and to ensure the controls are being implemented and provide the

required level of protection.

(4) Perform Work

(a) Confirm Readiness

Prior to startup of any project or operation, management will approve the SARS documentation. For routine work, the WCS and WPS are used to document the work, the hazards, and the appropriate protective actions.

(b) Perform Work Safely

All employees will perform work in accordance with requirements. Management will ensure that their employees workers are provided with procedures, are properly trained, have the appropriate equipment and materials.

(5) Feedback and Continual Improvement

(a) Collect Feedback Information

Management will collect feedback that comes through several sources including, but not limited to:

- assessments
- oversight of the operation by management
- program assessments
- inspections, reviews and audit
- performance indicators
- lessons learned
- Occurrence Reporting and Processing System (ORPS)
- Computerized Accident and Incident Reporting System (CAIRS)

(b) Identify Improvement Opportunities

Management will analyze the feedback, identify negative trends in performance and identify improvement opportunities.

(c) Make Changes to Improve

Management will develop and implement improvement plans with employee involvement.

(d) Oversight and Enforcement

Management will oversee and enforce ES&H requirements through informal reviews of operations, site and facility walkthroughs, formal inspections and assessments, internal and external audits, annual performance appraisals, and

other mechanisms deemed appropriate by the responsible manager.

e. Component 4: Integrated ES&H Management Mechanisms

The primary processes for hazard analysis and control are the SARS, the WCS, and the WPS. These processes are used to identify, analyze, and provide controls for hazards associated with NETL operations. ES&H standards are maintained by ES&H and supported through SARS/WCS and regulatory/DOE order reviews. Directives and manuals provide direction to employees.

f. Component 5: Responsibilities for Integrated ES&H Management

The functions, responsibilities, and authorities for ES&H program implementation are documented in Attachment 2 and are based on the following principles:

- Responsibility, accountability, authority, and resources for implementation are located within the organization where the work is performed.
- Site-wide ES&H programs are developed, managed, and implemented by ES&H, unless otherwise noted in Attachment 2.

Table 2 documents the interfaces between NETL and external entities for the ES&H program and is based on the following principles:

- The ES&H program managers have general liaison functions on policy issues.
- The ES&H group has liaison and reporting functions for those activities for which it is primarily responsible, including program development and implementation functions.

Onsite support contractors doing work on the NETL will comply with ES&H requirements as documented in contracts.

g. Component 6: Implementation of Integrated ES&H Management

Management is responsible for implementing this order and this attachment.

Attachment 2: ES&H Functions, Responsibilities, and Authorities*

	Director	Chief Operating Officer	Facility Operations	ES&H	Engineering and Facilities	Business Integration	Research and Innovation Center	Finance	Procurement
DEFINE WORK									
Translate Mission into Work	Approve ES&H policy and ES&H-related directives delegating authorities and responsibilities.	Review and recommend ES&H related directives	Review and recommend ES&H related directives Develop tactical plans	Provide subject matter expertise for Directives	Provide subject matter expertise for Directives	Develop and maintain Directives	Provide subject matter expertise for Directives		
Set Expectations		Approve ES&H goals and objectives	Recommend ES&H goals and objectives Approve FAC Operations Manuals	Recommend ES&H goals and objectives Develop ES&H program plans, manuals and focused standard list.	Recommend ES&H goals and objectives Develop E&F programs plans and manuals including SARS and WCS.		Recommend ES&H goals and objectives Develop RIC programs plans and manuals.	Issue budget policy and guidance	Include ES&H requirements into site support contracts
Prioritize Tasks and Associate Resources	Submit budget requests and approve internal budget allocations.	Submit budge and allocations for approval to the Director	Approve Implementation plans Consolidate FAC Ops budget request	Develop ES&H implement plans and budget requests	Develop E&F implementation plans and budget requests			Submit budget requests to DOE-HQ Allocate internal budget	

	Director	Chief Operating Officer	Facility Operations	ES&H	Engineering and Facilities	Business Integration	Research and Innovation Center	Finance	Procurement
ANALYZE HAZARDS									
Identify and Analyze Hazards	NEPA program implemented in the Director's office.		Approve all facility, construction and support operations SARS Reviews prior to work start	Provide ES&H Support for SARS reviews. Implement the SARS process for ES&H support operations.	Implement the SARS process for all facilities, support operations, and construction. Use WCS and WPS to identify and analyze routine hazards		Follow the SARS reviews for all R&D Projects Use WCS and WPS to identify and analyze routine hazards Approve SARS review prior to R&D project start.		
Categorize Hazards				Provide support for categorization of hazards	Categorize hazards and document in SARS reviews		Categorize hazards and document in SARS reviews		
DEVELOP AND IMPLEMENT HAZARD CONTROLS									
Identify Standards and Requirements				Identify applicable ES&H standards and requirements.	Identify applicable facility, constructions and maintenance standards and requirements.		Identify applicable R&D standards and requirements.		Communicate standards and requirements to site support contractors.

	Director	Chief Operating Officer	Facility Operations	ES&H	Engineering and Facilities	Business Integration	Research and Innovation Center	Finance	Procurement
Identify Controls to Prevent /Mitigate Hazards				Identify controls to prevent and mitigate hazards. Implement ES&H Programs.	Consult with ES&H to identify appropriate controls		Consult with ES&H to identify appropriate controls		
Establish Safety Controls				Assign subject matter experts and authority having jurisdiction.	Establish controls identified in SARS, WCS and WPS		Establish controls identified in SARS, WCS and WPS		
Implement Controls				Provide oversight of established controls to ensure compliance.	Implement controls identified in the SARS, WCS and WPS		Implement controls identified in the SARS, WCS and WPS		
PERFORM WORK									
Confirms Readiness			Approve facility, construction and support operations SARS documentation prior to work starting. Implements work according to SARS documentation.				Approve SARS review prior to R&D project start. Implements work according to SARS documentation.		

	Director	Chief Operating Officer	Facility Operations	ES&H	Engineering and Facilities	Business Integration	Research and Innovation Center	Finance	Procurement
Perform Work Safely	Shuts down work if a clear and present ES&H danger exists.	Shuts down work if a clear and present ES&H danger exists.	Shuts down work if a clear and present ES&H danger exists.	Oversee work to ensure compliance with requirements	Perform work in a safe manner. Shuts down work if a clear and present ES&H danger exists and notifies ES&H.	Shuts down work if a clear and present ES&H danger exists and notifies ES&H.	Perform work in a safe manner. Shuts down work if a clear and present ES&H danger exists and notifies ES&H.	Shuts down work if a clear and present ES&H danger exists and notifies ES&H.	Shuts down work if a clear and present ES&H danger exists and notifies ES&H.
FEEDBACK AND CONTINUAL IMPROVEMENT									
Collect Feedback Information				Conduct inspections, assessments. Manage external registrar. Communicate lessons learned. Submit reports to ORPS and CAIRS	Conduct inspections, assessments.	Conduct internal reviews of ES&H programs and controls Collect performance indicators. Collect SSC performance information.	Conduct inspections, assessments	.	Collect feedback on site support contractor performance.
Identify Improvement Opportunities				Identify non-conformities and opportunities for improvement.	Identify non-conformities and opportunities for improvement.	Analyze performance indicators and internal reviews to identify non-conformities and opportunities for improvement.			Communicate to site support contractor issues that need to be resolved.

	Director	Chief Operating Officer	Facility Operations	ES&H	Engineering and Facilities	Business Integration	Research and Innovation Center	Finance	Procurement
Make Changes to Improve			Approve improvement plans to address nonconformities and opportunities for improvement.	Create improvement plans to address nonconformities and opportunities for improvement.	Create improvement plans to address nonconformities and opportunities for improvement.		Create and approve improvement plans to address nonconformities and opportunities for improvement.		
Oversight and Enforcement		Conduct management reviews Conduct employee performance reviews.	Participate in management reviews. Conduct employee performance reviews.	Participate in management reviews. Conduct employee performance reviews.	Participate in management reviews. Conduct employee performance reviews.	Conduct follow up internal reviews to verify improvement plans were implemented.	Participate in management reviews. Conduct employee performance reviews.		Verify improvements have been made by SSC.

* The details of the implementation of the function, responsibilities, and authorities listed in this table can be found in the relevant directives and manuals.