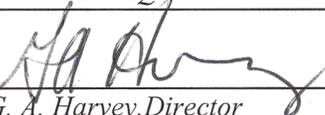


PROJECT HANFORD MANAGEMENT SYSTEM  
MANAGEMENT PLAN

# Integrated Environment Safety and Health Management System Plan

HNF-MP-003, Rev 2

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## INTEGRATED ENVIRONMENT, SAFETY AND HEALTH MANAGEMENT SYSTEM PLAN

### FOREWORD

The *Integrated Environment, Safety and Health Management System (ISMS) Plan* establishes a single, defined safety and environmental management system that integrates environment, safety and health (ES&H) requirements into the work planning and execution processes to effectively protect the workers, public, and the environment.

The ISMS supports the U.S. Department of Energy, Richland Operations Office (DOE-RL) *Hanford Strategic Plan* (DOE/RL-96-92) to safely clean up and manage the legacy waste and deploy science and technology while incorporating the ISMS fundamental goal to "Do work safely and protect human health and the environment".

This ISMS Plan specifically addresses the Project Hanford Management Contract (PHMC) requirements for documentation of an integrated environment, safety and health management system. This ISMS Plan satisfies Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 95-2, addresses implementation of an Environmental Management System (EMS) consistent with the principles of International Standards Organization (ISO) 14001, and supports the *Radiological Control Improvement Plan*. The ISMS also incorporates the best practices of the following policies, standards, and initiatives:

- DOE-RL ES&H Policy
- DOE's *Safety Management System Policy* (DOE P 450.4)
- DOE's *Line Environment, Safety and Health Oversight Policy* (DOE P 450.5)
- DOE's *Secretarial Policy Statement - Environment, Safety and Health* (DOE P 450.6)
- ISO EMS (ISO 14001)
- Voluntary Protection Program (VPP) - As established in the PHMC Team's VPP Strategic Plans
- Responsible Care<sup>®</sup> (RC<sup>®</sup>) - Chemical Manufacturer's Association
- Radiological Control Improvement Plan - DOE-RL
- Enhanced Work Planning (EWP)/Hanford Occupational Health Process (HOHP).

The ISMS is based primarily on the DOE philosophies, principles, and requirements policies (DOE P 450.4, DOE P 450.5, and DOE P 450.6) and the specification and guidance for EMS (ISO 14001 Standard).

The Safety Management System Policy described in DOE P 450.4 is based on the following seven Guiding Principles and five Core Functions:

- Line Management Responsibility for Safety
- Clear Roles and Responsibilities
- Competence Commensurate with Responsibilities
- Balanced Priorities
- Identification of Safety Standards and Requirements
- Hazard Controls Tailored to Work Being Performed
- Operations Authorization.

The following five safety management Core Functions defined in DOE P 450.4, supported by the Guiding Principles, provide the necessary structure for any work that potentially could affect the workers, public, or the environment:

- Define Scope of Work
- Analyze the Hazards
- Develop and Implement Hazard Controls
- Perform Work within Controls
- Provide Feedback and Continuous Improvement.

An EMS is defined in ISO 14001 as "the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy". The EMS is based on requirements relating to the following five EMS elements:

- Define an Environmental Policy and Commit to EMS Implementation.
- Formulate a Plan to Fulfill the Environmental Policy.
- Implement the Plan and Operate in a Manner that Achieves the Plan's Objectives and Targets.
- Check Performance and Implement Corrective Action As Needed.
- Conduct Top Management Review and Continuous Improvement.

A deliberate, careful comparison and integration of the Safety Management System Policy (DOE P 450.4) and the ISO 14001 Standard resulted in the development of the "Guiding Principles" and "Core Functions" identified in the Project Hanford ISMS Plan. These Guiding Principles and Core Functions are the cornerstones for development of the Project Hanford ISMS.

Appendix A, *DOE P 450.4 and ISO 14001 Integration*, provides a crosswalk of the elements of ISO 14001 and the Guiding Principles and Core Functions of the Project Hanford ISMS. The Tables demonstrates this integration and that the information can be used by the ISO 14001-oriented reader as a cross-reference to identify sections that correlate to the ISO 14001 elements.

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- D MINIMUM ES&H PERFORMANCE
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## INTRODUCTION

The *Integrated Environment, Safety and Health Management System* (ISMS) Plan establishes a single, defined environment, safety and health (ES&H) management system that integrates requirements into the work planning and execution processes to effectively protect the workers, public, and the environment. The ISMS identifies a set of requirements that reflects DOE's commitment to a 'standards based' safety program and the safety concepts reflected by these requirements.

ISMS provides the mechanisms for increasing worker involvement in work planning, including hazard and environmental impact identification, analysis, and control; work execution; and feedback/improvement processes. Effective implementation of the ISMS incorporates the best practices and supports the accomplishment of the Voluntary Protection Program (VPP), Enhanced Work Planning/Hanford Occupational Health Process (EWP/HOHP), Responsible Care<sup>®</sup>, and other ES&H performance improvement initiatives.

The Project Hanford ISMS consists of the seven Core Functions and is based on the 11 Guiding Principles, as defined in Chapter 2.0.

1. Establish ES&H Policy
2. Define Scope of Work
3. Identify Hazards and Requirements
4. Analyze Hazards and Implement Controls
5. Perform Work within Controls
6. Feedback and Improvement
7. Management Review.

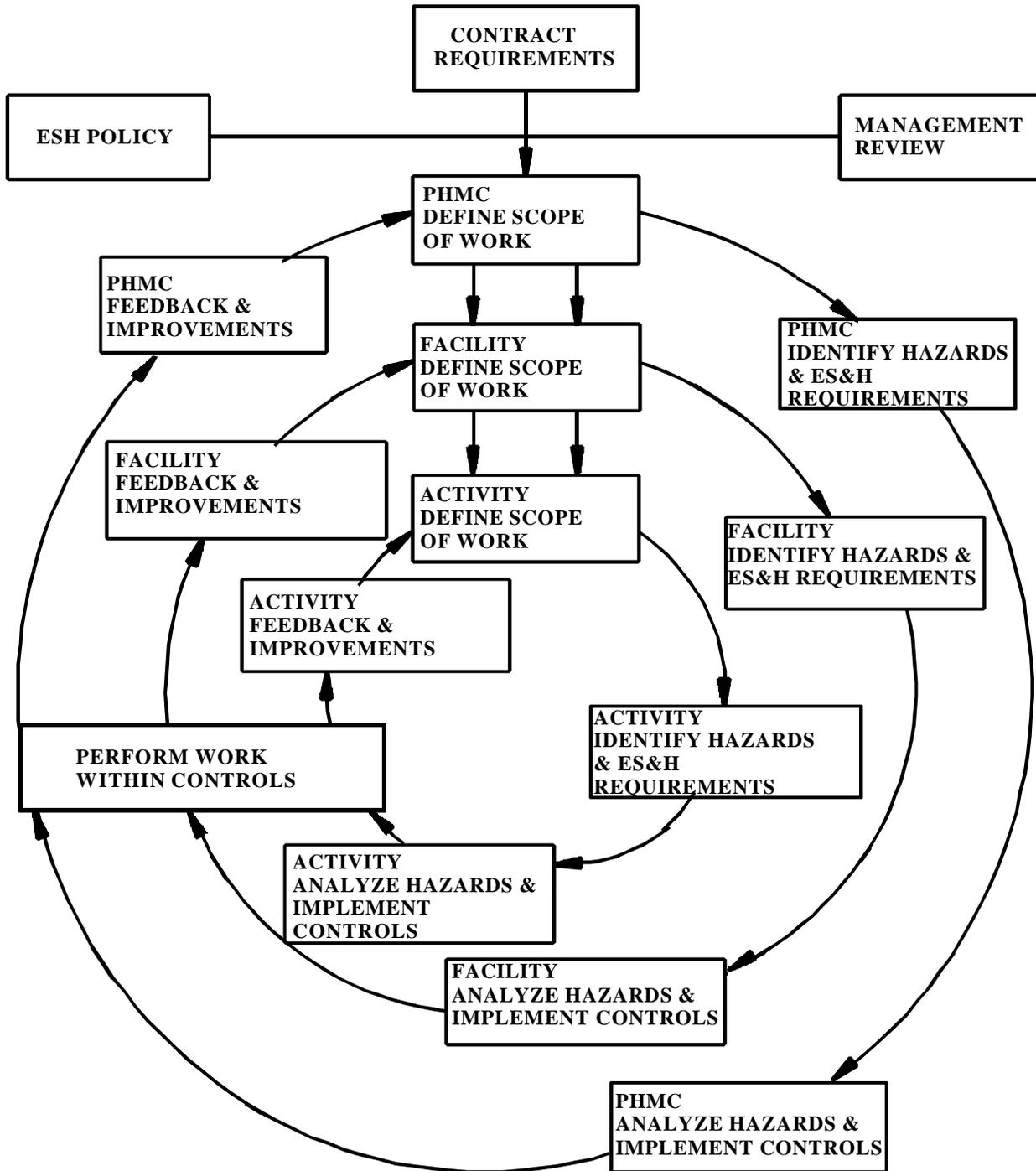
The Project Hanford ISMS Core Functions are an expansion of the core functions defined in DOE P 450.4 with the addition of two over-arching functions of Establish ES&H Policy and Management Review. The ISMS Core Functions are applied as a continuous ES&H management cycle shown conceptually in Figure 1. This structure provides for discrete levels of responsibility to implement the ISMS. A level of detail sufficient to address PHMC Scope Level, Facility Level, and Activity Level requirements and responsibilities for specific work activities and the associated hazards and environmental impacts are provided within the Project Hanford ISMS.

**PHMC Scope Level** - Fluor Daniel Hanford (FDH) management integration functions and oversight of Major Subcontractors and Infrastructure Services Subcontractors performance in implementation of the PHMC through policies, procedures and applicable ES&H requirements.

**Facility Level** - Major Subcontractors and Infrastructure Services Subcontractor implementing policies and procedures tailored to meet the needs of the project.

**Activity Level** - Work management teams, supervisors, PHMC Team workers, niche subcontractors, and lower tiered subcontractors (enterprise companies and subcontractors) conducting tasks within the PHMC Scope consistent with existing contracts, task orders,

procedural guidelines, hazard analysis, agreements and consent orders, permits, and other guiding documents.



Note: Hazards include environmental impacts.

Figure 1. Project Hanford Integrated Environment, Safety and Health Management System Core Functions Diagram.

The work planning process requires the use of a graded (tailored) approach, given that the PHMC Scope contains a wide range of facilities, project types, discrete missions, unique hazards, and environmental impacts. The ISMS achieves a balance between the need for tailoring work management functions to support facility- and project-specific needs (scope and life cycle), and PHMC Team consistency for the safe execution of work.

The ISMS is intended to provide the PHMC Team and its subcontractors with several organizational and functional benefits including the following:

- A single, PHMC wide integrated ES&H management system with a defined flow-down of ES&H requirements
- Worker involvement early in the work planning process
- Improved efficiency in identifying, analyzing, and controlling work hazards and environmental impacts
- Clearly stated, measurable, or verifiable performance expectations for ISMS implementation
- Continuous improvement in applying ES&H practices in PHMC Scope for a safer, environmentally protective work place
- Senior management commitment and involvement to establish, sustain, and improve the ISMS.

### **Audience**

This ISMS Plan provides PHMC Team managers and workers the process for incorporating ES&H requirements into daily planning and work activities. This Plan also provides information to DOE managers to demonstrate that the FDH ISMS follows DOE guidance for integrated safety management systems implementation and is consistent with the principles of ISO 14001. Furthermore, the ISMS Plan will be used to explain and demonstrate the PHMC Team approach to ES&H management, work planning, and worker, public, and environmental protection to interested stakeholders.

The PHMC Team consists of FDH, and Major Subcontractors, with responsibilities as defined as follows.

- FDH is the management and integration contractor that directs, controls, integrates, and supports the activities of the PHMC Scope, while most of the project work is performed and accomplished by subcontractors. FDH is responsible for the Spent Nuclear Fuel Project.
- B&W Hanford Company (BWHC) is responsible for the Facility Stabilization Project and Fast Flux Test Facility.

- Lockheed Martin Hanford Corporation (LMHC) is responsible for the River Protection Project and support to Systems Engineering.
- Waste Management Federal Services of Hanford, Inc. (WMH) is responsible for the Waste Management Project and for environmental services.
- Numatec Hanford Corporation (Numatec) is responsible for Engineering and Technology Support for all projects.
- DynCorp Tri-Cities Services, Inc. (DynCorp) is responsible for Infrastructure and Cross-cutting Services, including facility management, site support services, utility services, transportation infrastructure, and emergency services.

Additional detail on PHMC Team workscope can be obtained in the *Management and Integration Plan* (HNF-MP-001).

### **Format and Content**

The format of this ISMS Plan is based primarily on the DOE Integrated Safety Management System Guide (DOE G 450.4-1) as follows:

- **Foreword** - Summarizes the ISMS source documents and the interface of the ISMS with other Project Hanford programs and initiatives
- **Introduction** - Explains the purpose, benefits, and organization of the ISMS.
- **Chapter 1.0, Objectives of the ISMS** - Presents the primary objective and supporting objectives of the ISMS
- **Chapter 2.0, Guiding Principles of the ISMS** - Lists the 11 PHMC Team Guiding Principles that are integral to safe, quality work, and protection of human health and the environment
- **Chapter 3.0, Functions and Expectations of the ISMS** - Describes the seven PHMC Team Core Functions of the ISMS and expectations (required actions) necessary to implement the ISMS
- **Chapter 4.0, ISMS Implementation** - Explains how the PHMC Team will establish and implement the ISMS within the PHMC workscope.
- **Appendices**
  - A - DOE P 450.4 and ISO 14001 Integration
  - B - Description
  - C - ESH&Q Organization, Structure, Roles, Responsibilities, and Communication
  - D - Minimum ES&H Performance

## E - Glossary, References, and Acronyms

### Definitions

- **Contract Requirements** - Defined workscope and obligations included in the PHMC, DE-AC06-96RL13200
- **ES&H Requirements** - Those standards, regulations, orders, and rules identified in the PHMC, Part III, Section J, Appendix C; or an approved Standards/Requirements Identification Document (S/RID)
- **Environmental Impact** - Any adverse change to the environment, wholly or partially resulting from an organization's activities, products or services
- **Expectations** - A role coupled with responsibility assigned to an organization or individual that results in the development or improvement of specific mechanisms, processes or procedures that implement ISMS Core Functions
- **FDH** - The prime contractor for the PHMC, Fluor Daniel Hanford, Inc.
- **Facility** - For purposes of ISMS implementation, a facility includes any physical equipment, structure(s), system(s), process, activities, or logical groupings thereof that fulfills an intended and specific purpose(s). Facilities do not have to be structures. These could be a grouping of buildings and/or systems that continually are controlled and operated by a Major Subcontractor
- **Guiding Principles** - Attributes that, when incorporated into PHMC Scope work planning and execution, help ensure that work will be managed and performed in a manner that is protective of the workers, workers, and the environment. The relationship between Guiding Principles and Core Functions is described in Chapter 3.0
- **Hazard** - A source of danger (e.g., material, energy source, or operation) with the potential to cause illness, injury, or death to personnel or damage to a facility or to the environment
- **Major Subcontractors** - Subcontractors under direct contract to FDH. These Major Subcontractors include: B&W Hanford Company, Lockheed Martin Hanford Corporation, Waste Management Federal Services of Hanford, Inc., Numatec Hanford Corporation, and for purposes of the ISMS plan: DynCorp Tri-Cities Services, Inc.
- **Other Hanford Contractors** - DOE-RL prime contractors that are not part of the PHMC Team
- **PHMC** - Project Hanford Management Contract, DE-AC06-96RL13200
- **PHMC Scope** - All efforts under the direct control of FDH as set forth in the PHMC, DE-AC06-96RL13200

- **PHMC Team** - FDH and its Major Subcontractors
- **Safety** - Used synonymously with "environment, safety, and health" (ES&H) to encompass protection of the workers, the public, and the environment. Thus, the term "safety" includes the various ES&H disciplines (e.g., environmental protection, waste minimization, pollution prevention, fire protection, industrial hygiene, industrial safety, nuclear safety, and radiological control).

A glossary of additional terms is provided in Appendix E.

### **Document Hierarchy**

The Project Hanford ISMS Plan is a subordinate document to the *Management and Integration Plan (M&I Plan)*. The ISMS Plan will be reviewed at least annually and updated as necessary to reflect implementation progress, system improvements, and changed conditions and requirements. ISMS Plan revision will require DOE-RL review and approval. Distribution and control will be in accordance with existing document control procedures.

This Project Hanford ISMS Plan and other PHMC Team publications are not a substitution or a modification to the PHMC, DE-AC06-96RL13200. Where any publication conflicts with the PHMC, the contract shall govern. Where FDH states that it directs, runs, controls, coordinates, supports or otherwise participates in an activity on the Hanford Site, it is understood that the participation is in accordance with and at the level authorized by the PHMC. DOE-RL performs a large part of the Project Hanford mission through the contract with FDH. Much of the responsibility for safe operation of the facilities that comprise Project Hanford has been delegated to FDH through the PHMC. Through this delegation, this responsibility becomes shared but not relinquished by DOE-RL.

### **Applicability of ISMS Requirements**

The ISMS will be implemented across the PHMC Scope in accordance with the ISMS Implementation Project Plan (HNF-4554) discussed in Chapter 4.0. ISMS implementation will be verified in a defined, phased approach as described in HNF-4554.

Certain expectations of the ISMS Plan are implemented in the existing policies and procedures and through compliance with the PHMC, regulations, and DOE Orders. Further detail is provided in Appendix B.

There are no ISMS expectations that impact beyond the PHMC Scope, although the ISMS Plan could reference Project Hanford Sitewide programs (e.g., Emergency Response).

## 1.0 OBJECTIVES OF THE ISMS

The primary objective of the Project Hanford ISMS is to:

Systematically integrate ES&H into work management and practices at all levels of work planning and execution such that the Project Hanford mission is accomplished while protecting the workers, public, and the environment.

Supporting objectives of the Project Hanford ISMS are to:

- Identify PHMC Team processes that effectively will integrate safety and environmental protection into work planning and execution throughout the PHMC activities
- Establish mechanisms to flow down ES&H requirements to PHMC Team and lower tiered subcontractors, such that work activities are conducted in accordance with the applicable contractual and requirements basis documents
- Improve work efficiency, safety, and environmental protection by involving workers early in the work planning process
- Define expectations with respect to work planning, hazard, and environmental impact identification, analysis, and control, at the PHMC Scope, Facility, and Activity levels
- Address DOE, Tribal Government, stakeholder, and end-user needs for protection of the workers, public, and environment.

## 2.0 GUIDING PRINCIPLES OF THE ISMS

In support of accomplishing the Hanford Site mission, the PHMC Team subscribes to the following Guiding Principles for ES&H management. These Guiding Principles are attributes (i.e. values) of the ISMS and are achieved through execution of the mechanisms, processes, and procedures that satisfy the ISMS expectations and implement the Core. Those programs, standards, policies, and initiatives that contributed to establishing these Guiding Principles are shown in parentheses.

### 1. **Line Management Responsibility for Safety and Environmental Performance Defined** (DOE P 450.4/DOE 450.6/VPP/EWP/RC)

Line management is directly responsible for ensuring conformance to requirements so that workers, the public, and the environment are protected.

- Line management involves ES&H professionals and workers in the work planning process including hazard and environmental impact identification, analysis, and development of controls.
- ES&H requirements are incorporated into the work planning process applying a Job Hazard Analysis (JHA) system.
- Line management visibly demonstrates their commitment to, and responsibility for, safety and environmental protection by routinely being present in the workplace and by being responsive to worker safety and environmental protection concerns.

- ES&H performance objectives and measures are established and documented.
- ES&H performance objectives are incorporated into employee performance goals.
- Line management provides the necessary resources to protect the workers, public, and environment.

## 2. **Clear Roles and Responsibilities Defined** (DOE P 450.4/ISO 14001/VPP/RC )

Clear and unambiguous lines of authority and responsibility for ensuring conformance to ES&H requirements are established, documented, and communicated at all organizational levels to achieve effective safety and environmental management.

- ISMS expectations are met through established contract mechanisms.
- Major Subcontractors share the responsibility for the safety of the PHMC Team work force including lower tiered subcontractors working on PHMC Scope.
- Major Subcontractors are responsible for environmental protection during the performance of work.
- Roles and responsibilities are defined in Project Hanford policies and procedures.

## 3. **Competence Commensurate with Responsibilities** (DOE P 450.4/ISO 14001/VPP/EWP)

Workers possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.

- Workers participate in the work planning process (hazard and environmental impact identification, analysis, and control) within their abilities, experiences, knowledge, and skill level.
- Worker qualification and training requirements relevant to work being performed are identified and satisfied before work is started.

## 4. **Balanced Priorities** (DOE P 450.4)

Protecting the workers, the public, and the environment is a priority whenever work activities are planned and performed.

- Work performance is based on risk-informed planning.
- ES&H scope, and funding are considered an integral part of project planning.
- Resources are available to effectively address ES&H performance objectives and measures.
- Safe, environmentally protective work practices are not compromised to achieve operational milestones.

**5. Safety and Environmental Standards and Requirements Identified (DOE P 450.4 / ISO 14001/HOHP/RC®)**

Before work is performed, the hazards and environmental impacts are identified and ES&H standards and requirements are established.

- Standards and requirements applicable to the hazards and environmental impacts of activities are identified.
- Procedures and processes are established and maintained to identify and analyze safety hazards and environmental impacts of activities.

**6. Hazard Controls Tailored to Work Being Performed (DOE P 450.4/VPP/EWP/HOHP)**

Engineering and administrative controls to prevent and mitigate hazards are tailored to the work activity being performed.

- Operations and activities with identified hazards and environmental impacts are performed in conformance to requirements and within established controls.
- Use of appropriate commercial standards and practices is encouraged.

**7. Operations Authorization (DOE P 450.4/ISO 14001)**

The conditions and requirements for the safe and environmentally protective execution of work are established and clearly communicated.

- Facility Authorization Envelope clearly establishes the requirements and controls necessary prior to authorization of facility operations.
- Pre-job briefings are used to communicate hazard and environmental impact information, work controls, and actions to be taken in case of an emergency.
- The worker is the final check for work to proceed safely.

## 8. **Worker Involvement** (DOE P 450.6/VPP/EWP)

Workers are actively involved in preparing for work, including planning, hazard and environmental impact identification and analysis, implementation of controls, and readiness review.

- A team approach to work planning, work execution, and continuous improvement that encourages early worker involvement is applied.
- Each worker has the right, responsibility, and authority to report unsafe or environmentally unsound conditions or practices and stop work without fear of reprisal.
- Each worker is committed to performing safe, quality work.

## 9. **Communication and Stakeholder Involvement** (RC /ISO 14001)

Open and effective internal and external communication supports management of ES&H issues and initiatives.

- Processes and procedures are established and maintained for guiding internal communication between the various levels and functions of the PHMC Team, and for conducting external communication with regulatory agencies, community members, and stakeholders.
- Community members and other stakeholders participate in the decision making processes that establish FDH ES&H priorities and budget allocations.

## 10. **Continuous Improvement** (DOE 450.4/DOE P 450.5/ISO 14001/VPP/RC<sup>®</sup>)

Workers, supervisors, and management continually check the adequacy of work processes, procedures, equipment, and correct deficiencies when identified.

- ISMS implementation is periodically assessed and assessment results are used for performance feedback for continuous improvement.
- Post-job briefings are conducted to support continuous improvement.
- Lessons learned serve as a primary feedback mechanism to reduce or prevent problem recurrence by using information and data from similar activities in the planning and execution of work.

## 11. **Senior Management Involvement** (ISO 14001/VPP/RC )

Senior management is actively engaged in the implementation and improvement of the ISMS.

- Senior management establishes ES&H policies that commits to full implementation of the ISMS, continuous improvement, compliance with applicable laws and regulations, and setting objectives for improved ES&H performance.

- Senior management provides ISMS direction based on performance feedback analysis.

### **3.0 FUNCTIONS AND EXPECTATIONS OF THE ISMS**

This chapter provides a comprehensive description of the Project Hanford ISMS Core Functions and Expectations at the PHMC Scope, Facility, and Activity levels. Table 1 demonstrates the relationship between Core Functions, Guiding Principles, and Expectations. The Core Functions are defined by sets of 'Expectations' in this chapter.

- An Expectation is defined as a role coupled with a responsibility assigned to an organization or individual (e.g., a worker, supervisor, facility manager, or ES&H professional) that results in the development or improvement of specific mechanisms, processes, or procedures that implement ISMS Core Functions.
- Expectations are defined at three different levels; PHMC Scope Level, Facility Level, and Activity Level and placed in Expectation Text boxes within this chapter.
- The total set of Expectations constitutes the framework of the ISMS.
- A unique 'alpha-numeric designation' (number) is assigned to each expectation (e.g., P2, F1, A3, etc.) and used for tracking the expectation through implementation by the PHMC Team. The unique numbers identify the expectation level and sequence based on the initial approval of the document (P = PHMC Scope, F = Facility, and A = Activity). The numbers are sequentially assigned.
- Expectations are identified only as necessary at each level. For example, there are no Activity Level Expectations identified in "Define Scope of Work" or "Management Review" Core Functions.

This approach to ISMS implementation provides a number of benefits, particularly for the PHMC Management and Integration structure with multiple Major Subcontractors operating different facilities with different sets of management and operating procedures. The benefits of clearly defined ISMS Expectations are that these:

- Provide a consistent definition of the Project Hanford ISMS across different facilities and contractors
- Facilitate ISMS implementation and verification.
- Facilitate establishing measurable and verifiable criteria, which can be used for various kinds of internal or external assessments. Long term, this should improve the clarity of expectations for these assessments, as well as improve the ability to directly compare the results of these various assessments.

PHMC Scope Level expectations could apply to FDH, to the PHMC Team, or to a specific FDH organization. It is important to note that PHMC Scope Level Expectations assigned to the PHMC Team apply to the senior level managers of Major Subcontractors as well as FDH even though these are not listed separately under the Facility Level Expectations. The total set of Expectations constitute the framework of the ISMS. Project Hanford and facility procedures and practices (i.e., mechanisms) will be developed to implement this set of Expectations and will define the facility or project ISMS documentation and implementation.

Table 1. Relationship Between ISMS Expectations and the Guiding Principles and Core Functions

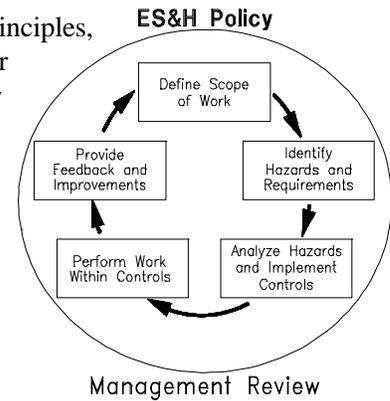
Guiding Principles	Core Functions						
	Establish ES&H Policy	Define the Scope of Work	Identify Hazards and Requirements	Analyze Hazards and Imp. Controls	Perform Work Within Controls	Feedback and Improvement	Management Review
Line Management Responsibility for Safety & Environmental Performance Defined		P7, F4, F5	F13	P28, P29, F19, F20, F22, F25, F30, F32	P39, F38, F40, F41, F42, F44, F48, A14	P47, F50, F52, F53, F54, F57, F61, A26, A27	
Clear Roles and Responsibilities Defined	F2	P4, P8, P9	P18, P22, P23	P27, P31, P32, P33, P34,	P35, P36, P38, P40, P41, P42, P43, P44 A9, A10, A11, A16, A17, A21, A23	P49, P50, P51, P52, P53, P54, P55, P56, P60, P61, P62, F49, F55, F56, F59, F60, A28	
Competence Commensurate with Responsibility				F18	F39, F47, A12, A15		
Balanced Priorities		P5, P6, P10, P10b P11, P12, F3	F9		A13	P57, F58	
Safety & Environmental Standards & Requirements Identified		P3	P13, P14, P15, P16, P17, P19, P20, P21, F10, F11, F12, F14	P24, P25, P26, P30, F15, F16, F17, F26, F29, F31, A3, A4, A6	P37, P45	P63	
Hazards Tailored to Work Being Performed			F6, F7, F8	F23	A18, A22		
Operations Authorization				F24, F33, F34, F35, F36, F37, A5, A7	F43, F45, F46, A8		
Worker Involvement	A1			F21, F27, F28, A2	A19, A20, A24	A25	
Communication & Stakeholder Involvement	F1					P48, P49b, P58	
Continuous Improvement						P46, P59, F51	
Senior Management Involvement	P1, P2					P64	P65, F62

NOTE: A unique alpha-numeric designation (number) is assigned to each Expectation (identified in Section 3.0).

### 3.1 CORE FUNCTION: ESTABLISH ES&H POLICY

Project Hanford Management System

(PHMS) policies are statements of common values, standards of conduct, principles, or general direction to be incorporated in subsequent plans and procedures or invoked through excellence in the conduct of operations. These policies flow from the mission, values, and success criteria for the PHMC scope of work and include ES&H policies (HNF-5053 and HNF-5054) that are consistent with DOE-RL policies. The Project Hanford policies state the PHMC Team commitment to reduce accidents, radiological and toxicological exposures, and regulatory noncompliances, and to be responsible stewards of the environment. These policies can be accessed on the PHMS Home Page.



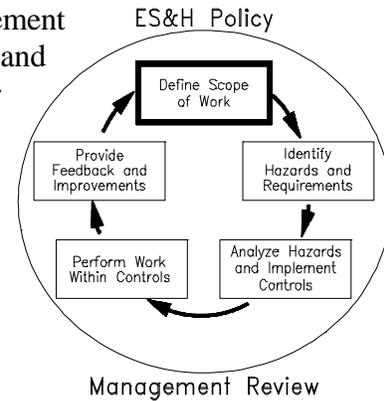
The PHMC Quality Assurance (QA) Policy (HNF-POL-QA)

complements the ES&H policies. The QA Policy sets the framework for establishing a quality management system that ensures activities are accomplished in accordance with requirements. The QA Policy states that Hanford Mission requirements intended to protect the environment and the safety and health of workers and the public are of primary importance and that PHMC Team line managers and employees are responsible for understanding and complying with the policies, procedures, and instructions applicable to their activities, and for ensuring safety of operations and the quality of their products and services. The QA Policy also can be accessed on the PHMS Home Page.

EXPECTATIONS: Establish ES&H Policy
<p>PHMC Scope Level:</p> <ol style="list-style-type: none"> <li>1. FDH Office of the President establishes ES&amp;H policies consistent with the DOE-RL environment, safety and quality policies and effectively communicates the policies to employees and stakeholders. (P1)</li> <li>2. The PHMC Team adheres to the ES&amp;H policies and ensures that activities are carried out consistent with the policies. ES&amp;H performance objectives and measures are consistent with the DOE-RL ES&amp;H Policy to "reduce accidents, radiological and toxicological exposures, and regulatory non-compliance". (P2)</li> </ol> <p>Facility Level:</p> <ol style="list-style-type: none"> <li>1. Major Subcontractors communicate the ES&amp;H policies, to their work force including lower tier subcontractors. (F1)</li> <li>2. Major Subcontractors adhere to the ES&amp;H policies and ensure that activities are carried out consistent with the policies. (F2)</li> </ol> <p>Activity Level:</p> <p>Employees are familiar with the ES&amp;H policies and perform work consistent with the policies. (A1)</p>

### 3.2 CORE FUNCTION: DEFINE THE SCOPE OF WORK

Defining the scope of work is a critical element of ES&H management functions. This sets the stage for the scope and depth of hazards and environmental impact identification/analysis, is the foundation for the budget formulation/allocation process, and is the primary factor in establishing expectations and accountability mechanisms. The fundamental objective of this ISMS function is to define the safe and environmentally sound expectations under which the DOE mission-defined activities are to be conducted.



#### 3.2.1 Translate Mission into Work

##### **Project Hanford Management Contract**

DOE requirements for a portion of the Project Hanford mission have been translated into a formal management and integration contract. The PHMC (DE-AC06-96RL-13200) Statement Of Work (SOW) defines the detailed work scope involved in the management and integration of the Hanford Site. The SOW establishes overall responsibility and accountability for the performance of all work within the scope of the PHMC. DOE-RL manages the prime contract with FDH. FDH manages and integrates PHMC Scope activities and has established subcontracts with six Major Subcontractors to operate various facilities and projects as defined in the Project Hanford *M&I Plan* (HNF-MP-001).

FDH ensures that the PHMC workscope is assigned to PHMC Team subcontractors and that the workscope is completed in accordance with the PHMC requirements (e.g., ES&H requirements, program performance obligations, etc.). The assignment of workscope and obligation to comply with PHMC requirements are accomplished among FDH and the Major Subcontractors through subcontract agreements. FDH authorizes work to the Major Subcontractors through Project Authorization Directives (PADs).

Although each Major Subcontractor has certain assigned workscope, it might be necessary to obtain assistance from one or more of the Major Subcontractors. The PHMC Team accomplishes this through the use of Task Packages, Internal Work Orders, and Task Order Agreements. Additional information on delegation of workscope responsibilities within the PHMC Team is provided in the *M&I Plan* (HNF-MP-001).

Delegation of workscope via the subcontract and Task Order Agreements also establishes a shared responsibility for meeting PHMC requirements based on the scope of work. This delegation of ES&H responsibility can be explicit, such as in the area of construction management, or implicit, such as in design engineering where it is expected the design will meet applicable codes. Through this delegation process, members of the PHMC Team and lower tiered subcontractors share in the responsibility for meeting workscope and ES&H requirements. These responsibilities become shared between FDH and the Major Subcontractors in the delegation of workscope, but never relinquished by either.

## Integrated Site Baseline

FDH develops the Integrated Site Baseline based on technical, schedule, and cost planning guidance provided by DOE-RL. The Integrated Site Baseline:

- Identifies work scope and contractor interfaces among FDH, Major Subcontractors, and other Hanford Site contractors
- Provides insight into the total site funding requirements over time
- Provides information to assess compliance with site requirements, including HFFACO (Tri-Party Agreement)<sup>1</sup>, ES&H Requirements, and Site Environmental Management Specifications
- Identifies working-level ties to mission-level performance measures
- Provides the basis for evaluating PHMC performance based on individual project performance.

ES&H Requirements are included in project roll-ups to the Integrated Site Baseline. Further detail on the PHMC Integrated Site Baseline is provided in the Project Hanford *M&I Plan* (HNF-MP-001).

<b>EXPECTATIONS: Define Scope of Work/Translate Mission Into Work</b>
PHMC Scope Level: <ol style="list-style-type: none"><li>1. FDH ESH&amp;Q functional area managers develop requirements and documents for the PHMC Team that are used to translate ES&amp;H requirements and obligations from the PHMC mission into work. (P3)</li><li>2. FDH ensures that all facilities, waste sites, or other ancillary structures are assigned to Major Subcontractors for execution of cleanup, surveillance and maintenance, or operation in accordance to the PHMC requirements; so that the full PHMC Scope hazards, and environmental impacts can be addressed when developing the Integrated Site Baseline. (P4)</li><li>3. The PHMC Team develops the Integrated Site Baseline based on technical, schedule, and cost planning guidance provided by DOE-RL, including consideration of the Tri-Party Agreement and other compliance agreements, obligations, and commitments. (P5)</li><li>4. PHMC Team uses formal mechanisms (e.g., subcontracts, task orders) to delegate</li></ol>

<sup>1</sup>The TRI-PARTY AGREEMENT is a legally binding document that recognizes the CERCLA and RCRA requirements applicable to the Hanford Site. These requirements are translated into milestones for accomplishment of work to bring the Hanford Site into compliance. Section H.4 of the contract, titled TRI-PARTY AGREEMENT, recognizes the requirements and milestones for cleanup and other activities on the Hanford Site.

workscape, including ES&H requirements, to other PHMC Team subcontractors and lower tiered subcontractors. (P6)

Facility Level:

Major Subcontractors provide input to FDH to support preparation of the Integrated Site Baseline. (F3)

### 3.2.2 Set Expectations

Performance Objectives are established annually for PHMC Scope by the DOE-RL through the Performance Agreement process. The DOE-RL maintains the policy and procedures for the development and administration of performance agreements and maintains a contract administration plan that covers the PHMC. The contract administration plan discusses a performance-based management system used to measure the progress of the PHMC Team in satisfying the contract requirements.

#### 1. Mechanisms for establishing performance objectives for work:

Before each fiscal year, the milestones established in the Integrated Site Baseline are reviewed for establishing performance objectives. Incentives earned are linked to the achievement of PHMC objectives and the completion of milestone activities. DOE-RL identifies the desired results or outcomes.

#### 2. Integration of safety and environmental protection performance objectives and measures with work performance:

Safety and environmental performance objectives and measures are identified annually in specific performance agreements or integrated into the criteria for successful completion of approved work plans. By integrating safety and environmental performance objectives and measures, the PHMC Team is motivated to accomplish the milestone safely and with concern for protecting the environment.

#### 3. Management's role in establishing performance objectives and measures:

The PHMC Team line management is responsible for establishing and documenting ES&H performance objectives and measures for the facilities and projects they manage and ensuring that the objectives and measures are included in performance agreements. Line management will include achieving ES&H-objectives and measures in employee performance expectations and evaluations. Line management and employees are responsible for achieving the ES&H objectives and measures.

**EXPECTATIONS: Define Scope of Work/Set Expectations**

PHMC Scope Level:

1. FDH Projects accepts DOE-RL performance agreements that reward both task completion

and ESH performance objectives achievement, while supporting the Integrated Site Baseline and funded scope of work. (P7)

2. The PHMC Team ensures that the organizational structure, expectations, and mechanisms for implementing the ISMS using a graded approach are documented, communicated, and clearly understood by employees. (P8)
3. PHMC Team links employee performance assessments and appraisals to identified ES&H performance objectives and measures. (P9)

Facility Level:

Major Subcontractors develop ES&H performance objectives and measures for improving safe operations and environmental protection. (F9)

### 3.2.3 Set Task Priorities and Allocate Resources

#### 1. Risk Management

The PHMC Team applies a systematic approach to setting priorities and managing PHMC Scope work. The system evaluates and incorporates a wide range of risks (public health, worker health, environmental impacts, stakeholder priorities, social and economic impacts, compliance, cost, schedule, and technical) and supports DOE strategic planning and sitewide decision-making. The risk management system as defined in the *Risk Management Plan* (HNF-MP-005) and used in the *Multi-Year Work Plan* (MYWP), supports the development and management of the Integrated Site Baseline in parallel with the DOE Office of Environmental Management 2006 Plan, annual planning, and performance reporting. The process is intended to balance priorities by using risk-based analysis to meet regulatory requirements, and control hazards and environmental impacts during work performance.

#### 2. Integrated Site Baseline

The Integrated Site Baseline is the summary document that defines the work to be performed. DOE-RL approves the Integrated Site Baseline and authorizes resources for executing work within a specific period. FDH authorizes work by its Major Subcontractors through Project Authorization Directives (PAD). Refer to the *M&I Plan* (HNF-MP-001) for more information on the Integrated Site Baseline.

#### 3. Baseline Change Control

Any modifications to the work scope that affect established control points are subject to subcontractor, FDH, or DOE-RL approval through the Baseline Change Control process. FDH exercises Baseline Change Control in support of DOE-RL's Basic Planning Approach. Refer to the *Configuration Management Plan* (HNF-MP-013) for more information on Change Control.

#### 4. ES&H Resource Planning and Prioritization

ES&H budgeting and planning is performed as specified by *M&I Plan* (HNF-MP-001) and supporting procedures maintained by Site Planning and Integration (SPI), and in accordance with the annual budget planning process guidance issued by DOE-RL. The key feature of the ES&H budget and planning process is the ES&H Crosscut Report.

The ES&H Crosscut Report captures the ES&H related portion of the PHMC Scope budget from the Project Baseline Summaries. The report identifies the direct and indirect funded ES&H work planned under various budget scenarios. ES&H related risks are quantified for any budget shortfalls. The review and approval process for the report allows FDH and DOE-RL ES&H management to develop strategies to address any vulnerabilities as a result of ES&H budget shortfalls. The approved report is provided to DOE-RL, DOE-EM, and DOE-EH management and is used as input to finalize the PHMC Scope budget.

Final budgets for direct funded (project) and indirect funded ES&H activities are documented in MYWPs and Indirect Work Plans, respectively. Changes to these baselines are controlled through a formal change control process.

<b>EXPECTATIONS: Define Scope of Work/Prioritize Tasks and Allocate Resources</b>
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PHMC Scope Level:
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- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"><li>1. The PHMC Team recommends work priorities, with consideration for risk elements and baseline change control, to ensure that the most significant hazards and environmental impacts are mitigated in the most cost-effective manner. (P10)</li><li>2. The PHMC Team modifies accepted work scope using the baseline change control process. (P10b)</li><li>3. FDH Projects provide necessary administrative guidance and mentoring resources to support ISMS implementation within the PHMC Scope. (P11)</li><li>4. The PHMC Team ensures that ES&amp;H requirements and activities are properly integrated into the planning, budgeting, and work management processes. (P12)</li></ol> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

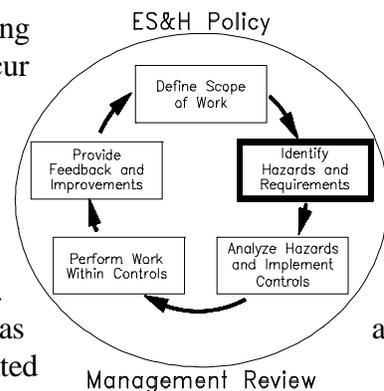
Facility Level:
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- |                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"><li>1. Facility management integrates ES&amp;H requirements, and responsibilities into work planning. (F4)</li><li>2. Facility management ensures that ES&amp;H resources are budgeted and adequate to support facility level needs and ES&amp;H issues. (F5)</li></ol> |
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### 3.3 CORE FUNCTION: IDENTIFY HAZARDS, ENVIRONMENTAL IMPACTS AND ES&H REQUIREMENTS

Identifying potential hazards and environmental impacts, and defining applicable ES&H requirements is a continual process that must occur throughout the facility or project life cycle (e.g., program planning, design, construction, operation, decommissioning, and closure). The ISMS is essentially a requirements (or standards) based system. For the Project Hanford ISMS, a defined Requirements Basis represents the fundamental ES&H requirements drivers, the applicability of which is generally a function of the hazards present.

Hazards, environmental impacts, and ES&H requirements change as result of facility and operational modifications and newly promulgated regulations, standards, DOE orders, etc. Also, hazards, impacts, and the associated ES&H requirements for their control change as individual work activities are performed within a facility or project. The following describes the processes that will be used by the PHMC Team contractors to identify hazards, environmental impacts, and ES&H requirements at the facility and activity levels.



#### 3.3.1 Identify Hazards and Environmental Impacts

ES&H requirements define hazard classifications and categories that must be analyzed. Hazards analysis provides an understanding of the potential for the hazard to impact the worker, public, or the environment. Hazard controls are developed based on this understanding as well as consideration of other job specific factors. Hazard sources typically analyzed for impact are summarized as follows:

- Ionizing radiation from specialized equipment and decay of radioactive material
- Ionizing radiation from a criticality event
- Non-ionizing radiation
- Chemical or pressure deflagration/explosion
- Toxic materials/hazardous materials/hazardous wastes
- Industrial and construction hazards
- Discharges to air, water, and land
- Energy sources (mechanical, chemical, electrical, nuclear)
- Biological sources
- Fire and natural phenomena (high winds, dust, tornadoes, floods, volcanic eruptions, extreme temperatures).

##### 3.3.1.1 Facility Level Hazard and Environmental Impact Identification

PHMC Team will evaluate each facility to identify the type and quantity of radioactive and chemical materials or waste contained in the facility to establish or confirm the facility hazard classification. This evaluation will result in separating facilities into four hazard classifications as shown in DOE Order 5480.23 (Nuclear, Radiological, Non-Nuclear, and Industrial) and will provide the basis for applying a graded approach to determining level of hazard analysis, applicable requirements, and necessary controls to ensure adequate protection of the workers, the public, property, and the environment.

Radiological and chemical inventories, environmental permits, NEPA documentation, environmental monitoring data, and other pertinent facility information will be used to support the hazards analysis of conditions of each facility that could affect the workers, the public, property, or the environment. This information also will be used in establishing the level of hazard analysis, safety documentation, and operational controls for the facility. This information also will be used to establish performance objectives and measures for improving safe operations and environmental protection.

Identifying environmental impacts should be an ongoing process occurring at all relevant functions and levels with the PHMC Team. The following, among other factors, also should be considered when establishing PHMC Team ES&H performance objectives and measures:

- Pollution prevention
- Waste minimization
- Emissions reduction
- Resource conservation.

The PHMC Team identifies environmental impacts of its activities through several mechanisms that include the Tri-Party Agreement and *The National Environmental Policy Act (NEPA) of 1969* documents, regulatory permits, emissions and effluent monitoring, spill reporting, chemical use tracking and reporting, waste generation tracking and reporting, pollution prevention opportunity assessments, etc.

<b>EXPECTATION: Identify Hazards and Requirements/Facility Level Hazard Identification</b>
PHMC Scope Level: <ol style="list-style-type: none"><li>1. FDH ES&amp;H&amp;Q develops and maintains procedures that describe the requirements for identifying and evaluating the hazards and environmental impacts present in facilities, and the Hazard Classification of the facilities. (P13)</li><li>2. FDH ESH&amp;Q develops and maintains a Chemical Management Program that manages and controls chemicals from procurement through use and final disposition. (P14)</li></ol>
Facility Level: <ol style="list-style-type: none"><li>1. Major Subcontractors ensure that hazard and environmental impact identification and analysis are performed and facility or project Hazard Classification is identified and maintained. (F6)</li><li>2. Major Subcontractors manage facility chemical inventories, and analyze and control the hazards associated with the inventory. Chemical materials with no programmatic needs are excessed or disposed. (F7)</li><li>3. The Major Subcontractors ensures hazard and environmental impact identification and analysis are performed and updated when facility life cycle and the associated hazards change. (F8)</li></ol>

### 3.3.1.2 Activity Level Hazard and Environmental Impacts Identification

The PHMC Team will use the Job Hazard Analysis (JHA) process as the primary means to identify hazards and environmental impacts associated with a specific work activity and to specify the controls necessary to mitigate the hazards and impacts. Section 3.4.1.2 provides additional detail and the expectations regarding the JHA and its use in hazard and environmental impact identification, analysis, and control. When practical, hazards and environmental impacts should be addressed through approved engineering processes rather than mitigated or controlled administratively.

### 3.3.2 Identify ES&H Requirements

The ES&H standards and requirements applicable to the PHMC Team are specified in the PHMC (Contract No. DE-AC06-96RL13200, Part III, Section J, Appendix C). Additionally, the Tri-Party Agreement is a major source for cleanup program requirements that must be addressed by the PHMC Team. These standards and requirements include federal, state, and local laws and regulations, and specific DOE Directives. In accordance with the PHMC, FDH is responsible for compliance with the standards and requirements specified in Part III, Section J, Appendix C regardless of which subcontractor performs the work. Consequently, FDH is responsible for 'flowing down' the necessary requirements to Major Subcontractors, and ensure the flow down continues to the lower tiered subcontractor performing the work.

The set of standards and requirements specified in Part III, Section J, Appendix C are incorporated into the contracts of the Major Subcontractors and enterprise companies. Major Subcontractors are responsible for complying with the requirements of their subcontract and for flowing down the necessary requirements to their lower tiered subcontractors. Major Subcontractors accomplish this flow down through identifying the applicable requirements relating to the scope of work in subcontract, task order, and purchase agreement. All enterprise companies, niche subcontractors, infrastructure subcontractor and lower tiered subcontractors are required to conduct work activities within the Authorization Envelope (refer to 3.4.3) of the Facility.

The ES&H standards and requirements described in Part III, Section J, Appendix C may be superseded, in whole or in part, by an alternative set of requirements developed through a DOE-approved process such as the Nuclear Facilities Standards and Requirements Identification Documents (S/RIDs). Facility-specific S/RIDs have been developed and approved for the following nuclear facilities. In addition, cross-cutting S/RIDs are requirements that are applicable to all facilities with approved S/RIDs. The facilities participate in the implementation of cross-cutting S/RIDs through established Project Hanford procedures.

### PROJECT HANFORD FACILITY SPECIFIC S/RIDs

<u>Facility</u>	<u>Responsible Contractor</u>
Tank Farms	LMHC
Plutonium Finishing Plant	BWHC
B Plant Complex	BWHC
Plutonium Uranium Extraction Facility	BWHC

Waste Encapsulation and Storage Facility	BWHC
Fast Flux Test Facility	BWHC
324/327 Building	BWHC
K-Basins	FDH
Canister Storage/Hot Conditioning	FDH
Waste Management Operations	WMH

Facilities classified as nuclear (Category 3), radiological, nonnuclear, or industrial that do not have an approved S/RID will be required to comply with the ES&H standards and requirements listed in Part III, Section J, Appendix C of the PHMC based on the facility defined scope of work, identified hazards and environmental impacts, and applicability requirements established in the standard or order.

The Project Hanford *Requirements Management Plan* (HNF-MP-015) provides a systematic approach for identifying, managing, implementing, and integrating requirements management for new, revised, or existing requirements such that:

- Requirements imposed by contractual, regulatory, statutory, and legal obligation are identified, validated to the established requirements baseline, and implemented (via authorized work scope) in a consistent manner.
- Appropriate actions are specified in implementing procedures to satisfy the requirements.
- Timely revision of implementing documents accommodates changes to requirements.
- Requirements are interpreted properly and consistently applied.
- Changes in requirements are controlled and passed on to the responsible organizations.
- Roles and responsibilities for managing requirements are identified and communicated.
- Traceability of requirements is provided.

<b>EXPECTATIONS: Identify Hazards and Requirements/Identify Requirements</b>
<p>PHMC Scope Level:</p> <ol style="list-style-type: none"> <li>1. FDH ESH&amp;Q develops and maintains a procedure that describes the process by which S/RIDs are developed, approved, and maintained current. (P15)</li> <li>2. FDH ESH&amp;Q and assigned technical authorities identify and assess newly promulgated or revised ES&amp;H standards and requirements. (P16)</li> <li>3. FDH Projects, Contracts, and ESH&amp;Q assess contractual and budgetary impacts of newly promulgated or revised standards and initiate the appropriate modifications to the PHMC and Major Subcontractor contracts and budgets. (P17)</li> <li>4. FDH Projects ensure that Major Subcontractors comply with all applicable S/RIDs or Requirements Basis Documents. (P18)</li> </ol> <p>Facility Level:</p>

1. Major Subcontractors determine the ES&H standards and requirements that apply to a contracted scope of work and convey these to lower tiered subcontractors, or other PHMC Team subcontractors via a contracting/task order mechanism. (F10)
2. Major Subcontractors maintain configuration control of S/RIDs or Requirements Basis Documents (requirements and implementing procedures). (F11)

### 3.3.3 Requirements Basis Documents

The PHMC Team will develop and maintain configuration control of procedures for implementing the applicable facility requirements basis. Requirements basis configuration control is intended to ensure that the requirements basis (S/RIDs for Nuclear Category 1 and 2 facilities) stays current with regulatory changes, and procedures remain current reflecting the requirements basis. Individuals with the appropriate expertise from the PHMC Team will develop implementing procedures for consistent and cost-effective implementation of standards and requirements by the PHMC Team. Project Hanford Policies and Procedures are applicable to all major and lower tiered subcontractors and the facilities to ensure consistent requirements implementation. Facilities with approved S/RIDs will comply with Project Hanford Policies and Procedures for those requirements contained in their S/RIDs and also identified in their company's contract with FDH. Major Subcontractors are responsible for developing implementing procedures not contained in the PHMS but determined necessary to support effective implementation of a facility Requirements Basis. Collectively, Project Hanford and the facility-specific implementing procedures constitute the PHMC Team ES&H program. The PHMS, and document hierarchy are detailed in the *M&I Plan* (HNF-MP-001).

**EXPECTATIONS: Identify Hazards and Requirements/Requirements Basis Documents**

**PHMC Scope Level:**

1. FDH ESH&Q identifies the initial set of PHMC Scope ES&H implementing procedures. (P19)
2. FDH ESH&Q and assigned technical authorities develop and maintain configuration control of Project Hanford ES&H implementing procedures to support compliance with the applicable ES&H standards and requirements. (P20)
3. FDH ESH&Q and FDH Project Integration approve new or revised Project Hanford procedures. (P21)
4. FDH Projects and ESH&Q ensure that the Major Subcontractors comply with the applicable Project Hanford procedures. (P22)
5. FDH Systems Engineering develops and maintains procedure guidance for Project Hanford configuration management. (P23)

**Facility Level:**

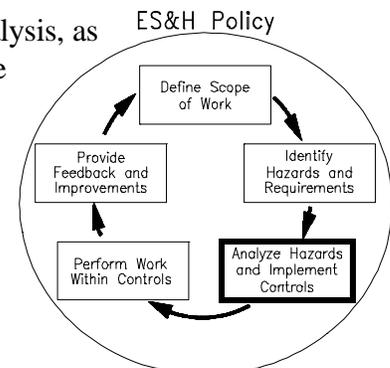
1. Major Subcontractors develop and maintain configuration control of Requirement Basis Documents and facility-specific implementing procedures necessary to support compliance with the applicable ES&H standards and requirements relevant to the scope of the work. (F12)
2. Major Subcontractors ensure that Enterprise, Infrastructure and lower tiered subcontractors conform to requirements and comply with the Project Hanford procedures and facility-specific implementing procedures applicable to the contracted scope of work. (F13)
3. Major Subcontractors develop implementing procedures not contained in the PHMS but determined necessary to support effective implementation of the facility requirements basis. (F14)

**3.4 CORE FUNCTION: ANALYZE HAZARDS AND ENVIRONMENTAL IMPACTS AND IMPLEMENT CONTROLS**

Facility hazard and environmental impacts analysis and job hazard analysis, as discussed in the following sections, are essential processes used by the PHMC Team to ensure that facility and project operations are conducted in a safe and environmentally protective manner.

**3.4.1 Analyze Hazards and Environmental Impacts**

Facility hazard analysis provides for developing facility-specific controls to protect the worker, the public, and the environment. The JHA identifies hazards and environmental impacts (facility and task



Management Review  
Integrated ES&H Management System Plan

specific) in order to establish effective work controls and provide for the safe performance of work.

#### 3.4.1.1 Facility Hazard and Environmental Impact Analysis

The facility hazard analysis is designed to evaluate hazards and environmental impacts associated with the operation of a facility. The depth and rigor of the facility hazard analysis is based on the hazard classification and categorization of the facility, life-cycle stage, magnitude of hazards present, magnitude of the potential environmental impacts, and the complexity of operations. The results of the facility hazard analysis are documented in the facility safety analysis reports (SAR) for nuclear facilities (DOE 5480.23), auditable safety analysis (ASA) for radiological and nonnuclear facilities (DOE 5481.1B), or comparable hazard analysis to support operations. Facility SARs and ASAs result in identifying and specifying the facility operational controls necessary to ensure adequate protection of the workers, property, the public, and the environment.

Facility hazard analyses generally are not required for industrial facilities because their operation presents hazards of types and magnitudes routinely encountered and accepted as common industrial or construction hazards. Common industrial and construction hazards are addressed through existing codes and standards (e.g., OSHA, Fire Codes occupancy permits), environmental documentation (e.g., permits, consent orders and agreements, etc.), facility operating procedures, and the JHA process (Section 3.4.1.2). Fire hazards analysis (FHA) required by DOE 5480.7A, and DOE 420.1/440.1 provides additional facility level analysis and controls. Environmental impacts are evaluated in the same manner regardless of facility classification.

**EXPECTATIONS: Analyze Hazards and Environmental Impacts/Facility Hazard Analysis**

**PHMC Scope Level:**

1. FDH ESH&Q develops and maintains the procedures to support preparation of facility SARs (or comparable analysis) as applicable as specified by DOE 5480.23. (P24)
2. FDH ESH&Q develops and maintains the necessary procedures for the preparation of an ASA (or comparable analysis) as applicable as specified by DOE Order 5481.1B. (P25)
3. FDH ESH&Q develops and maintains the procedures to analyze the potential for environmental impacts and to prepare and maintain environmental documentation. (P26)
4. FDH Projects approves facility SARs and ASAs, with written ESH&Q concurrence, and obtains DOE-RL approval of SARs and ASA (Nuclear and Nonnuclear Classified Moderate or High Hazard). The FDH Office of the President approves Authorization Basis and S/RIDs for transmittal to DOE-RL. (P27)

**Facility Level:**

1. Major Subcontractors, as directed by FDH Projects, develop a SAR or document exception to a SAR for Nuclear facilities. (F15)
2. Major Subcontractors, as directed by FDH Projects, develop (or document exception to) an ASA for each radiological, and non-nuclear facility. (F16)
3. Major Subcontractors operate industrial facilities in compliance with applicable operating procedures, permits, and consent orders and agreements (e.g., Tri-Party Agreement). If hazard and environmental impact analyses results indicate a potential for noncompliance, Major Subcontractors notify FDH Projects and ESH&Q of the potential noncompliance. (F17)
4. Major Subcontractors ensure that personnel performing hazard identification and analysis and development of controls are qualified and trained per the *Project Hanford Qualification and Training Plan* (HNF-MP-011) to perform the task safely, completely, and effectively. (F18)

**Activity Level:**

Individual workers assist in the work planning and hazard identification and analysis process. (A2)

3.4.1.2 Job Hazard Analysis

At the activity level, the integration of the work management and ES&H management processes are the defining element of the ISMS. How individual work activities in a facility or project are planned and managed is at the core of both productivity and ES&H management. Therefore, the integration focuses on the necessary elements of safety and environmental protection and work

planning so that work can be conducted in a manner that ensures safety and environmental protection while optimizing productivity and efficiency.

The JHA process is the primary vehicle by which the ISMS Core Functions are integrated into work planning and individual work activities. Additional key components of effective work planning and ES&H management include the:

- Team approach to work planning; and
- Risk and complexity approach to work planning.

The following describes these key components in detail to provide insight and understanding of the application of these concepts when applied at the work activity level.

### **Job Hazard Analysis and Work Planning**

The fundamental purpose of the JHA process is to systematically analyze a defined scope of work to identify potential hazards and environmental impacts and to specify the controls necessary to mitigate the hazards and impacts. The JHA also can be used to identify the applicable standards and requirements associated with the identified hazards and environmental impacts, and to specify the need for additional hazard analysis in the form of personnel, area, or environmental monitoring for chemical, physical (including ionizing radiation), biological, and ergonomic hazards. The rigor with which the JHA is completed and the personnel involved in completing the JHA is particularly important when hazards are multiple, dynamic, complex, or of high consequence.

At present, the PHMC Team uses several methods to conduct JHA, including a JHA checklist, Job Safety Analysis (JSA), and automated JHAs. The particular method used is tailored to the workscope risk and complexity. The Project Hanford ISMS is intended to drive the development and use of a single, comprehensive automated JHA (AJHA) process that is consistently used during work planning. The AJHA will be used in every case except when the type of work (routine versus non-routine), mission scope, duration, and/or milestone impacts indicate it is not effective or practical. Facility Level exemption from use of the AJHA requires FDH ESH&Q management approval. Table 2 provides specific features of the Project Hanford AJHA that achieves implementation of ISMS Core Functions at the Activity Level.

Table 2. Features of the Automated Job Hazards Analysis.

<ul style="list-style-type: none"><li>• Addresses environmental, industrial hygiene, industrial safety, nuclear safety, fire protection, and radiological hazards and requirements</li><li>• Promotes worker involvement in the work planning process including hazard and environmental impact identification, evaluation, and control</li><li>• Integrates the appropriate ES&amp;H personnel into the work planning process to effectively support hazard and environmental impact identification, evaluation, and document controls</li><li>• Supports the work planning team in determining the applicable standards and requirements and Project Hanford implementing procedures associated with the identified hazards and environmental impacts</li><li>• Provides the mechanism for access and completion of necessary work permits, environmental documents, and</li></ul>
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forms to support the work activity

- Supports determination of the risk and complexity of activities
- References the mandatory training based on the identified hazards and environmental impacts
- Delineates the need for pre-job walkdowns and provides the basis for pre-job briefings
- Allows for early determination of personnel and area monitoring requirements (radcon, industrial hygiene, environmental, etc.)
- Supports a comprehensive system for medical monitoring of significantly exposed personnel
- Promotes configuration control of the Authorization Envelope (Safety Review Process)
- Provides support for co-located workers
- Supports the work planning team in determining the need for training on mock ups before beginning the work activity
- Provides the capability of documenting Lessons Learned to ensure that the information readily is available the next time the work activity is performed
- Assists the work planning team in ensuring that the work activity can be completed within the controls specified by the final SAR or ASA, and applicable regulations, consent orders and agreements, and permit conditions.

#### EXPECTATIONS: Analyze Hazards and Environmental Impacts/Job Hazard Analysis

##### PHMC Scope Level:

1. FDH ESH&Q develops and maintains a JHA process and associated implementing procedures, and develops and maintains the automated JHA with hazard and environmental impact analysis capabilities consistent with Table 2. [Refer to Note] (P28)
2. FDH ES&H technical managers (e.g., Industrial Safety, Industrial Hygiene, Environmental Protection, Nuclear Safety, Radiological Control, Fire Protection, etc.) maintain the requirements and technical content of their respective modules in the automated JHA. (P29)

##### Facility Level:

1. The Major Subcontractor facility and project managers implement the JHA process and AJHA to support facility work activities and meet ISMS Activity Level Expectations. [Refer to Note] (F19)
2. The Major Subcontractor defines job hazard analysis requirements for lower tiered subcontractors to ensure that all work activities are performed safely and in accordance with the applicable PHMC Team standards, requirements, and implementing procedures. (F20)

**EXPECTATIONS:** Analyze Hazards and Environmental Impacts/Job Hazard Analysis

Note: The AJHA supports several of the Activity Level expectations of the ISMS Plan.

Refer to Table 2: Features of the Automated Job Hazard Analysis.

### **Team Approach to Work Planning**

A team approach to work planning brings together as a team the planners, workers, and crafts, engineering, operations, and ES&H personnel to collaboratively plan the work (including hazard and environmental impact identification, evaluation, and control) and develop the work package. The team approach to work planning is intended to prevent the cycling and recycling of work packages through multiple approval layers, improve communication, effectively develop an agreed-upon set of requirements for conducting the work activity safely and in an environmentally protective manner, and decrease work stoppages in the field to address unanticipated safety and workability issues.

**EXPECTATIONS:** Analyze Hazards and Environmental Impacts/Team Approach to Work Planning

Facility Level:

1. Major Subcontractor facility managers implement a team approach to work planning. (F21)
2. Major Subcontractor facility managers develop expectations and performance measures for the work planning process to document improvements made through ISMS implementation. (F22)

### **Risk and Complexity Approach to Work Planning**

A graded approach to individual work activities based on risk and complexity is necessary to effectively implement safe, environmentally protective, and cost-effective work practices. Risk defines the potential for an adverse effect to the workers, the public, or the environment. Risk is determined based on an analysis of safety, health, and environmental hazards; potential exposure to the hazard; the potential for an accident, release, or other unexpected event, and the consequence of an event or exposure. Complexity refers to the work activity's degree of difficulty or technical challenge, regardless of risk.

The activity itself, the location of the work, and the process system are all factors in determining risk and complexity. A complex and difficult task from a maintenance standpoint could have a very low inherent risk associated with it. However, if the same task is performed in a high hazard area or on a certain type of process system, the risk could be significant.

Based on the risk and complexity of the work activity, a proper balance of work instructions or procedures, JHA, worksite supervision, and craft skills will be applied. Table 3 provides general guidance for developing a graded approach to work planning:

Table 3: Risk versus Complexity Decision Matrix.

High-risk complex task	High-risk simple task
<ul style="list-style-type: none"> <li>• Detailed written work instructions</li> <li>• Task specific JHA required</li> <li>• Supervisor and management involvement in the field</li> <li>• Craft qualified for task.</li> </ul>	<ul style="list-style-type: none"> <li>• Work instructions as necessary</li> <li>• Task specific JHA required</li> <li>• Supervisor involvement in the field</li> <li>• Craft qualified for task</li> </ul>
Low-risk complex task	Low-risk simple task
<ul style="list-style-type: none"> <li>• Detailed written work instructions</li> <li>• JHA recommended<sup>2</sup></li> <li>• Supervisor involvement as necessary</li> <li>• Craft qualified for task</li> </ul>	<ul style="list-style-type: none"> <li>• Work instructions as necessary</li> <li>• JHA not required</li> <li>• Minimum supervisor involvement</li> <li>• Craft skill sufficient for task</li> </ul>

### Routine versus Nonroutine Approach to Work Planning

The routine or nonroutine nature of a task contributes to determining the proper balance of work instructions, JHA, worksite supervision, and craft skills. Once risk and complexity of the work have been defined, the facility history and worker experience in performing the work must be considered to adequately establish a set of controls and facility work authorization requirements. Table 4 explains how work is graded based on the facility history, Lessons Learned, and worker experience in performing the task.

Table 4. Grading Work Activity

<p><u>Routine Work Activity</u></p> <p>Based on the complexity and risk associated with a routine work activity, an initial JHA might need to be completed. The initial or 'standing' JHA can be used by the worker or work team each time the routine work activity is performed. The initial or standing JHA for routine work activities should be reviewed annually or biannually by the responsible line management and ES&amp;H technical personnel to ensure that the hazards and environmental impacts associated with the work activity have been appropriately identified and controlled. The need for written work instructions and the craft skills level needed for routine work activities should be based on the complexity of the activity and should be determined on a case-by-case basis by the responsible line manager in conjunction with the work planning team. Supervisors and workers always are responsible for ensuring that the JHA effectively addresses the planned activity and associated hazards and environmental impacts. Workers have stop work authority, which can be implemented during performance of assigned tasks.</p>
<p><u>Nonroutine/Planned Work Activity</u></p>

<sup>2</sup>Determining the risk level in the matrix may require that a JHA be completed. The JHA will ensure proper identification of hazards and environmental impacts.

Table 4. Grading Work Activity

<p>Unless a nonroutine work activity is relatively simple and of low risk, a JHA should be written. The balance among written work instructions and procedures, worksite supervision, and craft skills for nonroutine work activities should be based on the complexity and risk of the activity and should be determined on a case-by-case basis by the responsible line manager in conjunction with the work planning team.</p>
<p><u>Skill-of-the-Craft Work Activity</u></p> <p>Skill-of-the-craft work activities can be routine or nonroutine and usually are associated with work activities involving tools, methods, and materials that experienced, appropriately trained workers (journeymen) reasonably could be expected to safely use as part of their normal job function. The technical proficiency associated with skill-of-the-craft should be verifiable by some defined form of qualification. These activities typically are performed with limited supervision or written work instructions. Generally, an initial or standing JHA is completed for each skill-of-the-craft work activity. The craftperson should review the initial or standing JHA for skill-of-the-craft work activities before performing the work activity. The JHA also should be reviewed annually or biannually by the responsible line management and ES&amp;H technical personnel to ensure that the hazards and environmental impacts associated with the work activity have been appropriately identified and controlled. If required, written work instructions and supervision needed for skill-of-the-craft work activities generally are not extensive; however, this should be evaluated and specified by the responsible line management in conjunction with the work planning team.</p>

<p><b>EXPECTATIONS: Analyze Hazards and Environmental Impacts/Work Planning</b></p>
<p>Facility Level:</p> <ol style="list-style-type: none"> <li>1. Major Subcontractors develop and maintain a graded approach to work planning based on risk, complexity, and routine versus nonroutine nature of work activities. (F23)</li> <li>2. Major Subcontractors develop a graded method to authorize work to be performed within their facilities. (F24)</li> </ol>

### 3.4.2 Implement Controls

Facility hazard, environmental impact analysis, and JHA results are used to identify, develop, implement, and maintain controls through procedures, worker training, and emergency response planning.

#### 3.4.2.1 Implement PHMC Team Controls

The PHMC Team establishes a set of Project Hanford implementing procedures (Appendix B) that are identified and controlled by FDH for consistent and cost effective implementation of ES&H standards and requirements. These Project Hanford procedures are maintained in the PHMS.

**EXPECTATIONS: Analyze Hazards and Environmental Impacts/Implement Controls**

**Facility Level:**

Facility managers implement appropriate Project Hanford Procedures and facility procedures based on facility hazards, environmental impacts, and operations. (F25)

**3.4.2.2 Implement Facility Level Controls**

The facility controls, which include engineered, administrative, and personal protective equipment features, are established to ensure that ES&H standards and requirements are met, hazards and environmental impacts are prevented or mitigated, and hazardous materials are contained in a manner that ensures effective protection of the workers, the public, and the environment. Facility level controls developed from the facility hazard and environmental impact analysis are documented in technical safety requirements (TSR) and operational safety requirements (OSR), environmental documents, and other lower level and defense-in-depth controls. These documents are constructed to protect engineered design features of the facility, protect the assumptions made in the accident analyses, and establish commitments to the safety and environmental programs necessary to ensure the safe operation of the facility.

The necessary facility hazard controls are identified and developed during the facility or project conceptual and design phases for new facilities, or during safety document resolution based on life cycle changes. The appropriate ES&H personnel and workers are involved in the planning process and in the development of TSRs, OSRs, environmental documents, etc. These facility level controls are required for nuclear facilities. Similar types of controls may be required for nonnuclear and radiological facilities based on the consequences of an accident analysis. Facility controls for Industrial facilities are administrative control limits established under environment regulations and permit conditions, Project Hanford implementing procedures, Major Subcontractor implementing procedures, fire codes, and as defined in OSHA standards.

**EXPECTATIONS: Implement Controls/Implement Facility Level Controls**

**PHMC Scope Level:**

FDH ESH&Q develops and maintains procedures to assure appropriate facility controls are established (e.g., TSRs, OSRs, and environmental permits). (P30)

**Facility Level:**

1. The Major Subcontractors develop, maintain, and implement TSRs, OSRs, and environmental permits and other lower tiered and defense-in-depth controls as appropriate. (F26)
2. The Major Subcontractors ensure involvement of the appropriate ES&H personnel and workers during the development of controls. (F27)

### 3.4.2.3 Implement Activity Level Controls

The necessary Activity Level hazard and environmental impact controls are identified and developed as part of the work planning and JHA processes. The Activity Level controls, which include engineering, administrative, and personal protective equipment features, ensure that ES&H standards and requirements are met, and safety hazards and environmental impacts are prevented or mitigated in a manner that ensures effective protection of the workers, the public, and the environment. The Activity Level controls address the specific hazards and environmental impacts of the work and are contained in the work package and communicated in the pre-job briefing.

EXPECTATIONS: Implement Controls/Implement Activity Level Controls
Facility Level:  Work planning teams ensure that planned work activities can be conducted within the controls specified (TSRs/OSRs for nuclear facilities) by facility hazard analysis and environmental documentation. (F28)
Activity Level:  <ol style="list-style-type: none"><li>1. Work planning teams develop and document an agreed-upon set of controls adequate to mitigate the identified hazard(s) and environmental impacts. (A3)</li><li>2. Work planning teams evaluate whether existing/proposed controls for a given hazard or environmental impact generate a new, different hazard or impact. (A4)</li><li>3. Work planning teams effectively communicate the identified hazards and environmental impacts and specified controls to all personnel performing the work activity. (A5)</li></ol>

### 3.4.2.4 Emergency Management

Hazards and environmental impact analyses and assessments provide the technical bases for the emergency management program. The extent of emergency planning and preparedness performed for any facility directly corresponds to the type and scope of hazards and environmental impacts present and the potential consequences of events. The hazards and environmental impact analysis assessments provide the framework for response planning.

Using the accident scenarios and consequences identified in facility SARs or the hazard and environmental impact analyses, the observable methods of detecting or recognizing an emergency can be identified. These indicators, called Emergency Action Levels (EALs), are used to determine the emergency class. The event classification is used to trigger specified preplanned responses and protective actions. These actions include those steps necessary to protect workers, equipment, and the environment. These also include recommended actions for the protection of offsite populations. The Hanford Site Emergency Response Organization is trained and exercised to ensure the recognition and classification of emergencies and the implementation of protective actions.

The Hanford Site Emergency Management Program includes close cooperation among several agencies and organizations as defined in Memorandums Of Understanding. Memorandums Of Understanding have been executed by DOE-RL with the following:

- States of Washington and Oregon
- Benton, Franklin, and Grant Counties
- Local hospitals
- Local law enforcement agencies
- Local fire departments
- National Weather Service
- Energy Northwest (formerly Washington Public Power Supply System)
- Siemens Power Corporation
- Hanford Environmental Health Foundation.

EXPECTATIONS: Implement Controls/Emergency Management
<p>PHMC Scope Level:</p> <p>FDH develops and operates a PHMC Team Emergency Management Program including planning, preparedness, and readiness assurance for response to emergency events. (P31)</p> <p>Facility Level:</p> <ol style="list-style-type: none"><li>1. Major Subcontractors periodically review Facility EALs to determine the accuracy of established emergency event classifications based on changing facility mission and life cycle. (F29)</li><li>2. Facility Managers periodically conduct drills in accordance to the <i>Hanford Site Emergency Management Program</i>. (F30)</li></ol>

#### 3.4.2.5 Emergency Preparedness and ISMS Relationships

There are four primary relationships between Emergency Preparedness and the ISMS. Each relationship is distinguished by different functions requiring a specific understanding and management and staff emphasis for implementation.

- Tasks that have the potential for challenging the facility authorization envelope are identified as part of the routine work planning process.
  - Potential safety basis hazards and environmental impacts are identified (task level and facility level) and evaluated.
  - Facility safety basis, limits, and controls are incorporated into the work planning analysis, and work package development.
  - The necessity for Unresolved Safety Question/Safety Review process determination is reviewed when developing the JHA.
  - Pre-job briefings discuss work hazards and environmental impacts plus Emergency contingency actions.

- Shift Operations Management and Facility Management are notified of work scheduled with potential authorization envelope challenges.
- Facility hazards or environmental impacts not created by tasks or by facility changes but created by changing conditions (e.g., mission, life cycle, etc.) are analyzed to ensure potentially hazardous conditions are identified and controlled.
  - Hazards or environmental impacts created because of changes in operations scope, routine activities, or manner for dealing with hazards or conditions. (Examples of such changing hazards with changes in facility operations include the tank explosion at the Hanford Plutonium Refinishing Plant, and the identification of significant hydrogen hazards in several tanks at the Tank Farms.)
  - Introduction of new hazards, or hazardous materials that previously are not considered in the existing authorization envelope or controls.
  - Pre-job briefings discuss work hazards and environmental impacts plus Emergency contingency actions.
- Immediate response to the incident during work activities that cause emergency response actions to be initiated are consistent with Emergency Preparedness guidelines.
  - Line management and workers are trained to implement the correct actions in response to emergency conditions.
  - Pre-job briefings discuss work hazards and environmental impacts plus Emergency contingency actions.
- Post-incident response to ensure a safe and environmentally protective posture is re-established.
  - Impacted workforce is evaluated and cared for properly.
  - Incident is investigated thoroughly and corrective actions and Lessons Learned established.
  - Incident scene is restored and wastes properly dispositioned.
  - Controls and barriers are established to prevent future occurrences.
  - Restart of operations is authorized based on updates to Authorization Envelope.

**EXPECTATIONS: Implement Controls/Emergency Preparedness and ISMS Relationships**

**Facility Level:**

1. Facility hazards and environmental impacts created by changing conditions (e.g., mission, life cycle, operations, etc.) are analyzed to ensure potentially hazardous and environmental impact conditions are identified and proper controls established. (F31)
2. Immediate response to events/occurrences during work activities that cause emergency response actions to be initiated are consistent with facility emergency response guidelines. (F32)

**Activity Level:**

1. Tasks that have the potential for challenging the facility Authorization Envelope or cause environmental impacts are identified as part of the work planning process. (A6)
2. Pre-job briefing discuss work hazards, environmental impacts, and quality considerations based on the task to be performed and facility conditions, plus emergency contingency actions and worker responsibilities during an emergency. (A7)

3.4.3 Authorization Envelope

The requirements and controls necessary for safe, environmentally protective operation of a facility and adequate protection of the workers, the public, and the environment contained in documents collectively identified as the Authorization Envelope. The Authorization Envelope is based on applicable requirements and controls derived from analysis of facility-specific hazards and impacts, work scope, and conditions. Table 5 specifies the minimum components of the Authorization Envelope for nuclear, radiological, nonnuclear, and industrial facilities.

In accordance with the PHMC, DOE-RL approval of the Authorization Basis portions of the Authorization Envelope is required for nuclear facilities. In addition, DOE-RL has approval authority for the ASA for nonnuclear facilities (categorized as moderate or high). DOE-RL also has approval authority for the S/RIDs of Nuclear Category 1 & 2 facilities and Nuclear Category 3 facility S/RIDs when prepared. Project Hanford is subject to a variety of environmental permits, compliance agreements (most notably the Tri-Party Agreement) and orders that are related to PHMC Scope and facility-specific operations.

At the Activity Level, specific work controls identified in the JHA and facility controls that interface with the work scope are written into the work package or SOW, so that work within a facility is conducted consistently with the Authorization Envelope. The Major Subcontractor operating the facility is responsible for ensuring that all work conducted within the facility complies with the documented Authorization Envelope.

<p><b>EXPECTATIONS: Authorization Envelope</b></p> <p><b>PHMC Scope Level:</b></p> <ol style="list-style-type: none"> <li>1. FDH ESH&amp;Q develops and maintains the necessary procedures to ensure that Project Hanford and facility-specific environmental permits are obtained and maintained in accordance with compliance agreements and orders. (P32)</li> <li>2. The PHMC Team develops and maintains a process for documenting an Authorization Envelope consistent with facility life cycle and mission changes. (P33)</li> </ol> <p><b>Facility Level:</b></p> <ol style="list-style-type: none"> <li>1. The Major Subcontractors document and maintain their Authorization Envelopes. (F33)</li> <li>2. Major Subcontractors convey through a contract mechanism (e.g., subcontract, task order) the parameters of their Authorization Envelope and work within these parameters regardless of the performer of the work. (F34)</li> <li>3. Major Subcontractors maintain change control and configuration control procedures to ensure that work execution is within the authorization envelope. (F35)</li> <li>4. Major Subcontractors implement requirements and controls in accordance with the facility authorization envelope and JHA. (F36)</li> <li>5. Major Subcontractors ensure that the appropriate environmental permits are prepared and that facility operations are maintained in accordance with the requirements of these documents. (F37)</li> </ol>
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Table 5. Authorization Envelope.

Authorization envelope documentation	NUCLEAR	RADIOLOGICAL	NONNUCLEAR	INDUSTRIAL
Safety Basis Document <sup>1</sup>	Authorization Basis (SAR, FSAR, BIO, ISB)	Auditable Safety Analysis	Auditable Safety Analysis	Not Applicable
Requirements Basis <sup>2</sup>	Approved S/RID (Cat 1 & 2) and/or PHMC, Part III, Section J, Appendix C (Cat 3)	PHMC, Part III, Section J, Appendix C	PHMC, Part III, Section J, Appendix C	PHMC, Part III, Section J, Appendix C
Permit Basis <sup>3</sup>	Project Hanford and MSC Environmental Permits, Compliance Agreements and Orders	Project Hanford and MSC Environmental Permits, Compliance Agreements and Orders	Project Hanford and MSC Environmental Permits, Compliance Agreements and Orders	Project Hanford and MSC Environmental Permits, Compliance Agreements and Orders

<sup>1</sup> Safety Basis Documentation - The documentation used by facilities as their basis for safe operations. This could be FSAR, Basis for Interim Operations, Interim Safety Basis, ASA, Technical Safety Requirement, Operational Safety Requirement, Fire Hazards Analysis, or other DOE approved documentation.

<sup>2</sup> Requirements Basis - The scope of requirements identified as applicable and necessary for facility operations with existing hazards, and environmental impacts.

<sup>3</sup> Permit Basis - Applicable permits required by Project Hanford or individual facilities to meet established regulations, compliance agreements and orders.

### 3.4.4 Authorization Agreements

Authorization Agreements are written agreements defined in DNFSB/TECH 5 and TECH 16. Authorization Agreements will not be used to modify the PHMC. Adequate mechanisms exist for contractual modifications between DOE-RL and FDH.

FDH will work with DOE-RL to determine the content and application (if any) of Authorization Agreements for nuclear (Category 1 and 2) facilities. Category 1 and 2 nuclear facilities document their AE as part an Authorization Agreement (AA).

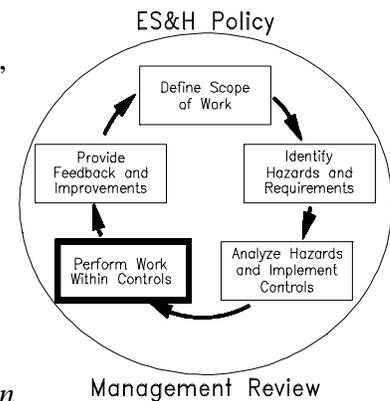
<p><b>EXPECTATIONS: Hazard Analysis/Authorization Agreements</b></p> <p>PHMC Scope Level:</p> <p>FDH Projects determine the application and content of Authorization Agreements for nuclear (Category 1 and 2) facilities. (P34)</p>
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### 3.5 CORE FUNCTION: PERFORM WORK WITHIN CONTROLS

Performing work includes (1) preparing for the work, (2) confirming readiness to perform the work at both the Facility and Activity Levels, and (3) performing the work in a safe environmentally protective, and efficient manner.

#### 3.5.1 Prepare For Work

An essential aspect of preparing for work is ensuring that the workers, support staff, supervisors, and managers possess the appropriate level of experience, knowledge, skills, and abilities (both mental and physical) to safely and effectively discharge their responsibilities. The Project Hanford *Qualification and Training Plan* (HNF-MP-011) describes the Project Hanford training management system that integrates existing and new qualification and training activities to meet the technical and organizational training requirements identified in the PHMC, and this ISMS Plan.



#### 3.5.1.1 Qualification and Training

Worker training is provided by a variety of PHMC Team training organizations, subject matter experts, outside vendors, and educational institutions. The Project Hanford *Qualification and Training Plan* (HNF-MP-011) establishes the framework and standards to ensure that all training provided to PHMC Team employees meets the applicable contractual and regulatory requirements [e.g., DOE Order 5480.20A, 29 *Code of Federal Regulation* (CFR) 1910/1926, 10 CFR 835, 10 CFR 830] and prepares the work force to effectively perform their activities in a safe and environmentally protective manner. These standards, in conjunction with implementing procedures and supporting documents that govern training under the PHMC, establish a graded, systematic approach to training that is designed to ensure an effective qualification and training program. Training, qualification, and certification requirements for personnel are established by individual managers in the training implementation matrices and/or the training matrix based on the applicable regulatory requirements and company and facility specific requirements. Primary responsibility for skill mix within the PHMC Team, as it pertains to ES&H, rests with the line management (HNF-MP-001).

The Project Hanford *Qualification and Training Plan* (HNF-MP-011) references training program descriptions. The ISMS training program description will include specific information concerning the ISMS. Training materials will be developed to support the following topics:

- ISMS Overview (including)
  - The importance of following ES&H Policies and ISMS requirements
  - Roles and responsibilities of personnel in performing activities consistent with the ES&H Policies and ISMS requirements.
- Requirements Basis and Authorization Envelope
- Hazard and Environmental Impact Identification and Analysis
- Development and implementation of controls for hazards and environmental impacts
- Consequences of departing from the operating controls and procedures
- Emergency Preparedness and ISMS relationships.

**EXPECTATIONS: Perform Work Within Controls/Prepare for Work**

**PHMC Scope Level:**

1. FDH Training develops and maintains the Project Hanford *Qualification and Training Plan* (HNF-MP-011) that includes the ISMS training program description. (P35)
2. FDH Training develops and maintains the appropriate mechanism to ensure that all PHMC Team employees receive training in the ISMS and applicable contractual and regulatory requirements. (P36)
3. FDH ESH&Q assigns technical authorities to identify 'new' regulatory requirements for training, and provides oversight of and interprets ES&H training requirements. (P37)
4. The PHMC Team maintains the Training Implementation Matrices and Training Matrix Processes. (P38)

**Facility Level:**

1. The Major Subcontractor managers specify the appropriate training and qualification in the Training Implementation Matrices and Training Matrix and ensure that employees attend the required training and qualification classes. (F38)
2. Major Subcontractors ensure that all personnel working on a project or at a facility are qualified and trained to conduct the work scope in a safe, environmentally protective, and quality manner. (F39)

**3.5.1.2 Hanford Occupational Health Process**

As part of the ISMS, the Employee Job Task Analysis (EJTA) provides the primary mechanism to ensure that personnel have the appropriate medical qualification, training, and exposure monitoring based on their assigned job functions and the hazards to which they might be exposed. The EJTA, in conjunction with the AJHA and exposure monitoring and reporting, provide the primary data input components to the Hanford Occupational Health Process (HOHP). In addition

to providing essential data for medical qualification and monitoring, the HOHP effectively supports other occupational medical evaluations and examinations such as pre-placement, voluntary periodic, return to work, and termination health examinations, which are specified by DOE Order 5480.8A.

The EJTA compiles employee-specific data regarding essential job functions, physical job requirements, special job requirements, medical qualifications, potential exposure hazards, exposure data, and training. The data collected on the EJTA represent a compilation of hazards and exposures associated with routine work activities, as well as hazards associated with nonroutine work activities that can be predicted or anticipated. For nonroutine work activities when exposures will or are likely to be greater than established criteria, EJTA exposure hazard data are supplemented by potential exposure hazard data from the AJHA . EJTA potential exposure hazard data also is supplemented with employee-specific exposure data reports from the Hanford Industrial Hygiene Exposure Database. The need to conduct personal exposure monitoring for chemical, radiation, physical (including nonionizing radiation), ergonomic, and biological hazards will be determined as part of the JHA process and will be conducted in accordance with Project Hanford Occupational Safety and Health and Radiation Protection procedures that specify the use of standardized exposure data collection forms, exposure databases, instrument calibration and maintenance, exposure reporting, and exposure records storage and maintenance. Specifically, the EJTA is designed to:

- Provide a simple automated tool to aid the line manager in determining the necessary employee medical qualification (e.g., drivers, pilots, protective force personnel, respirator wearers, etc.) and monitoring examinations (asbestos, lead, noise, lasers, HAZWOPER (hazardous waste operations and emergency response regulations), etc.)
- Assist line managers in determining the necessary whole body count, in-vivo monitoring, bioassay, etc., examinations
- Satisfy specific *Americans With Disabilities Act (ADA)*, fitness for duty, and return to work data needs
- Provide necessary data for pre-placement and termination health evaluations
- Identify the need for additional employee exposure assessment and monitoring data (e.g., personal or area exposure monitoring)
- Determine the necessary ES&H training based on the identified hazards
- Facilitate employee, manager, and industrial hygiene involvement in the overall hazard identification and occupational medical process
- Assist in identifying and managing applicable ES&H-related requirements
- Provide the data necessary to conduct comprehensive sitewide health and epidemiological studies

- Maintain an inventory of completed EJTA's for review and data analysis.

The specifics of the Occupational Medical Program that will be provided for the PHMC Team workforce is described in the Memorandum of Agreement (MOA) between the Occupational Medical Contractor (OMC) Hanford Environmental Health Foundation (HEHF) and FDH. The OMC will provide routine medical treatment; treatment following accidents, injuries, or illnesses; conduct employee medical examinations and evaluations in accordance with DOE 5480.8A; and provide line management with notification of adverse health effects detected by the occupational medical staff. The OMC also determines fitness for duty on employees for all conditions that might influence performance or work suitability. FDH, through the MOA, has commissioned the services of the HEHF Medical Director to act as the PHMC Team Corporate Medical Officer (CMO). The duties of the CMO include, but are not limited to, providing medical input into the ES&H procedures, conducting worksite assessments, attending Presidents' Zero Accident Council meetings, and providing input relative to case management, work injuries, and illnesses.

EXPECTATIONS: Perform Work Within Controls/Hanford Occupational Health Process
PHMC Scope Level: <ol style="list-style-type: none"><li>1. The PHMC Team provides employees with the specified occupational medical services described in the PHMC and detailed in the MOA between the OMC and FDH. (P39)</li><li>2. FDH ESH&amp;Q develops and maintains processes and procedures (e.g., EJTA, AJHA, and exposure monitoring and reporting) to support the HOHP. (P40)</li><li>3. FDH ESH&amp;Q, with the OMC, develops and maintains the automated EJTA system. (P41)</li></ol>
Facility Level: <ol style="list-style-type: none"><li>1. Major Subcontractor managers complete an EJTA for each of their employees, as specified by the FDH and DOE-RL HOHP directive. (F40)</li><li>2. Major Subcontractor facility or project manager ensures the completion of EJTA's for all lower tiered subcontractor employees who will perform work within the Major Subcontractor managed or operated facility or project and as specified by the DOE-RL HOHP directive. (F41)</li><li>3. The Major Subcontractors assess the adequacy of hazard controls when medical monitoring results indicate adverse health consequences to workers as a result of work place hazards. (F42)</li></ol>

### 3.5.2 Confirm Readiness

To perform work safely and in an environmentally protective manner, a process of confirming readiness and authorizing work at the facility and activity level is established. This process ensures that hazards and environmental impacts have been identified and controlled, requirements are met, compliance is ensured, workers understand and are ready to perform the assigned scope of work, and work can be done in accordance with the Authorization Envelope.

### 3.5.2.1 Facility Level Readiness

As required by the PHMC, the PHMC Team will conduct Operational Readiness Reviews in accordance with DOE Order 5480.31 and DOE-RL Implementing Directive (RLID) 5480.31 or another method as defined in an upgraded facility S/RID. Operational Readiness Reviews are conducted to ensure that new and existing Hazard Category 1, 2, and 3 nuclear facilities are started or restarted only after the appropriate level of review has occurred to ensure that the facility or project can operate in a manner that will ensure adequate protection of the workers, public, and the environment. In accordance with RLID 5480.31, Readiness Assessments also are required for less than Category 3 facilities before startup of new facilities, or restart of facilities that previously have been shut down.

The foundation of the operational readiness review and readiness assessment is a defined Authorization Envelope. (Section 3.4.3)

<b>EXPECTATIONS: Perform Work Within Controls/Confirm Readiness</b>
PHMC Scope Level:  <ol style="list-style-type: none"><li>1. FDH Project Integration develops and maintains the necessary procedures for conducting Operational Readiness Reviews and Assessments. (P42)</li><li>2. FDH Projects provides oversight and review of the Major Subcontractors Operational Readiness process. (P43)</li></ol>
Facility Level:  The Major Subcontractors conduct Operational Readiness Reviews and Readiness Assessments as required. (F43)

### 3.5.2.2 Activity Level Readiness

The pre-job briefing is the last confirmation of readiness before performing individual work activities and provides the work team with a collective understanding of the task to be completed, requirements for performing the task, identified hazards and environmental impacts, and necessary controls. Pre-job briefings are to be face-to-face communications with sufficient technical expertise present to answer questions concerning the work tasks or identified controls. The following ISMS Core Functions serve as the outline for pre-job briefings:

**Define the Scope of Work** - Describe the scope of work to be performed and the associated work instructions, procedures, etc.

**Identify Hazards and Environmental Impacts and Requirements** - Describe the hazards and environmental impacts and requirements associated with the work scope as identified in the JHA. Consider current site conditions and other activities in the area.

**Analyze Hazards and Environmental Impacts, and Implement Controls** - Describe any personal or area monitoring that will be necessary to quantify chemical, physical (including ionizing radiation) or biological hazards, and the controls (engineering, administrative, or personal

protective equipment) necessary to mitigate the identified hazards and environmental impacts described in the JHA. Describe any emergency response contingencies applicable to the work.

**Perform the Work** - Confirm each worker's readiness to perform the work relative to training, qualification, medical, and understanding of work and associated work instructions and procedures. Reinforce to all workers the STAR concept to Stop, Think, Act, and Review.

**Feedback and Improvement** - Request comments or clarification regarding the scope of work to be performed and the associated hazards and environmental impacts identification, evaluation and control; reinforce that a post-job briefing will be conducted to support continuous feedback and improvement.

EXPECTATIONS: Perform Work Within Controls/Activity Level Readiness
Facility Level:  Major Subcontractors establish and maintain procedures for conducting pre-job briefings. (F44)
Activity Level:  1. Work Supervisors and work teams conduct face-to-face pre-job briefings before the performance of work. (A8)  2. Work Supervisors use the AJHA as the basis for the pre-job briefing, which incorporates the ISMS Core Functions. (A9)  3. Work Supervisors ensure that the work instructions, procedures, standard operating procedures, etc., describing how the work is to be performed are conveyed adequately to all workers regardless of when they join the work team. (A10)  4. Work Supervisors incorporate ES&H requirements, implementing procedures, and permits (e.g., confined space, radiological work, etc) into individual work activities. (A11)  5. Work Supervisors ensure that the balanced combination of craft skills/worksite supervision and documentation is in place at work startup and throughout the activity. (A12)  6. Work Supervisors ensure that the controls required by the JHA are in place before the work activity is initiated. (A13)  7. Work Supervisors ensure that the required approvals and permits have been obtained before the work activity being initiated. (A14)  8. Individual Workers successfully complete training courses as required by the worker's training matrix. (A15)

### 3.5.2.3 Safety Review Process

The process for conducting USQs has been developed to ensure that the authorization basis for nuclear facilities can be maintained while allowing for 'operational' flexibility. The USQ allows the Major Subcontractors to make physical and/or procedural changes and to conduct tests and experiments without prior DOE-RL approval, as long as these changes do not explicitly or implicitly affect the Authorization Basis of the facility or result in a TSR change.

Review of proposed changes to the facility Authorization Envelope, which are not part of the Authorization Basis, will be conducted via a facility specific process. The purpose of this review process is to ensure that the level of protection to the worker, the public, and the environment is preserved, and to maintain compliance with regulations, permits, and compliance agreements and consent order provisions.

The AJHA process will include a feature to facilitate the review of proposed activities that potentially challenge the Authorization Envelope for all facility classifications.

USQs that have the potential to result in work scope change, have significant budget impact, or could cause the need to initiate contract change control activities require the involvement of FDH and DOE-RL. These activities are a team effort to ensure facilities are maintained in a safe condition.

<b>EXPECTATIONS: Perform Work Within Controls/Safety Review Process</b>
PHMC Scope Level:  The PHMC Team develops and maintains procedures to ensure appropriate facility guidance is provided in conducting the USQ screening. (P44)
Facility Level:  <ol style="list-style-type: none"><li>1. Major Subcontractors evaluate work to be conducted in a nuclear facility against its approved authorization basis and conduct USQ screenings as necessary. (F45)</li><li>2. Major Subcontractors evaluate work to be conducted against its approved Authorization Envelope (including consent orders and agreements, permits, and other documents). (F46)</li><li>3. Major Subcontractors ensure that personnel evaluating USQs are trained and qualified to perform the evaluation. (F47)</li></ol>

### 3.5.3 Perform Work

Safe and environmentally protective work is conducted in accordance with the requirements, controls, and procedures developed from and contained in the Authorization Envelope. FDH and the Major Subcontractors are committed to ensuring that all work is performed in a safe and environmentally protective manner, and within the Authorization Envelope. Working within the Authorization Envelope includes adhering to controls specified in the approved safety basis, complying with the approved Requirements Basis, and complying with the requirements in applicable environmental permits, consent orders and agreements, and other documentation.

The formality and degree to which work is directed by procedures and the degree of direct supervision is to be established based on the type and magnitude of the hazards and environmental impacts, the confidence that the hazards and environmental impacts are well known, confidence in the controls selected, complexity of the work performed, and worker qualifications.

### **Worker Involvement**

The PHMC Team has established a team approach for work planning and safety and environmental management that not only includes, but encourages, worker participation. Participation is encouraged through the use of the JHA process, Hanford Workers' Bill of Rights, "Stop Work" Responsibility, Employee Concerns Program, involvement in pre-job briefings, and participation of Employee Zero Accident Councils and other committees promoting safe and environmentally protective work.

### **Job Hazard Analysis**

The purpose of the JHA is to identify hazards and barriers to prevent worker injury and environmental impact. The JHA is a work planning tool that encourages the development of a work management team approach to work planning. A work management team's strength is enhanced when its skill mix includes workers, ES&H professionals, cognizant engineers, and other work planners. The work management team approach is vital to using the JHA successfully as a tool for proper work planning and to minimize work delays in the field.

### **Participation on Safety and Environmental Committees**

The PHMC Team supports the involvement and participation of the worker in safety and environmental committees, councils, and special assignment to task forces focused on continuous improvements and safe and environmentally protective work processes. The PHMC Team maintains several standing councils and committees to review ES&H issues and encourage employee participation in the development of good safety and environmental practices that result in quality performance. These committees and councils include the Presidents Zero Accident Council, Centers of Expertise in Radiological Safety, and Quality Assurance, Environmental Manager Committee, Safety Review Boards, and company and employee Zero Accident Councils. More information on these councils and committees is contained in their charters.

### **Worker Rights and Obligations**

FDH and its Major Subcontractors, employees, and bargaining units establish and uphold the Hanford Workers' Bill of Rights and "STOP WORK" Responsibility as tools that guarantee each worker the right, responsibility, and authority to report unsafe or environmentally unsound conditions or practices and stop work without fear of reprisal. The "STOP WORK" Responsibility and Workers' Bill of Rights promote open communications and foster a questioning attitude regarding health and safety issues, and concern for the environment. These tools are reinforced within the Core Functions of the ISMS because the worker becomes the final check for work to proceed safely and in an environmentally protective manner. The principles of "STOP

WORK" Responsibility are listed in Table 6. Unresolved "STOP WORK" issues are elevated until an acceptable resolution is obtained.

Table 6. Hanford Site "STOP WORK" Responsibility

<ol style="list-style-type: none"><li>1. Stop Work Responsibility</li><li>2. Every employee has the responsibility and authority to stop work IMMEDIATELY, without fear of reprisal, when they are convinced a situation exists that places themselves, their coworker(s), or the environment in danger. "Stop Work" is defined as stopping the specific task or activity that poses danger to human health and/or the environment.</li><li>3. Reporting Unsafe Conditions</li><li>4. Employees are expected to report any activity or condition that they believe is unsafe. Notification should be made to the affected worker(s) and to the supervisor or designee at the location where the activity or condition exists. After notification, resolution of the issue resides with the responsible supervisor.</li><li>5. Right to a Safe Workplace</li><li>6. Any employee who reasonably believes that an activity or condition is unsafe is expected to stop or refuse work without fear of reprisal by management or coworkers and is entitled to have the safety concern addressed before participating in the work.</li></ol>
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**EXPECTATIONS: Perform Work Within Controls/Perform Work**

**PHMC Scope Level:**

FDH maintains a uniform stop work authority for PHMC Scope efforts. (P45)

**Facility Level:**

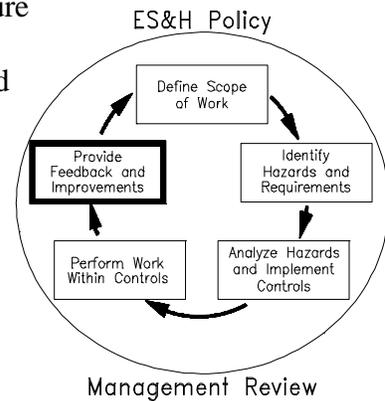
Line managers and supervisors conduct work area assessments and monitor safety and environmental protection by routinely observing work activities to identify and correct deficiencies. Management is present during performance of high hazard tasks. These activities include coaching employees as necessary to make process improvements. (F48)

**Activity Level:**

1. Work Supervisor maintains configuration control of drawings and documents associated with the work activity. (A16)
2. Work place safety issues are identified and addressed first by line management/supervision for resolution. (A17)
3. Individual workers perform the work activity in accordance with the specified work instructions, work procedures, standard operating procedures, etc. (A18)
4. Individual workers maintain a questioning attitude and use "STOP WORK" authority if the work instructions, work procedures, or standard operating procedures are unclear or inadequate and pose a hazard to the worker, the public, or the environment without fear of reprisal. (A19)
5. Individual workers use and recommend changes to work instructions, hazard and environmental controls, and the work planning process based on actual and evolving field conditions. (A20)
6. Individual workers comply with ES&H standards and requirements implementing procedures. (A21)
7. Individual workers conduct work in accordance with the controls (engineering, administrative and personal protective equipment) specified in the JHA. (A22)
8. Individual workers obey postings, warning signs, etc. (A23)
9. Individual workers communicate any safety or environmental concerns to their manager. Individual workers promptly report all accidents, near misses, noncompliances, occupational injuries or illnesses, threats or release to the environment, and recognized hazardous and environmentally unsound conditions to their managers. (A24)

### 3.6 CORE FUNCTION: PROVIDE FEEDBACK AND CONTINUOUS IMPROVEMENT

The PHMC Team use a variety of mechanisms to assess and measure performance. These mechanisms provide FDH and the Major Subcontractors with the information needed to evaluate worker and ISMS performance and identify and implement improvements. Feedback and opportunities for continuous improvement are obtained through worker assessments, management assessments, independent assessments, occurrence trending analysis, commitment tracking, causal factor analysis, and inspections by external agencies. Senior management involvement and review is crucial to successful operation of the feedback and improvement function. It is the vital link to the ES&H policies, performance objectives and measures, results, and continual improvement.



Communications with DOE-RL line management and ES&H organization is an important component of the feedback and continuous improvement process. Safety incidents, lost workday accidents, close calls, trends, and lessons learned are samples of information communicated to DOE-RL, ES&H, line management and other Hanford Site contractors.

#### 3.6.1 Establish and Analyze Performance Measures

Safety and environmental performance objectives and measures will be established and progress towards achieving these will be monitored and measured. Performance objectives and measures will be quantified to the extent practicable and reflect the work being performed. These performance objectives and measures will correspond to the formally established PHMC ES&H performance indicators and leading indicators established at the facility level.

FDH and DOE-RL have identified specific environmental, safety, health and quality performance indicators for Project Hanford. These are identified in the PHMC *Environmental, Safety, and Health, and Quality Performance Indicator Plan* (PI Plan) and in subsequent letters to DOE-RL. The performance indicators serve as baseline and initial indicators for measuring performance of the ISMS Plan implementation. The safety and health performance indicators in the PI Plan are based on injury and illness rates, occurrence and event reporting, and assessment performance. The identified environmental indicators are environmental events, total spills, reportable spills, and radiological releases (alpha and beta). Quality assurance indicators address delinquent assessment issues, design errors/omissions, rejected line item purchases, and findings per external assessment. These indicators will be monitored during ISMS implementation and evaluated for correlation in data trends.

Leading indicators that address the direct effects of the ISMS implementation will be developed at the facility level. Leading indicators will focus on the work process and measure work delays or safety and environmental concerns that occur from improper planning or the inadequate or incomplete application of the ISMS Core Functions.

FDH also will develop a process for evaluating the PHMC Team safety and environmental culture. FDH has established a subteam in the VPP Champions Committee to develop a safety and environmental culture survey that will set a baseline to identify the existing culture. The

survey will be re-analyzed periodically during the implementation of ISMS and the out years for correlation trends.

The ISMS implementation in PHMC Scope and facilities will be scheduled and the status provided to senior management (refer to Section 3.7). ISMS implementation will be monitored for improvement correlations through analysis of facility and ES&H performance indicators.

<p><b>EXPECTATIONS: Feedback and Continuous Improvement/Establish Performance Measures</b></p> <p>PHMC Scope Level:</p> <ol style="list-style-type: none"><li>1. The PHMC PI Plan serves as an outcome-based indicator for the success of the ISMS. (P46)</li><li>2. FDH Projects and ESH&amp;Q establish ISMS performance objectives and measures and reviews and updates these annually. (P47)</li><li>3. FDH ESH&amp;Q develops and administers a safety and environmental culture survey to baseline and track the effects of implementing ISMS on the PHMC Team safety and environmental culture. (P48)</li><li>4. FDH Projects establishes a schedule for presenting ISMS implementation status to senior management. (P49)</li><li>5. FDH communicates ES&amp;H information to DOE-RL, line management, other Hanford Site contractors, and stakeholders. (P49b)</li></ol> <p>Facility Level:</p> <ol style="list-style-type: none"><li>1. Major Subcontractors establish leading indicators directly relevant to safe environmentally protective work performance. (F49)</li><li>2. Major Subcontractors develop a schedule for facility or project implementation of ISMS Expectations and track performance. (F50)</li></ol>
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### 3.6.2 Assess Performance and Collect Feedback Information

The *Project Hanford Quality Assurance Program Description* (HNF-MP-599) applies both to FDH and its Major Subcontractors and establishes requirements for performing management and independent assessments to address the adequacy of the work. FDH and Major Subcontractor line organizations perform and document periodic management assessments that focus on the effectiveness of management systems. Assessments are used to identify and correct deficiencies and coach employees as necessary to make process improvements. Deficiencies identified during management and independent assessments are entered into the PHMC Team Deficiency Tracking System.

In addition to the results of both internal and independent assessments, FDH and its Major Subcontractors receive feedback regarding deficiencies in safety, environmental, and quality

performance from various external oversight organizations including DOE-RL, DOE-HQ, the DNFSB, the U.S. Environmental Protection Agency (EPA), and the Washington State Departments of Ecology (Ecology) and Health (WDOH). Deficiencies identified by external oversight organizations are handled in the same manner as those identified internally, including being entered into the PHMC Team Deficiency Tracking System.

The FDH Environmental Protection organization coordinates and facilitates inspections by EPA, Ecology, and WDOH. Information from those inspections that relates to environmental performance is disseminated in a timely manner and is used to develop and share lessons learned.

Safety and environmental monitoring activities are performed by the PHMC Team to satisfy DOE objectives, maintain a healthy workforce, demonstrate compliance with legal requirements, and to determine the effectiveness of ongoing operations and programs. Monitoring equipment is calibrated and maintained in accordance with applicable requirements and procedures. Monitoring records are retained in accordance with established PHMC Team plans and procedures for quality assurance, document control, and records management (e.g., HNF-MP-559, HNF-PRO-210, and HNF PRO-244). Monitoring information can be used to evaluate success in achieving established ES&H performance objectives.

Major Subcontractors that outsource project or construction management services that include ES&H responsibilities (e.g., safety oversight of lower tiered subcontractors, development of environmental permit applications) must include in their management assessments the effectiveness of these subcontractors in meeting the ES&H requirements of the facility or project. The Major Subcontractors level of oversight and the performance of project and construction management service subcontractors will be evaluated by the FDH Facility Evaluation Board during facility assessments.

Worker assessments will be implemented through the use of the JHA and random surveillance audits of JHA implementation. The Post-Job Review section of the automated JHA will be completed by the work planning and execution team and will address such issues as effectiveness and adequacy of:

- Hazard and environmental impact identification as part of the JHA process
- Controls and barriers
- Work instructions and procedures
- Budget, technical resource allocation, coordination, and scheduling
- Combination of craft skills, work-site supervision, and documentation
- Other work management considerations.

PHMC Team processes and mechanisms are developed for review, evaluation, investigation, and reporting of operational events and worker injuries. The data and information resulting from these investigations also are used in identifying improvement opportunities. This information is collected from PHMC Team facilities and is tracked in accordance with the *PI Plan*.

EXPECTATIONS: Feedback and Improvement/Assess Performance and Collect Feedback Information

PHMC Scope Level:

1. FDH ESH&Q establishes a multi-element assessment program that includes management assessments and independent assessments using both operational and systems approaches. (P50)
2. The FDH Facility Evaluation Board conducts assessments of facilities operated by Major Subcontractors to ensure compliance with ES&H requirements. (P51)
3. FDH establishes a process to track deficiencies and recommendations identified during internal and external assessments, reviews, and inspections that supports continuous environmental, safety and quality program improvement. (P52)
4. FDH ESH&Q develops and maintains the requirements and processes to be followed in collecting and analyzing ES&H performance indicator data and reporting the results to FDH, subcontractor, and DOE-RL management, including senior line management. (P53)
5. FDH ESH&Q establishes and maintains a process for comparing actual safety and environmental performance to objectives. (P54)
6. FDH ESH&Q establishes processes and methodologies common to all the PHMC Team for reviewing, evaluating, investigating, and reporting of operational events, environmental incidents, noncompliance to the Nuclear Safety Rules and worker injuries, including identification of causal factors. (P55)
7. FDH ESH&Q establishes a method to annually evaluate ES&H performance of construction management services (FDNW and Numatec). (P56)

Facility Level:

1. Major Subcontractors identify results from occurrence reports and various types of accident investigations to determine the direct, contributing, and root causes of incidents, and use the results in establishing lessons learned. (F51)
2. Major Subcontractors implement the automated JHA post-job review feature and maintain information from the review in the automated system. (F52)
3. Major Subcontractors monitor and oversee operations and activities that pose a significant safety hazard or a significant impact to the environment. (F53)
4. Major Subcontractors evaluate ES&H compliance performance indicators to provide feedback and information for continuous improvement. (F54)
5. Major Subcontractors implement management assessment programs in accordance with the *Project Hanford Quality Assurance Program Description* (HNF-MP-599). (F55)
6. Major Subcontractors that use other subcontractors (e.g., Numatec, FDNW) to perform project or construction management services, including oversight and compliance to ES&H requirements and implementing procedures, assess the performance of these subcontractors. (F56)

Activity Level:

Work management teams complete post-job reviews, which include reviews of the accuracy and completeness of the AJHA. (A25)

### 3.6.3 Identify and Make Changes to Improve Performance

ES&H issues and concerns from the related feedback mechanisms, such as assessments, occurrence management, performance trends, and causal factor analysis are processed for action by responsible managers in the facilities. Changes and improvements that have a broader application than the immediate facility are shared through communication programs such as the Lessons Learned program, training modifications, and worker briefings.

Improvements are made as actions listed in the Project Hanford Team Deficiency Tracking System are addressed and resolved. Actions listed in this system are assigned to a responsible line manager along with a target completion date. Actions with broader impact are elevated to senior management for input and direction.

The Project Hanford Lessons Learned program as administrated by the FDH Re-engineering and Continuous Performance Improvement (CPI) represents a powerful tool for implementing improvements. The lessons-learned distribution process starts with the FDH lessons-learned coordinator screening various sources of information, including the Occurrence Reporting and Processing System (ORPS), DOE publications, and list-server messages. The coordinator issues applicable lessons to points of contact at each facility and in each major organization. Those points of contact distribute the lessons-learned bulletins within their organizations. Subject matter experts assist the points of contact and the lessons-learned coordinator with technical issues and implementation.

Management presence and knowledge of the field activities is essential in the management review and continual improvement process. FDH Project Directors and Major Subcontractors' presidents are expected to know the conditions of their projects and report them monthly at the FDH Project Review Meeting.

Employees are empowered and expected to provide constructive feedback concerning ESH&Q issues and performance improvements to management. This interaction between employees and management promotes numerous small improvements that contribute significantly to raising quality in the areas of work performance and compliance. Every employee is expected to continually identify potential safety and quality issues, and threats to the environment, propose solutions where possible, and fully inform management of the situation. Employees are encouraged to elevate any ESH&Q issue through the chain of command and raise issues at a local Employee Zero Accident Council (EZAC). Employee concerns raised at EZAC can be addressed at the company level (Major Subcontractor) or forwarded to the monthly Presidents' Zero Accident Council for consideration and resolution. The PHMC Team maintains a confidential Employee Concern Program. The employee's concern can be addressed at the Major Subcontractor, FDH, or DOE-RL level. The Employee Concern Program includes guidance on submitting, investigating, and resolving employee suggestions, concerns, and complaints regarding ESH&Q issues.

**EXPECTATIONS: Feedback and Improvement/Identify and Make Changes to Improve Performance**

**PHMC Scope Level:**

1. FDH Projects and ESH&Q compares ISMS performance objectives to actual performance. Gaps are identified, ranked in order of priority, and resolved. (P57)
2. The FDH collects lessons learned from on and offsite and disseminates these to facility personnel. (P58)
3. The PHMC Team evaluates the safety and environmental performance indicators for adverse/improving trends in performance to determine causes, and actions needed to reinforce improvements. (P59)
4. FDH establishes common processes for implementing the Lessons Learned and Employee Concern Program. (P60)

**Facility Level:**

1. Major Subcontractor facility managers report unsafe and environmentally unsound acts and conditions within the facility and review these findings as opportunities to improve. (F57)
2. Major Subcontractors resolve adverse performance indicator trends based on organizational priorities and management direction. (F58)
3. Facility line managers review performance indicators routinely to determine potential ES&H performance improvements in work practices and processes. (F59)

**Activity Level:**

1. Line managers use feedback from lessons learned, employee concerns, ORPs reports, incidents investigations, and performance indicator trends to:
  - Modify training as appropriate
  - Revise work instructions and procedures as appropriate
  - Engineer new methods of accomplishing work. (A26)
2. Line managers establish methods to obtain employee feedback and addresses employee concerns, providing the opportunity for employees at all levels to identify ES&H improvements or voice ES&H concerns. (A27)

3.6.4 Oversight and Enforcement

PHMC Team employees are responsible for checking their own work to ensure it meets quality requirements and customer expectations. Additionally, the FDH QA Program establishes a blend of assessments by FDH and its subcontractor facility or organizational executive and subtier managers to identify problems that impede their organizations' ability to achieve their performance

objectives. The FDH Facility Evaluation Board conducts independent technical assessments at all nuclear and some nonnuclear facilities, and independent program assessments of cross-cutting or PHMC Scope support activities. These independent assessments satisfy the requirements identified for the PHMC Scope. Finally, the FDH CEO has periodic assessments of PHMC Scope performed by a company that is independent from the PHMC Team. Deficiencies and areas of potential improvement identified in these various assessments are evaluated, tracked, and trended to support performance improvements. External oversight is primarily conducted by the DOE, EPA, Ecology, and WDOH.

The PHMC Team has established Codes Of Conduct and Master Safety Rules that must be complied with as a condition of employment. Failure to comply with these rules and follow approved procedures may result in disciplinary action, up to and including termination. The Codes Of Conduct and Master Safety Rules support the ISMS objective to "Do work safely and protect human health and the environment".

FDH and its Major Subcontractors promote meaningful reward and recognition programs that identify, reinforce, and promote safe and environmentally protective work behavior that reflects FDH values, effective actions, and results in support of the Project Hanford Mission. The major subcontractors use various methods to recognize and reward employees for safe and environmentally protective behavior, achievement of milestones, and life-saving actions.

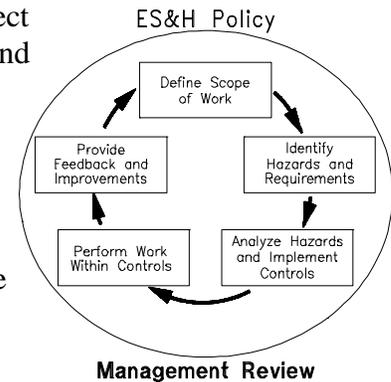
EXPECTATIONS: Feedback and Improvement/Oversight and Enforcement
PHMC Scope Level: <ol style="list-style-type: none"><li>1. FDH ESH&amp;Q establishes and implements mechanisms for independent assessment of PHMC Scope operations. (P61)</li><li>2. FDH FEB performs independent assessments of the ISMS Plan expectations and implementation schedules. (P62)</li><li>3. FDH Office of Legal Counsel and ESH&amp;Q establish Codes Of Conduct and Master Safety Rules to communicate compliance with the Project Hanford Policies and Procedures and conduct of operations. (P63)</li><li>4. FDH ESH&amp;Q and Human Resources establish a reward and recognition program to promote behavior that is safe, protects the environment, and reflects quality values. (P64)</li></ol>
Facility Level: <ol style="list-style-type: none"><li>1. Major Subcontractors conform with Project Hanford plans and procedures to ensure safe work performance that protects the worker, the public, and the environment. (F60)</li><li>2. Major Subcontractors establish reward and recognition programs to promote safe behavior that is safe, protects the environment, and reflects quality values. (F61)</li></ol>

Activity Level:

Workers conduct themselves according to the Codes Of Conduct and Master Safety Rules. (A28)

### 3.7 CORE FUNCTION: MANAGEMENT REVIEW

At appropriate intervals, FDH top management will review the Project Hanford ISMS to ensure that it continues to be suitable, adequate, and effective. The management review process will ensure that the necessary information is collected to allow management to carry out this evaluation. The review will be documented and will address the possible need for changes to policy, objectives, and other elements of the ISMS to accommodate worker, management, and independent assessment results, changing circumstances, and the commitment to continual improvement.



FDH Project Integration and ESH&Q will coordinate the top management review. The top management review will include reviewing assessments and information from the following sources, in conjunction with assessments of the ISMS, to identify needed ISMS improvements.

- FDH ES&H Vice President
- FDH Project Directors
- Facility Evaluation Board
- External Organizations
- Regulators
- *M&I Plan* oversight and evaluation processes

### EXPECTATIONS: Management Review

PHMC Scope Level:

FDH Project Integration and ESH&Q establish a process and procedures as necessary for top management review of the ISMS. (P65)

Facility Level:

Major Subcontractor senior management participates in ISMS reviews, review assessment results, and directs corrective actions/improvements. (F62)

#### **4.0 ISMS IMPLEMENTATION**

FDH Project Integration has developed an ISMS Implementation Project Plan (HNF-4554) to guide the PHMC Team through the steps necessary to complete integration of environment, safety, and health into management and work practices at all levels. The steps include preparation of System Description documents, resolving gaps in elements of the ISMS, identifying and providing training for ISMS implementation, and the performance of Phase I and II verifications that FDH and the Major Subcontractors have implemented ISMS. The ISMS Implementation Project Plan contains information regarding mission need and objectives, technical planning, project risk management, management approach, acquisition strategy, project schedule, resource planning, controlled items/baselines, and project charter.

On completion of the ISMS Implementation Project Plan activities, HNF-4554 will be cancelled. Section 4.0 (this section) of the ISMS Plan will be updated to describe the implementation of DOE P450.5, *Line Environment, Safety and Health Oversight* in the PHMC.