

River Corridor Closure Contract

Integrated Environment, Safety, and Health Management System Description

September 2009

For Public Release

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor



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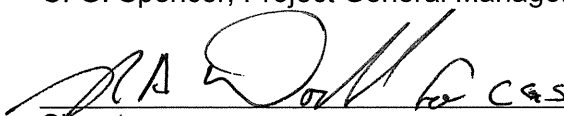
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Closure Contract** 

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REVISION HISTORY

Revision	Date	Reason for revision	Revision initiator
7	September 2009	Updated Environmental Management System (EMS) description to reflect ISO 14000 and DOE O 450.1A requirements.	K. A. Hadley
		Updated the POMCs, ISMS Performance Indicators and integrated the FY10 Safety Health Improvement Plan.	S. A. Thursby
		Clarified the IWCP process to detail the procedural improvements (development of Job Hazard Analysis – What IF procedure).	P. K. Wells
		Incorporated Safety Ownership Program as part of the continuous improvement program.	G. A. Sly
		Updated references to current DOE/contract requirements and WCH procedures/processes.	G. A. Sly
		Provided clarification to Subcontractor 10 CFR 851 applicability (Appendix J). Eliminated redundancy to implementing documentation (i.e., Exhibit G).	G. A. Sly
6	September 2008	Updated Organizational change to reflect Operations Programs re-structured to be included in Engineering, SH&Q and Training.	G. A. Sly
		Updated the POMCs, ISMS Performance Indicators and integrated the FY09 Safety Health Improvement Plan	S. A. Thursby
		Clarified the IWCP process to detail the procedural improvements (modified the work control flow chart – Appendix C to reflect changes)	P. K. Wells
		Updated references to be consistent with 10 CFR 851 compliance matrix and WCH procedures and processes.	G. A. Sly
		Removed the 10 CFR 851 Compliance Matrix from appendix and moved it into a separate (referenced) Program Support Document (PSD-8)	G. A. Sly
5	April 2007	Incorporation of DOE comments on 10 CFR 851 Worker Health and Safety Program (WHSP) descriptions.	G. A. Sly
		Revision of WCH Organizational Chart – Figure 1-7 and organizational descriptions.	G. A. Sly
		Consolidation of five WCH projects into three (D4/ISS, Waste Operations, Field Remediation).	G. A. Sly

Revision	Date	Reason for revision	Revision initiator
		Update Appendix I (ISMS Requirements Implementation Matrix)	G. A. Sly

ACRONYMS

ALARA	as low as reasonably achievable
BCP	baseline change proposal
CAM	Corrective Action Management
CAS	Contractor Assurance System
CASD	Contractor Assurance System Description
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CF	core function
CFR	<i>Code of Federal Regulations</i>
CRD	contractor requirements document
CVP	closure verification package
D4	Deactivate, Decontaminate, Decommission, and Demolish Closure Project
D4/ISS	Deactivate, Decontaminate, Decommission, and Demolish/ Interim Safe Storage Closure Project
DEAR	Department of Energy Acquisition Regulation
DHI	design hazard identification
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy-Headquarters
DSA	documented safety analysis
ECP	environmental control plan
Ecology	Washington State Department of Ecology
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
EPL	environmental protection lead
ERC	Environmental Restoration Contractor
ERDF	Environmental Restoration Disposal Facility
FY	fiscal year
GP	guiding principle
HASP	Health and Safety Plan
HDIT	Hazard and Discipline Identification Tool
IPB	Integrated Project Baseline
ISM	Integrated Safety Management
ISMS	Integrated Environment, Safety, and Health Management System
ISMSD	Integrated Environment, Safety, and Health Management System Description
IWCP	Integrated Work Control Program
JHA	job hazard analysis
MOA	memorandum of agreement
NTP	notice to proceed
OSHA	Occupational Safety and Health Administration
PFWR	plant forces work review
PMP	<i>Project Management Plan (WCH-2)</i>
POD	plan of the day
POMC	performance objective, measure, and commitment
PSS	procurement subcontract specialist
QA&S	Quality Assurance and Services
R&DC	Records and Document Control
RCC	River Corridor Closure

RCCAT	River Corridor Closure Action Team
RCCC	River Corridor Closure Contract
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RL	U.S. Department of Energy, Richland Operations Office
RM	Responsible Manager
ROD	record of decision
RWP	radiological work permit
S/C	subcontractor
S&H	Safety and Health
SH&Q	Safety, Health and Quality
SHIP	Safety and Health Improvement Plan
SME	subject matter expert
SOP	Safety Ownership Program
SSHASP	site-specific health and safety plan
SSWMI	site-specific waste management instruction
STR	subcontract technical representative
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
USQ	unreviewed safety question
VPP	Voluntary Protection Program
WBS	work breakdown structure
WCH	Washington Closure Hanford
WIDS	waste information data system
WPF	work process flow

1.0 HISTORY AND STRUCTURE OF INTEGRATED SAFETY MANAGEMENT SYSTEM

1.1 BACKGROUND

The U.S. Department of Energy (DOE), in response to DNFSB Recommendation 95-2, committed to implementing an Integrated Safety Management System (ISMS) across the complex by issuing an Implementation Plan in April 1996 and, subsequently, DOE P 450.4 in October 1996. That policy, along with the Department of Energy Acquisition Regulation (DEAR) clauses 970.5223.1 and 970-5404-2 required contractors to follow ISMS objectives, guiding principles (GPs), and functions to describe the approach for implementing and tailoring an ISMS to the contractor's site/facility or activities.

To address this requirement Washington Closure Hanford (WCH) has developed this Integrated Environment, Safety, and Health Management System Description (ISMSD) to provide the structure by which specific activities can be carried out by different organizations while adopting a uniform approach to protecting the workers, the public, and the environment. This ISMSD developed for the River Corridor Closure (RCC) Project describes the approach and management systems used to address integrated approach to environmental and safety management within the RCC Project.

This ISMSD is specifically based on the requirements of contract clause I.93, DEAR 952.223-71, "Integration of Environment, Safety, and Health into Work Planning and Execution" (DOE 2000b), as contained in the River Corridor Closure Contract (RCCC), DE-AC-06-05RL14655. The ISMSD presented in this document is consistent with the following:

- 10 CFR 851, "Worker Health and Safety," which requires each DOE contractor to demonstrate compliance through systematic policies, programs, and procedures. Appendix H provides the description and basis for the RCC Project's Worker Health and Safety program along with Appendix J for WCH subcontractors.
- DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, which forms the basis for the RCCC Contractor Assurance System (CAS). Section 10.0 provides a description and outlines the key elements of this system.
- DOE O 450.1, *Environmental Protection Program*, Attachment 1, Contractor Requirements Document (CRD), which forms the basis of the RCCC Environmental Management System (EMS). DOE O 430.2B, *Departmental Energy, Renewable Energy and Transportation Management*, and its CRD address specific sustainable energy, water, building, and transportation/fleet management goals and requirements. WCH-63, Environmental Protection and Compliance Plan, establishes an EMS that reflects the environmental management system elements and framework found in the International Organization for Standardization's (ISO) 14001:2004 (E) International Standard and provides the environmental protection and compliance framework and strategy for implementing both DOE O 450.1A and DOE O 430.2B.

Implementing the ISMS is the responsibility of all directors/managers. Developing and implementing environmental protection, using an EMS, within the scope of the ISMS is the responsibility of the Environmental Protection Director (within the Environmental Protection

History and Structure of ISMS

organization). This aligns with the concept that, in most instances, RCC support organizations establish programs, while project directors implement programs. The ISMSD demonstrates this concept by placing the responsibility for safe and compliant performance of work and sustainable energy, water, building, and transportation/fleet management on line management from first-line supervisors to the Project General Manager.

The ISMS traverses all elements of the RCC Project and serves as the integrating mechanism for project-wide safety components and programs (including but not limited to nuclear safety, chemical safety, industrial safety, environmental protection, waste management, and the Voluntary Protection Program [VPP], as well as other safety programs.) Each of these programs is governed by applicable DOE orders, federal and state regulations, local regulations, or industry standards designed to establish an effective environment and safety, health, and quality (SH&Q) program.

1.1.1 Project History

The Hanford Environmental Restoration Project was established by DOE, Richland Operations Office (RL) in 1987 through the issuance of the Environmental Restoration Contract (ERC) to the Westinghouse Hanford Company. From 1987 to 1994, Westinghouse Hanford Company was the primary contractor performing work on the Environmental Restoration Project.

The ERC was recompeted in 1994 and awarded to Bechtel Hanford, Inc. and its pre-selected subcontractors. The new ERC Team successfully performed the Environmental Restoration Project work scope for 11 years. During that time, the ERC Team safely cocooned 4 retired plutonium production reactors and closed 215 waste sites. Nearly 6 million tons of contaminated soil and debris were removed from liquid waste disposal sites and solid waste burial grounds along the Columbia River.

In 2005, the scope of the environmental restoration work was expanded to include the entire river corridor, and the RCCC was awarded to WCH¹. The scope of the current RCCC includes planning, executing, and controlling the management/disposition of environmental contamination spread across 210 square miles of the Hanford Site located along the Columbia River. This includes remediation of burial grounds, demolition and cocooning of deactivated nuclear reactors, and surveillance and maintenance of facilities/sites awaiting remediation. Currently, WCH is responsible for only one category 2 and four category 3 nuclear facilities²:

Category 2

- 324 Building

Category 3

- 327 Building
- 618-10 Remediation Area
- 618-11 Remediation Area
- 118-K-1 Remediation Area

The Hanford Site's political and regulatory framework is complex, with diverse views represented by DOE, the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), Tribal Nations, Natural Resource Trustees Council, the

¹ WCH is a limited liability company formed by Washington Group International, Bechtel National, and CH2M HILL.

² Future reference to nuclear facility(ies) within this document will refer to the category 2/3 nuclear facilities identified above.

History and Structure of ISMS

public, and other stakeholders. In 1989, RL agreed to a regulatory framework with EPA and Ecology, as documented in the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989). The Tri-Party Agreement specifies actions that RL has agreed to complete during the cleanup of the Hanford Site. A key component of the Tri-Party Agreement is public participation by stakeholders, the Natural Resource Trustees Council, and the Tribal Nation entities.

Effective implementation of the RCC Project requires initiating innovative plans to ensure optimal achievement of river corridor closure and environmental restoration at the Hanford Site. The RCCC states that WCH will comply with all applicable federal, state, and local laws. It is WCH's responsibility to be aware of changes to the laws and to ensure compliance.

1.1.2 Mission

The mission of the RCC Project is to perform cleanup activities to preserve, protect, or restore the Hanford Site to allow other beneficial uses. In support of this mission, the RCC Project will strive to accomplish the following:

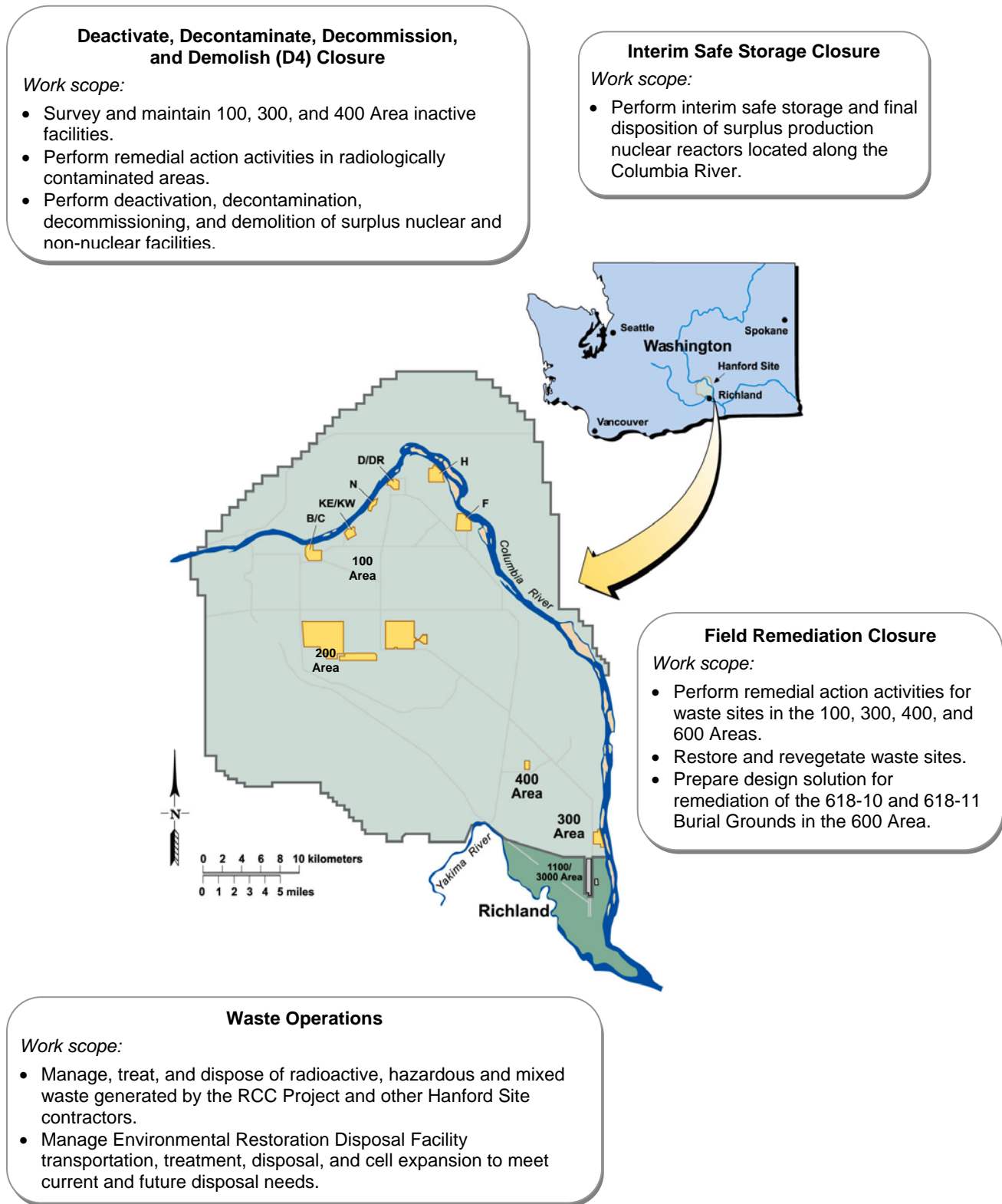
- Protect the safety and health of workers and the public
- Minimize harmful effects to the environment
- Balance the use of aggressive restoration, natural environmental processes, and associated risk in the decision-making process, while considering stakeholder values, current and future land-use options, and life-cycle cost effectiveness
- Focus research and development on the needs of the RCC Project, while using cost-effective, state-of-the-art, and innovative science, engineering, and technology
- Manage natural resources until lands are available for other uses.

Figure 1-1 summarizes the work scope of the RCC Project, as defined by each field project. The four work scopes are managed under three organizational directors.

1.2 PURPOSE

The primary objective of this document is to show WCH's commitment to accomplishing Hanford Site cleanup in a safe and responsible manner through an integrated approach to environmental and safety management. As part of this mission, WCH is dedicated to the protection of workers, the public, and the environment through implementation of balanced priorities and work practices that will not compromise safety for the sake of production or expediency. This ISMSD outlines WCH's overall commitment to safe work practices within the RCC Project. Additionally, the ISMSD supports the goals of the VPP, EMS, Integrated Work Control Program (IWCP), Hanford Occupational Health Process, and overall RCC Project goals.

Figure 1-1. Hanford Site Map and River Corridor Closure Project Work Scope.



History and Structure of ISMS

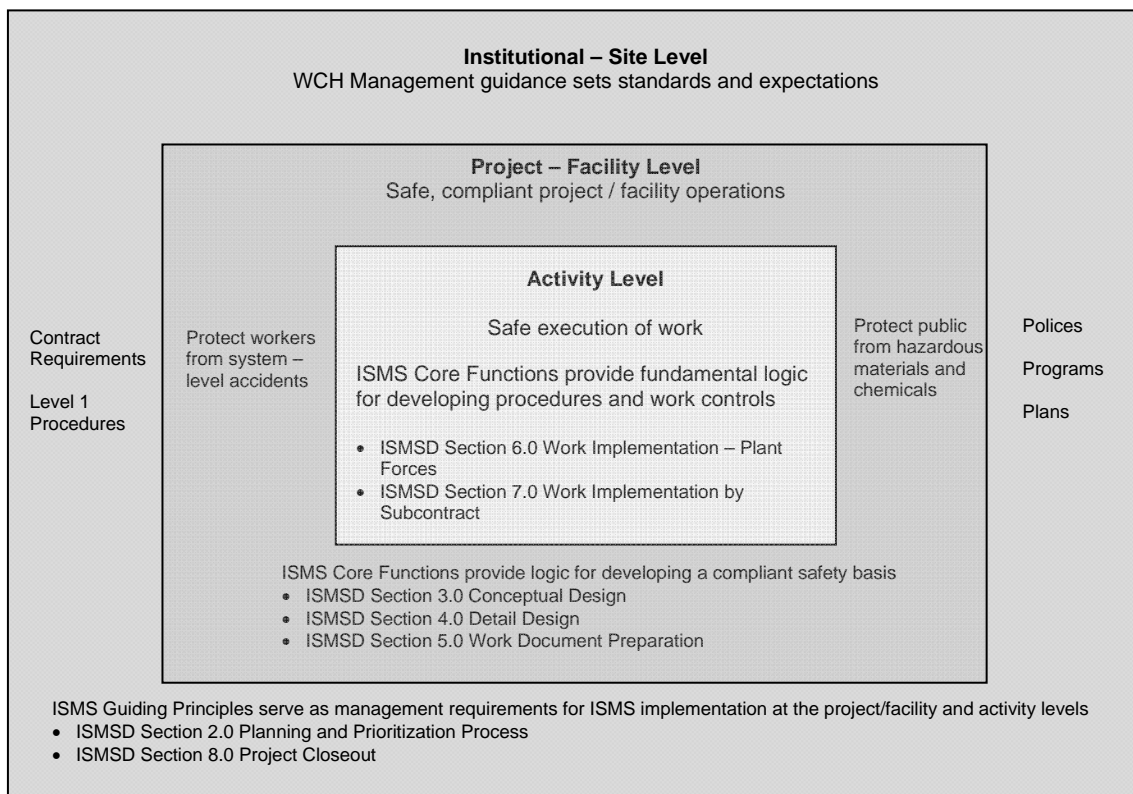
WCH is committed to maintaining and improving its ISMS as indicated by the continuous monitoring of performance objectives, measures, and indicators, as well as the annual review of the ISMSD. The WCH ISMS fully integrates the elements of an EMS such as pollution prevention, environmental compliance, and chemical management, and sustainable energy, water, building, and transportation/fleet management. Additionally, the WCH ISMS is fully compliant with 10 CFR 850, "Chronic Beryllium Disease Prevention Program," and 10 CFR 851, "Worker Safety and Health Program."

ISMS performance objectives, measures, and indicators are discussed in more detail in Section 11.0.

1.3 SCOPE

The ISMSD is a high-level overall discussion of how WCH integrates environmental and S&H considerations into RCC Project work processes. This ISMSD focuses on WCH's primary methods for integrating environmental and S&H considerations into RCC Project work practices at all levels (i.e., Institutional, Project/Facility, and Activity) through the workflow processes as indicated in Figure 1-2.

Figure 1-2. WCH Conceptual Illustration of ISMS Interactions at the Institutional/Project – Facility/Activity Levels.



History and Structure of ISMS

The key elements to any work process are planning work as a team, identifying responsibilities, involving appropriate staff, conducting walkdowns, identifying risks, using briefings effectively, and ensuring that personnel are adequately trained. Administrative activities are described in implementing procedures and may occur in a different order, simultaneously, or in parallel during each phase of a given workflow process. This document is reviewed by all RCC project directors and is approved by the Project General Manager.

1.4 INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW

The DOE Safety Management System Policy, DOE P 450.4, subdivides the concept of the ISMS into six primary components: Objectives, Principles, Functions, Mechanisms, Responsibilities, and Implementation.

The objectives, principles, and functions are established and provided by the DOE and are universally applied to all activities and operations at the RCC Project.

PM-1, *WCH Policies*, PM-ESHQ-1, "Integrated Environmental, Safety and Health Management System (ISMS) Implementation Policy," adopts the six DOE P 450.4 primary components as further discussed below.

1.4.1 Objectives

In support of the RCC Project, WCH has developed procedures that provide a thorough framework reflecting ISMS guiding principles (GPs) and core functions (CFs) in all work processes.

GPs and CFs can be divided into two distinct categories: performance-based and behavior-based. The performance-based GPs and CFs typically result in a documented endpoint, such as a list of standards or requirements, a job/activity hazard analysis (JHA), or identification of hazard controls and management procedures. Behavior-based GPs and CFs are intrinsic to good business practices and are implemented through corporate policy and senior management involvement.

There are 11 GPs that provide the fundamental policies and attributes for work performance within the RCCC:

- GP-1: Line Management Responsibility for Safety and Environmental Requirements
- GP-2: Clear Roles and Responsibilities
- GP-3: Competence Commensurate with Responsibilities
- GP-4: Balanced Priorities
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization
- GP-8: Worker Involvement³
- GP-9: Communication and Stakeholder Involvement³
- GP-10: Continuous Improvement³

³ Indicate guiding principles or core functions that have been added to provide additional emphasis on key attributes that are important to RL and WCH management.

History and Structure of ISMS

GP-1 – Line Management Responsibility for Safety and Environmental Requirements:

Line management is directly responsible for the protection of workers, the public, and the environment. Additionally, DOE's Office of Environment, Safety, and Health provides safety requirements, enforcement, and independent oversight functions.

GP-2 – Clear Roles and Responsibilities: Clear and unambiguous lines of authority and responsibility for ensuring safety, health, and environmental stewardship are established and maintained at all organizational levels.

GP-3 – Competence Commensurate with Responsibilities: Personnel possess the experience, knowledge, skills, and abilities that are necessary to perform their assigned tasks.

GP-4 – Balanced Priorities: Resources are effectively allocated to address safety as well as programmatic and operational considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed.

GP-5 – Identification of Safety and Environmental Standards and Requirements: Before work is performed, the associated hazards are identified and a set of environmental, safety, and health standards and requirements are established, which provide adequate assurance that workers, the public, and the environment are protected from adverse consequences.

GP-6 – Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls are tailored to the work being performed so that hazards are effectively prevented, mitigated, or minimized.

GP-7 – Operations Authorization: The conditions and requirements to be satisfied in order for work to be initiated and conducted are clearly established and agreed upon by all responsible parties involved in the operation.

GP-8 – Worker Involvement: Workers are actively involved in preparing for work, including planning, hazard and environmental impact identification and analysis, implementation of controls, and readiness reviews as required.

GP-9 – Communication and Stakeholder Involvement: Open and effective internal and external communication supports the environmental, safety, and health aspects of work activities and fosters public involvement in work planning and processes as required.

GP-10 – Continuous Improvement: Workers and management continually monitor the adequacy of work processes and correct deficiencies when identified.

GP-11 – Senior Management Involvement: Senior management is actively and continually engaged in the implementation and improvement of the Integrated Environment, Safety, and Health Management System.

1.4.3 Core Functions

The seven core safety management functions provide the necessary structure for any work activity that could potentially affect the public, the workers, and the environment. The functions are applied as a continuous cycle with the degree of rigor appropriate to address the type of work activity and the hazards involved.

History and Structure of ISMS

CF-A – Establish Environment, Safety, and Health Policy: Establish management commitment to incorporate environment, safety, and health factors into planning, design, construction, operation, maintenance, and deactivation work processes. These environmental and S&H factors are overarching and incorporated into all RCC Project workflow processes to ensure the protection of workers, the public, and the environment.

CF-B – Define the Scope of Work: Missions are translated into work, expectations are established, tasks are identified and prioritized, and resources are allocated.

CF-C – Identify and Analyze the Hazards: Safety, health, and environmental hazards associated with the work are identified, analyzed, and categorized.

CF-D – Develop and Implement Hazard Controls: Applicable standards and requirements are identified and agreed upon, and controls to prevent/mitigate hazards are developed and implemented.

CF-E – Perform Work Within Controls: Readiness is confirmed and work is performed safely using identified hazard controls.

CF-F – Provide Feedback and Continuous Improvement: Feedback on the adequacy of hazard identification and controls is gathered; opportunities for improving the definition, planning, and execution of work are identified and implemented; line and independent oversight is conducted; corrective actions are completed; and lessons learned are documented and broadly communicated.

CF-G – Management Review: Management will periodically review the work processes outlined in the ISMSD to ensure that they continue to be suitable, adequate, and effective.

Figure 1-4 depicts the core safety management functions and subfunctions. Although arrows indicate a general direction, these functions are not independent, sequential functions. They are a linked, interdependent collection of activities that may occur simultaneously. Outcomes during the accomplishment of one function may affect other functions and potentially the entire system.

Additionally, the core safety management functions are integrated vertically throughout all levels (i.e., site, facility, and task-level activity) of the organizations as shown by the vertical arrows in Figure 1-5.

The ISMS is tailored to the work and organizational structure unique to WCH. The ISMS provides the following:

- Mechanisms for doing work safely
- Unambiguous assignment of responsibilities
- Implementation of the objective, principles, and functions.

Figure 1-4. Safety Management Functions.

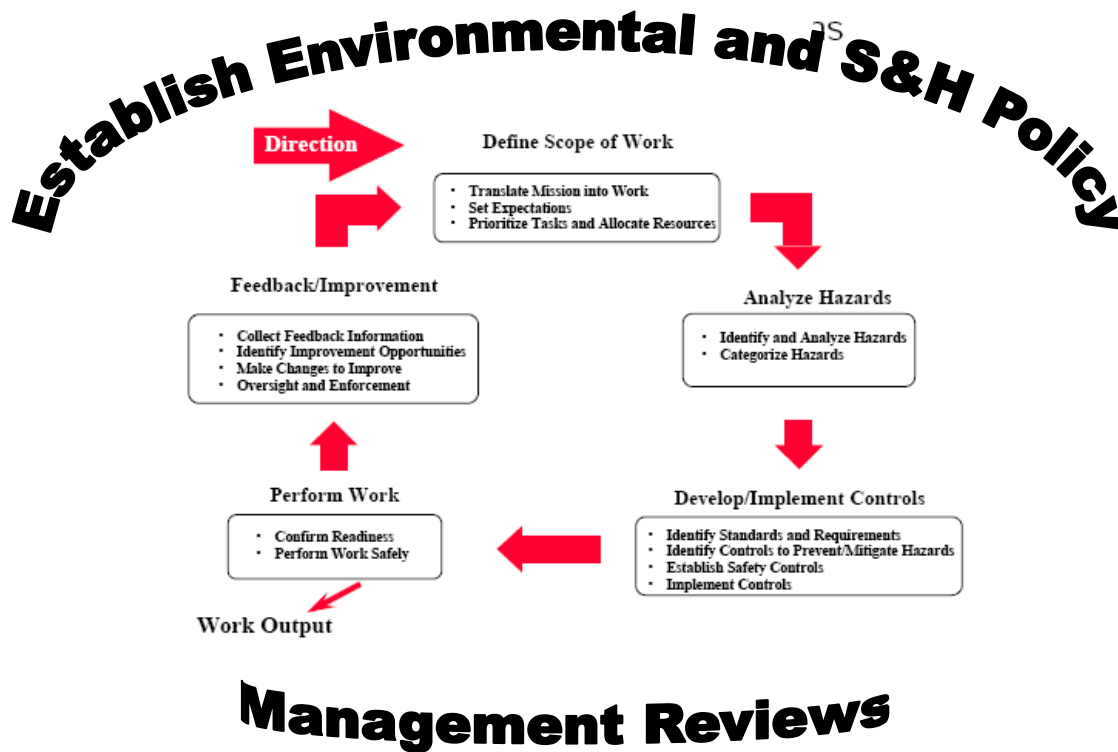
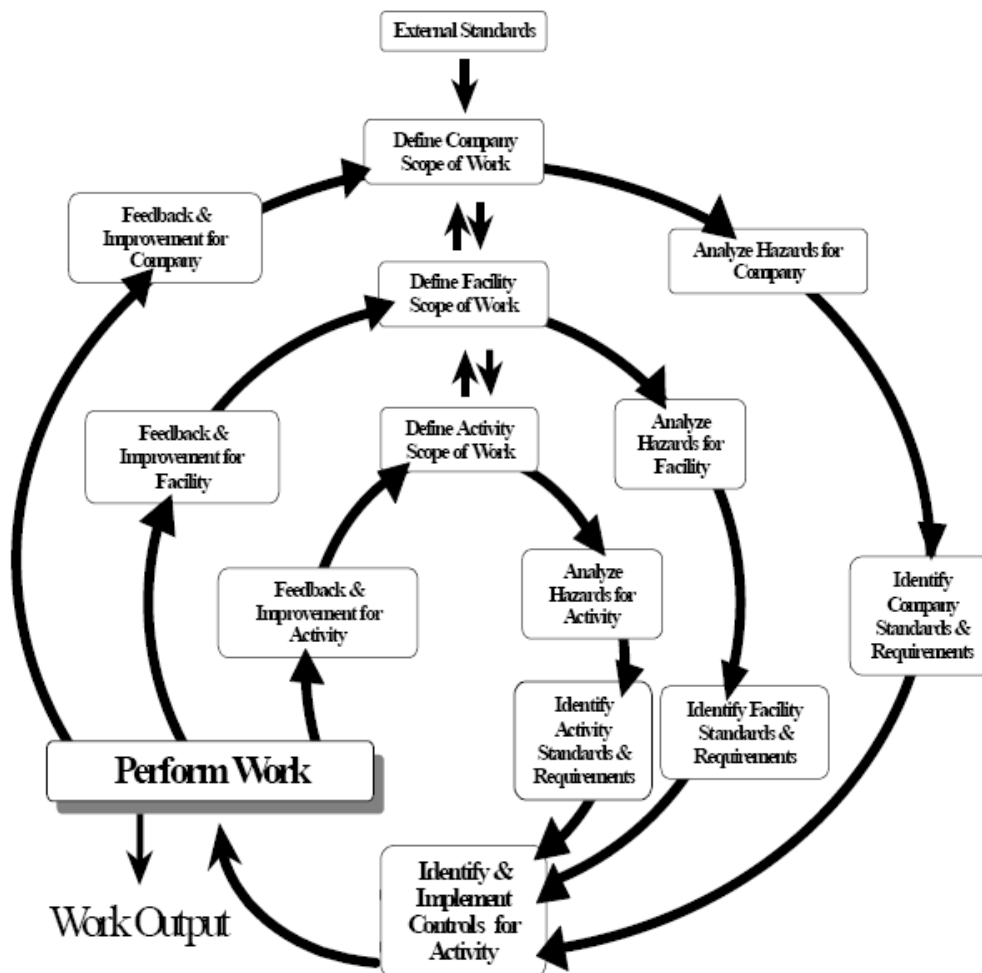


Figure 1-5. Application of ISM Core Functions at All Levels.



The following operational imperatives support the WCH ISMS:

- Safety
- Continuous Improvement
- Disciplined Operations
- Cost Effectiveness
- Worker Involvement
- Teamwork.

These operational imperatives support the WCH Strategic Plan general management focus area objectives of Safety and Security; Technical Capability and Performance; Community, State and Regulator Relationships; Cost Effectiveness; and Corporate Perspective to manage the RCC Project through effective teamwork internally and with the DOE.

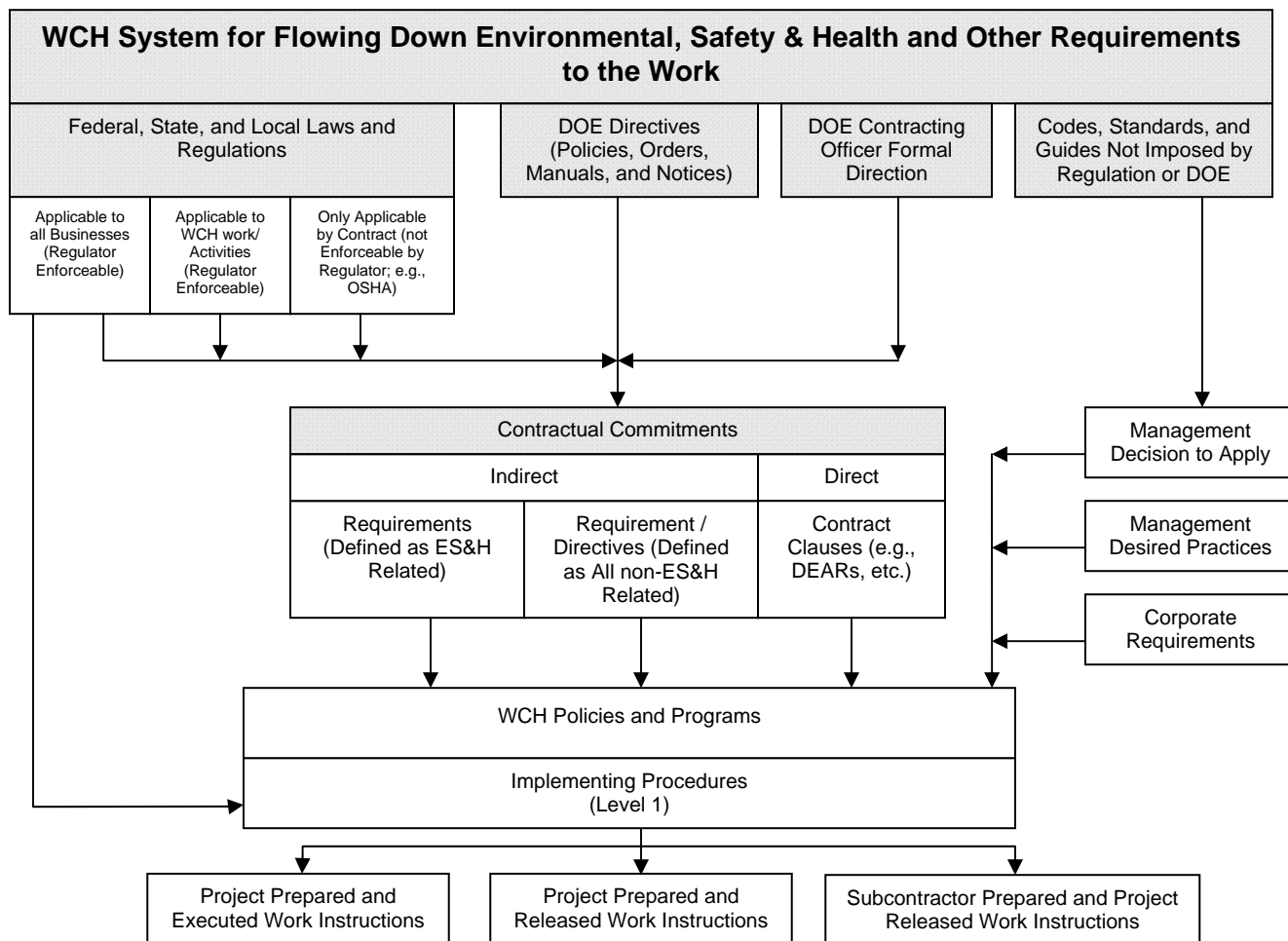
1.4.4 Mechanisms

Mechanisms are the means by which agreements are reached with DOE and WCH and the core safety management functions are implemented and performed. Environment, safety, and health requirements in the form of laws, regulations, DOE directives, consensus standards, and others flow down from their source into the WCH policy and procedure set. Those documents contain the requirements that WCH determines are applicable to the work and conditions at the RCC Project.

The WCH policies and procedures define the applicability of requirements on a facility basis according to the work and hazards conducted at each facility. These policies and procedures include controls tailored to the work/activity and the type and level of hazards present. Specific mechanisms used by WCH to fulfill the ISMS functions in accordance with the ISMS GPs are presented in Section 1.5. A listing of WCH policies, procedures, and manuals describing the ISM mechanisms is located in Appendix F of this ISMSD.

Figure 1-6 illustrates the successive policy and procedure organizational levels of ISM within the RCC Project.

Figure 1-6. WCH Flow Down of ISMS Requirements to Work.



History and Structure of ISMS

As stated in Section 1.1, the WCH prime contract contains the scope and contractual requirements for the RCCC. These contractual requirements include contract clauses, DOE orders, laws, and regulations. At the inception of the WCH contract, these requirements were reviewed and specifically assigned to appropriate directors or functional managers. This is documented in the WCH contract requirements matrix and the DOE order matrix. These are living documents and are updated appropriately.

When these requirements are revised, added, or deleted at the direction of DOE, WCH has an established process for managing the contractual changes. This is contained in BSC-1, *Business Services and Communications*, BSC-1-8.7, "Contract Requirements." This procedure sets forth the process for appropriate reviews by the Contracts Manager, directors, functional managers, and subject matter experts (SMEs). It delineates specific responsibilities to ensure the requirements are flowed down to the appropriate areas of responsibility for compliance.

1.4.5 Responsibilities

WCH is organized to satisfy the first GP that line management is responsible for safety and environmental protection. Unambiguous lines of responsibility within WCH are paramount to effective safety and environmental management on the RCC Project. The second GP, that roles and responsibilities are clearly defined, within each procedure, of functional responsibilities and approval authorities for each proceduralized activity.

WCH satisfies the third GP by staffing the organization with personnel having competence commensurate with their responsibilities. Personnel having appropriate line management authority for their areas of responsibility report directly to the WCH Project General Manager.

Line management has primary responsibility for safely operating facilities, protecting the environment, and conducting activities. The field projects identified in Section 1.1 are fully supported by project management and RCCC support organizations. The RCCC support organizations include the following:

- *Project Services* provides business support services for the RCCC and includes the following:
 - Procurement of materials and award of subcontracts
 - Warehousing
 - Property management
 - Information technology: applications and network infrastructure support
 - Document control, forms management, procedures administration, and records management
 - Financial services: accounting, cost collection, time collection
 - Landlord services: infrastructure support for occupied facilities (on and off site)

History and Structure of ISMS

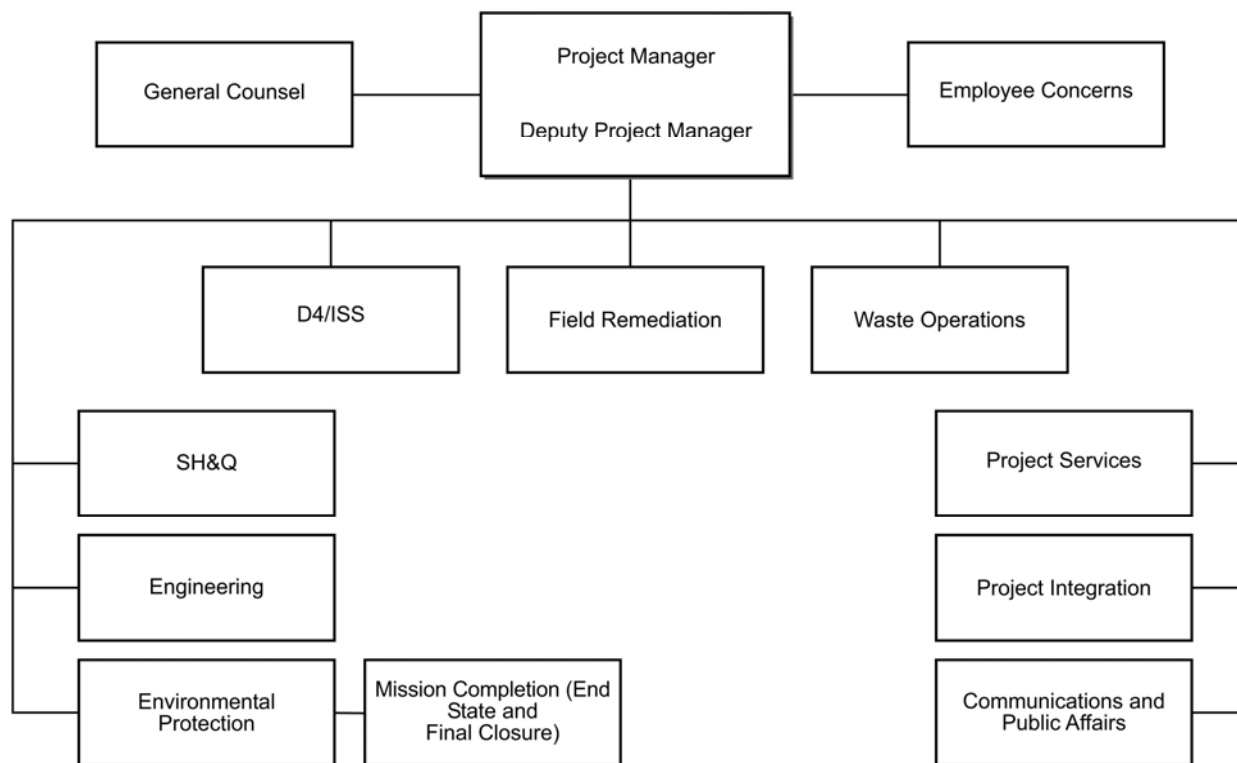
- Human resources: compensation, benefits, staffing, and development
- Labor relations
- Contract management and legal services
- Ethics program
- Training
- Subcontractor Technical Representative (STR) Program.
- *Safety, Health, and Quality (SH&Q)* provides technical expertise in the following areas:
 - Safety and health (includes industrial hygiene, fire protection occupational health, and industrial safety)
 - Radiological control (includes dosimetry, As Low As Reasonably Achievable [ALARA] Program)
 - Quality assurance
 - Occurrence reporting
 - Emergency management
 - Emergency preparedness
 - Safeguards and security.
- *Environmental Protection* consists of three sub-elements:
 - *Environmental Services* (environmental protection, science, engineering, and sample and data management)
 - *Environmental Compliance* provides the RCCC with regulatory and environmental expertise related to strategic planning and regulatory coordination
 - *Mission Completion* function provides baseline risk assessments, prepares remedial action and investigation reports, and develops the long-term stewardship plan for project closure.
- The *Project Integration* support organization provides the RCC Project with the project planning and project controls necessary to ensure the requirements of the RCCC are met and the closure of the river corridor is complete.
- The *Engineering Services* support organization provides the RCCC with specialized technical, nuclear, and criticality safety expertise. The Engineering function's responsibility is to provide engineering support to the RCCC programs and to make technical decisions on

behalf of the field projects. Engineering Services also provides Operations support which includes the IWCP and Conduct of Operations.

- *Communications and Public Affairs* provides support to the RCC Project through development of communication products for the WCH workforce; media; stakeholders; RL; regulators; tribes; Hanford Advisory Board; political, state, and local elected officials; the community; and corporate parents. Communications and Public Affairs also supports Human Resources and Safety communications.

Figure 1-7 shows the WCH organizational structure for both the RCC projects and support organizations.

Figure 1-7. WCH Organization



1.4.6 Implementation

The RCC Project's scope and requirements are defined in the RCCC, the prime contract between RL and WCH. The requirements state that WCH will comply with all applicable laws and regulations regarding its work, including federal, state, and local regulations, as well as DOE orders and stipulations in the Tri-Party Agreement (Ecology et al. 1989). These requirements create the cornerstone for the development of WCH policies, programs, and procedures.

History and Structure of ISMS

Key to the overall ISMS implementation and demonstration of contractual environmental and SH&Q compliance are the WCH policies and specific site-wide programs:

- Environmental Management System (EMS)
- Chemical Management Program
- WCH Waste Minimization/P2 Program
- WCH Waste Management Program
- WCH Natural and Cultural Resource Program
- Contractor Assurance System (Section 10.0)
- Worker Safety and Health Program
- Operating Experience (Lessons Learned).

The objective of the EMS is to perform work in an environmentally sound manner, in compliance with applicable regulations and statutes and approved regulatory documents, and ensure protection of the environment. The primary environmental documents that implement the EMS are PM-ESHQ-2, "Environmental Protection and Compliance Policy"; WCH-63, *Environmental Protection and Compliance Plan*; and the environmental and waste management procedures. The key elements of the EMS include measurable goals, objectives, and targets; training; metrics; operational controls; and self-assessments.

WCH has established a Chemical Management Program to ensure the safe, compliant, and cost-effective acquisition, tracking, storage, transportation, and final disposition of chemicals in accordance with applicable regulations and the *DOE Handbook for Chemical Management* (DOE-HDBK-1139/1-2000 [DOE 2000a]). This program is implemented during project planning and execution, including scope identification, hazard analysis, and hazard control, as well as during work performance. The WCH chemical requisition process requires a review of available chemicals in the excess chemical database prior to purchasing a new chemical. A review is also performed to identify appropriate alternatives that are less toxic. Specific procedural requirements for this program are found in ENV-1, *Environmental Monitoring & Management*, ENV-1-1.11, "Chemical Management Program."

In concert with the Chemical Management Program, the WCH Waste Minimization/P2 Program promotes reduction of waste through segregation, affirmative procurement, reuse, and recycling for all project activities. These principles are applied during the planning and execution stages of project activities to reduce or eliminate the generation of waste and the release of pollutants to the environment. Pollution prevention opportunity assessments are also performed on newly generated waste streams that have not been previously assessed. Specific procedural requirements for this program are found in WMT-1, *Waste Management and Transportation*, WMT-1-1.1, "Waste Minimization and Recycling."

The WCH waste management program ensures protection of the public and environment. The program implements compliant waste management from generation through disposal for all wastes in accordance with controlling regulations and DOE orders. Controlling regulations/documents include *Washington Administrative Code* 173-303, "Dangerous Waste Regulations," for management of dangerous waste, and DOE O 435.1 and its implementation plan (DOE-RL 2003) for management of radioactive waste and regulatory approval documents. Procedural requirements for management of waste are found in WMT-1, *Waste Management and Transportation*.

History and Structure of ISMS

The WCH Natural and Cultural Resource program ensures protection of natural and cultural resources, including threatened and endangered species. The program develops and implements strategies for mitigation, which include restoration/revegetation planning that supports long-term stewardship values and ensures excavation permits and ecological and cultural plans and clearances are properly integrated into project-wide planning. Specific procedural requirements for this program are found in ENV-1, *Environmental Monitoring & Management*, ENV-1-1.4, "Protection of Natural Resources on the Hanford Site"; ENV-1-1.5, "Protection of Cultural Resources on the Hanford Site"; and PAS-1, *Project Activities and Support*, PAS-1-2.1, "Excavation Work and Permitting Requirements."

Section 10.0 of this document provides a description of the WCH CAS developed to address DOE O 226.1, *Implementation of Department of Energy Oversight Policy*. The WCH CAS is a fully integrated system and addresses the fundamental aspects of both ISMS and the DOE order through the following:

- Assessments
- Event reporting
- Worker feedback
- Issues management
- Lessons learned
- Performance measures.

On February 9, 2006, 10 CFR 851, "Worker Safety and Health Program," was enacted and the new regulation requires the DOE contractors to submit

"...for approval a written worker safety and health program that provides the methods for implementing the requirements of Subpart C of this regulation."

Key elements of this regulation are the demonstration of the following:

- Management responsibilities and worker rights and responsibilities [10 CFR 851.20]
- Hazard identification and assessment [10 CFR 851.21]
- Hazard prevention and abatement [10 CFR 851.22]
- Safety and health standards [10 CFR 851.23]
- Functional areas [10 CFR 851.24]
- Training and information [10 CFR 851.25]
- Recordkeeping and reporting [10 CFR 851.26].

WCH through its existing policies, programs, and procedures has a worker safety and health program that compliant with all applicable requirements of this regulation and ensures the safety of the worker, public, and environment. Appendix H contains the WCH Worker Safety and Health Program Plan. Appendix J contains the WCH Subcontractor Worker Safety and Health Program Plan. Both documents demonstrate compliance and implementation of the federal regulations throughout the RCC Project.

History and Structure of ISMS

WCH-2, *Project Management Plan* (PMP), is the overall guidance document that describes the work that will be performed under the RCCC and how WCH will be organized to execute the work. The document explains WCH's organizational approach, utilizing field projects and support functions, and defines their respective roles, responsibilities, accountabilities, and authorities. The importance of performing all work safely is stressed throughout the PMP, and Section 3.1.2, "Perform All Work Safely," requires WCH to perform the RCCC scope using a single project-wide ISMS. The management and design of these documents and their specific sponsors are conceptually presented in WCH document hierarchy shown in Figure 1-8.⁴

Management of work at the facility/project level is through the implementation of site-wide (i.e., Level 1) procedures or WCH-approved subcontractor work packages. To manage field work or specific task or activities, WCH has a program of controlled procedures, plans, instructions, and workflow processes. It should be noted that under the IWCP all work (direct, WCH planned, or subcontractor planned) is reviewed and approved by the appropriate WCH management team prior to the performance of any field activities.

In addition to policies and procedures, WCH has developed several program support documents (PSD) that help track requirements, responsibilities, and/or compliance information.

The strategy for implementing the ISMS continues to be the use of WCH site-wide programs. These site-wide programs meet DOE's and WCH's shared objective, principles, and functions for tailoring requirements to safely accomplish specific work at specific facilities. The WCH procedural hierarchy, depicted in Figure 1-8, with the policies and procedures created and maintained within that system, serve as the vehicle for implementing the objective, principles, and functions of the ISMS. Environment, safety, and health program requirements, including safeguards and security requirements, are incorporated into the implementation of the work through the process illustrated in Figure 1-9.

This process is applied to all activities and all levels of the WCH organizational structure.

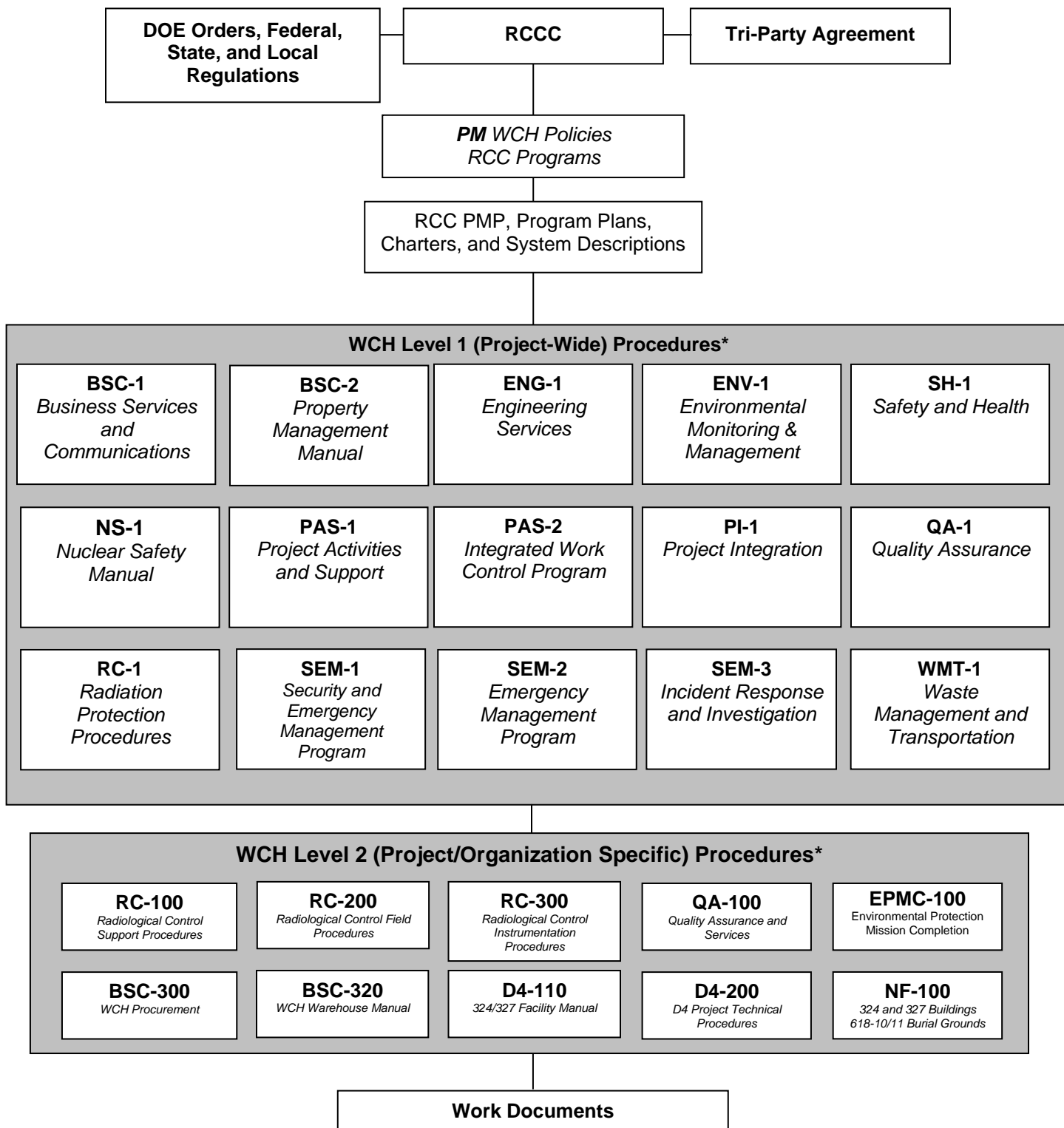
To enhance ISMS implementation, all employees receive an introduction and orientation to ISMS during their initial and refresher General Employee Training.

1.5 INTEGRATED SAFETY MANAGEMENT SYSTEM MECHANISMS

Environment, safety, and health programs are incorporated into the work at the company and facility level. This section also links the DOE's safety objectives, principles, and functions with the WCH implementing strategy and responsibilities discussed earlier.

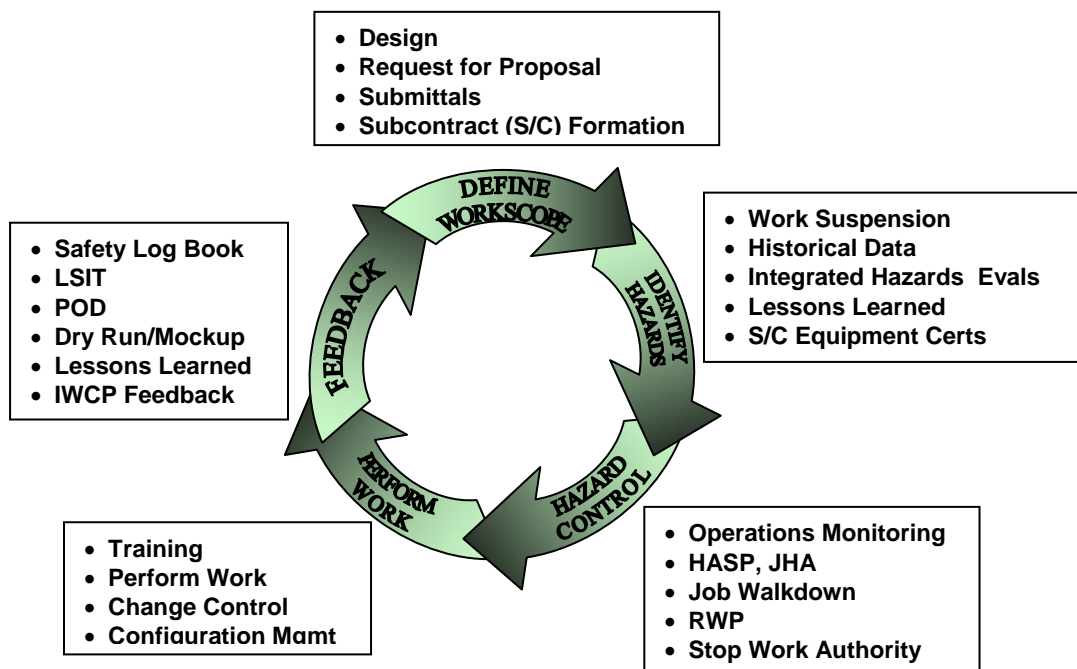
⁴ WCH procedures are living documents and are subject to change.

Figure 1-8. The WCH Hierarchy of Documents.



*Developed as needed, list is not comprehensive.

Figure 1-9. Incorporation of ISMS into All WCH Work and Work Activities.



The primary company-level manuals, documents, and procedures that define the mechanisms that direct the safe and environmentally compliant conduct of work at all facilities, for all activities and organization levels, covered by the WCH Contract, which itself is a mechanism, are identified below. Also described are the roles the primary manuals, documents, or procedures that serve in satisfying the ISMS CFs and GPs. Vertical integration is illustrated by the flow down of ISMS requirements to the primary company-level procedural mechanisms (manuals, documents, or procedures) and other supporting company-level manuals, documents, and procedures. The following manuals, documents, or procedures serve as primary vertical integrators:

- NS-1, *Nuclear Safety Manual*
- SEM-1, *Security and Emergency Management Program*
- SH-1, *Safety and Health*
- WCH-2, *Project Management Plan*
- WCH-6, *Performance Management System Description*
- WCH-23, *River Corridor Closure Contract Integrated Project Baseline (Volumes 1 and 2)*
- WCH-51, *Washington Closure Hanford Quality Assurance Program Description*
- WCH-63, *Environmental Protection and Compliance Plan*

History and Structure of ISMS

- WCH-67, *Services Subcontract Technical Representative (STR) Handbook*
- WCH-100, *Washington Closure Hanford Radiation Protection Program*.

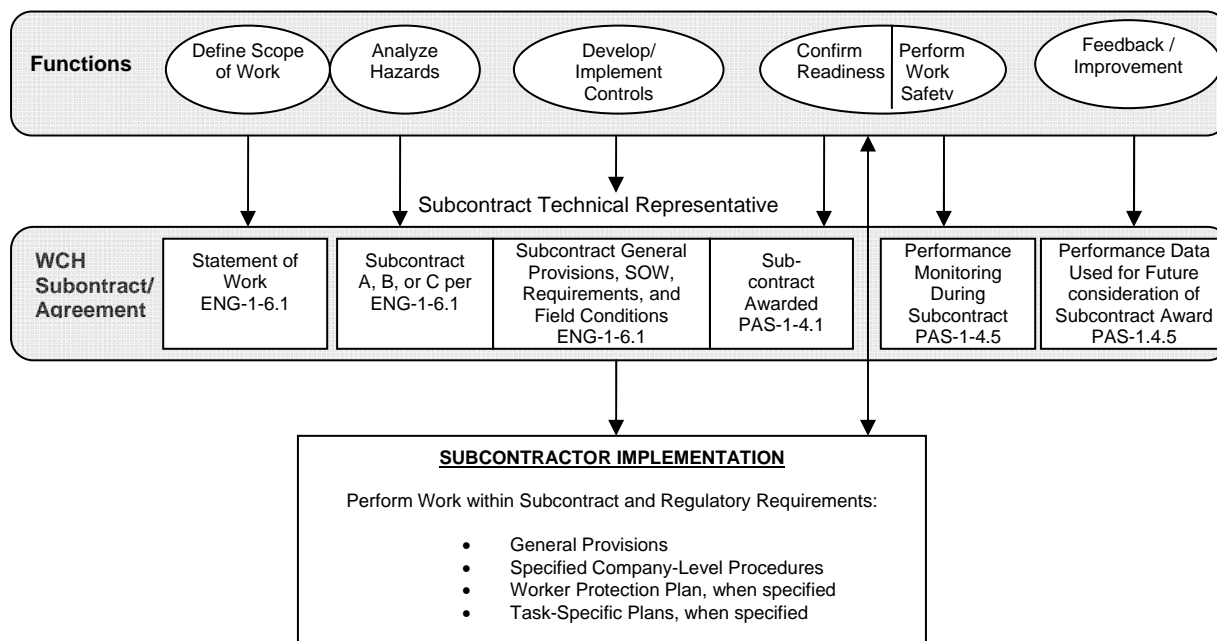
Horizontal integration is illustrated by the manuals, documents, or procedures that cross-cut all of the CFs. There are 10 manuals, documents, or procedures of this type, as follows:

- BSC-1, *Business Services and Communications* (selected procedures)
- PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control"
- PI-1, *Project Integration*, PI-1-2.13, "Work Authorization / Authorized Changes"
- PM-1, *WCH Policies* (selected policies)
- QA-1, *Quality Assurance*
- WCH-4, *Integrated Environment, Safety, and Health Management System Description*
- WCH-5, *River Corridor Closure Project Risk Management Approach and Plan*
- WCH-38, *Training Implementation Matrix for River Corridor Closure Non-Reactor Nuclear Facilities*
- WCH-57, *WCH Radiological Control Manual*.

The ISMS roles served by the primary ISMS manuals, documents, or procedures above and the additional supporting manuals, documents, or procedures are briefly described in this section and in Appendix F.

For work performed by subcontractors, ENG-1, *Engineering Services*, ENG-1-6.1, "Requisition Request Development," directs the specification and documentation of safety and health requirements in purchase requisitions and subcontract statements of work. PAS-1, *Project Activities and Support*, PAS-1-4.1, "Construction Subcontract Formation and Award"; PAS-1-4.4, "Appointment of Services Subcontract Technical Representative"; and PAS-1-4.5, "Subcontract Technical Representative (STR) for Field Work Activities," are used to award, ensure adequate oversight, and monitor subcontracted activities. The general flow down of requirements and responsibilities to the subcontractor is shown in Figure 1-10.

Figure 1-10. Subcontract ISMS Mechanisms.



1.5.1 Approval of Company-Level Policies and Procedures

BSC-1, *Business Services and Communication*, BSC-1-7.9, "Preparing, Approving, and Issuing Policies and Charters," and BSC-1-7.2, "Preparing, Issuing, Revising, and Canceling Administrative Procedures," provide the guidance preparation of company-level policies, charters, and procedures. BSC-1-7.3, "Internal Review of Documents," identifies and involves other area project, functional, and department managers, as appropriate, in the review of proposed changes to policies, charters, and procedures. Primary responsibilities for managing company-level policies, charters, and procedures are assigned to functional or program directors responsible for the program administration and management of the content of company-level policies, charters, and procedures, and who report directly to the Office of the Project General Manager. The functional/project directors effectively integrate the formulation and implementation of company-level policies, procedures, and processes, and review and approve company-level policies and procedures.

Project Integration reviews the requirements and cost/schedule impacts with the affected functional/project directors and resolves any associated issues prior to authorizing the preparation of procedures that will add requirements or increase costs.

Additional committees and teams (see PM, *WCH Policies*, Section 6.0, "Charters") provide input to company-level policies, charters, and procedure reviews and recommendations, and promote communications, networking, and lessons learned sharing that aids effective implementation of changes. The committees provide technical guidance to site-wide programs and foster integration of mutually acceptable concepts among the site programs and across organizational boundaries.

History and Structure of ISMS

1.5.2 Role of Company-Level Mechanisms in Implementing the ISMS Functions

There are seven CFs that apply to the RCC Project. Five are derived from DOE orders and two are imposed by WCH management. Four of the CFs (CF-A, CF-C, CF-D, and CF-G) apply to all of the RCC Project workflow processes presented in this ISMSD. The remaining three CFs (CF-B, CF-E, CF-F) apply to discrete elements of the work process flow as shown in Figure 1-3 and discussed in Sections 2.0 through 8.0.

The seven core safety management functions provide the necessary structure for any work activity that could potentially affect the public, the workers, and the environment. The functions are applied as a continuous cycle with the degree of rigor appropriate to address the type of work activity and the hazards involved.

1.5.2.1 CF-A – Establish Environment, Safety, and Health Policy. At the company level, CF-A includes two policies that involve an integrated approach to incorporating environmental and S&H factors into planning, design, construction, operation, maintenance, and deactivation work processes. These policies are incorporated into all RCC Project workflow processes to ensure the protection of workers, the public, and the environment.

The WCH environmental policy is outlined in the WCH policy manual, *WCH Policies*, PM-ESHQ-2, "Environmental Protection and Compliance Policy," and encourages identification and elimination of environmental compliance concerns.

The safety and health policy is described in the WCH policy manual, *WCH Policies*, PM-ESHQ-3, "Safety," and applies an "injury-free workplace" philosophy.

1.5.2.2 CF-B – Define Scope of Work. WCH has a systematic system for the defining and flow down of work scope and activities throughout all organizational levels. The primary mechanisms for defining the WCH work scope are as follows:

- WCH-2, *Project Management Plan*
- WCH-23, *River Corridor Closure Contract Integrated Project Baseline, Scope Baseline*.

WCH-2, the PMP, contains the mechanism by which WCH determines what work and provides the authorization for work to be accomplished given the priority of the work and the available funding. WCH-2 establishes the site responsibilities and requirements for a process to perform cost-effective planning, control, and execution of projects using a risk-based approach. This document is applicable to all projects within the RCCC.

This agreed-upon scope of work, identified in WCH-2, is transformed into WCH-23 and consists of scope, schedule, cost, and performance metrics. WCH-23 also provides a prioritization process to ensure a balanced approach to line and support tasks and resources, and ensures that safety management is integrated into the budget process.

The baseline is further refined into organizational/project work breakdown structures (WBS) defining the scope of the work for each organization or project. The WBS is a task- or product-orientated hierarchical tree that includes all authorized contract work and defines the end products and deliverables in manageable units of work. The clearly defined units of work are

History and Structure of ISMS

then integrated with support organizations, thereby aligning the proper technical disciplines with the appropriate elements of responsibility.

At the facility level, WCH line and project management use a prioritization process to decide which work scopes will be executed with the available funding. This process ensures that significant risks and safety hazards are identified, reviewed, and factored into critical funding decisions to ensure balanced priorities.

The DOE, regulators, stakeholders, Tribal Nations, Natural Resource Trustees Council, and Hanford Advisory Board-RCC committee meetings all provided input into the various elements of scope identification, definition, and agreement. Once agreed upon, the RCC scope is included in the WCH contract via a formal change process. The WCH contract then becomes the implementing document that defines the final agreed-upon scope of work for the RCC Project. Details of how CF-B, Define Scope, is integrated throughout the WCH work process to the activity level are provided in Sections 2.0 through 8.0, as appropriate.

1.5.2.3 CF-C – Analyze Hazards. WCH has instilled within the organizational structure five primary mechanisms for ensuring that any operations or activities performed during the executing of the RCCC do not endanger the worker, public, or environment. These mechanisms are applied throughout the work planning, execution, and closeout of work activities. Augmenting the five primary hazards analysis mechanisms are a number of project and/or functional procedures that are activity specific and are applied as needed during the project and/or functional activities. Together along with hazards analysis tools, create a philosophy and methodology that identify and these mechanisms, analyze known hazards, evaluate for potential unknowns, and identify controls to perform work safely and protect the worker, public, and environment. The primary mechanisms for hazards identification and analysis for the various stages of the project/activity life-cycle are as follows:

- ENG-1, *Engineering Services*
- ENV-1, *Environmental Monitoring & Management*
- PAS-1, *Project Activities and Support*
- PAS-2, *Integrated Work Control Program*
- NS-1, *Nuclear Safety Manual*
- SH-1, *Safety and Health*
- SEM-1, *Security and Emergency Management Program*
- WMT-1, *Waste Management and Transportation.*

1.5.2.4 CF-D – Develop/Implement Controls. The primary mechanisms for developing and implementing controls are as follows:

- PSD-4, *WCH DOE Order Applicability Matrix*
- WCH-63, *Environmental Protection and Compliance Plan*
- WCH-100, *Washington Closure Hanford Radiation Protection Program*
- NS-1, *Nuclear Safety Manual*
- SH-1, *Safety and Health*

History and Structure of ISMS

- PAS-1, *Project Activities and Support*, PAS-1-1.1, “Technical Procedure Development and Implementation”
- PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control."
- PAS-2, *Integrated Work Control Program*, PAS-2-1.2, “Preventive Maintenance”

PSD-4, *WCH DOE Order Applicability Matrix*, is a compilation of all the DOE orders referenced in Appendix J of the RCCC. For each referenced order the WCH documents and procedures that implement the order are provided.

WCH-63, *Environmental Protection and Compliance Plan*, establishes the EMS and provides guidance to WCH staff on the requirements and implementation of DOE O 450.1A and DOE O 430.2B. Greater detail on WCH-63 and the EMS is provided in Section 9.0.

WCH-100, *Washington Closure Hanford Radiation Protection Program*, provides the framework for ensuring that all activities and operations performed under the RCCC protect the worker, public, and environment from radiological hazards. The document addresses all aspect of radiological control and addresses characterization, risk assessment, and planning and controls.

NS-1, *Nuclear Safety Manual*, establishes programmatic requirements, via implementing procedures, related to the WCH criticality safety program and safety analysis documentation including the unreviewed safety question process.

SH-1, *Safety and Health*, establishes programmatic requirements, via implementing procedures, for ensuring compliance to 10 CFR 851.

PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development and Implementation" establishes the requirements for implementing a work control process through technically oriented procedures. This process involves identification and analysis of work site hazards, development of the technical procedure, performance of work, and observational approach for newly identified hazards.

PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control," establishes requirements for implementing a work control process that involves identification and analysis of work site hazards, development of a work package, performance of work, and observational approach for newly identified hazards.

PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance," establishes requirements for implementing a work control process that involves identification and analysis of work site hazards, development of a preventive maintenance package, performance of work, and observational approach for newly identified hazards.

1.5.2.5 CF-E – Perform Work. The primary mechanisms for ensuring readiness and performing work are as follows:

- PAS-1, *Project Activities and Support*, PAS-1-1.1, Technical Procedure Development and Implementation”
- PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control"

History and Structure of ISMS

- PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance"
- NS-1, *Nuclear Safety Manual*
- WCH-51, *Quality Assurance Program Description*
- WCH-98, *Washington Closure Hanford Conduct of Operation Applicability Matrix*.

PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development and Implementation," describes the requirements, responsibilities, and process for the development, control, release, and implementation of technical procedures used within the River Corridor Closure Project (RCCP). Technical procedures are used where the scope of work is continuous over extended periods (e.g., ERDF Operations) or will be used multiple times in the same way (e.g., pipe tapping).

PAS-1-1.1 uses multi-disciplinary teamwork and worker involvement to support the identification and analysis of work site hazards, development of work technical procedures, performance of work, and observational approach for newly identified hazards. Technical procedures are developed and approved for work using a graded approach based on risk and complexity of the work, hazards, and worker competence.

PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control," uses multi-disciplinary teamwork and worker involvement to support the identification and analysis of work site hazards, development the work packages, performance of work, and observational approach for newly identified hazards. Also covered are administrative work package closeout activities. The team approach allows the collective identification and analysis of hazards to be performed concurrently with the development of work packages. The work packages are developed and approved for release using a graded approach based on risk and complexity of the work hazards and worker competence.

The IWCP is applicable to all field work activities managed and performed using work packages and routine work activities by WCH and its subcontractors.

PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance," establishes the requirements and responsibilities for development and control of preventive maintenance (PM) on WCH controlled activities. PMs are used where the activity involves the scheduled surveillance or maintenance to maintain equipment or structures. PAS-2-1.2 uses multi-disciplinary teamwork and worker involvement to support the identification and analysis of work site hazards, development of work preventive maintenance packages, performance of work, and observational approach for newly identified hazards.

The remaining documents that are related to this CF are described in Appendix F.

1.5.2.6 CF-F – Feedback/Improvement. Maintenance and oversight of ISMS implementation is inherent in the WCH senior management commitment to continuous improvement in all areas. ISMS and EMS improvement will be achieved through a number of continuous improvement processes and assurance systems, including but not limited to the following:

- Surveillances and self-assessments
- Management and independent assessments

History and Structure of ISMS

- Plan of the Day and Pre-evolution Briefings
- Readiness reviews
- Work Planning (walkdowns, JHA meetings, etc.)
- Occurrence reporting and critiques
- Emergency drills and exercises
- Lessons learned application
- IWCP Feedback System
- LSIT
- Environmental and SH&Q committees and employee feedback/concerns
- Corrective action management and tracking
- Oversight of subcontractor environmental and SH&Q programs.

The process and system data are periodically analyzed, compiled, and reported to WCH senior management to support development and implementation of performance improvement initiatives, establishment of safety goals, and completion of required reporting to DOE.

The primary company-level mechanism for feedback and improvement is WCH-51, *Washington Closure Hanford Quality Assurance Program Description*.

1.5.2.7 CF-G – Management Review. Management will periodically review the work processes outlined in the ISMSD to ensure that they continue to be suitable, adequate, and effective.

1.5.3 Role of Company-Level Mechanisms in Implementing ISMS Guiding Principles

There are 11 ISMS GPs; 7 are identified within the DOE orders⁵ and 4 by management expectations and directives. Seven GPs (1, 2, 3, 4, 8, 10, and 11) apply to the implementation of all seven of the ISMS CFs, whereas the remaining four GPs (5, 6, 7, and 9) apply to specific CFs.

1.5.3.1 GP-1: Line Management Responsibility for Safety and Environmental Requirements.

"Line management is responsible for the protection of the public, the workers, and the environment."

Line management includes all levels of management from first-line supervisors to the Project General Manager. Each phase of the WCH workflow process identifies line management responsibility for work execution, which will vary depending on the activity. WCH-2, the PMP, describes the WCH management organization.

In a matrix organization, the director is responsible for the overall project objectives and uses direct-report managers and project engineers for ensuring execution of the work. Functional managers provide technical expertise and SMEs, as necessary, to support the projects. The work supervisor (this is a generic term for either a craft supervisor or field superintendent) and the STR are the day-to-day interfaces in the field for line management and provide reports on project status and safety performance directly to the field manager/area project manager.

⁵ For clarity, if a guiding principle is from a DOE order, the guiding principle is provided in the discussion.

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1.5.3.2 GP-2: Clear Roles and Responsibilities.

"Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within the Company and its subcontractors."

Each worker must understand his/her roles and responsibilities relative to the work being performed. Managers must ensure that staff are trained to perform their job duties and are knowledgeable of their roles and responsibilities. The Level 1 procedure manuals (Figure 1-8) include organization roles and responsibilities. Additionally, specific roles and responsibilities for work activities and process steps are detailed in individual procedures and position descriptions.

1.5.3.3 GP-3: Competence Commensurate with Responsibilities.

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

To perform work safely, workers must have the necessary skills, knowledge, and ability to perform the work. Systems that are used to ensure competency include the hiring process, RCC Project training programs, procedure reviews, pre-job/pre-evolution briefings, plan-of-the-day (POD) meetings, and other activities for identifying clear roles and responsibilities, ensuring proper management and supervision, and following prescribed procedures or work directions. Further descriptions are included in BSC-1-1.2, "Employment and Personnel Placement," BSC-1-1.1, "Employee Development and Education," BSC-1-2.1, "Training Roles and Responsibilities," and BSC-1-2.4, "Training Requirements."

1.5.3.4 GP-4: Balanced Priorities.

"Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed."

The RCCC uses a work planning and prioritization process to develop work scope and schedules based on RL budget guidance. Work priorities are developed during this process using criteria such as legal obligations, regulatory obligations, environmental and SH&Q concerns (e.g., early removal of high hazards), and contractual obligations. Priorities and budgets change frequently, and WCH uses a change control process to document changes in work scope, costs, and priorities. Prioritizing work involves public and stakeholder input, as required by the Tri-Party Agreement (Ecology et al. 1989), and is further described in Section 6.2, "Regulatory and Environmental Management," of the PMP. The RCCC prioritization process is defined in PI-1, *Project Integration*, PI-1-2.9, "Portfolio Management."

1.5.3.5 GP-5: Identification of Safety and Environmental Standards and Requirements.

"Before work is performed, the associated hazards are evaluated and an agreed-upon set of safety standards and requirements are established which, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences."

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The RCCC's procedures and policies identify and describe the necessary safety, health, engineering, and environmental standards applicable to RCCC work activities. Standards are identified in regulations (federal, state, and local), policies, contracts, DOE orders and guidance documents, and legal orders. Legal orders issued to RL are pursuant to the Tri-Party Agreement or from a regulatory agency. ESH&Q professionals are matrixed to line organizations to assist in implementation of applicable RCCC procedures that ensure the appropriate standards are identified and incorporated into work-controlling documents.

1.5.3.6 GP-6: Hazard Controls Tailored to Work Being Performed.

"Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and the associated hazards."

Hazard controls are tailored to the work being performed. These controls must be verified prior to commencing work and can include engineered systems, alarms, administrative controls in work packages, implementing procedures training, pre-job/pre-evolution briefings, verification of roles and responsibilities, POD meetings, and other communication mechanisms. Additional information is provided in the following:

- SH-1, *Safety and Health*
 - SH-1-6.1, "Project/Facility Safety Planning and Documentation"
 - SH-1-3.2, "Hazard Communication"
- PAS-1, *Project Activities and Support*
 - PAS-1-1.1, "Technical Procedure Development and Implementation"
- PAS-2, *Integrated Work Control Program*
 - PAS-2-1.1, "Integrated Work Control "
 - PAS-2-1.2, "Preventive Maintenance"
- ENV-1, *Environmental Monitoring & Management*
 - ENV-1-1.14, "Integrated Chemical and Radiological Hazard Evaluation"
- WMT-1, *Waste Management and Transportation.*

1.5.3.7 GP-7: Operations Authorization.

"The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed-upon."

Authorization by the appropriate line management is required to perform any work. The work (e.g., craft, scheduled maintenance, or subcontract); type of work (e.g., nuclear, non-nuclear, safety basis impacting); and who is performing the work determines the operation authorization that is necessary. This process is described in various manuals and procedures including, but not limited to, CONOPS-1, *WCH Conduct of Operations Manual*, PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development and Implementation", PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control "; PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance"; ENG-1, *Engineering Services*, ENG-1-4.15,

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"Project Startup Reviews"; and ENG-1-4.16, "Operational Readiness Review and Readiness Assessment"; or through a notice to proceed (NTP) that is issued to subcontractors, as described in PAS-1-4.5, "Subcontract Technical Representative (STR) for Field Work Activities."

Prior to work implementation, a readiness determination is made. A graded approach is used in this determination. The method of ensuring readiness can range from supervisor personal knowledge to a formal operational readiness review. Work is authorized only after readiness is confirmed. Line management ensures that the work crew is properly trained and qualified for the assigned task.

1.5.3.8 GP-8: Worker Involvement.

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

Each worker is required to understand the scope of work, hazards involved, hazard controls, and work to be performed. The RCCC's work procedures and plans are followed to perform the work safely, and each worker should be trained for the type of work performed. Workers participate in work planning to ensure that hazards are identified and that necessary controls are in place before work starts.

Additionally, workers participate in hazard identification and control through participation in; job walkdowns, job hazards analysis, the Task Safety Awareness process, and pre-job/pre-evolution briefings, as well as other methods of hazard identification, analysis, and control. Participation in emergency preparedness drills and exercises provides another level of worker involvement. Non-craft employees are required to develop at least one personal performance objective that commits to "improving safety, increasing knowledge of safety, or enhances the use of ISMS" as part of their annual individual performance review.

1.5.3.9 GP-9: Communication and Stakeholder Involvement.

"Open and effective internal and external communication supports the environmental, safety, and health aspects of work activities and fosters public involvement in work planning and processes as required."

Many RCCC activities require stakeholder and public involvement, as required by federal, state, and local laws and regulations. Other agreements, such as the Tri-Party Agreement, as well as contractual agreements with RL, require public involvement and other communications necessary to ensure that work is performed with public input. Tribal Government consultations are also required for certain work planning and implementation activities. The Communications and Public Affairs organization manages communication and stakeholder involvement activities for the RCCC. Their roles, responsibilities, accountabilities, and authorities are described in the PMP, Section 6.2.2.

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1.5.3.10 GP-10: Continuous Improvement.

"Workers and management continually monitor the adequacy of work processes and correct deficiencies when identified."

Procedures and mechanisms are in place and are used by personnel to detect and prevent quality problems. The primary mechanism implantation of a quality continuous improvement program is through the application of the WCH CAS described in Section 10.0 of this document. As stated previously, the WCH CAS is a fully integrated program that ensures quality and continuous improvement through the systematic application of the following:

- Assessments
- Event reporting
- Worker feedback
- Issues management
- Lessons learned
- Performance measures
- Corrective Action Management (CAMS)
- Human Performance
- Tailoring of Subcontractor Flowdown Contracting Exhibits
- Radiological Drills through Emergency Drills Program

The RCC Project's assessments of project and support organization activities (e.g., surveillances, self-assessments, operational readiness reviews and readiness assessments, and independent assessments) are conducted to evaluate the effectiveness of compliance with procedural and contractual requirements to confirm that safety is integrated into the workplace, and to initiate corrective actions. Assessments identify strengths and weaknesses and bring attention to good practices, positive events, and accomplishments.

Corrective actions identified during assessments and other activities are tracked in the WCH Corrective Action Management System in accordance with QA-1, *Quality Assurance*, QA-1-1.2, "Corrective Action Management and Tracking." Managers use the corrective action tracking system to identify improvement opportunities and to consider and resolve recommendations for improvement, including worker suggestions.

Additional mechanisms used to implement continuous improvement include use of the Lessons Learned program (PAS-1-1.8, "Lessons Learned"), IWCP feedback, (PAS-2-1.1, "Integrated Work Control"), occurrence reporting (SEM-3-1.2, "Occurrence Categorization and Reporting") critiques, issue evaluation reports, management walkthroughs (QAS-1-1.14, "Management Walkthroughs"), evaluation of safety statistics and metric trending, implementation of the VPP (e.g., Safety Ownership Program [SOP]), and drills and exercises.

Management uses ISMS performance indicators and performance objectives, measures, and commitments (see Section 12.0) as well as other environmental and SH&Q metrics to monitor performance in areas critical to ISM. This facilitates targeted process or procedural changes where weaknesses or deficiencies occur. The measures and indicators are submitted to RL, stasured quarterly, and updated annually.

Continuous improvements are also encouraged as an integral element of day-to-day activities for identifying unsafe practices and for stopping work, as well as daily communications at job briefings, POD meetings, staff meetings, project meetings, and management meetings.

These procedures and mechanisms provide the framework to ensure that continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and every stage in the work process.

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1.5.3.11 GP-11: Senior Management Involvement.

"Senior management is actively and continually engaged in the implementation and improvement of the Integrated Environment, Safety, and Health Management System."

Senior management (project/functional directors) direct involvement in RCCC work activities is a critical element for ensuring accomplishment of WCH's vision and mission and for actively demonstrating a commitment to safety. The WCH Policy Manual contains many RCCC policies outlined by senior management that must be followed and are inherent to all work that is performed.

RCC Project senior management reviews programs within the RCCC on a frequency level consistent with WCH procedures to ensure that policies and programs are implemented and effective. These programs include the Environmental Protection Program (ENV-1), the RCCC Safety and Health Program (SH-1), and the RCCC Quality Program (QA-1).

Senior project management is expected to frequently visit field work locations to directly verify that their expectations and policies are being adequately implemented. Senior project management also actively participates in job walkdowns.

RCC Project senior management reviews the performance measures and indicators developed to monitor ISMS implementation and effectiveness and uses the information for making process and program adjustments to provide continual improvement. See Section 11.0 for a detailed description of the performance objectives, measures, and commitments and indicators.

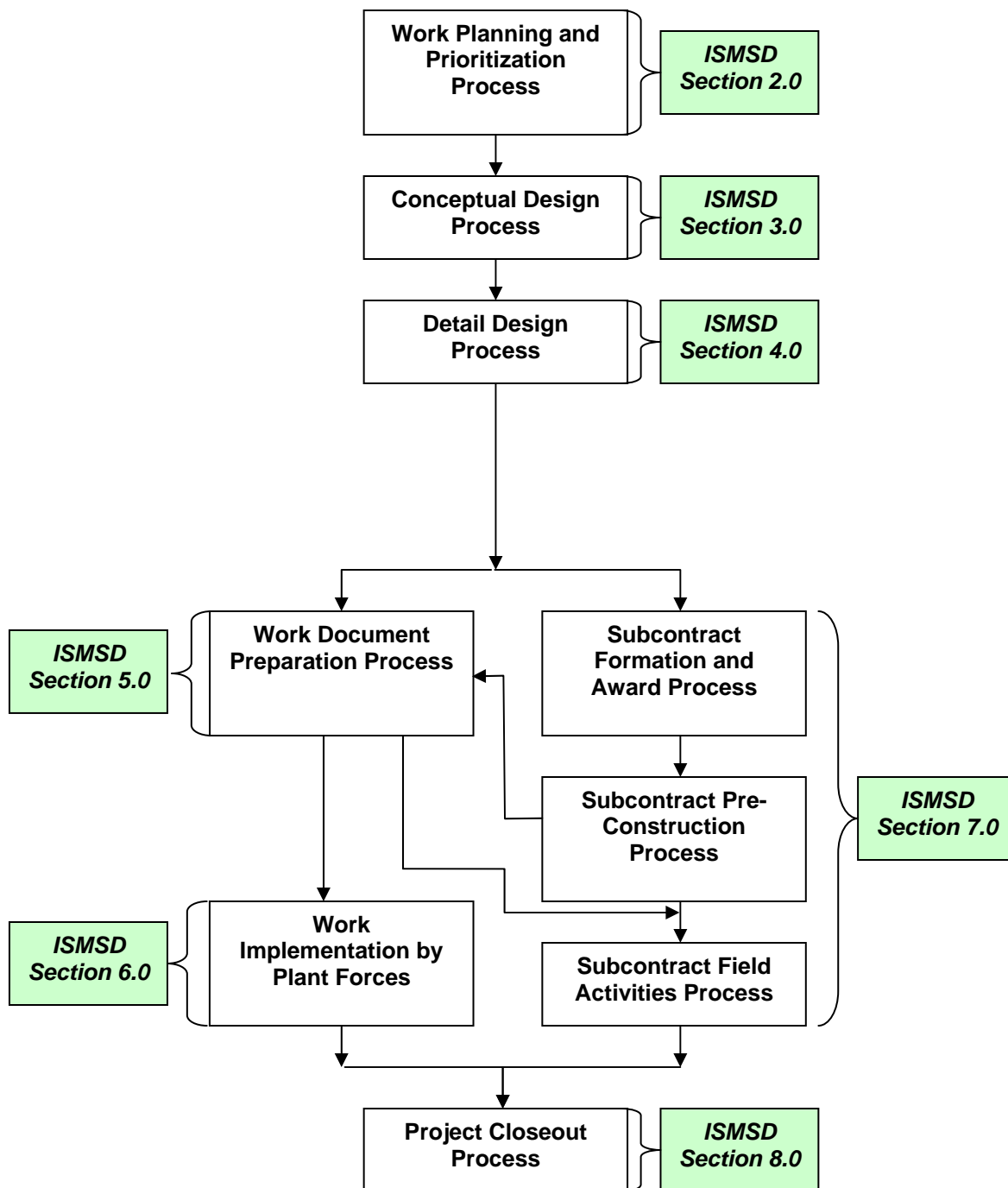
1.5.4 Protection of the Workers, the Public, and the Environment

WCH has a six-step workflow process (Figure 1-11) for activities performed by the RCCC team. These steps include (as appropriate) work planning and prioritization, conceptual design, detail design, work package preparation, implementation, and project closeout. Separate from these steps (but consistent with the ISMS) is work implementation by subcontract, which is applied when a selected subcontractor executes elements of the RCC Project work scope.

Administrative activities are described in implementing procedures and may occur in a different order, simultaneously, or in parallel during each phase of a given workflow process. The process flowcharting approach (Appendices A through E) allows for additional flexibility, efficiency, resource management, and priority adjustments of integrated and sometimes independent administrative processes.

The key elements to any work process are planning work as a team, identifying responsibilities, involving appropriate staff, conducting walkdowns, using briefings effectively, and ensuring that personnel are adequately trained. These key elements are embedded throughout all WCH work planning, execution, and closeout.

Figure 1-11. Simplified Workflow Diagram.



1.6 RCC PROJECT WORKFLOW PROCESS

1.6.1 Overarching CFs and GPs

It must be emphasized that there are certain CFs and GPs that apply to all of the RCC Project workflow processes presented in this ISMSD. These CFs and GPs are as follows:

- CF-A: Establish Environmental and S&H Policy
- CF-C: Identify and Analyze the Hazards
- CF-F: Provide Feedback and Continuous Improvement
- CF-G: Management Review
- GP-1: Line Management Responsibility for Safety and Environmental Requirements
- GP-2: Clear Roles and Responsibilities
- GP-3: Competence Commensurate with Responsibilities
- GP-4: Balanced Priorities
- GP-8: Worker Involvement
- GP-10: Continuous Improvement
- GP-11: Senior Management Involvement.

1.6.2 Workflow Process Organization and Design

Figure 1-11 presents a diagram showing the typical flow of work from planning and prioritization through design then to either the plant forces workers for work package preparation and implementation or to a subcontractor for implementation, both concluding with project closeout. WCH uses this workflow model for the implementation of all work activities within the RCC Project. It should be noted the scope of work will dictate which of the workflow elements are performed and which are not. This allows for optimization and tailoring of the various processes and activities.

The sections of the ISMSD document that address each phase in the overall workflow process are noted. The individual sections identified in the diagram address the integration of safety into the workflow process.

Sections 2.0 through 6.0 and 8.0 of this ISMSD provide descriptions of the six primary RCC Project workflow processes (planning and prioritization, conceptual design, detail design, work package preparation, work implementation, and closeout). Section 7.0 of this ISMSD summarizes the work process performed by subcontractors. In each of the workflow sections, the appropriate CFs and GPs that are built into RCC Project workflow processes are discussed.

For example, in Section 3.0 the workflow process for conceptual design is presented in terms of its major phases. Each workflow process phase is discussed at a summary level, with reference to particular details contained in the process flowchart. The CFs and/or GPs that apply to each phase are listed. This methodology applies to all sections of the workflow process.

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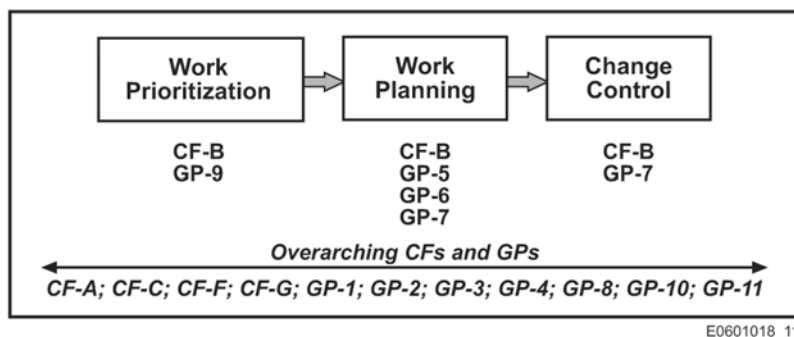
The decision to perform the work with plant forces or a subcontractor is made through the plant forces work review (PFWR) process. This process consists of researching the cost of the work, the work steps, and craft type(s) that will perform the activities.

Typical summary-level work process flowcharts are included in Appendices A through E. Further, Appendix I maps ISMS requirements to implementing RCC procedures.

2.0 PLANNING AND PRIORITIZATION PROCESS

This section describes the three major steps of the planning and prioritization process, as well as identification of the applicable CFs and GPs used in the process. Figure 2-1 graphically depicts the CFs and GPs discussed in this section.

Figure 2-1. Planning and Prioritization Workflow Process.



Within the RCC Project, the planning and prioritization workflow process consists of the following three major overlapping phases:

- Work prioritization
- Work planning
- Change control.

The applicable CF and GPs for the planning and prioritization process are as follows:

- CF-B: Define the Scope of Work
- GP-5: Identification of Safety Standards and Environmental Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization
- GP-9: Communication and Stakeholder Involvement.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

2.1 WORK PRIORITIZATION PHASE

The applicable CF and GP for the work prioritization phase are as follows:

- CF-B: Define the Scope of Work
- GP-9: Communication and Stakeholder Involvement.

Planning and Prioritization Process

The field manager/area project manager and project engineer are responsible for execution of this phase.

The PMP and WCH-6, *Performance Management System Description*, define WCH's overall management approach, the Planning and Controls system, and responsibilities. These documents involve a set of workflow definitions and processes that are designed to provide effective planning and control of the RCC Project's technical scope, schedule, cost, and funding.

WCH-5, *River Corridor Closure Project Risk Management Approach and Plan*, provides a detailed description of WCH's five-step approach to risk management, including organizational responsibilities. An initial list of risks to performance have been identified and quantified and are presented in WCH-5. This initial risk list was analyzed through a Monte Carlo simulation, as an input to the contingency calculation for the RCC Integrated Project Baseline (IPB). The IPB is the master plan that provides the detailed scope definition, cost estimate information, budgetary reporting, performance measurement, and performance reporting.

The WCH contract defines the scope of work for the RCC Project. Identification of environmental aspects and potential impacts of operations are considered in a variety of regulatory decision documents that further detail the RCC work scope. The contractual definition of work scope is translated into technical work scope, costs, and schedules that are included in the RCC IPB. The RCC Project mission and vision are included in the project baseline documents and were developed as part of the RCC Project's strategic planning process.

The DOE provides guidance and input for the development of the IPB. In addition, the regulators participate in the planning processes through requirements identified in the Tri-Party Agreement, the budget development process, planning and prioritization workshops, and reviews. Stakeholders and Tribal Nation entities provide input into the planning processes through public meetings and Hanford Advisory Board-RCC committee meetings.

WCH uses the following factors to prioritize the work scope:

1. Risk reduction: Consistent with ISMS principles, the controls identified for specific hazards are based on risk to the worker, the public, and the environment. A graded approach is applied to identify and implement the controls necessary to safely perform the work.
2. Regulatory compliance: Compliance with regulatory requirements and Tri-Party Agreement milestones is mandatory.
3. Closure acceleration: Large, difficult jobs are handled early to ensure that the end date can be met; this reduces legacy costs of surveillance and maintenance, freeing up budget for additional closure activities.
4. Waste mix to the Environmental Restoration Disposal Facility (ERDF): Priority is placed on sequencing different types of cleanup activities (e.g., demolition and field remediation) to maximize the efficient shipments and placement of waste in ERDF and minimize the amount of clean soil required in waste placement. Projects will coordinate with ERDF to schedule and sequence work so that waste quantities are level-loaded to the extent practicable.

Planning and Prioritization Process

5. Resource optimization: Analyze budget, worker availability, materials, and special equipment requirements and prioritize work that maximizes work acceleration while minimizing impacts caused by availability of critical resources for competing tasks.
6. Subcontracting like work: Grouping similar work (particularly in geographic proximity) is a priority and achieves logistical efficiencies.

The objective of work prioritization is to identify all RCC Project activities and to determine their relative priority with respect to defined evaluation criteria.

2.2 WORK PLANNING

The applicable CF and GPs for the work planning process are as follows:

- CF-B: Define Scope of Work
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization.

Individuals responsible for work execution develop the work plans and monitor performance. The RCC IPB is the master plan. The baseline includes the scope, risk, and estimated cost for all activities; a logical sequencing of work into a master schedule; and resource allocation within funding constraints. WCH maintains configuration control of the RCC Project baseline through a formal change control process described in PI-1, *Project Integration*, PI-1-2.13, "Work Authorization / Authorized Changes.

WCH's directors, in conjunction with the cost account managers, are responsible for development of (1) detailed work plans for the discrete work packages performed by WCH workers, and (2) the procurement packages and execution of work performed by subcontractors. ISMS concepts, CFs, and GPs are demonstrated at all levels of planning and ensure that the level of rigor in planning activities is appropriate for the job. Specific environmental objectives and targets are established to ensure protection of the environment throughout all phases of work execution.

Craft workers, engineers, safety professionals, and supervisory personnel participate in the production of the discrete work packages. DOE personnel, especially facility representatives, are also encouraged to monitor and provide oversight of this process. Hazards and environmental protection requirements are identified through job task analysis and walkdowns of the work areas as well as through exhaustive historical research, sampling, and prospective hazard analyses.

Clear lines of responsibility are established for the RCC Project, including subcontractors. This helps ensure work is performed safely and that work scope priorities are aligned with those of upper-level management. When possible, work planning is prioritized to focus on eliminating high-risk hazardous work first in order to eliminate risk earlier and ensure the safest working environment for RCC Project personnel.

The technical details of the IPB include workscope definition, major products and deliverables, Tri-Party Agreement milestones (including commitments, basis, and assumptions), subcontract

Planning and Prioritization Process

plans, material and equipment requirements, and planned remediation and waste disposal quantities.

The IPB costs are developed within the WBS for the project. Resources are further defined by labor, material/equipment, work order, and subcontract categories. Labor resources are estimated to include requirements for each support organization. The IPB schedules are prepared for each scope of work and, when integrated with cost estimates, provide staffing requirements/profiles at the project and support organization resource levels.

In addition, the IPB includes expenditure forecasts (cashflow projections), performance plans, and key production metrics. WCH directors, project teams, RL, and WCH management use the IPB as the basis for change control and to ensure overall managerial and financial control of the RCC Project throughout the contract.

2.3 CHANGE CONTROL PROCESS

The applicable CF and GP for the change control process are as follows:

- CF-B: Define Scope of Work
- GP-7: Operations Authorization.

The RCC Project change control process is defined in PI-1, *Project Integration*, PI-1-2.13, "Work Authorization / Authorized Changes. This process is used to manage revisions to the technical, schedule, and cost baselines for the RCC Project.

The IPB is a collection of documents and references that express RCC Project cost, schedule, and technical requirements. Modifications to the IPB are made only through an approved baseline change proposal (BCP). Each BCP must address the relevant changes to the technical, schedule, and cost baseline via the WBS. When approved, the BCP will be reflected in the appropriate WBS detail in related RCC Project control tools and databases.

BCPs are dispositioned and approved by the River Corridor Closure Action Team (RCCAT). The RCCAT is a WCH strategic board that promotes and sustains a proactive management environment to ensure managerial and financial control of the RCC Project.

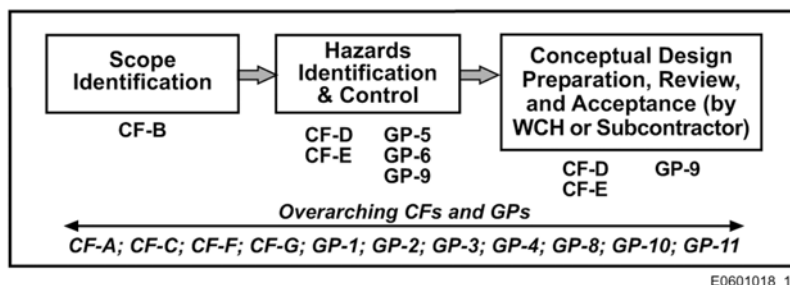
A senior management steering committee, the RCCAT, is charged with evaluating performance and risk associated with the work performed by the RCC Project, and deciding what work is to be accelerated or deferred, as needed, to comply with environmental protection and other regulatory requirements, balance funding with scope, and meet the WCH goals and objectives. Members of the RCCAT are identified in PI-1, *Project Integration*, PI-1-2.13, "Work Authorization / Authorized Changes.

Meeting biweekly, the RCCAT members review safety and compliance performance and project status, resolve any resource or cross-cutting issues in the performance path, identify opportunities for work acceleration, authorize accelerations as funding is identified, and evaluate project risk management activities.

3.0 CONCEPTUAL DESIGN

This section describes the major phases of the conceptual design process and identifies the CFs and GPs that are incorporated within each phase. Figure 3-1 graphically depicts the CFs and GPs discussed in this section.

Figure 3-1. Conceptual Design Workflow Process.



NOTE: The complete workflow process diagram for conceptual design is provided in Appendix A.

Within the RCC Project, the conceptual design workflow consists of the following four major overlapping phases:

- Scope identification
- Hazards identification and analysis
- Scope/hazards concurrence
- Conceptual design, preparation, review, and acceptance (by the RCC Team or subcontractor).

The applicable CFs and GPs for the conceptual design workflow process are as follows:

- CF-B: Define the Scope of Work
- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-5: Identification of Safety Standards and Environmental Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-9: Communication and Stakeholder Involvement.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

Conceptual Design

3.1 SCOPE IDENTIFICATION PHASE

The applicable CF for the scope identification phase is as follows:

- CF-B: Define the Scope of Work.

The director or field manager/area project manager and project engineer are responsible for execution of this phase.

This phase initiates the conceptual design. The overall project scope is defined in the RCC prime contract. Based on the IPB developed from the prime contract, the field manager/area project manager identifies the project task in accordance with source documents and studies, which may include (but is not limited to) records of decision, action memoranda, feasibility studies, a final characterization report, a decommissioning plan, and engineering evaluations/cost analyses. Section 3.0 of this ISMSD document also defines these scopes of work.

The project engineer defines the initial scope, assembles the design team, identifies required specialty groups, plans for a preliminary site walkdown, and obtains the necessary input from the design team and specialty groups to adequately define the scope of work and the design criteria necessary for the conceptual design. To ensure the acceptability of CF-B, the project engineer will involve personnel from Waste Operations, Engineering, Environmental, and SH&Q support organizations. When this phase is complete, the hazards identification and control phase can be initiated.

3.2 HAZARDS IDENTIFICATION AND CONTROL PHASE

The applicable CFs and GPs for the hazards identification and control phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-9: Communication and Stakeholder Involvement.

The project engineer is responsible for this phase.

This phase of the project begins with an evaluation of potential hazards based on process knowledge, historical document review, and, if necessary, a preliminary job site walkdown by the project team, including qualified individuals from involved organizations. Existing and potential hazards (including environmental protection requirements based on the *Atomic Energy Act*, the *Resource Conservation and Recovery Act of 1976* [RCRA], the *National Environmental Policy Act of 1969*, and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* [CERCLA], as appropriate) are identified and assessed during this process. Craft worker input is obtained as necessary by Field Programs, Waste Operations, Engineering, Environmental, and SH&Q.

To ensure the acceptability of CF-C, the project engineer obtains support as needed from Engineering, Field Programs, Environmental, and SH&Q support organizations. These groups,

Conceptual Design

as part of the walkdown, provide assessments of the job site and work scope hazards from the perspective of environmental and SH&Q requirements (e.g., air quality, water quality, and RCRA permitting). Feedback is provided to the project engineer for incorporation into conceptual design planning and development activities, along with development of the initial hazard categorization documentation.

3.3 SCOPE/HAZARDS CONCURRENCE PHASE

The overarching CFs and GPs are applicable to the scope/hazard concurrence phase.

The project engineer is responsible for this phase.

During this phase, the regulators and management are advised to ensure that the project is proceeding according to the direction provided and applicable regulations. The conceptual scope of work, design criteria, hazard identification steps, environmental criteria, and environmental mitigation measures are then completed.

During this stage, Engineering, Environmental, and SH&Q support organizations provide SMEs to respond to management and regulator questions. If required, the SMEs provide detail to support the conceptual scope of work, design criteria, and hazard identification steps.

For CERCLA activities, a remedial design report/remedial action work plan or removal action work plan is developed that translates the requirements of the CERCLA remedial action work plan authorization document into specific directions for design. These documents are approved by the regulators in accordance with the corresponding CERCLA decision document. Additional primary documents that may be approved are listed in Table 9-1 of the Tri-Party Agreement.

3.4 CONCEPTUAL DESIGN PREPARATION, REVIEW, AND ACCEPTANCE PHASE (BY WCH OR BY SUBCONTRACTOR)

The applicable CFs and GP for the conceptual design preparation, review, and acceptance phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-9: Communication and Stakeholder Involvement.

The director or field manager/area project manager and project engineer are responsible for execution of this phase.

In this project phase, the design team or design subcontractor performs conceptual design work and generates related engineering studies. This effort includes the development of a preliminary design basis and system parameters, authorization basis documents for nuclear and non-nuclear facilities, technical demonstration needs, pollution prevention and waste minimization considerations, and environmental protection requirements and mitigation measures.

Conceptual Design

The project engineer may decide to proceed directly with detail design, thus bypassing the remaining portions of conceptual design. If the conceptual design is not bypassed, a design subcontractor or WCH design team can perform the conceptual design. The project engineer ensures that the design team or the design subcontractor has the appropriate qualifications and capabilities. If a design subcontractor is used, RCC Project environmental and SH&Q requirements are part of the procurement process and are addressed in specifications used to select the subcontractor.

This phase of the conceptual design process involves the greatest extent of Engineering, Environmental, and SH&Q support organization involvement. The level of involvement must be commensurate with the work scope and identified level of risk.

Other RCC Project entities that provide support to this phase are as follows:

- D4 Closure/ Interim Safe Storage Closure
- Project Integration
- Waste Operations
- Project Services
- Field Remediation Closure
- Mission Completion.

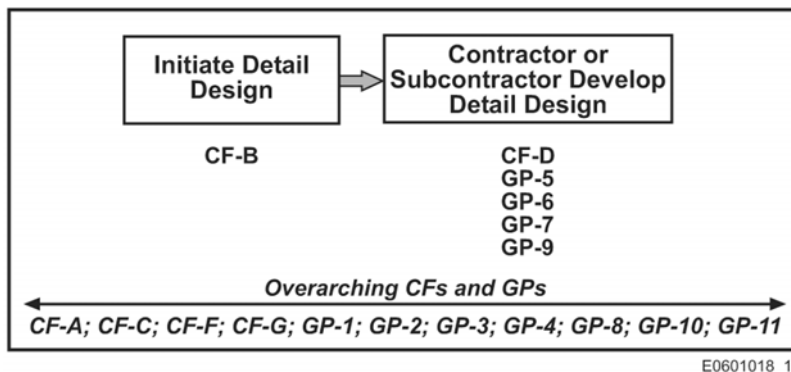
Documents are reviewed by the appropriate entities to ensure compliance with requirements, including environmental and SH&Q. In addition, ALARA, environmental and SH&Q, and constructability reviews of the conceptual design are performed by environmental, SH&Q and Field Programs. The project engineer approves the conceptual design upon completion and obtains reviews and acceptance from all involved and responsible entities, including final approval from the director or field manager/area project manager. The director/manager ensures RL and regulator acceptance of the conceptual design and related documentation. Conceptual design documentation is retained by Document Control.

After the conceptual design has been approved, detail design is the next step in the project life cycle. In detail design, conceptual drawings, specifications, and the design documents provide the basis for developing design documents that will be used directly by Procurement and Field Programs to buy, build, and install systems, structures, and components. The phases included in the detail design workflow process, as well as the CFs and GPs that are incorporated within each phase, are described in Section 4.0 of this ISMSD.

4.0 DETAIL DESIGN

This section depicts the major phases of the detail design process and describes the CFs and GPs that are incorporated within each phase. Figure 4-1 graphically depicts the CFs and GPs discussed in this section.

Figure 4-1. Detail Design Workflow Process.



NOTE: The complete workflow process diagram for detail design is provided in Appendix B.

Within the RCC Project, the detail design workflow consists of the following three major overlapping phases:

- Initiate detail design
- Contractor or subcontractor develops detail design
- Contractor or subcontractor completes design implementation.

The applicable CFs and GPs for detail design are as follows:

- CF-B: Define the Scope of Work
- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization
- GP-9: Communication and Stakeholder Involvement.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

Detail Design

4.1 INITIATE DETAIL DESIGN PHASE

The applicable CF for the initiate detail design phase is as follows:

- CF-B: Define the Scope of Work.

The director or field manager/area project manager and project engineer are responsible for execution of this phase.

During this phase, the field manager/area project manager authorizes the project team to proceed in accordance with previous supporting documents and the conceptual design. If the project engineer bypasses conceptual design, the scope of work and hazard identification steps of conceptual design are not bypassed and are carried forward into the detail design. The project engineer initiates detail design, assembles the design team, and identifies specialty groups that may be required in accordance with the scope, design criteria, and conceptual design.

4.2 CONTRACTOR OR SUBCONTRACTOR DEVELOP DETAIL DESIGN PHASE

The applicable CFs and GPs for the contractor or subcontractor who develops the design phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization
- GP-9: Communication and Stakeholder Involvement.

The director or field manager/area project manager and project engineer are responsible for this phase.

As part of detail design, the design team updates the appropriate regulatory documentation, if required, with other affected entities providing input. The field manager/area project manager obtains approval of the detail design and associated documentation from RL and the regulators. Project engineering ensures that environmental protection requirements are identified by the environmental protection lead (EPL).

Prior to initiation of field activities, an environmental control plan (ECP) is prepared by the EPL. This ECP compiles a summary of key environmental requirements, reviews, and authorizations or other project documentation applicable to a project activity into a single document that can be used in the field as a compliance tool. The ECP is revised as necessary by the EPL.

NOTE: For subcontracted work, the subcontractor prepares an environmental compliance plan containing details of how they will implement the provisions of the ECP.

Following completion of the detail design phase, the work package preparation workflow process occurs. During work package implementation, the work package identifies the environmental and SH&Q requirements applicable to the scope of work that will be performed and controlled by the projects. The work package may involve a scope of work that uses direct-

hire (plant forces) personnel (Section 6.0), or it may necessitate directing the work to a subcontractor (Section 7.0). These phases of work package preparation are discussed in subsequent sections of this document.

For work that falls within the scope of 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," a site-specific health and safety plan (SSHASP) is developed. The SSHASP and JHA include job-specific hazards analysis, hazards inventory, and the actions prescribed to minimize environmental and SH&Q hazards. The development of the SSHASP and JHA is based on 10 CFR 851, "Worker Safety and Health," ESH&Q procedures and programs, lessons learned, and past work experience. Based on the conclusions of the detail design, certain classes of work require the development of emergency response implementation instructions. These documents are revised as new hazards are recognized.

5.0 WORK DOCUMENT PREPARATION

This section describes the work document preparation process with respect to applicable CFs and GPs. Work document refers to work packages, preventive maintenance packages, and technical procedures. The work document preparation process is functionally controlled and executed through a project management organizational structure. The work package preparation process is applicable to all work that will be implemented by direct-hire craft workers or subcontractors at the task/activity level. The preventive maintenance package preparation process is applicable to all work that will be implemented by direct-hire craft workers at the task/activity level. The technical procedure preparation process is applicable to all work that will be implemented by direct-hire craft workers at the task/activity level. Section 7.0 defines additional processes for work that will be implemented by subcontractors.

Work packages, preventive maintenance packages, and technical procedures are developed using a graded approach, incorporating as many components as necessary to accomplish the task(s). The type of work, risk, and complexity levels of the activity will dictate the type and content of the work document. The choice of the work document type rests with the Responsible Manager (RM). The determination of the document content rests with the work control planner or procedure writer, work planning/JHA team, SMEs, and the RM. The RM may select one of the following work control processes:

- Routine Work (skill of the craft, minimum risk and complexity)
- Craft work package (skill of the craft where a JHA is needed)
- Type I work package (where step by step methods must be used)
- Preventive, surveillance and scheduled maintenance
- Technical Procedure
- Work order.

WCH work assignments will vary from simple skill of the craft work with few hazards to complex work with multiple hazards. Work assignments will also vary from work performed only once to work performed continuously over extended periods. Work performed under a work order is controlled via the work order document (i.e., work orders between WCH and other Hanford Site contractors) as identified in BSC-1-8.6, "Obtaining Services from Other Hanford Site Contractors."

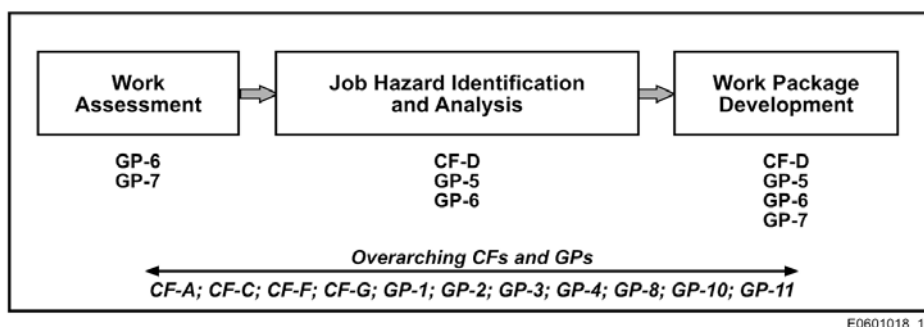
Section 5.0 details work document preparation in accordance with PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development and Implementation", PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control", PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance" and "PAS-2, *Integrated Work Control Program*, PAS-2-1.4, Job Hazard and What If Analysis." In all cases the ISMS process steps described below are similar for work packages, PM packages, and Technical Procedures.

Input for the work control process may include a detailed scope of work or engineering drawings and specifications prepared during the detailed design process. Preliminary work site characterization, industrial hygiene monitoring, and radiological surveys may also be completed as a prerequisite to document preparation. The planning team for work document preparation is chosen by the RM. For work packages, this team consists of the work planner, supervisor, the site safety representative, workers and other SMEs as directed by the RM.

Work Package Preparation

Personnel assigned with the task of work package preparation may obtain input throughout the workflow process from other functions and disciplines. The level of detail required for planning is a function of the complexity of the work; hazards associated with the work; and the resulting risk (or potential risk) to workers, the public, and the environment. Figure 5-1 graphically depicts the CFs and GPs discussed in this section.

Figure 5-1. Work Package Preparation Workflow Process.



NOTE: The workflow process diagram for work package preparation and implementation is provided in Appendix C.

The work package preparation cycle consists of the following three overlapping phases:

- Work assessment
- Job hazard identification and analysis
- Work package development.

The applicable CF and GPs for work package preparation beyond the overarching CFs and GPs are as follows:

- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety Standards and Environmental Requirements
- GP-6: Hazard Controls Tailored to the Work Being Performed
- GP-7: Operations Authorization.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

5.1 WORK ASSESSMENT PHASE

The applicable GPs for the work assessment phase are as follows:

- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to the Work Being Performed
- GP-7: Operations Authorization.

Work Package Preparation

The RM is responsible for this phase.

In the work assessment phase, the RM (e.g., field manager/area project manager) identifies the need and timing to perform work in support of the project's work scope. Activities to be performed may range from complex work with multiple hazards to routine (skill of the craft) work. Work is completed in the field by using Technical Procedures; Type I, or craft work packages; preventive maintenance work packages; or work order.

The work package process uses historical information, job walkdowns, engineering information, and hazard analysis as input for development of the work package. Preventive maintenance work packages and technical procedures are similarly based on engineering, technical information, and/or hazard analysis. Skill-of-craft activities requiring a hazard analysis are controlled with a craft work package that incorporates a JHA as the hazard identification and control measure. All categories of work are completed within the scope of environmental, SH&Q and emergency response implementation procedures.

5.2 JOB HAZARD IDENTIFICATION AND ANALYSIS PHASE

The applicable CF and GPs for this phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed.

The work planner or Qualified JHA Facilitator is responsible for execution of this phase with project and functional support. The JHA is completed during the work package development phase. The walkdown/JHA team makeup is determined by the RM. Prior to walkdowns, the team or member of the team review the SSHASP for hazards that may be encountered during the walkdown. In addition, briefings by safety, IH and radiological controls may be given to alert the team to possible hazards on the walkdown.

The JHA walkdown team is composed of the work planner; craft discipline representatives; the supervisor involved in the work; and the professionals (SMEs) necessary to perform the analysis. The walkdown team evaluates the worksite, job, proposed methods, and equipment to be used. During the process, consensus is reached as to the hazards and prospective methods to mitigate or control the hazards. The results of the walkdown and discussion are analyzed in the JHA.

Job hazard analysis is performed for work packages, maintenance work packages, and technical procedures. During the JHA process hazards are identified, analyzed and a control method specified on an activity level specific to the work being performed.

5.3 WORK PACKAGE DEVELOPMENT PHASE

The applicable CF and GPs for the work package development phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety Standards and Environmental Requirements

Work Package Preparation

- GP-6: Hazard Controls Tailored to the Work Being Performed
- GP-7: Operations Authorization.

The RM is responsible for this phase. The draft task instruction, based on the scope of work, the general approach from the walkdown/JHA team, JHA, and historical information, is prepared and reviewed by the project team to ensure incorporation of all requirements and to verify that the instructions are clear and cannot be misinterpreted by the workers. The work supervisor, radiological engineer, Industrial Hygiene, and Industrial Safety evaluate and determine worker training and health monitoring (e.g., dosimetry, bioassay, and physicals) requirements.

The level of detail contained in the work document is commensurate with the complexity of the work and hazards associated with the work. The instructions are reviewed by the project team for compliance with support organization(s) and project requirements. Protection of workers, the public, and the environment is the ultimate goal during the work package development phase.

Craft worker input is obtained to verify and validate that the approach to the work is feasible from a worker standpoint. The work document is reviewed by craft supervision and other support organization representatives on the project team, depending on the scope of work. Changes resulting from the review and approval cycle are incorporated into the JHA and work document as applicable.

The work planner/procedure writer assembles the work document upon completion of the permits and supporting documents. These permits may include excavation permits, electrical hot work permits, and confined space permits. The work planner may also request that the radiological control staff develop a radiological work permit (RWP) for the work.

If waste will be generated, a site-specific waste management instruction (SSWMI) will be developed. This instruction is developed by personnel that have received special training in waste management and handling. Other controls targeted toward environmental compliance are defined explicitly in the work documents.

The work document preparation process at WCH nuclear facilities requires that an unreviewed safety question (USQ) review be performed on all work packages, PM packages and technical procedures used to guide the performance of work regardless of the risk level associated with the work. This is performed for newly issued work packages and during any subsequent revisions. If the work document is for a facility that is less than category 3, no USQ review is required.

The work document is issued, managed, closed by project management, and then retained by Document Control.

6.0 WORK IMPLEMENTATION – PLANT FORCES

The work implementation section describes work that will be performed by subcontract and direct-hire craft after the proper readiness/work release determination is made by project management and supervision. The work implementation process, like the work document preparation process, is managed by the project organization, supported by other disciplines and functions.

Work performed using technical procedures is described in PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development and Implementation", Work performed using work packages is described in PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control", and surveillance and maintenance work is described in PAS-2, *Integrated Work Control Program*, PAS-2-1.2, "Preventive Maintenance," but the overall work implementation process is similar throughout all WCH facilities/locations.

Controls that are identified during conceptual design, detail design, and work package preparation to minimize risk from the hazards are part of work implementation. The work implementation process accommodates changes in field conditions and/or work methods. Emergent hazards or conditions identified outside of existing controls may necessitate revisions to existing project documents, including the JHA and work document. Work is performed and monitored through oversight and assessments to ensure performance within these controls.

The work implementation workflow process consists of the following four phases:

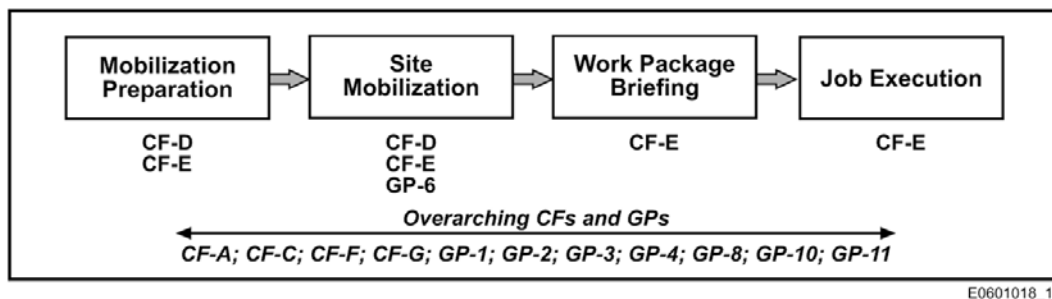
- Mobilization preparation
- Site mobilization
- Work package briefing
- Job execution.

The applicable CFs and GP for the work implementation workflow process are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-6: Hazard Controls Tailored to Work Being Performed.

Figure 6-1 graphically depicts the CFs and GPs discussed in this section.

Figure 6-1. Work Implementation – Plant Forces Workflow Process.



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NOTE: The workflow process diagram for work package pre-job/pre-evolution briefing and work implementation is provided in Appendix D.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

6.1 MOBILIZATION PREPARATION PHASE

The applicable CFs for the mobilization preparation phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls.

The work supervisor is responsible for this phase.

This phase involves preparation activities for the site mobilization phase. Project scope, budget, and schedules will be reviewed. Collection and verification of work documents will be performed. The majority of the work in this phase involves the following activities:

- Determining site layout and traffic routes
- Identifying facility, equipment, and utility needs
- Ordering equipment and material
- Notifying functions of personnel needs
- Obtaining site turnover of structures to be decommissioned
- Work site safety briefing.

The work supervisor coordinates with other RCCC support organizations to ensure mobilization preparation activities are complete and ready for site mobilization.

Work Implementation – Plant Forces

6.2 SITE MOBILIZATION PHASE

The applicable CFs and GP for the mobilization phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-6: Hazard Controls Tailored to Work Being Performed.

The work supervisor is responsible for this phase.

This phase involves establishment of the site facilities, barriers, and equipment. Environmental and SH&Q work to establish site worker protection boundaries and identify required environmental barriers (e.g., silt fencing) as well as monitoring equipment for the work activity.

The work supervisor and landlord support set up project facilities with utilities. In some cases, the work scope or hazards associated with providing facilities and utilities require generation of a work document. Controls that are identified during conceptual design, detail design, and work document preparation to minimize risk from the hazards are part of work implementation.

The work supervisor confirms that permits are in place, reserves equipment, and verifies that material is available (or will be available) when needed. The work supervisor obtains from Document Control the reference documents and drawings necessary to support the work.

The work supervisor confirms availability of personnel, materials, tools, and equipment.

NOTE: Depending on facility/location, complexity, or work activity, a readiness review may be performed prior to initiation of field activities.

6.3 WORK DOCUMENT BRIEFING PHASE

The applicable CF for the work document briefing phase is as follows:

- CF-E Perform Work Within Controls.

The work supervisor is responsible for this phase.

During this phase, the work supervisor receives a work document for implementation. The work supervisor and other project team members are generally familiar with the approach based on their previous involvement in the planning stages. The work supervisor notifies any support organization representatives and additional project personnel who will be involved in the briefing.

A work package briefing is conducted as part of the pre-evolution brief for craft personnel and support personnel who will be involved in the execution of work using a work package or PM. The pre-evolution briefing is retained in the work package.

Training is conducted for technical procedures. This training may range from required reading to mock ups or performance under supervision to demonstrate proficiency. Once trained, the user of a technical procedure may or may not receive a brief prior to performing the procedure.

Work Implementation – Plant Forces

6.4 JOB EXECUTION PHASE

The applicable CF for the mobilization phase is as follows:

- CF-E: Perform Work Within Controls.

The work supervisor is responsible for this phase.

Daily work is preceded by a pre-evolution briefing to prepare the team for the day's activities, hazards, and controls covered by work packages and PMs. The work supervisor performs a final verification that the assigned workers have the training and qualifications necessary to perform the work under the current conditions.

The work supervisor has line management responsibility for the safe performance of work by craft personnel. Craft and supervision have the opportunity to utilize the Task Safety Awareness Card to determine hazards at the job site immediately prior to commencement of work. Every person on the work site has the authority to stop work.

During the performance of the work, problems, new hazards, or other issues may be identified, and the work supervisor evaluates these issues or problems. The work supervisor utilizes project staff to resolve issues as necessary. If the situation cannot be resolved by the work supervisor, the RM is notified. The RM may revise the JHA and work document to incorporate the changes resulting from problem resolution. Changes in the work scope, methods, personnel, or equipment result in a new pre-evolution briefing prior to a return to work. Factors that may be taken into consideration by the work supervisor when revising the work document include evaluating the need for additional training.

Change to work documents used to guide work at Nuclear Category 2 and 3 work areas are screened via the USQ process to ensure the work performed remains aligned with the assumptions contained within the facility safety basis documents.

Waste handling and packaging are performed in accordance with the SSWMI or work document by craft personnel, with oversight provided by the field manager/area project manager and technical guidance from Waste Operations, SH&Q, the EPL, and the project engineer.

Emergency management response and oversight are performed in accordance with SEM-2, *Emergency Management Program*, by the emergency response organization.

The work supervisor tracks cost and schedule progress with help from the Planning and Controls support organization. The field manager/area project manager monitors craft personnel productivity and performance. If necessary, adjustments to schedules and workforce composition are made.

Feedback is submitted and entered into the IWCP Feedback database in accordance with PAS-2, *Project Activities and Support*, PAS-2-1.1, "Integrated Work Control," and lessons learned are documented and processed through the WCH lessons learned program (PAS-1-1.8, "Lessons Learned") to capture both positive and negative events that result from work execution for use on future work of similar scope.

Work Implementation – Plant Forces

When work covered by a work package is completed, the work supervisor, RM and work planner close the work package. When the site is demobilized, the field manager/area project manager oversees closure of the project and assembles a team to verify the final configuration of the facility or site against planned endpoints. Verification of the endpoints is documented and retained for retrieval.

Procedural compliance is strictly enforced throughout the work implementation process. Individuals performing the work at WCH nuclear facilities are trained to meet the standards established in DOE Order 5480.20A, as applicable.

Document Control retains documentation generated during work implementation.

7.0 WORK IMPLEMENTATION BY SUBCONTRACT – BUILDING TRADES

This section describes the workflow process when it is determined that a subcontractor will execute the work scope. Virtually all of the work that is defined as "construction" is subcontracted. Other subcontracted work involves specialty services in support of WCH's direct-hire maintenance and operations staff. PAS-1, *Project Activities and Support*, Section 4.0, and BSC-300, *WCH Procurement*, provide details on work implemented by subcontractors. Other services provided are described in BSC-1, *Business Services and Communications*, BSC-1-8.5, "Providing WCH Services to Other Hanford Site Contractors."

The work implementation by subcontract workflow process consists of the following phases (see Appendix D):

- Subcontract formation and award
- Subcontract pre-construction
- Subcontract work execution.

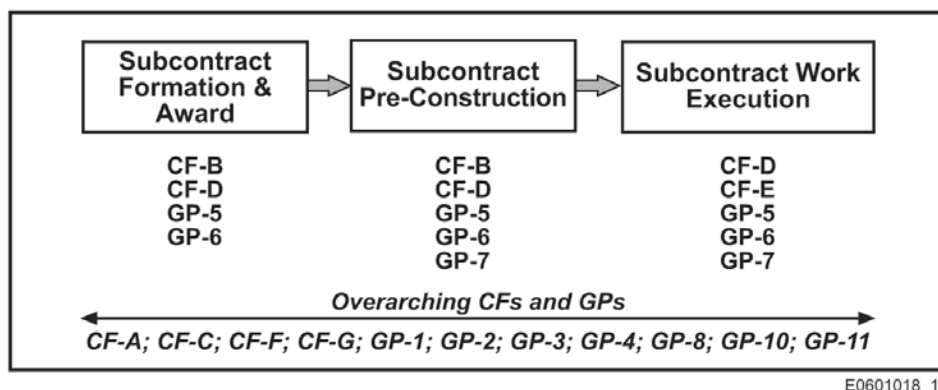
The applicable CFs and GPs for the work implementation by subcontract workflow process are as follows:

- CF-B: Define the Scope of Work
- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-5: Identification of Safety Standards and Environmental Requirements
- GP-6: Hazard Controls Tailored to the Work Being Performed
- GP-7: Operations Authorization.

GP-9, Communication and Stakeholder Involvement, does not apply to work implementation by subcontractors. Open and effective communications exist, but not outside of the subcontracted parties.

Descriptions of each phase and the associated CFs and/or GPs are provided below. Figure 7-1 graphically depicts the CFs and GPs discussed in this section. These workflow processes are included in Appendix D and in PAS-1-4.1 and PAS-1-4.5.

Figure 7-1. Work Implementation by Subcontract Workflow Process.



7.1 SUBCONTRACT FORMATION AND AWARD PHASE

The applicable CFs and GPs for the subcontract formation and award phase are as follows:

- CF-B: Define the Scope of Work
- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety Standards and Environmental Requirements
- GP-6: Hazard Controls Tailored to the Work Being Performed.

The field manager/area project manager, project engineer, STR, and project procurement specialist are responsible for this phase.

During the scope identification performed as a part of the design phase, project engineering develops a PFWR document with assistance of project management. Work that is determined to be applicable to the *Davis-Bacon Act of 1931* is identified through the PFWR process, beginning with the subcontract formation process.

The project engineer develops a statement of work in conjunction with the drawings and specifications developed during the detail design phase. The statement of work, design drawings, specifications, and any technical submittal requirements are transmitted to Procurement through a purchase requisition.

All potential subcontract bidders must pre-qualify for work on the RCCC by passing an evaluation of the subcontractor's Experience Modifier Rate as well as a review of past work performance.

Procurement controls the construction subcontract formation process, with support primarily from project engineering and project management. The Procurement manager assigns a procurement subcontract specialist (PSS), and the director or field manager/area project manager assigns an STR to the task of subcontract formation.

Procurement maintains "pro-forma" documents for subcontracting. The pro-forma is a shell of commercial terms and conditions. The pro-forma contains legally binding contract language to

Work Implementation by Subcontract – Building Trades

ensure conformance to applicable RCCC contractual requirements. The terms and conditions enforce subcontractor responsibility for these items, including ISMS implementation. The RCCC holds subcontractors accountable for all aspects of performance, including safety. Accordingly, subcontracts flow down the applicable portions of laws, requirements, and directives along with ISMS in accordance with the WCH Prime Contract. This is implemented on a graded approach via clauses in the pro-forma documents. Requirements flow down through contractual mechanisms. The mandatory requirements are flowed down to subcontracts at any tier necessary to ensure subcontractors' compliance with the requirements. All subcontracts have the right to stop work if there is an imminent danger.

For contracts involving complex or hazardous work, WCH includes a contract clause similar to the DEAR clause 952.223-71 in Exhibit G of the contract. Subcontractors are required to provide a WCH Subcontractor Safety and Health Compliance Matrix as a submittal document for WCH review and acceptance along with a site-specific health and safety plan, if required. The safety and health plan must contain all the provisions necessary for the subcontractor to adequately protect the workers, the public, and the environment and to comply with the flowed down provisions of the DEAR clause, if applicable.

Subcontractors understand that they are contractually required to provide a safe and healthy work environment for their workers as well as lower tier subcontractors, vendors, suppliers, and visitors on their work sites. Subcontractors are required to flow down WCH ISMS implementation requirements to their subtier subcontractors.

The ISMS flowdown process for subcontractors also enables WCH to enforce site-wide consistency of environmental and SH&Q standards in areas for which Hanford Site-specific standards have been developed, agreed to, and flowed down by RL through the contract-required documents. Examples of these standards include radiological controls, hoisting and rigging, electrical safety, lock and tag, and emergency response.

When work is being conducted by a subcontractor, environmental management is documented through the subcontractor's preparation of and conformance to an ECP as part of the subcontract requirements. The purpose of the subcontractor ECP is to describe how subcontractors will comply with environmental, chemical and waste management requirements. The ECP may also reference other subcontract submittals that contain environmental requirements. The environmental subcontract requirements are communicated to the subcontractors through Exhibit J – Subcontractor Environmental and Waste Management Requirements (pro forma document).

In addition to the pre-award assessment of a subcontractor's safety program, the program and its level of implementation are assessed during work execution and at contract closure. Safety professionals are assigned to support line management's oversight of subcontractors during the contract period. Subcontractors determined to lack adequate safety performance may have their contracts suspended and/or terminated and may be removed from future work consideration. Regardless of the performer of the work, WCH is ultimately responsible for compliance with RCCC requirements.

Figure 7-2 shows how WCH uses the contract mechanism to flow down only the applicable requirements so that each subcontract is tailored to the scope of the work. As shown in the example, environmental and SH&Q requirements are structured commensurate with the complexity of the work and according to the type and nature of the hazards.

Work Implementation by Subcontract – Building Trades

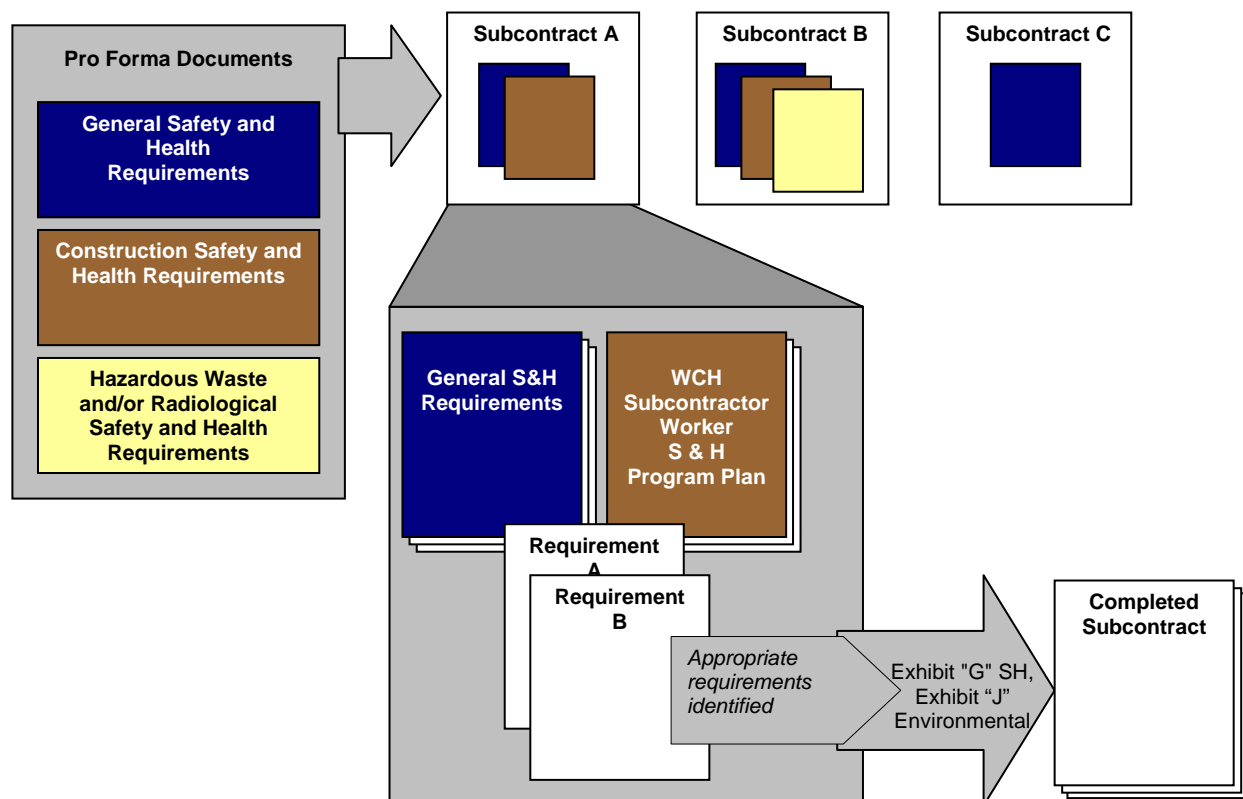
All subcontracts contain the general environmental and SH&Q requirements for construction. Similarly, if the work involves the potential for exposure to hazardous waste or radiation, those applicable environmental and SH&Q requirements are included. In addition, only applicable provisions of guidance documents or standards are flowed down. This screening method allows requirements to be tailored and excludes those that are extraneous or unnecessary, which delivers greater compliance and increased safety.

A draft request for proposal is developed using the statement of work input from project engineering and the pro-forma documents. Master agreements are used to accommodate services that will be required on a recurring basis. Master agreements are executed by task order subcontracting or through a "job order." The job order or task order subcontract is issued for proposal, and the work is monitored in the same manner as a subcontract.

The field manager/area project manager, project engineering, EPL, work planning support, SH&Q, and Waste Operations provide review of the proposal, along with other functions or disciplines involved in the work.

Procurement makes an award based on the technical and commercial evaluations of the proposal. The evaluations include analysis of the subcontractor's approach to health, safety, and environmental issues and the likelihood for successful performance.

Figure 7-2. Subcontractor Requirements Are Tailored According to the Type of Work to be Performed



Work Implementation by Subcontract – Building Trades

7.2 SUBCONTRACT PRE-CONSTRUCTION PHASE

The applicable CFs and GPs for the subcontract pre-construction phase are as follows:

- CF-B: Define the Scope of Work
- CF-D: Develop and Implement Hazard Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements
- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization.

The field manager/area project manager, STR, and work supervisor are responsible for execution of this phase.

The pre-construction phase begins with the subcontract award and concludes when it is determined that the subcontractor has completed the prerequisites to mobilization and construction that are identified in the subcontract.

At award, the PSS issues a partial notice-to-proceed (NTP) for offsite activities. A pre-construction meeting is held between the subcontractor and RCCC project and support organization representatives with whom the subcontractor will be interfacing during execution of the subcontract. The purpose of the meeting is to establish a mutual understanding of how the subcontract requirements will be translated into action. The environmental and SH&Q requirements are included as an agenda item, and subcontractor expectations are reviewed.

The subcontractor delivers the technical and product submittals required as a prerequisite to mobilization, as specified in the subcontract documents. The environmental and SH&Q submittals are reviewed against requirements in the context of the subcontractor's own approach to the work and WCH's experience in environmental and SH&Q management, which includes the flowdown of applicable ISMS elements discussed in this ISMSD. The STR coordinates the reviews. Each submittal is accepted by the function or discipline that placed the requirement in the subcontract. Safety submittals are approved by SH&Q. These submittals are approved/concurred by the responsible subject matter discipline (e.g., SH&Q, Engineering, EPL, Waste Operations).

Upon completion and acceptance of the submittal prerequisite to mobilization, the STR issues an NTP for field mobilization.

NOTE: Depending on facility/location and work activity, a readiness review or operational readiness review maybe required prior to initiation of field activities.

7.3 SUBCONTRACT WORK EXECUTION PHASE

The applicable CFs and GPs for the subcontract work execution phase are as follows:

- CF-D: Develop and Implement Hazard Controls
- CF-E: Perform Work Within Controls
- GP-5: Identification of Safety and Environmental Standards and Requirements

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- GP-6: Hazard Controls Tailored to Work Being Performed
- GP-7: Operations Authorization.

The project engineer, field manager/area project manager, STR, SH&Q, EPL, Waste Operations specialist, and the PSS are responsible for this phase. The STR is considered to be line management and is responsible for managing the technical aspects of the subcontract.

The subcontractor begins mobilization to the site when an NTP has been received from the STR and labor, materials, and equipment are available to begin work.

The subcontractor workforce obtains the SH&Q training, badging, and dosimetry identified in the subcontract. The STR works with the subcontractor to obtain authorization on work permits (e.g., hot work permits, excavation permits, and RWPs).

If the subcontractor is to perform the work, the subcontractor executes the workscope defined in the subcontract after generation of work packages in accordance with IWCP, verifying that the hazards have been identified, and necessary controls are in place. WCH and/or the subcontractor is responsible for maintaining complete control of work planning and release and is accountable for the work being performed. Any exceptions and controls would be discussed in the contracting agreement and monitored by the STR. Specific subcontractor safety activities (e.g., walkthroughs) are conducted in accordance with 10 CFR 851 and the approved Environmental, Safety, Health, and Quality program.

The STR and project personnel (e.g., EPL, Waste Operations, SH&Q) perform surveillances and management walkthroughs to ensure subcontractor conformance to the approved environmental and SH&Q program, requirements flowed down, and the subcontract. Any nonconformance in the area of environmental and SH&Q is dealt with in the same manner as nonconformance to the technical requirements of the subcontract, with the addition of immediate stop work authority. This step allows for the identification of improvements or actions needed, as well as providing feedback.

Written routine reports of the work activities are prepared and maintained by the STR. The reports include health, safety, and environmental activities, as well as a record of progress made during the day. Regularly scheduled progress meetings are held with the subcontractor to discuss and review work progress and issues; environmental and SH&Q are regular agenda items. Formal meeting minutes are taken during the progress meeting, and actions are identified. In the event of continued adverse safety performance or a significant violation by the subcontractor, the STR works with the PSS to enforce corrective actions to prevent recurrence. If this does not correct the process, then subcontract termination may be an option.

Upon successful completion of the subcontracted scope of work, the subcontractor demobilizes from the site. An evaluation of the subcontractor's performance is made by Procurement, with input from the field manager/area project manager, STR, project engineering, EPL, Waste Operations, and SH&Q. Document Control retains documentation generated during work implementation by subcontract.

Work performed by other Hanford Site contractors (which are not "subcontractors") under a memorandum of agreement (MOA) or work order at WCH worksites will be overseen for environmental and SH&Q compliance by a WCH representative. Work orders identify the requirements, points of contact, and oversight expectations for the scope of work to be

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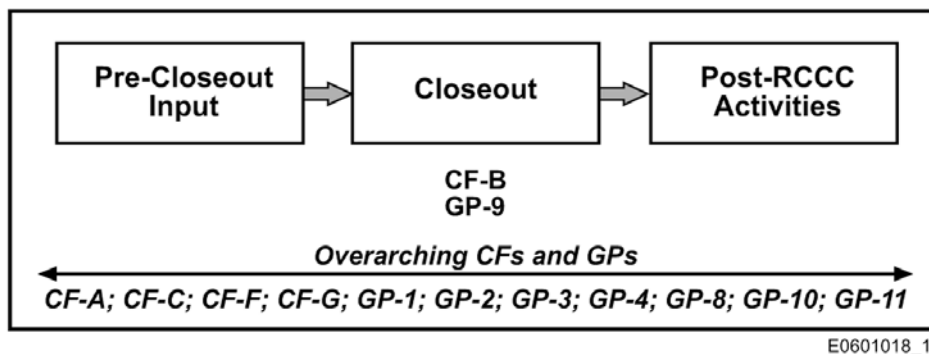
performed. Work performed for WCH under a MOA that is performed offsite will be controlled by the contracted entity's environmental and SH&Q program, over which WCH has neither control nor implied liability.

Work packages used to guide work performed by subcontractors at WCH nuclear facilities are reviewed and approved by nuclear facility technical staff prior to release. Subcontractor work plans are screened via the USQ process to ensure that the work performed remains aligned with the assumptions contained within the facility safety basis documents. Work performed by subcontractors is authorized on a daily basis to support maintaining ongoing alignment with safety basis documents.

8.0 PROJECT CLOSEOUT

This section describes the three major steps of the RCC Project closeout process, as well as identification of the applicable CFs and GPs used in the process. Figure 8-1 depicts the applicable CFs and GPs discussed in this section.

Figure 8-1. Project Closeout Workflow Process.



NOTE: The complete workflow process diagram for project closeout is provided in Appendix E.

Within the RCC Project, the project closeout workflow process exists in the context of the Design and Implementation processes, which are predecessors of the actual closeout process. Project closeout is the culmination of these pre-closeout work processes, which are included in the workflow process (Appendix E) for completeness. The project closeout process coordinated by the WCH Mission Completion function is a new process for WCH, effective with the start of the RCCC, and is the least mature of the various work processes presented in Sections 2.0 through 8.0 of this document. Therefore, the project closeout process is expected to evolve as contract execution proceeds, and WCH will refine and update its project closeout work process, procedures, and deliverables accordingly.

The applicable CF and GP for the project closeout workflow process are as follows:

- CF-B: Define the Scope of Work
- GP-9: Communication and Stakeholder Involvement.

Although not specifically addressed here, Section 1.4.1 identifies those overarching CFs and GPs that are inherent in the planning and prioritization processes. Descriptions of each phase and the associated CFs and/or GPs beyond the overarching CFs and GPs for each phase are provided below.

The Mission Completion Manager is responsible for execution of the RCC Project closeout process.

Note that field sampling, walkdowns, or other field data collection activities performed in support of the project closeout process are conducted as part of work processes other than the project closeout process, including the conceptual and detail design, work package implementation,

work implementation, subcontract formation and award, and subcontract field activities processes. Therefore, procedures and ISMS CFs and GPs relating to data collection activities performed in support of the project closeout process are included under other work processes and are not included here.

In the project closeout process, the Mission Completion Manager identifies the need and timing to perform the RCC Project's work scope, defines the scope of work, and authorizes the project team to proceed. The project closeout process is initiated with the receipt of closeout reports on reactors, facilities, and source waste sites from other WCH projects. To ensure the acceptability of CF-B, the technical authority will involve appropriate personnel from Field Remediation, D4/Interim Safe Storage, Environmental and SH&Q support organization. Feedback is provided to the technical authority for incorporation into closeout activities.

The end products of the RCCC closeout process (e.g., long-term stewardship plan, risk assessment reports, remedial action report, and proposed plan) are reviewed by appropriate entities to ensure compliance with requirements, including environmental and SH&Q. The technical authority approves the documents upon completion and obtains reviews and acceptance from all involved and responsible entities. The Mission Completion Manager ensures RL and regulator acceptance of the deliverables prepared for closeout. Additionally, a proposed plan will undergo public review where stakeholder input will be obtained.

The end products of the WCH project closeout process support other closeout activities that occur after completion of the RCCC and are performed by others (Appendix E). These activities support RL obtaining a final remedy record of decision, deletion from the National Priorities List, and transfer to long-term stewardship within DOE.

9.0 WCH ENVIRONMENTAL MANAGEMENT SYSTEM OVERVIEW

WCH-63, *Environmental Protection and Compliance Plan* (WCH 2009) (EPCP), establishes the EMS and provides the necessary environmental protection and compliance framework for the RCCC. The EMS program is composed of several key program components, documents, and processes that are arranged in five major elements: environmental protection and compliance policy, planning, implementation, check/review, and feedback/improvement.

The WCH EMS is consistent with DOE O 450.1A and the associated contractor requirements document (CRD) that was written to implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources impacted by DOE operations. The WCH EMS reflects the environmental management system elements and framework found in the International Organization for Standardization's (ISO) 14001:2004 (E) International Standard, including policies, procedures and training to identify operations and activities with significant environmental impacts; to manage, control, and mitigate the impacts of these operations and activities; and to assess performance, implement corrective actions where needed, and ensure continual improvement.

The CRD flows down key environmental protection and stewardship requirements from DOE O 450.1A. It also establishes DOE Sustainable Environmental Stewardship goals and addresses specific sustainable environmental practices for:

- environmentally preferable purchasing
- pollution prevention and waste reduction
- post-consumer material recycling
- toxic or hazardous chemicals use and release reduction
- life-cycle environmental management of electronic assets

DOE O 430.2B *Departmental Energy, Renewable Energy and Transportation Management*, addresses specific sustainable energy and transportation goals and requirements for:

- energy efficiency, renewable energy
- fleet management
- water conservation
- sustainable design/high performance building

As called for by the DOE O 450.1A CRD, WCH has incorporated relevant and appropriate environmental requirements into the EMS from existing statutes, regulations, and policies and other requirements which relate to WCH's environmental aspects.

9.1 ENVIRONMENTAL PROTECTION AND COMPLIANCE POLICY

PM-ESHQ-2, "Environmental Protection and Compliance Policy," provides clear direction on how WCH will perform work that is protective of the environment on the RCC Project. The policy guides decision makers in considering the environmental aspects and impacts associated

with planned work scope and provides a framework for setting and reviewing environmental objectives and targets. Three areas of emphasis in the policy are as follows:

- Requiring compliance with applicable legal requirements and other requirements which relate to WCH's environmental aspects
- Encouraging waste minimization activities
- Committing to continual improvement and prevention of pollution.

9.2 PLANNING

The WCH planning process utilizes several tools to make certain that all work performed by WCH protects human health and the environment. Operations associated with the above environmental aspects are identified and planned consistent with the environmental policy, objectives and targets, in order to ensure that they are carried out under specified conditions. The planning process includes the following main objectives:

- Minimizing waste generation
- Mitigating or minimizing impacts to air, water, soil, cultural, historical, and ecological resources
- Mitigating or minimizing environmental impacts at waste sites, areas, and facilities
- Maintaining compliance with environmental requirements.

9.3 IMPLEMENTATION

Implementation of an effective EMS requires development and implementation of processes and operational controls that are protective of the environment. Documented procedures have been established and implemented and are maintained to control situations where their absence could lead to deviation from the environmental policy, objectives and targets. Where necessary, operating criteria are specified in the procedures. Applicable procedures and requirements related to the significant environmental aspects of goods and services used by WCH are communicated to suppliers and subcontractors.

The following processes and controls have been developed to ensure the successful implementation of work that is protective of the environment on the RCC Project.

Work performed directly by WCH is implemented by the following elements:

- Procedures and requirements (ENV-1, PAS-1, and WMT-1)
- Environmental controls (Environmental Control Plans)
- Environmental compliance system (PSD-7)
- Regulator-approved documents and permits.

Work that is performed by a subcontractor is implemented by the following:

- Exhibit J
- Subcontractor procedures
- Environmental Compliance Plans (ECPLANs).

9.4 CHECK/REVIEW

The check and review process is an integral part of the WCH EMS that is used to evaluate the effectiveness of WCH's overall EMS program. The tools used for check and review include surveillances and self-assessments, metrics, and trending.

9.5 FEEDBACK/IMPROVEMENT

The final element of the WCH EMS program is the feedback and improvement cycle, which offers opportunities to promote the recurrence of desirable activities and/or preclude the recurrence of undesirable activities. The tools used for feedback and improvement include the following:

- Implementing the Lessons Learned Program (PAS-1-1.8)
- Completing an annual WCH environmental performance evaluation report
- Conducting an annual management review
- Updating environmental processes/procedures as appropriate
- Revising the EMS/*Environmental Protection and Compliance Plan*, as appropriate.

10.0 WCH CONTRACTOR ASSURANCE SYSTEM DESCRIPTION (DOE O 226.1)

10.1 INTRODUCTION

The WCH Contractor Assurance System Description (CASD) provides an overview of the Contractor Assurance System (CAS) developed to address DOE O 226.1, *Implementation of Department of Energy Oversight Policy*. The WCH CAS is composed of existing WCH processes and systems that meet the criteria from DOE O 226.1, Attachment 2, "Contractor Requirements Document." The WCH CAS is considered part of the ISMS and is included as a component of the ISMS for configuration control and annual review by DOE.

10.2 PURPOSE

This WCH CASD identifies specific WCH implementing documents and processes that directly support necessary organizational activities to ensure a comprehensive and integrated assurance system.

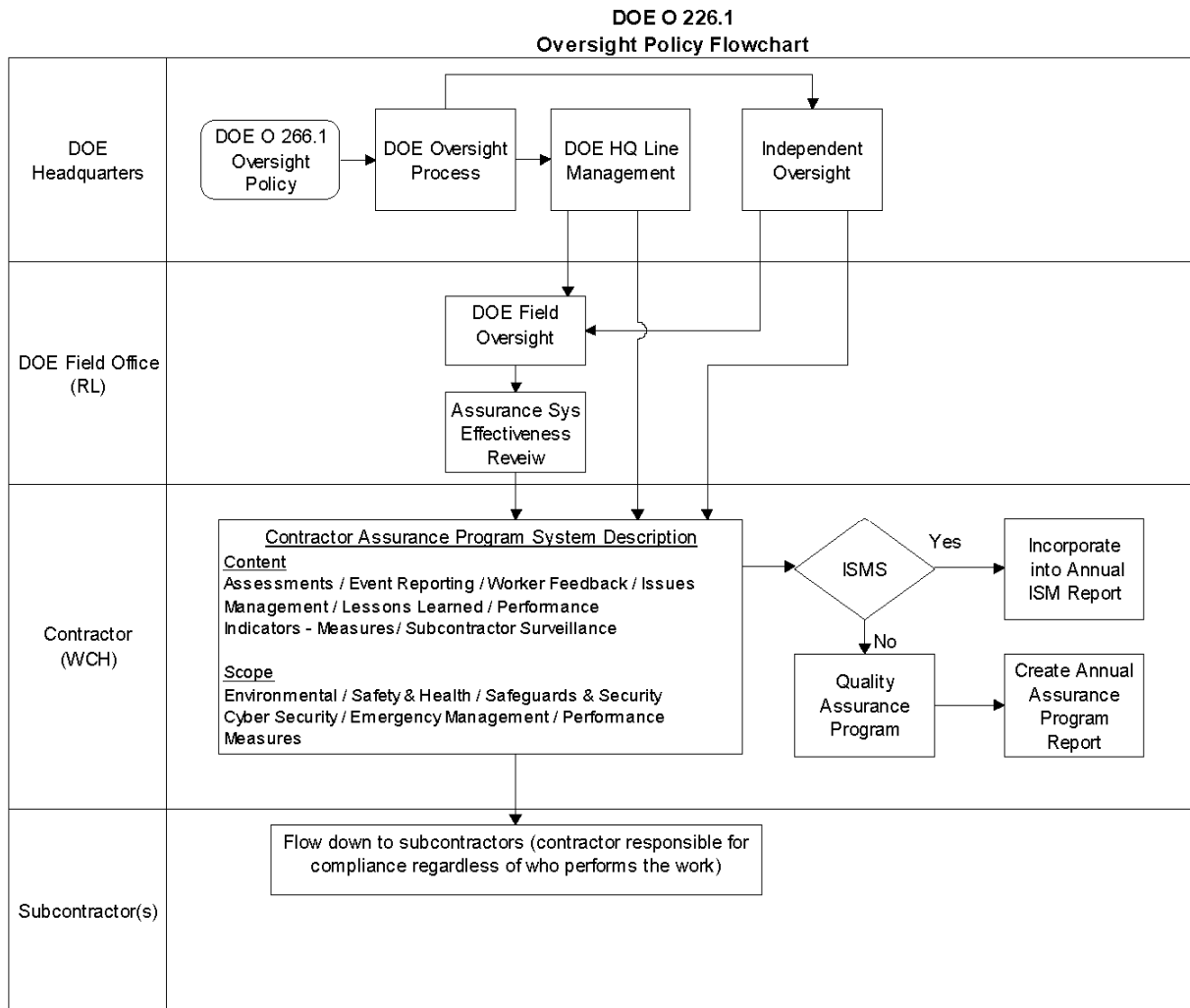
10.3 SCOPE AND REQUIREMENTS

This document identifies the processes and systems used to implement a graded approach for an effective CAS as described in DOE O 226.1, *Implementation of Department of Energy Oversight Policy*. The WCH CAS addresses organizational activities designed to implement assessments, event reporting, worker feedback, issues management, lessons learned, and performance indicators. The CASD does not attempt to describe in detail the systems for which oversight is provided since each has its own implementing document(s).

Regardless of the performer of the work, WCH is responsible for complying with the CASD requirements. WCH is responsible for implementing the CASD to the extent necessary to ensure the compliance with the stated requirements.

The WCH CAS (Figure 10-1) establishes a comprehensive and integrated CAS in accordance with quality assurance requirements (as stated in 10 CFR 830, Subpart A), applicable DOE directives, and contract terms and conditions. The CAS encompasses environmental and SH&Q, safeguards and security, cyber security, emergency management, and subcontractor oversight.

Figure 10-1. DOE O 226.1 Oversight Policy Flowchart.



10.4 WCH CONTRACTOR ASSURANCE SYSTEM DESCRIPTION

The WCH CAS is implemented to address the following aspects of operation:

- Environment, Safety, and Health – This ISMSD is one part of WCH’s overall commitment to safety work practices within the RCC Project in addition to goals of the VPP, IWCP, Hanford Occupational Health process, and overall RCC Project goals. WCH is committed to maintaining and improving its ISMS as indicated by the continuous monitoring of performance objectives, measures, and indicators, as well as the annual review of the ISMSD. The WCH ISMS fully integrates the elements of an EMS such as pollution prevention, environmental compliance, and chemical management and is the foundation for the operational systems associated with environmental and SH&Q.

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ENV-1, *Environmental Monitoring & Management*, contains program procedures for implementing all aspects of the environmental operational program including environmental requirements, environmental investigations, and field screening.

SH-1, *Safety and Health*, contains program procedures for implementing all aspects of the safety and health operational program including general safety and health requirements, industrial safety, industrial hygiene, fire protection, and work site analysis.

- Safeguards and Security, Emergency Management, and Cyber Security – SEM-1, *Security and Emergency Management Program*, contains program procedures for implementing the operational process related to WCH Safeguards and Security, Emergency Management, and Cyber Security. Specific operations addressed include physical protection, information security, cyber security, personnel security, and nuclear material control and accountability.
- Business Practices – Requirements associated with the operational system for business practices are contained in BSC-1, *Business Services and Communications*. Included within the program are requirements related to Human Resources; Training; Controller; Procurement, Property and Material Management; Information Technology; Document and Information Management; Ethics, Legal, and Contracts; Administrative Support and Office Services; and Communications and External Affairs.

A full description of key attributes of the CAS is presented below.

10.4.1 Assessments

The WCH assessment program is a primary management component to ensure effective, efficient organizational programs (i.e., Environmental Protection, SH&Q, Safeguards and Security, Cyber Security, and Emergency Management).

- a. Independent Assessment – described in QA-1, *Quality Assurance*, QA-1-1.11, "Independent Assessment"
- b. Management Assessment – described in QA-1, *Quality Assurance*, QA-1-1.12, "Management Assessments"
- c. Self-Assessment – described in QA-1, *Quality Assurance*, QA-1-1.5, "Self-Assessment"
- d. Management Walkthroughs – described in QA-1, *Quality Assurance*, QA-1-1.14, "Management Walkthroughs"
- e. Subcontractor Oversight – described in QA-1, *Quality Assurance*, QA-1-1.7, "Surveillances."

QA-1, *Quality Assurance*, QA-1-1.11, "Independent Assessment" defines the WCH process, responsibilities, and controls for scheduling, qualification, and selection of personnel, planning, performing, reporting, and closing of WCH Quality Assurance and Services (QA&S) independent assessments. Independent assessments are performed by WCH QA&S qualified and certified lead assessors consistent with the requirements of DOE O 414.1C, *Quality Assurance*, Criterion 10, and 10 CFR 830, Subpart A, 830.122(j), Criterion 10, "Assessment/Independent Assessment." (Personnel who are independent of the activities to be assessed are selected and assigned as lead assessor, assessor, or technical specialist.)

The WCH Independent Assessment process is part of the WCH Contractor Assurance Program as defined in DOE O 226.1, *Implementation of Department of Energy Oversight Policy*.

This procedure applies to organizations, activities, projects, and processes for which WCH has responsibility. Independent assessments are performed by the WCH QA&S organization and scheduled based on a graded approach as defined in WCH-51, *WCH Quality Assurance Program Document*. Independent assessments are part of the integrated WCH Assessment Program.

QA-1, Quality Assurance, QA-1-1.12, "Management Assessments" ensures that WCH management assesses their management processes. WCH management must identify and correct problems that hinder their organizations from achieving its objectives. Management assessments are conducted to identify opportunities for improvement and issues that may hinder an organization from achieving its objectives in accordance with safety, quality, environmental protection, contract, or business requirements. Management assessments should be a combination of compliance-based and performance-based assessments.

The management assessment process strives to identify precursor issues for early resolution before significant problems can occur that could adversely affect WCH activities. Management assessments also provide managers feedback on the effectiveness of the project's management systems, work process, and procedures. Management assessments are objective and broad in scope. The assessments crosscut the organization and explore the extent of condition for identified deficiencies.

This procedure provides the description of the management assessment process elements including goals, participation, training, assessment planning, expectations for the number and frequency of management assessments, assessment reports, planning, and administration of the overall process.

QA-1, Quality Assurance, QA-1-1.5, "Self-Assessment" describes how WCH establishes and implements an effective self-assessment process that adds organizational value by evaluating the status of the organization's performance at all levels. Self-assessments help to determine the effectiveness of policies, requirements, standards, and implementation.

Self-assessments are conducted by project and functional managers to evaluate their organizations' processes and performance as well as individual procedure compliance. This procedure provides the description of the WCH self-assessment process elements, applicability, and implementation by project and functional organizations.

QA-1, Quality Assurance, QA-1-1.14, "Management Walkthroughs" describes how WCH establishes and implements an effective Management Walkthrough (walkthrough) process. Walkthroughs support WCH's commitment to promote greater management awareness, involvement, and timely participation prior to commencement of activities, during the execution of work, and during post-job activities. Walkthroughs also help to ensure that adequate technical support is provided for project activities and operations. This procedure describes the process for management to perform and document structured operational awareness (i.e., management walkthroughs) of projects and facilities. Walkthroughs provide additional oversight of planning, work, and operational activities; verify that appropriate technical criteria are met; and provide a

partial indication of system effectiveness when considered with other feedback information such as quantitative performance measures.

This procedure applies to WCH and subcontractor job site walkthroughs performed by WCH management and their representatives as part of the overall WCH Assessment Program. Walkthroughs are performed to provide direct observation of organizational performance and project or facility conditions; however, compliance with applicable procedures and other contractually mandated requirements may be observed and documented.

Walkthroughs performed by WCH management document activities that are not recorded by other means (e.g., self-assessments, management assessments, independent assessments, surveillance, audits, readiness reviews, critiques, formal investigations).

QA-1, Quality Assurance, QA-1-1.7, "Surveillances" describes the process for planning, performing, and reporting surveillances of the following:

- WCH organizations and projects
- WCH subcontractors
- Other Hanford Site contractors performing work for WCH.

This procedure applies to WCH personnel performing surveillances of WCH activities, functions, and organizations. Surveillance applies to any type of WCH subcontract or other Hanford Site contractor work order (e.g., subcontracts/work orders for services, materials, fabrication, items). Surveillances are performed by individuals independent of the activity/project being assessed. Surveillances provide an opportunity to verify the quality of the work in process and promote improvement. Surveillances are routinely conducted to verify conformance of items, services, and processes to established requirements. Surveillance activities are separate from and in addition to independent, management, and self-assessments. Project and functional organizations perform surveillances of projects, subcontractors, and other Hanford Site contractors.

10.4.2 Event Reporting

These WCH processes are used to identify issues and report, analyze, and address operational events, accidents, and injuries.

- a. Reportable occurrences – described in SEM-3-1.2, "Occurrence Categorization and Reporting"
- b. Price-Anderson Amendment Act – described in QA-1-1.8, "Identification, Tracking, and Reporting of Price-Anderson Amendments Act Noncompliance"
- c. Trending analysis of events, accidents, and injuries – described in QA-1-1.3, "Trend Analysis."

SEM-3, Security and Emergency Management, SEM-3-1.2, "Occurrence Categorization and Reporting" provides direction for identifying, categorizing, and reporting events and occurrences to the DOE Occurrence Reporting and Processing System. Additionally, this procedure supports event investigation, timely corrective action identification and completion, and provides

WCH Contractor Assurance System Description

for lessons learned to improve operational performance. This procedure implements the following:

- DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, Attachment 2, "Contractor Requirements Document"
- CRD M 231.1-2, "Occurrence Reporting and Processing of Operations Information"
- DOE-0233, *Emergency Plan Implementing Procedures*, RLEP 3.24, "Notification, Reporting, and Processing of Operations Information."

This procedure applies to all RCC operations and includes activities conducted by RCC subcontractors. This procedure shall be followed when any reportable or potentially reportable event or condition is discovered. Events and conditions occurring on subcontractor's operations will be reported by the responsible WCH project/functional director.

QA-1, Quality Assurance, QA-1-1.8, "Identification, Tracking, and Reporting of Price-Anderson Amendments Act Noncompliance" provides instructions for performing self-identification, reporting, correcting, and tracking of noncompliance to DOE nuclear safety requirements to enhance and protect radiological health and safety of the public and workers. The DOE's enforcement policy and this procedure apply to all WCH personnel, pre-selected subcontractors, and work performed by subcontractors and other suppliers and their personnel who are responsible for performing activities or supplying services or products supporting the RCC Project.

QA-1, Quality Assurance, QA-1-1.3, "Trend Analysis" describes the process for analyzing and evaluating data identified in the Corrective Action Management System database to determine and report trends. This procedure applies to the analysis and evaluation of data identified through self-identified and external agency findings. This procedure does not apply to cost, budget, or schedule trending or to the specific trending and performance analysis required for occurrence reports.

10.4.3 Worker Feedback

WCH uses a variety of methods to solicit feedback from workers and work activities:

- a. Employee concerns – described in SEM-3, *Security and Emergency Management*, SEM-3-3.1, "Employee Concerns Program"
- b. Pre-job briefs – described in PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control"
- c. Job hazard walkdowns by workers prior to work – described in PAS-2-1.1, "Integrated Work Control"
- d. Post-job interviews – not currently addressed; planned for future revision of Integrated Work Control Program
- e. Safety meetings – described in PM-1, *Policy Manual*, PM-ESHQ-8, "WCH Safety Meetings"

WCH Contractor Assurance System Description

- f. Critiques – described in SEM-3, *Security and Emergency Management*, SEM-3-2.2, "Event Management"
- g. Local safety improvement teams – described in PM-1, *Policy Manual*, PM-ESHQ-3, "Safety."

SEM-3, *Security and Emergency Management*, SEM-3-3.1, "Employee Concerns Program" establishes the requirements for the WCH Employee Concerns Program and provides a method for all employees of the RCCC team, as well as employees of lower-tier subcontractors performing work for WCH, to formally and informally raise and address questions and concerns.

This procedure applies to all employees of companies that comprise the RCCC team including subcontractors performing work under WCH direction, as specified in their respective subcontracts. The scope of the Employee Concerns Program as described in this procedure include issues that fall under the category of Safety, Health, Environment, Security, Quality, Waste, Fraud, Abuse, or Corruption.

SEM-3, *Security and Emergency Management*, SEM-3-2.2, "Event Management" provides guidance for performing critiques of accidents or other unplanned events. The purpose of a critique is to capture the facts of an event, develop the history and sequence, and share lessons-learned information. The information obtained during critiques may be used for root cause analysis, to identify corrective actions, and by appropriate management to prevent recurrence or to promote operational excellence. It is the intent of WCH management that the critique process include appropriate DOE personnel, and DOE is encouraged to actively participate. This process compliments DOE O 231.1-2, *Occurrence Reporting and Processing of Operations Information*, and DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*.

This procedure applies to all WCH employees and to all WCH subcontractors to the extent required by the subcontract. When appropriate conditions exist, critiques may be performed for unplanned events involving industrial safety or hygiene, radiological controls, conduct of operations, and/or areas of general programmatic breakdown. An event may be composed of a single significant event and/or a combination of small occurrences that show a trend toward a significant underlying problem.

The following are examples (not intended to be all-inclusive) of problems where a critique may be beneficial:

Single Event	Combination Situations
<ul style="list-style-type: none"> • Radiological incidents • Personnel injury/illness • Chemical or radiological exposure 	<ul style="list-style-type: none"> • Repeated mistakes • Continuing lack of discipline • Consistent failure to adhere to work control documents
<ul style="list-style-type: none"> • Industrial accidents • Near misses • Environmental spills/releases 	<ul style="list-style-type: none"> • Recurring problems/incidents • Repeated mistakes

PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control," and PM-1, *Policy Manual*, are described in Appendix F.

10.4.4 Issues Management

WCH has established an issues management process to provide timely and effective resolution of deficiencies as an integral part of the CAS.

- a. Program and performance deficiencies – described in QA-1, *Quality Assurance*, QA-1-1.2, "Corrective Action Management"; SEM-3, *Security and Emergency Management*, SEM-3-1.2, "Occurrence Categorization and Reporting"; PM-1, *Policy Manual*, PM-ESHQ-11, "Graded Approach"; QA-1, *Quality Assurance*, QA-1-1.4, "Root Cause Analysis"; PI-1, *Project Integration*, PI-1-2.10, "Risk Management"; QA-1, *Quality Assurance*, QA-1-1.3, "Trend Analysis." The procedures referenced above establish a structured process for:
 - i. Determining risk, significance, and priority of deficiencies
 - ii. Evaluating the scope and extent of the condition of the deficiency
 - iii. Determining event reportability under applicable requirements
 - iv. Identifying root causes (applied to all items using a graded approach based on risk)
 - v. Identifying and documenting corrective actions and recurrence controls based on analyses to correct conditions and prevent recurrence
 - vi. Identifying individuals/organizations responsible for implementing corrective actions
 - vii. Establishing appropriate milestones for completion of corrective actions, including consideration of significance and risk
 - viii. Tracking progress toward milestones such that responsible individuals and managers can ensure timely completion of actions and resolution of issues
 - ix. Verifying that corrective actions are complete
 - x. Validating that corrective actions are effectively implemented and accomplish their intended purposes, using a graded approach based on risk
 - xi. Ensuring that individuals and organizations are accountable for performing their assigned responsibilities
- b. Issues management impact determination/timely actions – WCH guidance for interim corrective actions (e.g., stopping work, shutting down activities, or revising a procedure) are described in PM-ESHQ-3, "Safety," and PM-ESHQ-4, "Stop Work."
- c. Analysis – Processes for analyzing deficiencies, individually and collectively are described in QA-1, *Quality Assurance*, QA-1-1.3, "Trend Analysis," and QA-1, *Quality Assurance*, QA-1-1.2, "Corrective Action Management."

WCH Contractor Assurance System Description

- d. Management notification – WCH has established graded approach communications processes to ensure the appropriate level of management, including senior management, is notified of issues in a timely manner. These notifications/communications processes are described in SEM-3, *Security and Emergency Management*, SEM-3-1.1, "Single Point of Contact."

QA-1, Quality Assurance, QA-1-1.2, "Corrective Action Management" This procedure describes the WCH system used to implement Corrective Action Management (CAM). The CAM process promotes timely and effective identification, screening, tracking, disposition, and correction of issues or process improvements. Listed below are common sources for commitments and issues:

- Noncompliance Tracking System Issues
- Occurrence reports
- Subcontractor deficiency reports
- DOE operational awareness reports
- Internal assessment reports, including contractor oversight surveillances, self-assessments, independent assessment, and management assessments
- Outside agency assessment reports
- Emergency Response Organization drill reports
- Critiques
- DOE and other external initiating documents
- Readiness review findings and observations
- Issues documented on an Issue Identification Form.

The CAM process encompasses the continuous monitoring of work performance and safety to identify conditions adverse to quality, determine their causes, implement corrective actions to resolve the problems and prevent recurrence, and determine the effectiveness of the corrective actions to ensure successful resolution and prevention of the same or similar problems. The scope includes conditions of both high and low significance.

The CAM program applies to organizations involved in (1) documenting commitments and issues, (2) correcting conditions adverse to quality, and (3) verifying effective implementation of corrective actions or process improvements.

SEM-3, Security and Emergency Management, SEM-3-1.2, "Occurrence Categorization and Reporting" implements the reporting requirements for WCH for the reporting and investigation of incident information relating to occupational injury/illness, accidents, near misses, property damage, or environmental releases. This procedure applies to all WCH employees and staff

augmentation personnel. Responsibility for accident investigation and reporting for subcontractors is detailed in Exhibit G of the subcontract.

QA-1, Quality Assurance, QA-1-1.4, "Root Cause Analysis" describes the process for performing root cause analyses for deficiencies, events, or adverse conditions, by using a graded approach to identify and implement appropriate corrective measures in order to prevent recurrence. This procedure applies when required by other WCH procedures (e.g., QA-1, *Quality Assurance*, QA-1-1.1, "Corrective Action Request [CAR]," and SEM-3-1.2, "Occurrence Categorization and Reporting"). This procedure may also be used on an optional basis for occurrence reports, assessments, and other findings or deficiencies.

PI-1, Project Integration, PI-1-2.10, "Risk Management" describes the specific processes used to identify risks assess or quantify risks, develop mitigation actions, track risks to closure, and report the status of risks to RCCC management and the customer, RL.

The requirements for managing risk for DOE projects are described in Chapter 14 of DOE Manual DOE-M 413.3-1, *Project Management for the Acquisition of Capital Assets*. Uncertainties identified in the RCCC scope, schedule, and cost are evaluated for applicability to be designated as project risks. The overall scope of the risk management process includes identifying risks, assessing risks, developing mitigation plans, mitigating risks, closing risks, and reporting the status of project risks. A database is maintained of identified risks and their mitigation plans.

SEM-3, Security and Emergency Management, SEM-3-1.1, "Single Point of Contact" establishes requirements for the WCH Single Point-of-Contact on-call personnel availability and assignment of on-call duty. On-call duty requires that the assigned individuals be capable of performing their on-call responsibilities and remain available (by telephone or pager) at all times, so that they can be contacted rapidly by project personnel and emergency organizations. The requirements of this procedure apply to WCH staff members assigned to on-call duty as the Single Point-of-Contact.

QA-1, *Quality Assurance*, QA-1-1.3, "Trend Analysis," is described in Section 10.4.2, and PM-1, *Policy Manual*, is described in Appendix F.

10.4.5 Lessons Learned

The WCH Lessons Learned process supports effective communications of lessons learned during work activities, process reviews, and event analyses to potential users and applied to future work activities. The WCH Lessons Learned process is linked to the rest of the DOE complex through the DOE Lessons Learned Database; is coordinated by the ISMS Coordinator; and is described in PAS-1, *Project Activities and Support*, PAS-1-1.8, "Lessons Learned."

PAS-1, Project Activities and Support, PAS-1-1.8, "Lessons Learned" documents and shares information that can be used to (1) promote the recurrence of desirable activities or (2) preclude the recurrence of undesirable activities. The WCH Lessons Learned Program is designed to encourage sharing of information in a consistent manner across projects and functional groups. The WCH Lessons Learned Program provides simplified instructions for the generation and distribution of lessons learned information resulting from work activities, self-assessments, and project/support organization accomplishments. The WCH Lessons Learned Program applies to all RCCC employees, organizations, and projects.

10.4.6 Performance Measures

a. Project Integration Performance Measures

WCH uses performance indicator data in allocating resources, establishing goals, identifying performance trends, identifying potential problems, and applying lessons learned and good practices. Performance measures are used as an input in establishing priorities for the CAS assessment schedule. WCH performance measures are described in PI-1, *Project Integration*, PI-1-2.14, "Performance Management System Surveillance," and PI-1-2.9, "Portfolio Management."

PI-1, *Project Integration*, PI-1-2.14, "Performance Management System Surveillance" establishes the requirements for periodic surveillance of the WCH Performance Management System. The Performance Management System is described in WCH-6, *Performance Management System Description*. System surveillances are conducted in accordance with the requirements of ANSI/EIA-748-A, *Earned Value Management Systems*, and is based on the National Defense Industrial Association (NDIA) Program Management Systems Committee (PMSC) Surveillance Guide, October 2004.

This procedure applies to all projects, functions, and off-project services performed by WCH. This procedure is implemented by Strategic Planning and Baseline Management, Project Integration, with support from project and functional personnel as requested.

PI-1, *Project Integration*, PI-1-2.9, "Portfolio Management" establishes the requirements and responsibilities for portfolio management within WCH which further allows WCH to effectively manage the total contract cost, schedule, and risk to achieve RCC Project goals. The procedure defines the implementation process and provides guidance for WCH portfolio management, an integral part of the WCH management decision-making and change control process. Portfolio management is established in WCH-2, the PMP, and further discussed in WCH-6, *Performance Management System Description*.

PI-1-2.9, "Portfolio Management," is a framework that organizes projects and functions into a single portfolio aligned with the WCH objectives and processes. This procedure applies to all WCH projects and functions. This procedure is utilized by WCH senior management, the RCCAT, project and functional directors, and Project Controls supervisors.

b. Safety, Health, and Quality Performance Indicators

WCH holds monthly performance review meetings with senior management to review performance using a comprehensive set of performance indicators (PIs) that include the ISMS Metrics described in section 11.0. Each metric owner analyzes recent performance and is responsible for presenting that analysis to the senior managers. The performance indicator process is a dynamic process that has resulted in the modification of the PIs, development of new PIs to monitor progress in new programs or problem areas, and the elimination of PIs once goals have been reached.

WCH has incorporated into the Executive Safety and Quality Review Board (ESQRB) Policy the review of performance related information such as assessments, operational awareness activities, Lessons Learned, trend analysis, event investigations, and worker feedback. The ESQRB provides oversight of programs and processes associated with the safety management

programs which include those programs and processes that make up the Integrated Safety Management System.

Table 10-1. WCH Contractor Assurance System.

WCH Contractor Assurance System and Key Attributes ^a						
Operational Area	Assessments	Event Reporting	Issues Management	Worker Feedback	Lessons Learned	Performance Indicators / Measures
Environmental Safety & Health Safeguards & Security Emergency Management Cyber Security Subcontractor Oversight	<ul style="list-style-type: none"> Management Assessment QA-1-1.12 Self Assessment and Surveillances QA-1-1.5 Independent Assessments QA-1-1.11 Management Walkthroughs QA-1-1.14 	<ul style="list-style-type: none"> Reportable Occurrences SEM-3-1.2 Identifying, Tracking and Reporting PAAA Noncompliance QA-1-1.8 Trend Analysis QA-1-1.3 	<ul style="list-style-type: none"> Corrective Action Management and Tracking QA-1-1.2 Occurrence Categorization and Reporting SEM-3-1.2 Graded Approach PM-ESHQ-11 Root Cause Analysis QA-1-1.4 Risk Management PI-1-2.10 Safety PM-ESHQ-3 Stop Work PM-ESHQ-4 Trend Analysis QA-1-1.3 Single Point of Contact SEM-3-1.1 	<ul style="list-style-type: none"> Employee Concerns SEM-3-3.1 Integrated Work Control PAS-2-1.1 Safety Meetings PM-ESHQ-8 Event Management SEM-3-2.2 Local Safety Improvement Teams PM-CH-4 	<ul style="list-style-type: none"> Lessons Learned PAS-1-1.8 	<ul style="list-style-type: none"> Portfolio Management PI-2.9 Performance Management System Surveillance PI-1-2.14 ESH&Q Monthly Performance Indicators
Emergency Management		<ul style="list-style-type: none"> Event Categorizations, Classifications, and Notifications SEM-2-3.1 		<ul style="list-style-type: none"> Drills and Exercises SEM-2-9.0 		
Safeguards & Security		<ul style="list-style-type: none"> Reporting Security Incidents SEM-1-2.3 Security Badges SEM-1-5.1 				
Cyber Security		<ul style="list-style-type: none"> Cyber Security Incident Response and Recovery SEM-1-4.5 				
Subcontractor Oversight	<ul style="list-style-type: none"> Subcontractor Oversight QA-1-1.7 					

^a Procedures are only identified for the primary attribute. Overlapping roles, responsibilities, and actions contained in the referenced procedures may exist.

^b Items that are specific to Emergency Management, Safeguards & Security, Cyber Security, and Subcontractor Oversight are identified as separate line items.

11.0 PERFORMANCE OBJECTIVES

11.1 ISMS PERFORMANCE INDICATORS

WCH has been directed by RL to report on a comprehensive set of SH&Q performance indicators that are used routinely by senior management and staff to evaluate the implementation and effectiveness of the ISMS. WCH reports on selected performance metrics during RL monthly performance reports. The ISMS performance indicators listed below are modified as needed to ensure that the correct ISMS attributes are being assessed. Current ISMS performance indicators include the following.

OSHA Total Recordable Case Rate: Number of OSHA recordable injuries and illnesses multiplied by 200,000 and divided by the total number of work hours (including subcontractors).

Days Away, Restricted, Transferred Case Rate: The number of OSHA recordable cases involving days away from work, days involving restricted work or job transfer multiplied by 200,000 and divided by the total number of work hours.

Near-Miss Occurrences: A reportable event or situation as described by DOE M 231.1-2, Group 10 in which an inappropriate action occurs, or a necessary action which could be reasonably expected to occur, is omitted and could have resulted in a serious personnel injury. This includes a situation in which controls that should have been in place were absent or overlooked.

Radiological Skin Contaminations: Radiological skin contaminations, as defined by DOE M 231.1-2, Group 6, Subgroup D, Criteria 3.

Radiological Uptakes: Radiological uptakes, as defined by DOE M 231.1-2, Group 6, Subgroup C, Criteria 3.

Hazardous Energy Control Events: Hazardous energy control events resulting in a person contacting hazardous energy, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 1 OR hazardous energy control events where personnel fail to follow prescribed hazardous energy control processes, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 2.

Transportation Safety: Transportation safety events as defined by DOE M 231.1-2, Group 8.

Spills and Releases: Spills and releases, as defined by DOE M 231.1-2, Group 5, Subgroup A.

Technical Safety Requirement Violations: The number of TSR violations at nuclear facilities.

Completed Corrective Actions: Percent of corrective actions completed by the original forecasted completion date.

Completed Scheduled Assessments: Percent of assessments completed on time during the period.

- Percent of corrective actions that are overdue
- Percent of actions that are >180 days old
- Percent of actions that are extended.

Performance Objectives

11.2 PERFORMANCE OBJECTIVES, MEASURES, AND COMMITMENTS

In accordance with the RCCC (DE-AC-06-05RL14655) Clause I.93, DEAR 952.223-71, "Integration of Environment, Safety, and Health into Work Planning and Execution" (DOE 2000b), WCH is required to annually review and update its ISMS performance objectives, measures, and commitments (POMCs). POMCs will be updated using a variety of inputs, such as the previous year's performance, internal and external assessments, and worker input via the various feedback systems (e.g., Employee Concerns Program, employee surveys) available. The POMCs will be developed in accordance with QA-1, *Quality Assurance*, QA-1-1.15, "Development, Review, Approval and Submittal of ISMS Performance Objectives, Measures, and Commitments." The POMCs for fiscal year (FY) 2010 are included in Table 11-1.

Source information for the POMCs include information from, but not limited to, WCH performance measures, independent and management assessments, readiness assessments, RL Facility Representative Technical surveillances/assessments, and external organizational assessments.

RCCC performance against POMC criteria is reported monthly and quarterly to RL and on an annual basis in the ISMS annual report. It is important to note that "RCCC Performance" includes subcontractor and subtier subcontractor performance as well.

The FY 2010 (FY10) POMCs will be accomplished through the effort of RCCC management to establish and increase safety awareness and environmental protection compliance for both manual and non-manual employees. Actions found to be effective in FY09 and carried over into FY10 are as follows:

- Providing safety trained supervisor (STS) certification training for first-line supervisors and line management. This certification is administered through the American Board of Industrial Hygiene and the Board of Certified Safety Professionals. Historically, significant reduction in worker compensation costs have been realized at WCH parent companies following safety trained supervisor certification of line management. WCH began this training in FY 2006 and will continue this training through FY10. To date approximately 250 RCCC employees have attained STS certification.
- Conducting monthly project safety meetings for all personnel, including subcontractors and suppliers. These meetings will periodically include presentations by motivational speakers on worker safety and health topics.
- Continuing to conduct toolbox meetings, POD meetings, and pre-job/pre-evolution briefings, all of which begin with a safety topic and disseminate important safety information to workers.
- Providing incentives for worker participation in the VPP and for reporting unsafe conditions (through the employee recognition program and safety ownership program).
- Continuing a "safety timeout" policy that encourages workers to raise safety questions for prompt resolution.

Table 11-1. ISMS Performance Objectives, Measure, and Commitments for Fiscal Year 2010.

Objective	Quarterly Performance Measures and Commitments
Work Toward an Injury-Free Workplace	Injury/Illness Review – Analyze and track all first aid, recordable, and/or days away/restricted cases. Director level review of each injury with the safety representative and line management, document actions to preclude or mitigate similar injuries on the S&H Injury Management Review Report form. (base goal)
	Injury Rate Continuous Improvement – Monitor TRC and DART 12 Month Moving Avg. (MMA) trends and implement improvement plans if trending unfavorably. Initiate a targeted corrective action improvement plan when any adverse trend, defined as quarter ending 12 MMA TRC or DART rate is greater than the previous quarter's end, is identified (base goal)
	Fall Protection-Elevated Work Improvements - Perform an effectiveness evaluation of the improved WCH fall protection program to include procedures, training, and fall hazard prevention analyses. (base goal=Completion of End Point Assessment).
	IWCP/Job Hazard Analysis Improvements - Perform an effectiveness evaluation of improvements made to the Integrated Work Control and Job Hazard Analysis processes. (base goal = Completion of End Point Assessment)
Maintain Effective Control of Hazardous Energy	Hazardous Energy Control Events per quarter resulting in a person contacting hazardous energy, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 1, equal to 0/1 (stretch goal/base goal).
	Hazardous Energy Control Events per quarter where personnel fail to follow prescribed hazardous energy control processes, as defined by DOE M 231.1-2, Group 2, Subgroup C, Criteria 2, equal to 0/1 (stretch goal/base goal).
Environmental Program Compliance	Environmental Noncompliance as defined by DOE M 231.1-2, Group 9, SC4 per quarter equal to 1/3 (stretch goal/base goal).
	Protection of Environmental and Cultural Resources as defined in DOE M 231.1-2, Group 5, Subgroup B per quarter equal to 0/1 (stretch goal/base goal).
	Environmental Protection Index per quarter equal to 1.0/0.9 (stretch goal/base goal) This index is calculated based on criteria specified for compliance relative to air quality permitting, spill prevention control, excavation plans, ecological/cultural plans, and sample management.
	EMS Conformance Corrective Actions – Implement the corrective actions identified in the WCH EMS Declaration of Conformance to DOE O 450.1A. (Base Goal)
	Improve Waste Documentation – Implement the recommendations from the external assessment on the generation and use of OWTFs, to include revised WMT procedures, requirements document, and human factored OWTF. (base goal)
Industrial Hygiene	Participation in the development and site wide applicability of the Site Wide Respiratory Program with 80 % participation in scheduled Hanford Respiratory Protection Committee meetings to assist with program development. (base goal) <i>(stretch goal N/A. This goal will be evaluated as the program is developed and site wide implementation of the program is determined)</i>
	Heat Stress Recognition and Process Improvements – Implement a new/revised procedure to include physiological monitoring for heat stress, and provide awareness briefings and information on recognition and treatment of Heat Stress. (base goal)
Safety Ownership Program	Safety Ownership Program - Successfully promote the four tenets of the Safety Ownership Program (SOP) by completing all scheduled activities within the Communications Plan (base goal) and obtain participation of at least 500 personnel for the SOP activities (stretch goal).
Continuous Improvement and Feedback	Performance Analysis conducted per year equal to 3/2 (stretch goal/base goal).
	WCH Key Performance Indicator monthly evaluations conducted per quarter equal to 3/2 (stretch goal/base goal).
	Operating Experience documents issued per quarter (both internally and externally generated equal to 90/70 (stretch goal/base goal).
	Safety and Health Improvement Plan (SHIP) development, implementation and communication. Establish a SHIP that includes key goals and commitments for safety and health and communicate these goals to all employees with updated information on the status and achievement of goals on a quarterly basis (base goal).

DART – Days Away, Restricted, or Transferred
DOE – U.S. Department of Energy
FY – fiscal year
N/A – not available

OSHA – Occupational Safety and Health Administration
RCCC – River Corridor Closure Contract
VPP – Voluntary Protection Program
WCH – Washington Closure Hanford, LLC.

Performance Objectives

11.3 SAFETY AND HEALTH IMPROVEMENT PLAN

In addition to the formalized performance indicators, S&H outlines other improvements to ensure continuous improvement of programs and processes. The Safety and Health Improvement Plan (SHIP) for FY10 continues to focus on both program development and program execution in the field. Actions within this improvement plan are tracked on a monthly basis and reported through the Plan of the Week to WCH senior management. The current SHIP is located on the S&H Program Web Site and is updated with status on a monthly basis.

Improvement actions for FY09 included in the SHIP provided continuous improvement to the overall S&H Program, strengthen the implementation of the WCH VPP, and assisted in the goal of working toward achieving DOE VPP "Star" status. In FY09 WCH S&H Program focused on the following areas for improvement:

- S&H Observation Program
- Site-Wide Hazard Identification and Mitigation Document
- Fleet and Vehicle Safety Program
- Subcontractor Flowdown of Requirements
- S&H Employee Involvement.

Significant progress was made in many areas, including the submission and verification of the ISMS Declaration which outlined the specific improvement areas and accomplishments made throughout FY09. Areas for additional improvements were also identified and are included in the FY10 improvement plan to continue the trend of continuous improvement WCH. This plan will be managed and tracked by management via the Plan-of-the-Week and updated on a quarterly basis.

The SHIP for FY10 will focus on both program development and program execution in the field. A common goal for both the S&H program and field execution is successfully maintaining the DOE Voluntary Protection Program (VPP) "Star" status. The VPP focus areas for FY10 will be integrated into the S&H Program and included in the overall employee involvement goals and initiatives. Actions included in this plan will provide continuous improvement to the overall S&H Program, strengthen the implementation of the WCH VPP, and assist in the implementation of the Safety Ownership Program. Additional improvements may be identified throughout FY10 and added to the overall improvement plan.

The FY10 SHIP has been divided into five improvement areas:

1. Working Toward an Injury-Free Workplace-Incident Severity reduction
2. Safety Ownership Program Implementation
3. Training Requirements
4. Elevated Work Practices (to include fall protection, ladders, scaffolding, and elevated work platforms).
5. Heat Stress.

Items within the specific improvement initiatives that were considered best practice improvements include the following.

Performance Objectives

11.3.1 Working Toward an Injury-Free Workplace-Incident Severity Reduction

Incident severity reduction for FY10 will focus on three areas: (1) Incident trends, (2) S&H Focus Campaigns, and (3) Incident Analysis and Review. Actions identified for improvement in this area include the following:

- Tracking and trending all incidents to include first aid, recordable, and lost time incidents to provide trending data.
- Provide trend data for incidents by project. Develop additional performance indicators as necessary to track and trend specific areas of emphasis.
- Initiate focus campaigns for areas identified with adverse trends.
- Provide information to all personnel on the incidents, the lessons learned, and the methods to prevent reoccurrence.

11.3.2 Safety Ownership Program (SOP) Implementation

Implementation of this initiative is part of the continuous improvement of the overall safety culture for WCH. The elements of the SOP program include: procedure and Integrated Work Control Process (IWCP) work package use and adherence, human behaviors (e.g., attention to detail), situational awareness, and technical inquisitiveness. Ensuring that work packages are reviewed, complied with, analyzed and adhered to was an opportunity for improvement identified during the DOE VPP on-site assessment. The improvements in safety culture via the SOP will include the following:

- Communication of current SOP initiatives at safety meetings across the WCH project locations (LSIT, Project Safety, PODs, Subcontractor Safety Meetings, etc.) and through the Weekly Roundup.
- Encourage employee participation through the development of personal safety plans that detail how employees can “own” their safety and the commitments each employee makes to improve safety.

11.3.3 Training Requirements

Verification of training depending upon work scope, location, and job tasks must be accomplished to enable the workers to have the necessary information and skills to perform the work safely. Ensuring that training requirements are updated upon moves or changes in work scope was identified as opportunity for improvement in the DOE VPP on-site assessment. Training improvement focus areas for FY10 will consist of the following:

- Review the adequacy of training, field experience, and education relating to competency in both conducting and overseeing work.
- Conduct a review of Employee Job Task Analyses (EJTAs) to determine the status of adequacy at least annually.

Performance Objectives

- Communicate the necessary changes to the appropriate personnel to ensure that training is accomplished for the affected workers.

11.3.4 Elevated Work Practice improvements

The emphasis on all elevated work was initiated in July of 2009 and will continue through FY10. Emphasis and improvements involved with elevated work include the following:

- Continue to implement and verify a comprehensive training and competency course for individuals involved with elevated work. The level of training and briefings will be dependent upon the level of authority and responsibility for that type of work and will include current procedural requirements.
- Review and revision (as necessary) of procedures involved in elevated work as continuous improvements are identified.
- Evaluate the effectiveness of process and procedural updates and training.

11.3.5 Heat Stress

Heat stress was emphasized in FY09 and will continue in FY10. Heat Stress program improvements for FY10 include the following:

- Provide focus topics on the signs, symptoms, and precautions related to heat-related illnesses.
- Improve the WCH heat stress processes and procedures to provide the most effective protection for the workers.
- Conduct surveillances and assessments to determine additional process improvements necessary to protect the workers.

The SHIP is a living and continuous improvement document where additional actions and activities are added on a weekly basis to facilitate the overall improvement process for S&H. Each fiscal year, this plan is completely reviewed and updated to ensure that improvement actions are aligned with project and ISMS performance objectives, measures, and commitments.

The goal of WCH is to encourage personnel to feel personally responsible for their safety and the safety of their coworkers and to act upon that responsibility when necessary. WCH fosters a safe and environmentally compliant culture that supports strong worker involvement and feedback.

12.0 ISMS DESCRIPTION CHANGE CONTROL PROCESS

Documentation generated to support implementation of the ISMS is provided to WCH's Document Control group on an ongoing basis to be processed into WCH's electronic document management system. Types of documentation provided to Document Control include correspondence, published reports, log sheets, drawings, survey records, photographs, submittals, and other documentation generated in support of the RCC Project workflow processes (planning and prioritization, conceptual design, detail design, work package preparation, implementation, and project closeout).

Document Control is responsible for tracking, controlling, scanning, distributing (as directed by document owners), and retaining documentation in accordance with applicable procedures referenced herein and in accordance with approved Records Inventory and Disposition Schedules.

Application of the WCH procedures for preparation, processing, and review of WCH documents (BSC-1-7.2, "Preparing, Issuing, Revising, and Canceling Administrative Procedures," BSC-1-7.3, "Internal Review of Documents," and PAS-1-1.1, "Technical Procedure Development") ensures that changes to the ISMSD and ISMS implementing procedures are carefully assessed and do not negatively impact S&H system effectiveness. These procedures satisfy the configuration management and change control requirements as identified in applicable DOE orders. Qualified SMEs examine proposed changes to the ISMSD and its implementing procedures to assess potential effects on the ISMS. This includes changes to DOE directives or federal, state, and local laws as they are reflected in WCH manuals and procedures. A formal process exists between RL and WCH for amending and modifying the RCCC to incorporate new or revised requirements.

Future changes to the ISMSD will be documented in a change control log that will be appended to this document.

ISMS Update Reporting

WCH is committed to maintaining its ISMS, as well as taking the appropriate actions to provide for continuous improvement. In accordance with the guidance provided in Chapter IV of DOE G 450.4-1B, Vol. 1, "Maintaining an Approved ISMS," WCH will annually review its ISMSD and update it as appropriate or notify RL that a review of the ISMSD indicates no update is necessary.

The annual revision to the ISMSD will identify other pertinent changes to the WCH ISMS, such as significant changes in work scope, procedures, policies, manuals of practice, organizations, performance measures and indicators, or other major system documents or processes.

The annual revision to the ISMSD, if required, will be provided to RL on a date agreed upon between WCH and RL before the beginning of a new fiscal year. The process and roles and responsibilities for the ISMSD update are addressed in SH-1-1.1, "Program Organization and Responsibilities."

WCH will maintain the approved ISMS under configuration control as described in Chapter IV of DOE G 450.4-1B, Vol. 1, as per BSC-1 procedures.

13.0 REFERENCES

- 10 CFR 830, "Nuclear Safety Management," *Code of Federal Regulations*, as amended.
- 10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended
- 10 CFR 851, "Worker Health and Safety," *Code of Federal Regulations*, as amended.
- 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," *Code of Federal Regulations*, as amended.
- 29 CFR 1926, "Safety and Health Regulations for Construction," Subpart K, *Code of Federal Regulations*.
- BSC-1, *Business Services and Communications*, Washington Closure Hanford, Richland, Washington.
- BSC-300, *WCH Procurement*, Washington Closure Hanford, Richland, Washington.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 U.S.C. 9601, et seq.
- Davis-Bacon Act of 1931*, 40 U.S.C. 276a, et seq.
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- DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, U.S. Department of Energy, Washington, D.C.
- DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, U.S. Department of Energy, Washington, D.C.
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- DOE O 435.1, *Radioactive Waste Management*, U.S. Department of Energy, Washington, D.C.
- DOE O 450.1A, *Environmental Protection Program*, U.S. Department of Energy, Washington, D.C.
- DOE P 450.4, *Safety Management System Policy*, U.S. Department of Energy, Washington, D.C.
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- ENV-1, *Environmental Monitoring & Management*, Washington Closure Hanford, Richland, Washington.
- EPMC-100-1.1, "Work Control Process Flow Diagram for Project Closeout", Washington Closure Hanford, Richland, Washington.
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- National Environmental Policy Act of 1969*, 42 U.S.C. 4321, et seq.
- NS-1, *Nuclear Safety*, Washington Closure Hanford, Richland, Washington.
- PAS-1, *Project Activities and Support*, Washington Closure Hanford, Richland, Washington.
- PAS-2, *Integrated Work Control Program*, Washington Closure Hanford, Richland, Washington.
- PI-1, *Project Integration*, Washington Closure Hanford, Richland, Washington.
- PM, *WCH Policies*, Washington Closure Hanford, Richland, Washington.
- QA-1, *Quality Assurance*, Washington Closure Hanford, Richland, Washington.
- RC-1, *Radiation Protection Procedures*, Washington Closure Hanford, Richland, Washington.
- Resource Conservation and Recovery Act of 1976*, 42 U.S.C. 6901, et seq.

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- SH-1, *Safety and Health*, Washington Closure Hanford, Richland, Washington.
- WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.
- WCH-2, *Project Management Plan*, Rev. 3, Washington Closure Hanford, Richland, Washington.
- WCH-5, *River Corridor Closure Project Risk Management Approach and Plan*, Rev. 0, Washington Closure Hanford, Richland, Washington.
- WCH-6, *Performance Management System Description*, Rev. 3, Washington Closure Hanford, Richland, Washington.
- WCH-12, *River Corridor Cleanup Contract Fiscal Year 2006 Detailed Work Plan*, Rev. 0, Vols. 1 and 2, Washington Closure Hanford, Richland, Washington.
- WCH-23, *River Corridor Closure Contract Integrated Project Baseline*, Rev. 0, Vols. 1 and 2, Washington Closure Hanford, Richland, Washington.
- WCH-37, *Washington Closure Hanford Maintenance Implementation Plan*, Rev. 0, Washington Closure Hanford, Richland, Washington.
- WCH-38, *Training Implementation Matrix for River Corridor Closure Non-Reactor Nuclear Facilities*, Rev. 1, Washington Closure Hanford, Richland, Washington.
- WCH-51, *Washington Closure Hanford Quality Assurance Program Description*, Washington Closure Hanford, Richland, Washington.
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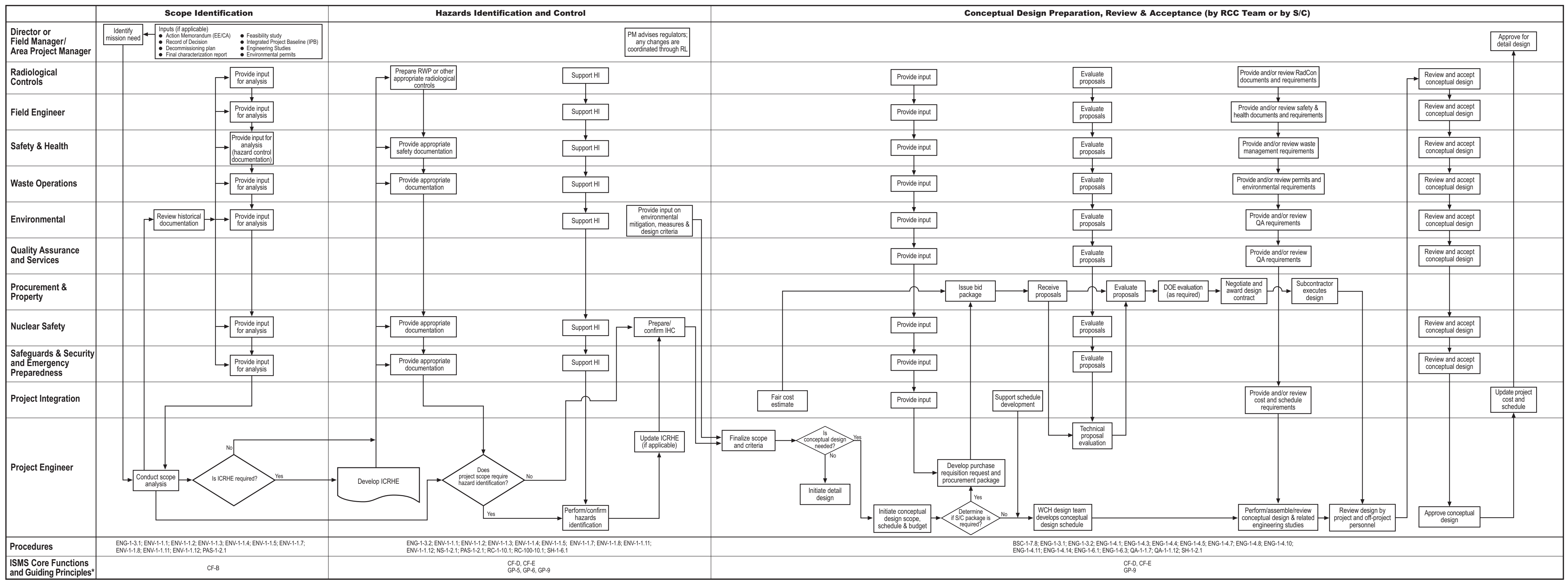
WCH-100, *Washington Closure Hanford Radiation Protection Program*, Rev. 3, Washington Closure Hanford, Richland, Washington.

WMT-1, *Waste Management and Transportation*, Washington Closure Hanford, Richland, Washington.

APPENDIX A

CONCEPTUAL DESIGN FLOWCHART, ENG-1, *ENGINEERING SERVICES*, PROCEDURE ENG-1-3.1, "DESIGN PROCESS AND CONTROL"

Conceptual Design Flowchart for Integration with Other Functional Organizations

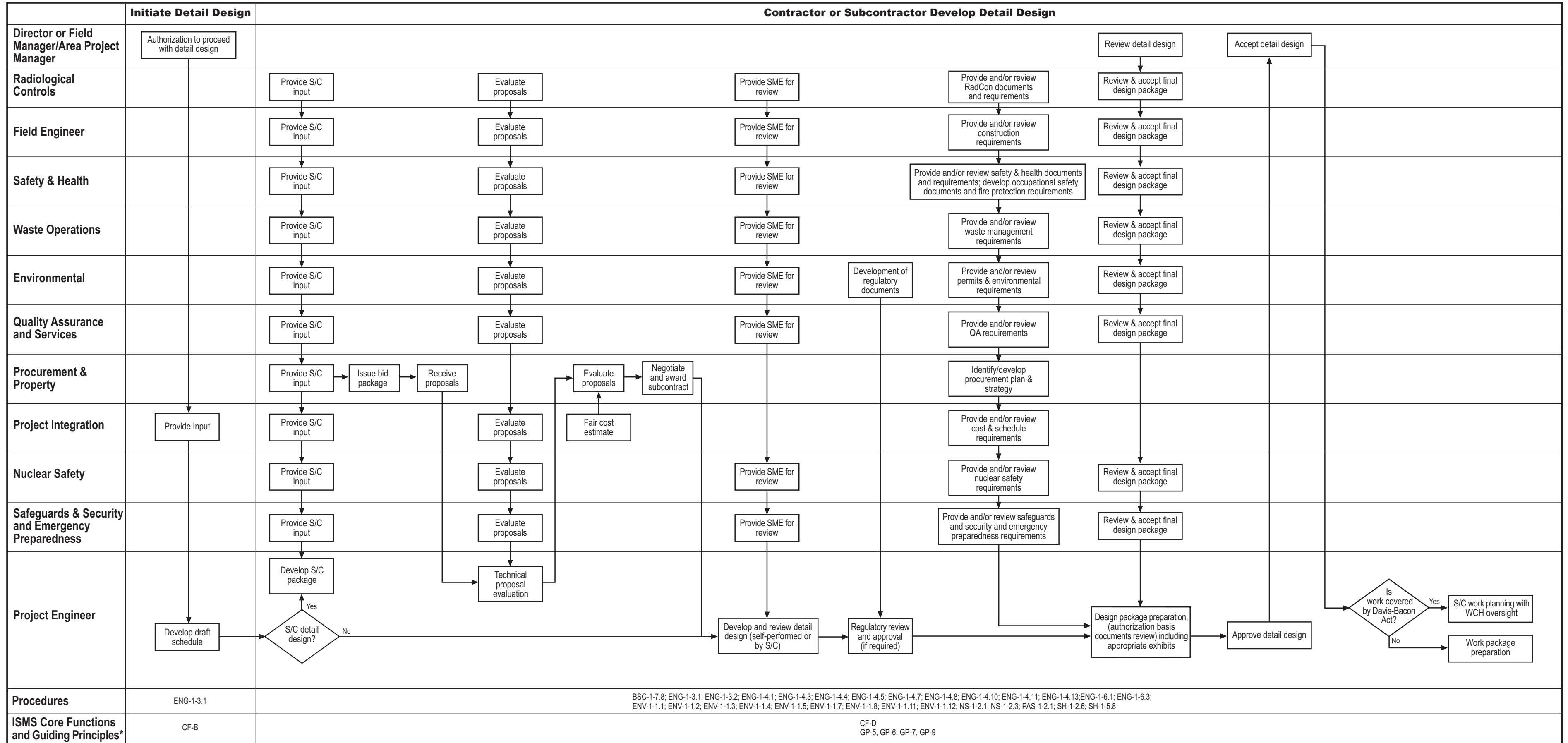


*As mentioned in section 1.4 of the ISMS Description Document, there are overarching Core Functions and Guiding Principles that apply to all phases of RCC Project work: CF-A, CF-C, CF-F, CF-G, GP-1, GP-2, GP-3, GP-4, GP-8, GP-10, GP-11
All acronyms on this flowchart can be found in the Acronyms section of this document (Page V).

APPENDIX B

DETAILED DESIGN FLOWCHART, ENG-1, *ENGINEERING SERVICES*, PROCEDURE ENG-1-3.1, "DESIGN PROCESS AND CONTROL"

Detail Design Flowchart for Integration with Other Functional Organizations



*As mentioned in section 1.4 of the ISMS Description Document, there are overarching Core Functions and Guiding Principles that apply to all phases of RCC Project work: CF-A, CF-C, CF-F, CF-G, GP-1, GP-2, GP-3, GP-4, GP-8, GP-10, GP-11. All acronyms on this flowchart can be found in the Acronyms section of this document (Page V).

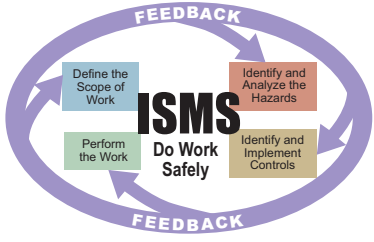
APPENDIX C

IWCP FLOW CHARTS (1),

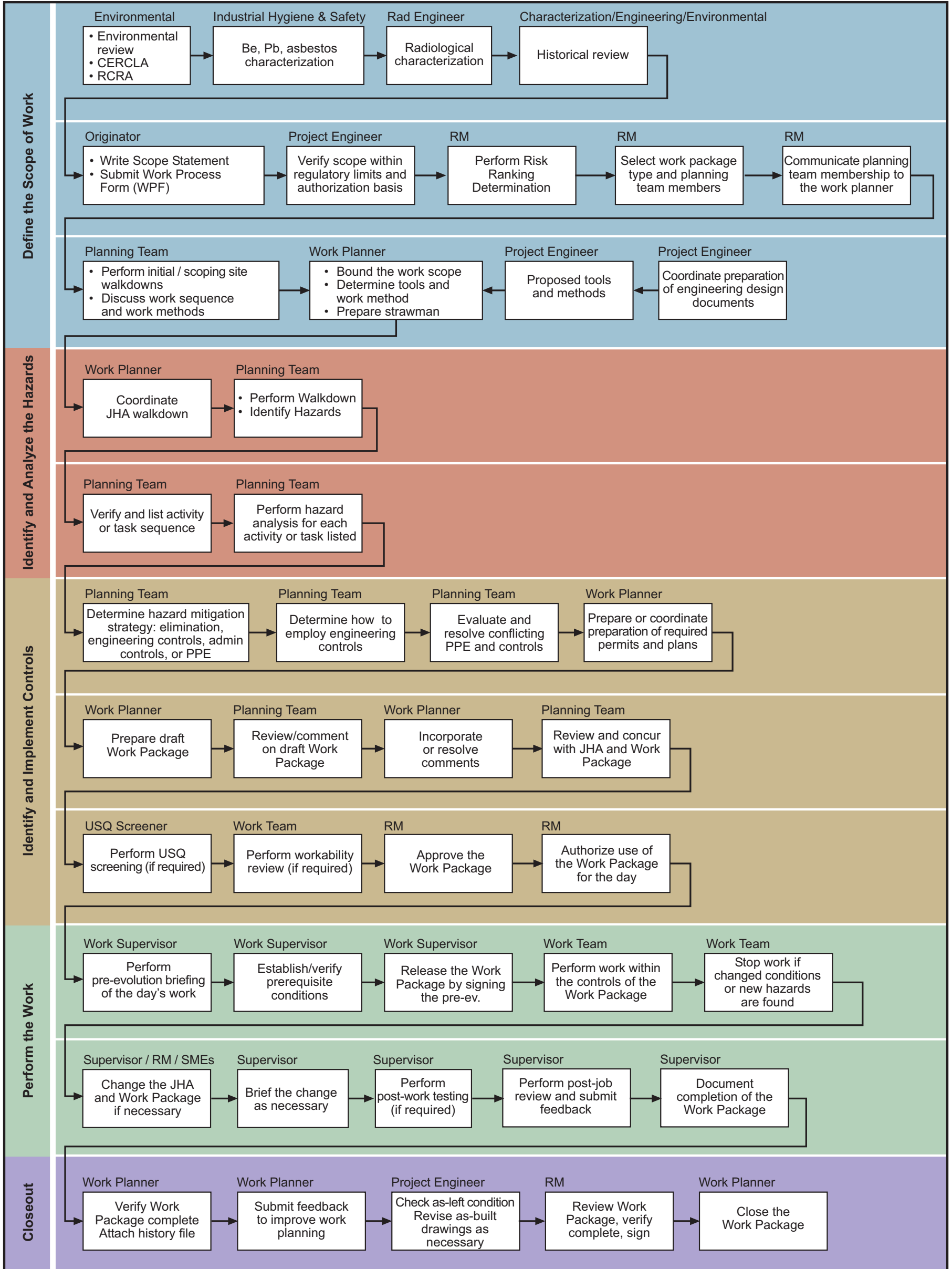
PAS-2, *INTEGRATED WORK CONTROL PROGRAM*, PROCEDURE
PAS-2-1.1 "INTEGRATED WORK CONTROL"

(IWCP Work Flow Process)

NOTE: PAS-2-1.1 outlines the general process flow depicted in the attached diagram. But based upon the large variety, scope, subcontracting, and work activity the actual process used in the field may differ slightly from the figure. Refer to the work control document for specific details on development and execution of the work activity.



IWCP Work Flow Process



FEEDBACK

APPENDIX D

SUBCONTRACT FLOWCHARTS (3),

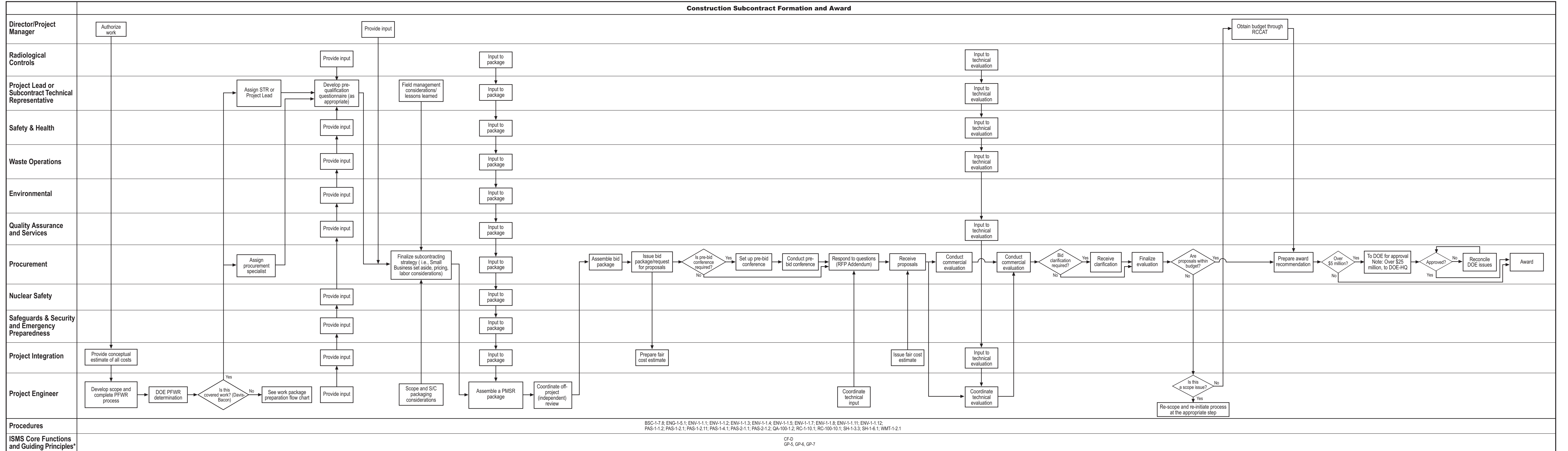
PAS-1-4.1, "CONSTRUCTION SUBCONTRACT FORMATION AND AWARD"

(CONSTRUCTION SUBCONTRACT FORMATION AND AWARD)

**PAS-1-4.5, "SUBCONTRACT TECHNICAL REPRESENTATIVE (STR) FOR
FIELD WORK ACTIVITIES"**

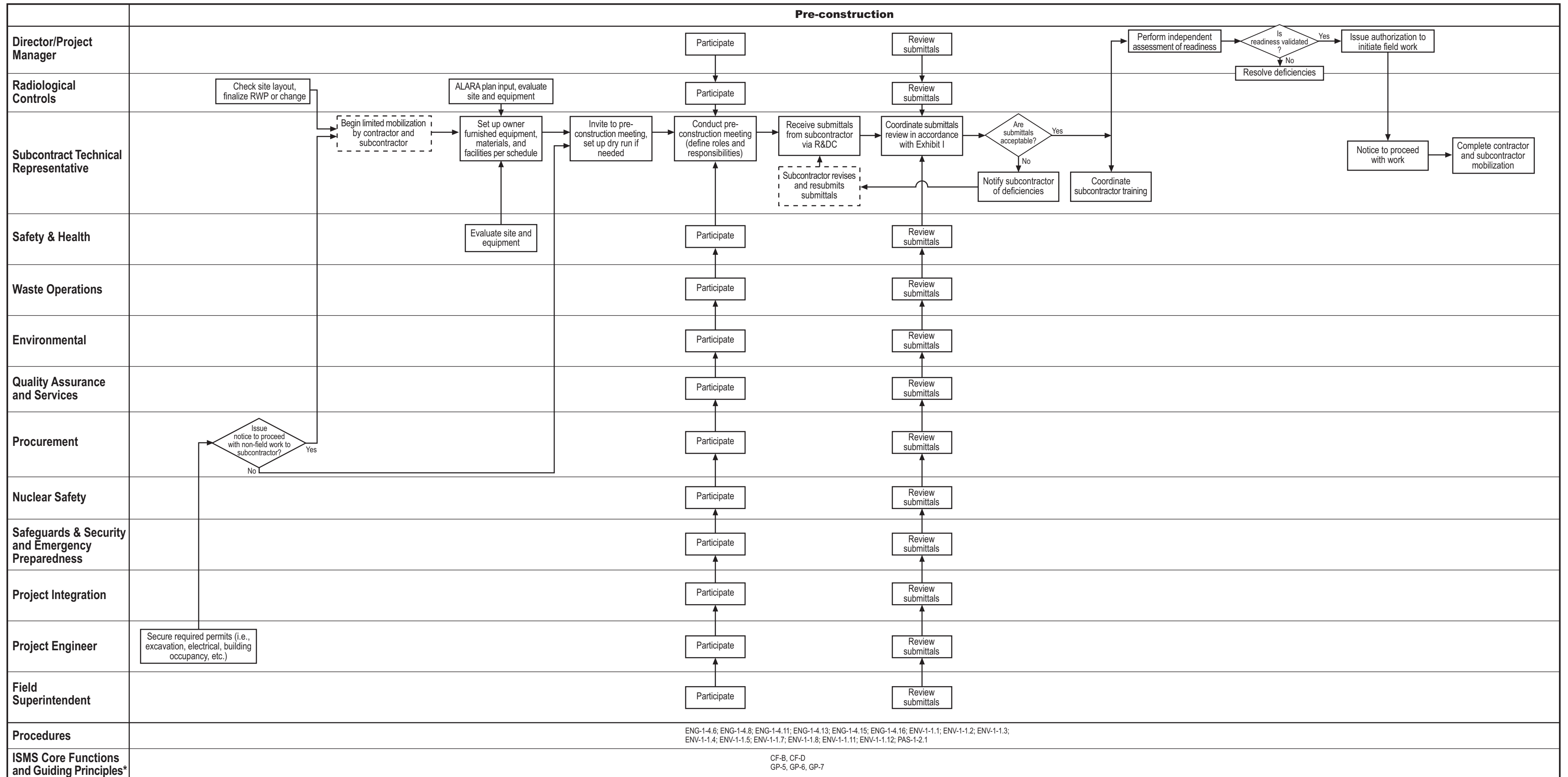
***(CONSTRUCTION SUBCONTRACT PRE-CONSTRUCTION)
(WORK EXECUTION – SUBCONTRACT)***

Construction Subcontract Formation and Award



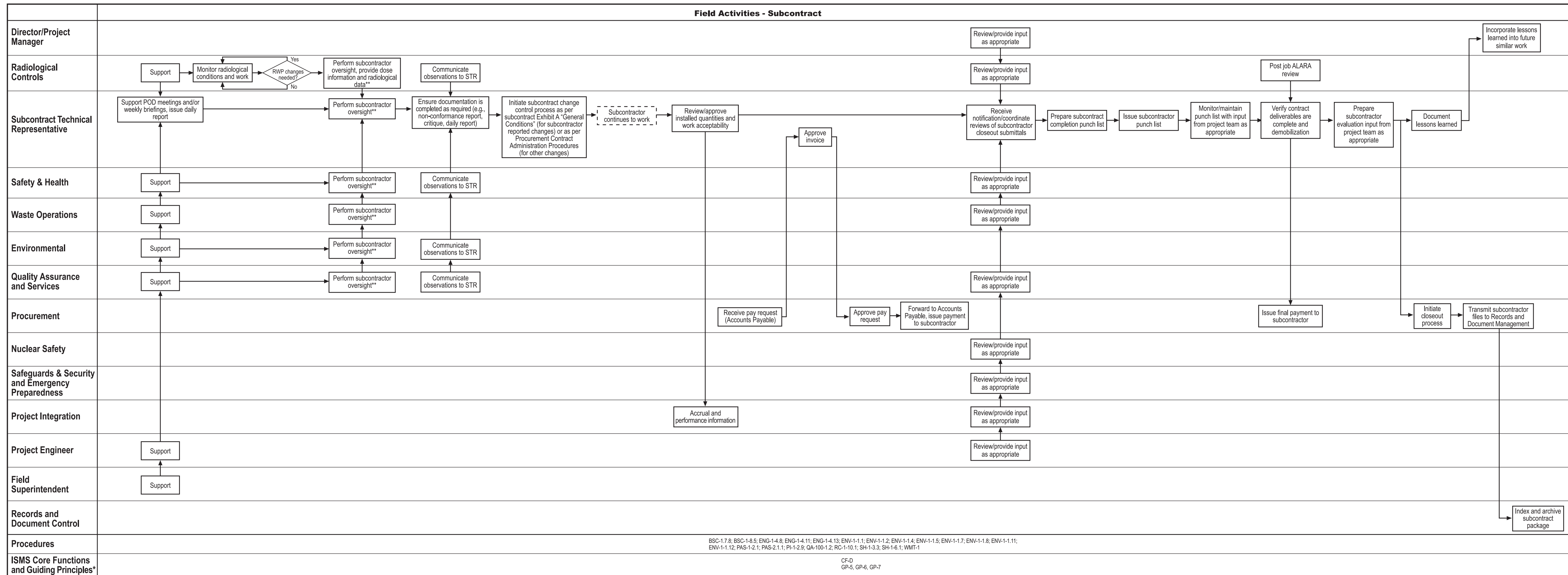
*As mentioned in section 1.4 of the ISMS Description Document, there are overarching Core Functions and Guiding Principles that apply to all phases of RCC Project work: CF-A, CF-C, CF-F, CF-G, GP-1, GP-2, GP-3, GP-4, GP-8, GP-10, GP-11. All acronyms on this flowchart can be found in the Acronyms section of this document (Page V). Procedures in parentheses are grandfathered during the IWCP transition period.

Construction Subcontract Pre-Construction



*As mentioned in section 1.4 of the ISMS Description Document, there are overarching Core Functions and Guiding Principles that apply to all phases of RCC Project work: CF-A, CF-C, CF-F, CF-G, GP-1, GP-2, GP-3, GP-4, GP-8, GP-10, GP-11
All acronyms on this flowchart can be found in the Acronyms section of this document (Page V).

Work Execution - Subcontract

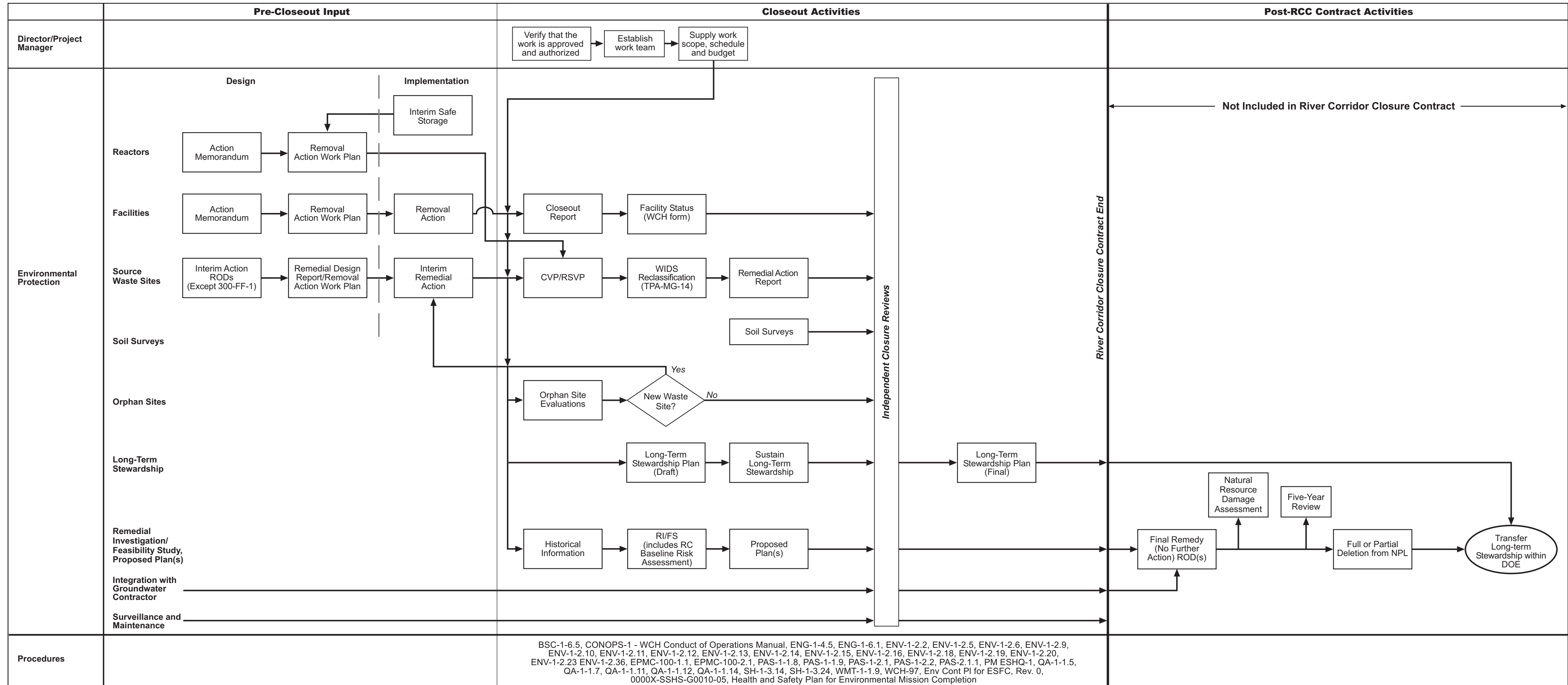


* As mentioned in section 1.4 of the ISMS Description Document, there are overarching Core Functions and Guiding Principles that apply to all phases of RCC Project work: CF-A, CF-C, CF-F, CF-G, GP-1, GP-2, GP-3, GP-4, GP-8, GP-10, GP-11
 ** "To protect employees, the public, and the environment, Washington Closure Hanford management authorizes employees to stop work when a concern presents an imminent danger to employee safety and health, the environment, facilities, or property." - excerpted from WCH Stop Work Policy
 All acronyms on this flowchart can be found in the Acronyms section of this document (Page V).
 Procedures in parentheses are grandfathered during the IWCP transition period.

APPENDIX E

JOB CLOSEOUT FLOWCHART DESCRIBED IN EPMC-100-1.1, “WORK PROCESS FLOW DIAGRAM FOR PROJECT CLOSEOUT”

Project Closeout



APPENDIX F

BIBLIOGRAPHY: DOCUMENTS CONTAINING WCH ISMS MECHANISMS

APPENDIX F

BIBLIOGRAPHY: DOCUMENTS CONTAINING WCH ISMS MECHANISMS

F.1 Policy Manual (PM-1) and Management Directives

Only policies that apply to the mechanisms and implementation of the Integrated Safety Management System (ISMS) are provided in this appendix.

F.1.1 [PM-ADM-1](#), Authority of Staff Augmentation Subcontractors

Washington Closure Hanford (WCH) recognizes that during the field work activities it may be necessary to allow subcontractors to assume certain roles and duties that normally are assigned to WCH employees (e.g., subcontractor technical representative [STR]). This policy establishes the flowdown of authorities, roles, and responsibilities for staff augmentation by subcontractors for those times. Further, the criteria by which a subcontract may assume specific WCH duties are provided within this policy.

F.1.2 [PM-ADM-2](#), Procedures

WCH is committed to a high standard of operational integrity. This standard is accomplished in part by establishing a defined procedure hierarchy that ensures personnel conduct WCH activities in a manner that is safe, efficient, and compliant with the WCH contract; applicable U.S. Department of Energy (DOE) directives; proven business practices; and binding agreements with oversight and stakeholder communities. This policy provides the framework for the requirements, development, and implementation of high-quality, compliant, and integrated procedures.

F.1.3 [PM-ESHQ-1](#), Integrated Environment, Safety and Health Management System (ISMS) Implementation Policy

WCH is committed to executing the River Corridor Closure Contract (RCCC) in a manner that incorporates protection of the environment as well as safety and health of the workforce and the public into all work activities.

To achieve the objective, WCH has developed the RCCC Integrated Environment, Safety, and Health Management System Description (ISMSD) document (WCH-4). The ISMSD addresses the requirements of Contract Provision I-93, DEAR 952.223-71, "Integration of Environment, Safety, and Health into Work Planning and Execution" (December 2000). Also discussed in the ISMSD are the work processes and procedures WCH uses to implement ISMS.

The purpose of this policy is to ensure that ISMS considerations are incorporated into all aspects of RCCC work scope. This policy applies to all RCCC personnel and work activities.

F.1.4 [PM-ESHQ-2](#), Environmental Protection and Compliance Policy

WCH is committed to conduct operations in a compliant manner that protects human health and the environment. WCH will continually strive to improve environmental awareness across the

project and will take appropriate actions to minimize the impacts of our operations on the environment.

F.1.5 [PM-ESHQ-3](#), Safety

WCH is committed to developing and maintaining a culture based on an "injury-free workplace" philosophy, under which all accidents are preventable and occupational injuries and illnesses are not acceptable. The purpose of this document is to describe the WCH policy and program elements that are instrumental to the success of meeting that commitment. All WCH projects and activities fall within the scope of this policy. WCH subcontractors will adopt policies that support and are compatible with this policy.

F.1.6 [PM-ESHQ-4](#), Stop Work

The purpose of this policy is to empower employees with the responsibility and authority to stop work when they are convinced that a situation exists which places themselves, their coworker(s), or the environment in danger.

F.1.7 [PM-ESHQ-5](#), Fire Protection

WCH management is committed to support a level of fire protection and fire suppression capability sufficient to minimize losses from fire and related hazards, consistent with the "best class" of protected property in private industry. This policy describes the strategy for meeting that commitment.

F.1.8 [PM-ESHQ-6](#), ALARA Policy

It is the policy of WCH to reduce safety and health risks associated with radioactive materials and ionizing radiation to levels that are as low as reasonably achievable (ALARA). Additionally, WCH management commits to ensuring that there should not be any occupational exposure of workers to ionizing radiation without the expectation of an overall benefit from the activity causing the exposure. Both individual and collective exposures should be maintained as far below the DOE occupational dose limits as social, technical, economic, practical, and public policy considerations permit.

F.1.9 [PM-ESHQ-7](#), Safety Recognition Program

WCH acknowledges the importance of recognizing employees for participation in safety awareness activities. Employee actions that improve the safety culture on the River Corridor Closure (RCC) Project are invaluable to the success of the project. The WCH Safety Recognition Program is intended to recognize employee contributions and successes that are linked to continuous improvement in safety performance on the RCC Project.

F.1.10 [PM-ESHQ-8](#), Safety Meetings

WCH's policy on safety meetings is intended to ensure safety-related information is communicated to all employees.

Safety meetings are a forum for improving safety conditions, enhancing safety awareness by sharing information on both on-the-job and off-the-job safety issues, and for communicating

information regarding company and project safety initiatives. These meetings are in addition to plan-of-the day, staff meetings, and Local Safety Improvement Team (LSIT) meetings.

The safety meeting topics are made available through a “Monthly Safety Meeting Toolbox” issued on a monthly basis. The toolbox provides the minimum content for review at the monthly safety meetings and should be used by the safety meeting leader to prepare the material used for the meeting.

Every meeting that has six or more employees should begin with a safety topic.

F.1.11 [PM-ESHQ-9](#), Worker Bill of Rights

The purpose of this policy is to identify the fundamental occupational safety and health-related rights of employees. It is WCH’s policy that every employee performing work on the RCC Project has the right to all the items outlined in the policy (e.g., right to information, personal exposure records, and stop work policy), without reprisal from WCH supervision or management.

It is the responsibility of management, employees, and unions to uphold these rights and respect those that invoke them for their personal safety or the safety of others.

F.1.12 [CONOPS-1-0](#), Program Overview and General Requirements (replaced [PM-ESHQ-10](#), Conduct of Operations)

WCH shall integrate "Conduct of Operations" principles into all of its programs, projects, and work activities to enhance safe operation.

All levels of management, supervision, and staff shall comply with the principles of Conduct of Operations as they apply to their specific job and responsibility. Regardless of the degree of complexity of the work, the same level of safe performance is expected, which includes each individual’s commitment to continuously improve operations consistent with the principles of WCH’s ISMS.

All WCH personnel are responsible for ensuring a commitment to safety and continuous improvement in the performance of work and operations. These commitments are supported by strong adherence to the principles of conduct of operations.

F.1.13 [PM-ESHQ-11](#), Graded Approach

WCH advocates the use of a graded approach in the application of project and activity requirements, rules, and regulations. Use of a graded approach is intended to provide a compliant pathway to implement the Quality Assurance rule and DOE order, while, at the same time, (a) ensuring conditions do not compromise public, employee, or project safety or adversely affect the environment; and (b) ensuring WCH processes and functions remain effective and efficient.

The WCH graded approach is implemented through the approved set of WCH procedures and documents that support implementation of WCH-51, *Quality Assurance Program Description* (QAPD). The graded approach is applicable to all functions and organizations that contribute to the quality and safety of WCH activities. Compliance with applicable portions of stated

requirements established in 10 *Code of Federal Regulation* (CFR) 830 Subpart A, *Quality Assurance*, and in DOE O 414.1B, *Quality Assurance*, is mandatory unless an exemption is approved through an appropriate process.

The graded approach may not be used in implementing the USQ (unreviewed safety question) process, implementing technical safety requirements, or in obtaining exemptions from the requirements of DOE 414.1B or 10 CFR 830, Subpart A.

Grading is encouraged if a single or uniform method of applying a requirement across a project or activity does not add value or reduce risk. The graded approach provides the flexibility to establish controls (e.g., procedures, instructions, specifications) that are necessary to provide protection from hazards identified for the project or activity. Procedures should apply the graded approach in response to the risks, hazards, and necessary controls for tasks and activities. The use of the graded approach in procedures shall be established in BSC-1, *Business Services and Communications*, BSC-1-7.2, "Preparing, Issuing, Revising, and Canceling Administrative Procedures," and PAS-1, *Project Activities and Support*, PAS-1-1.1, "Technical Procedure Development."

Defining appropriate grading is accomplished by deliberate quality planning and is based on activity-specific or project-specific factors such as the following:

- The relative importance to safety, safeguards, and security
- The magnitude of any hazard or risk involved
- The life-cycle stage of a project or activity
- Impact/consequences on programmatic mission of a project
- The particular characteristics of a project or activity
- The nuclear safety classification or hazard category of the item or activity
- Adequacy of existing safety documentation
- The relative importance of radiological and nonradiological hazards
- Complexity of products or services involved
- Performance history of a project or activity.

F.1.14 PM-PI-1, Performance Management System

WCH will apply a Performance Management System—an integrated management control system—to all work on the RCC Project. Use of the Performance Management System will allow both DOE and WCH management to have visibility into cost, schedule, and scope progress on the RCC Project for the purpose of performance measurement and project management.

WCH-6, *Performance Management System Description*, provides guidance on application of earned value management system principles to meet the contractual requirements of the RCC Project.

F.2 WCH MANAGEMENT PROGRAMS

F.2.1 Criticality Safety Program

The WCH Criticality Safety Program (CSP) applies to fissionable materials (FMs) that are produced, processed, stored, transferred, disposed, or otherwise handled by WCH. The CSP identifies programmatic elements that prevent accidental criticality in accordance with applicable DOE and American National Standards Institute (ANSI)/American Nuclear Society (ANS) requirements. NS-1, *Nuclear Safety Manual*, establishes programmatic procedures for implementing the WCH CSP. The CSP is established, implemented, and maintained at the 324 and 327 Buildings and 618-10 and 618-11 Burial Grounds in accordance with the description provided in HNF-11724, *Fluor Hanford Safety Management Programs*. The program key attributes, as applicable per HNF-7098, *Criticality Safety Program*, are identified in the approved and implemented documented safety analysis for each facility. HNF-11724 and HNF-7098 will be applicable to each of these facilities until implementation of NS-1-1.1, "Washington Closure Hanford Criticality Safety Program," is completed at the facility.

Operations with FM that pose a criticality accident hazard are evaluated and documented to demonstrate that operations will be subcritical under both normal and all credible abnormal conditions. The FM operations are conducted in such a manner that consequences to personnel and property that result from a criticality accident will be mitigated. No single credible event or failure will result in a criticality accident having unmitigated consequences.

F.2.2 Worker Safety and Health Program

The WCH Worker Safety and Health Program Plan, along with the WCH Subcontractor Safety and Health Program Plan, may be found in Appendices H and J, respectively. Both of these documents provide the programmatic basis for demonstrating compliance with 10 CFR 851. Safety and health program responsibilities and program descriptions are found in SH-1, *Safety and Health*, Section 2.

Safety and health programs cover work performed at the RCCC projects and facilities by establishing requirements and guidelines to protect workers and the public. Implementing procedures provide the content and direction to ensure that all known and anticipated work hazards are analyzed prior to the performance of work and that consideration is given to potential emergency conditions. Work is conducted in the safest and most economical manner possible within the guidance of existing procedures and work control documents.

WCH safety and health programs are implemented consistent with the core functions and guiding principles of the WCH ISMS. Work is conducted in a manner that is compliant with contractual safety requirements and consistent with applicable state, federal, and local regulations. The ISMSD will be maintained under configuration control. Significant changes to policies, procedures, and/or manuals may impact the ISMSD and require it to be updated and submitted to the DOE, Richland Operations Office (RL) for approval.

- **Industrial Safety**

Industrial Safety organizational responsibilities and procedures are found in SH-1, Section 3.

The primary objective of industrial safety is to ensure a place of employment that is free from recognized hazards with the potential to result in employee injury or illness. Industrial Safety processes and procedures in SH-1 address requirements and practices, and establish the methods for control of industrial hazards within the WCH organization.

Hazards are addressed when selecting or purchasing equipment, products, or services. Work plans, hazards analyses, and pre-job activities identify and address industrial hazards associated with the site and/or work to be performed. Industrial safety practices are reinforced in the work place routinely by project safety leads and project safety representatives as well as through various safety communications programs and initiatives.

- **Industrial Hygiene**

Industrial hygiene (IH) organizational responsibilities and procedures are found in SH-1, Section 4.

Industrial hygiene is the science of protecting the health of workers by minimizing exposure to physical, chemical, and biological hazards. This is accomplished by identifying, analyzing, controlling, and monitoring IH hazards during work planning and implementation.

Industrial hygienists participate in critiques and investigations and review external reports, bulletins, newsletters, and other documents for trends and lessons learned that are applicable to WCH project work sites. They also provide IH oversight; technical support and direction; exposure monitoring for chemical, biological, and physical agent hazards; staff and subcontractor training; and communications necessary for IH safety awareness.

- **Fire Protection**

Fire protection organizational responsibilities and procedures are found in SH-1, Section 5.

Fire protection processes and procedures ensure that WCH-managed facilities and projects are provided a level of fire protection adequate to meet contractual requirements established for the RCCC. Activities supported by fire protection processes and procedures include, but are not limited to, providing technical support, assessment schedules, requirements management, organizational interface and communications, and liaison with the Hanford Fire Department.

Fire protection activities and responsibilities are aligned with existing Hanford Fire Department programs, procedures, and processes.

- **Work Site Analysis**

Work site analysis procedures are located in the SH-1, Section 6.

WCH is committed to an ISMS that requires analysis, identification, and mitigation of safety and health hazards in all phases of work planning, development, and implementation. The objective is to start this process as soon as the scope of work is defined and work planning begins. During preliminary and later phases of work site analysis, thorough reviews and analysis of the work environment are completed to anticipate, recognize, evaluate, and

control situations, stressors, or other conditions in the work environment that may impair the health, well being, or efficiency of the WCH workforce.

F.2.3 Environmental Protection and Compliance Plan

The purpose of the Environmental Protection and Compliance Plan (EPCP) is to describe the WCH environmental protection and compliance framework and establish a WCH environmental management system (EMS). The WCH EMS provides a structured process for the achievement of continual improvement. In addition, the EPCP describes WCH's approach to maintaining compliance with applicable laws, regulations, and standards.

The EPCP applies to WCH employees involved in environmental restoration work at the Hanford Site. This includes strategic site-wide planning; ISMSD work process phases of project development; engineering, construction, and project closeout; facility and maintenance operations; and all other work activities that could impact the environment.

Integration of the WCH EMS into the ISMSD for all WCH work activities is consistent with DOE O 450.1A and 430.2B and the associated contractor requirements document (CRDs). The CRDs flow down key environmental protection and stewardship requirements from DOE O 450.1A and 430.2B such as pollution prevention opportunities and implementation of metrics that measure goals, objectives, and targets. WCH implements these requirements through the use of an EMS incorporated in the WCH ISMSD. Compliance with the CRD is further discussed in Section 4.0 of this document.

An environmental policy has been issued to provide clear direction on how WCH will perform work on the RCC Project. The policy guides decision makers in considering the environmental aspects and impacts associated with work within their purview. The policy calls for continuous environmental improvement, encourages pollution prevention, and requires compliance with applicable regulations. The company environmental policy is communicated to employees through various methods including site-wide mailing distribution, EMS awareness training, and posting the policy on the company intranet site.

F.2.4 Quality Assurance Program Plan (WCH-51)

The WCH Quality Assurance Program Description (QAPD) was written to comply with the requirements of DOE O 414.1 B, *Quality Assurance*; 10 CFR 830, Subpart A, "Quality Assurance Requirements"; and the quality assurance requirements of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989).

The WCH QAPD is intended to provide the roadmap for developing and maintaining the WCH procedures that control work. The WCH QAPD describes what must be done and the WCH procedures describe how it will be done. As procedures are written or revised, their content will be reviewed against the applicable criteria of the WCH QAPD by the organizations affected by the procedure content. Where required by DOE orders, federal or state regulations, or permits, individual quality assurance plans (QAPs) shall be prepared by WCH to reflect requirements unique to a specific environmental restoration activity or scope of work. Such activity-specific QAPs shall be prepared to interface with and be subordinate to the WCH's overall quality program (i.e., management system). The QAPs shall be reviewed by the WCH Quality Assurance and Services Manager.

The WCH quality management system describes methods for planning, performing, and assessing the adequacy of work, including work assigned to parties outside the organization. The WCH quality management system is intended to support and function with the WCH ISMS.

F.2.5 Radiation Protection Program Plan

WCH-57, *WCH Radiological Control Manual (RCM)*, provides guidance and direction at the WCH management level for compliance with the requirement of 10 CFR 835, *Occupational Radiation Protection*. The intent of the RCM is to ensure that any occupational exposures to radiation are ALARA and that plans, programs, and WCH activities are in compliance with the WCH Radiation Protection Program (RPP), WCH-100, *Washington Closure Hanford Radiation Protection Program*.

In addition to regulatory requirements of 10 CFR 835, the RCM commits WCH to implementation of DOE/RL-2002-12, *Hanford Radiological Health and Safety Document (HRHSD)*; DOE Order 5400.5, *Radiation Protection of the Public and the Environment*; and other contractual or regulatory commitments. Compliance with the intent of these documents is required to achieve the WCH goal of excellence in radiological protection.

10 CFR 835.101 states that DOE activities shall be conducted in compliance with a documented DOE-approved radiation protection program and provides general requirements and conditions for development and compliance with the RPP. The RCM and the WCH RPP addresses these requirements as applicable.

F.2.6 Personnel Training

WCH-38, *Training Implementation Matrix for River Corridor Closure Non-Reactor Nuclear Facilities*, describes the operating organization qualification programs for positions within the operating organization of WCH.

The Training Implementation Matrix (TIM) identified in WCH-38 defines and describes how the WCH implements the requirements of DOE Order 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*. The TIM also describes the organization and administration of the WCH training and qualification program(s) and includes justification for exceptions taken to any requirements. The WCH Facilities TIM was developed to show how WCH has established implementing requirements, assigned responsibilities, and describes the management systems established to ensure the quality of WCH activities and products.

Training and qualification programs established and implemented to satisfy regulatory requirements other than DOE Order 5480.20A are addressed separately in other WCH training program requirements documents and procedures.

F.2.7 Conduct of Operations

WCH-98, *Washington Closure Hanford Conduct of Operations Applicability Matrix*, summarizes the applicability and implementation of the requirements established in DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, and is consistent with the expectations established in CONOPS-1, *WCH Conduct of Operations Manual*.

As a first step in developing this document, each of the WCH projects reviewed DOE Order 5480.19 on a requirement-by-requirement basis to define precisely which requirements were applicable. Then each project identified the implementing procedures associated with achieving compliance with the applicable requirements. Several iterations were completed to identify opportunities to encourage implementation of common approaches to meeting the requirements and to ensure that projects could take full advantage of the insights and approaches used throughout WCH.

In developing this matrix, consideration was also given to the different types of work within each of the five projects. Where lower tier documents are used to achieve compliance with DOE Order 5480.19, they are also incorporated into this matrix

F.2.8 Emergency Management Program

The purpose of the Emergency Management Program is to ensure the safety and health of workers and the public and for the protection of property and the environment in the event of an emergency or abnormal incident.

The WCH Emergency Management Program applies to all RCCC operations, facilities, and personnel, including subcontractors, vendors, visitors, and non-WCH tenants in WCH-managed facilities.

The WCH Emergency Management Program establishes coordinated RCCC Emergency Response Organizations that are capable of mitigating and responding to industrial, security, radiological, and nonradiological hazardous materials incidents in a timely, efficient, and effective manner. The WCH Emergency Management Program is based on a graded approach and is commensurate with the hazards and consequences associated with the projects/facilities and activities managed by WCH and/or neighboring contractor facilities.

The WCH Emergency Management Program is part of the overall DOE Emergency Management Plan established in DOE/RL-94-02 and DOE/RL-0223.

Implementation of the WCH Emergency Management Program is accomplished by adherence to the requirements identified in volume 2 of the Level 2 administrative procedures manual, *Security and Emergency Management, and Occurrence Notification Manual*.

F.2.9 Fire Protection

Fire protection organizational responsibilities and procedures are found in SH-1, Section 5.

Fire protection processes and procedures ensure that WCH-managed facilities and projects are provided a level of fire protection adequate to meet contractual requirements established for the RCCC. Activities supported by fire protection processes and procedures include, but are not limited to, providing technical support, assessment schedules, requirements management, organizational interface and communications, and liaison with the Hanford Fire Department.

Fire protection activities and responsibilities are aligned with existing Hanford Fire Department programs, procedures and processes.

F.2.10 Waste Management

The waste management program consists of three functional elements:

- Waste Management
- Waste Transportation
- Waste Minimization/P2 Program.

The WCH waste management program ensures protection of the public and environment. The program implements compliant waste management from generation through disposal for all wastes in accordance with controlling regulations and DOE orders. The primary repository for RCCC waste is the Environmental Restoration Disposal Facility (ERDF). The ERDF was designed to serve as a waste isolation structure for bulk soil, demolition debris, and miscellaneous contaminated material from Hanford Site remediation activities conducted under *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)* authority. WCH-191, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, establishes the ERDF waste acceptance criteria for disposal of materials resulting from Hanford Site cleanup activities. Compliance with the waste acceptance criteria requirements enables implementation of appropriate measures to protect human health and the environment, ensure the integrity of the ERDF liner system, facilitate efficient use of the available space in the ERDF, and comply with applicable or relevant and appropriate requirements. The waste acceptance criteria further define responsibilities, identify the waste acceptance process, and provide the primary acceptance criteria and regulatory citations to guide ERDF users.

Waste transportation covers the loading, transportation, and unloading to waste vehicles involved with the remediation activities. During this phase of the operations it is imperative that workers, the public, and environment are protected from both radiological and chemical hazards. By implementing the CFs and GPs of ISM within the waste transportation procedures, WCH minimizes the risks during this activity.

The WCH Waste Minimization/P2 Program promotes reduction of waste through segregation, affirmative procurement, reuse, and recycling for all project activities. These principles are applied during the planning and execution stages of project activities to reduce or eliminate the generation of waste and the release of pollutants to the environment. Pollution prevention opportunity assessments are also performed on newly generated waste streams that have not been previously assessed. Specific procedural requirements for this program are found in WMT-1, *Waste Management and Transportation*, WMT-1-1.1, "Waste Minimization and Recycling."

Level 1 waste management governing procedures are found in WMT-1.

F.3 WCH COMMITTEES, TEAMS, FORUMS, AND CHARTERS

F.3.1 Local Safety Improvement Teams

The mission of the LSIT is prevent the occurrence of injuries by increasing personnel safety awareness both at work and at home and to provide an avenue for employees to contribute to the safety program, promote continuous safety improvement, promote safety awareness, and provide a concerted focus on safety issues from an employee perspective.

Major responsibilities are as follows:

- Solicit and encourage employee involvement in safety and health programs
- Coordinate and manage identification and resolution of safety issues
- Review, evaluate, and implement decisions related to safety initiatives
- Discuss lessons learned, accident investigations, inspection data, safety concerns, and safe work practices at monthly meetings
- Provide an effective way to communicate safety and health information among employees
- Create methods of recognizing and rewarding employees for safety successes.

F.3.2 Local Safety Improvement Team Forum

The mission of the LSIT Forum is to champion the safety issues and concerns of all RCC Project employees and encourage continuity of safety practices. The primary objective is to provide a forum for LSIT chairpersons to ensure lessons learned and best practices are shared across the RCC Project.

F.3.3 Voluntary Protection Program Champions Committee

The WCH Voluntary Protection Program (VPP) promotes effective worksite-based safety and health. In the VPP, management, labor, and OSHA establish cooperative relationships at workplaces that have implemented a comprehensive safety and health management system. Through the application of the VPP in conjunction with other WCH safety and health programs, WCH has achieved occupational safety and health. The VPP Champions Committee was formed to further recognize and promote the following VPP tenets:

- Management Leadership
- Employee Involvement
- Worksite Analysis
- Hazard Prevention and Control
- Safety and Health Training.

WCH's VPP Champions Committee serves as an avenue by which employees may raise safety and health issues as well as providing a forum for worker involvement to develop, enhance, and promote continuous worker safety and health performance.

The Champions Committee provides advice and assistance to upper WCH management including the Safety, Health, and Quality (SH&Q) Director, WCH line organizations, Hanford Atomic Metal Trades Council (HAMTC), and, upon request, to other WCH safety committees. In addition, the committee provides a central forum for other safety committees to discuss safety and health issues. WCH's VPP Champions Committee has often been called upon to mentor other external organizations interested in obtaining VPP status as well as those interested in learning more about WCH safety and health program. The committee meets monthly.

F.3.4 Electrical Safety Committee

The Electrical Safety Committee ensures that WCH and subcontractor employees performing work on or near electrical systems are compliant with electrical safety codes/procedures and perform the work in a safe manner. The WCH Electrical Safety Committee provides review, recommendation, technical guidance, and recommendations to WCH management and employees regarding electrical work practices, procedures, and code compliance requirements in accordance with the WCH Electrical Safety Program.

The Electrical Safety Program provides effective processes and procedures that ensure the safety of personnel while in performance of work associated with or near electrical systems.

The Electrical Safety Program is compliant with the following:

- 29 CFR 1910, "Occupational Safety and Health Standards," Subpart S
- 29 CFR 1926, "Safety and Health Regulations for Construction," Subpart K
- 10 CFR 851, "Worker Health and Safety" *Code of Federal Regulations*, as amended
- NFPA 70E, *Standard for Electrical Safety in the Workplace*
- NFPA 70, *National Electrical Code*.

Implementing procedures are contained in the following:

- SH-1, *Safety and Health*, Sections 2 and 3
- PAS-1, *Project Activities and Support*
- PAS-2, *Integrated Work Control Program*.

F.3.5 ALARA Committees

PM-ESHQ-6, "ALARA Policy," demonstrates a commitment to ALARA and the application of ALARA in all aspects of WCH planning, design, and work execution. To further enhance the ALARA program, WCH created two functional groups to oversee and monitor the application of ALARA principles, the Senior ALARA Committee and the project ALARA committees.

The Senior ALARA Committee is designed to ensure participation by a diverse range of WCH team personnel and provides for an appropriate level of management involvement in review of ALARA issues.

Project ALARA committees will be established for each project to develop project goals, ensure ALARA concepts are built directly into work planning, and help resolve site ALARA concerns.

See RC-1, *Radiological Protection Programs*, RC-1-10.2, "ALARA Program," for additional information pertaining to the Senior ALARA Committee and the Project ALARA committees.

F.3.6 Executive Safety and Quality Review Board

The purpose of the Executive Safety and Quality Review Board is to oversee the effectiveness of programs and processes associated with the Safety Management Program, Quality Management Program, and the *Price-Anderson Amendments Act* (PAAA) program, including the identifying, analyzing, and reporting of issues and effectiveness of implementing corrective actions.

- Review the causal analysis and corrective action plan development for Significant Condition Adverse to Quality issues as defined in the Corrective Action Management procedure and other issues as determined by the chair, vice chair, or sponsor.
- Provide oversight to ensure that corrective actions identified and tracked in the corrective action management program for Significant Condition Adverse to Quality and other selected issues have achieved desired results.
- Provide feedback and senior management direction concerning the focus and conduct of the WCH Assessment Program.
- Periodically (approximately quarterly) review the effectiveness of the Safety Management Program and Quality Management Program.
- Periodically (approximately quarterly) review the PAAA Program performance regarding proper screening and reporting of events and issues.
- On an ongoing and as-needed basis, review events, issues, and adverse trends with safety or quality significance and/or programmatic implications, including safety and/or quality issues that crosscut organizational boundaries.
- Periodically (approximately monthly) review safety and quality metrics and any corrective actions generated from the metrics.

The Safety Management Program is implemented through NS-1, *Nuclear Safety Manual*. The Quality Management Program is described in WCH-51, *Washington Closure Hanford Quality Assurance Program Description*.

F.3.7 Hanford Radiological Control Forum

Each contractor that conducts activities in accordance with a Radiation Protection Program, as required by 10 CFR 835, shall participate in the development, maintenance, and implementation of a set of Hanford Site-wide radiological requirements that define the radiological practices that are in the best interest of the Hanford Site. Accordingly, the participating contracting organizations are expected to charter an organizational mechanism (i.e., the Hanford Radiological Control Forum) to address Hanford Site-wide consistency issues, optimize radiological programs in a consistent manner to incorporate Hanford Site-wide best practices, and ensure long-term management of radiological health and safety issues.

The chartered organization shall establish administrative protocols for the following elements:

- Justification for decisions
- Implementation schedule
- Prioritization of potential issues or concerns relative to site needs
- Cost-benefit analysis and other methods to decide between alternatives, as appropriate
- Submittal process to RL/Office of River Protection for review.

Hanford Site-wide radiological requirements derived from the above organization shall be consistent with all relevant statutory and regulatory requirements and shall be revised whenever

necessary to ensure such consistency. Whenever there is a conflict, the applicable WCH Radiation Protection Program takes precedence. DOE shall be notified of any conflict identified by the contractor between this document and other requirements.

In addition to DOE/RL-2002-12, *Hanford Radiological Health Safety Document (HRHSD)* requirements, WCH has established a Radiological Control (RadCon) organization to provide radiological support to managers and workers and to implement the Radiation Protection Program as described in WCH-100. WCH RadCon personnel include radiological control managers, radiological control technical support staff, radiological engineers, radiological control supervisors, and radiological control technicians.

WCH is a member of the Hanford Radiological Control Forum. WCH-57 commits to the Hanford Site-wide consistency requirements of the HRHSD.

F.3.8 River Corridor Closure Action Team (RCCAT)

The River Corridor Closure Action Team (RCCAT) membership includes the WCH Project General Manager for the RCC Project, all project directors, the SH&Q Director, and the Project Integration Director. The RCCAT meets regularly as specified in PI-1, *Project Integration*, PI-1-2.13, "Work Authorization / Authorized Changes," to review project status, resolve any resource or cross-cutting issues in the performance path, identify opportunities for work acceleration, challenge the status quo, and share lessons learned, if relevant. The RCCAT will also make the decision on critical go/no-go decision points for risk mitigation actions, surface emerging risks to be added to the risk list, and confirm risk closures.

F.4 WCH COMPANY-LEVEL MANUALS

F.4.1 BSC-1, Business Services and Communications

WCH is responsible for management of a number of major remediation projects involving large quantities of government property as the environmental restoration contractor for the Hanford Site. For purposes of this manual, procedural direction is provided to directors, managers, and other employees, all of whom are involved to some degree in the management of the RCCC.

The primary responsibility for carrying out these functions rests with the organizations to which the activity resides. The Business Services and Communication staff is responsible for providing company-wide direction, coordination, assistance, and management overview to ensure that these responsibilities are properly met. Essential functions as they relate to ISM are as follows:

- Human Resources
- Training
- Controller
- Procurement
- Information Technology
- Document and Information Management
- Ethics, Legal, and Contracts
- Communication and Public Affairs.

F.4.2 ENG-1, Engineering Services

The Engineering Services manual consists of a top-tier procedure (ENG-1-1.1, “Engineering Services Overview”) and subtier procedures that have been grouped within five functional elements. The subtier procedures are approved engineering and engineering/procurement support procedures that implement Engineering Services requirements.

The Engineering Services procedural set was designed based on the core functions and guiding principles identified within the ISMS program as described in WCH-4, *Integrated Environment, Safety, and Health Management System Description*. The ISMS core functions and guiding principles are embedded throughout the engineering process and procedures contained in the Engineering Services manual.

F.4.3 ENV-1, Environmental Monitoring & Management

As part of the RCCC, WCH is responsible for regulatory compliance and protection of the environment and natural resources of the Hanford Site that may be damaged from normal operations, remediation, or cleanup. To ensure that RCC activities are executed in a compliant manner and risk to the environment are minimized, the RCC Project has developed a number of Level 1 procedures. The ENV-1 manual contains the RCCC environmental procedures that address project operations, compliance, regulatory, and safety issues for the entire life cycle of project-specific activities and the RCCC.

F.4.4 CONOPS-1, WCH Conduct of Operations Manual

The purpose of the WCH Conduct of Operations program is to ensure that facility operations are managed, organized, and conducted in a manner that results in a high level of performance and therefore contributes to safe and reliable operations. The elements of this program are fundamental to the manner in which operations are conducted to comply with Department of Energy (DOE) requirements.

The CONOPS-1 manual summarizes the WCH approach to satisfying the various requirements of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, on the River Corridor Closure Contract (RCCC). The CONOPS-1 manual addresses the eighteen CONOPS elements identified in DOE Order 5480.19 as follows:

WCH Procedure ID	WCH Procedure Title	DOE O 5480.19 Guidelines
CONOPS-1-0	Program Overview and Requirements	---
CONOPS-1-1	Operations Organization and Administration	Chapter 1
CONOPS-1-2	Shift Routines and Operating Practices	Chapter 2
CONOPS-1-3	Control Area Activities	Chapter 3
CONOPS-1-4	Communications	Chapter 4
CONOPS-1-5	Control of On-Shift Training	Chapter 5
CONOPS-1-6	Investigation of Abnormal Events	Chapter 6
CONOPS-1-7	Notifications	Chapter 7

WCH Procedure ID	WCH Procedure Title	DOE O 5480.19 Guidelines
CONOPS-1-8	Control of Equipment and System Status	Chapter 8
CONOPS-1-9	Lockouts and Tagouts	Chapter 9
CONOPS-1-10	Independent Verification	Chapter 10
CONOPS-1-11	Logkeeping	Chapter 11
CONOPS-1-12	Operations Turnover	Chapter 12
CONOPS-1-13	Operations Aspects of Facility Chemistry and Unique Processes	Chapter 13
CONOPS-1-14	Required Reading	Chapter 14
CONOPS-1-15	Timely Orders to Operators	Chapter 15
CONOPS-1-16	Operations Procedures	Chapter 16
CONOPS-1-17	Operator Aid Postings	Chapter 17
CONOPS-1-18	Equipment and Piping Labeling	Chapter 18

F.4.5 NS-1, Nuclear Safety Manual

The WCH Nuclear Safety staff is dedicated to protecting workers, the public, and the environment from the hazards associated with the DOE nuclear facilities for which WCH is the responsible contractor. Through the application of NS-1, WCH management requires review of work activities involving hazardous (i.e., radiological and nonradiological) material commensurate with the complexity of the work to be performed and the relative magnitude of the hazards involved. Nuclear safety documentation addresses uncertainties associated with the hazardous material inventory data and documents the appropriate hazard controls needed to provide adequate protection from the identified hazards.

NS-1 is compliant with 10 CFR 830, and WCH nuclear safety management requirements provide an appropriate level of control for managing, collecting, handling, processing, storing, transferring, transporting, and disposing radiological material to provide reasonable assurance that the work can be performed safely. To the extent practical, all persons; all government, public, and private property; and the environment are adequately protected from the hazards associated with the DOE nuclear facilities for which WCH is the responsible contractor.

F.4.6 PAS-1, Project Activities and Support, and PAS-2, Integrated Work Control Program

The PAS manuals are a collection of project planning, work control, and support activities required to ensure that all work performed in a systematic and controlled manner. The major areas of emphasis with this set of procedures are as follows:

- Job control – based on identified hazards
- Standard equipment operational procedures
- Subcontract formation and management
- Work management of work packages and field activities.

The procedures also address the administrative aspects of technical procedure development and maintenance.

F.4.7 PI-1, Project Integration

The Project Integration support organization provides the RCC Project with the project planning and project controls necessary to ensure the requirements of the RCCC are met and the closure of the river corridor is complete.

F.4.8 QA-1, Quality Assurance

Quality Assurance procedures implement in part the requirements outlined in Section 10.0 of the ISMSD, DOE O 414.1, and DOE O 226.1. The procedure set is integral to the WCH ISMS in that it provides the mechanisms for identification of concerns, root causes, and corrective actions. The procedure set is further instrumental to management and the DOE in evaluating overall compliance, safety and progress towards safely achieving the RCC mission, milestones and commitments. QA-1 achieves these goals through a systematic and graded approach of assessments, analysis, corrective actions, and feedback. QA-1 applies to all aspects of WCH and subcontractor operations.

F.4.9 RC-1, Radiation Protection Procedures

RadCon procedures provide the policies and actions necessary to ensure compliance with regulatory requirements and commitments. Compliance with these procedures is essential to ensure exposure to workers and the general population is maintained ALARA and ensures the risk of release of radioactive materials to the environment is minimized.

Written procedures are developed to ensure compliance with WCH-57, *WCH Radiological Control Manual*, commensurate with the radiological hazards created by the activity, and consistent with the education, training, and skills of the individuals exposed to those hazards.

Procedures are structured to implement controls that will enable the user to comply with regulatory requirements, radiation exposure limits, and the criteria regarding the release of radioactive materials. It is the responsibility of WCH management and supervision to ensure compliance with these requirements by those individuals reporting to them, including subcontractors.

The procedures and requirements within this manual apply across organizational boundaries.

F.4.10 SEM-1, Security and Emergency Management Program; SEM-2, Emergency Management Program; and SEM-3, Incident Response and Investigation

The SEM manuals are a collection of security, emergency management, and accident investigation procedures that are essential to the safety of the site, worker, and public. WCH SEM programs are fully integrated with the other Hanford Site contractors and state and local agencies. There are provisions and procedures for addressing asset protection, onsite security threats, cyber security, and hazardous chemical/radiological events through the use of incident response and management, assessments, drills, and investigation/reporting. The procedures also address access control, nuclear material accountability, emergency response

organizations, control of potential chemical/radiological threats, and management of occupational injury/illness incidents.

F.4.11 SH-1, Safety and Health

This manual contains the operational and implementing procedures for various safety and health programs including Industrial Safety, Industrial Hygiene, Fire Protection, and Work Site Analysis. The Safety and Health organization and its responsibilities are consistent with WCH-4, *Integrated Environment, Safety, and Health Management System Description*.

F.4.12 WMT-1, Waste Management and Transportation

WMT-1 provides procedures that address the control and security for waste operations, minimization, and transportation.

APPENDIX G
TRANSITION INITIATIVES

APPENDIX G

TRANSITION INITIATIVES

G.1 TRANSITIONED CATEGORY 2 AND 3 NUCLEAR FACILITY WORK SCOPE

When Washington Closure Hanford (WCH) assumed responsibility for work scope previously performed by Fluor Hanford (FH), of particular concern was transition of operations for four nuclear facilities. These include one hazard category 2 facility (the 324 Building) and three hazard category 3 facilities (the 327 Building and the 618-10 and 618-11 Burial Grounds). A number of administrative challenges were encountered during transition of this work scope. The primary challenge was the constraint that adopting the FH documented safety analyses (DSAs) for these nuclear facilities had on the ability to transition to a single set of WCH administrative and technical procedures. This issue and the approach adopted by WCH to manage the issue are described in the following paragraphs.

In accepting responsibility for operation of the former FH category 2/3 nuclear facilities, WCH became responsible for complying with the associated DSA requirements. Therefore, at transition, WCH adopted the existing nuclear facility DSA documents developed by FH and approved by the U.S. Department of Energy (DOE). The DSAs reference FH safety management programs (SMPs) as described in HNF-11724, which in turn reference specific FH implementing procedures. Because WCH and DOE could not make substantial revisions to the DSAs during transition and because the incumbent work force transitioning from FH was trained to the FH SMP procedures, WCH elected to adopt the FH SMPs in a tailored fashion for an interim period by "blue sheeting" HNF-11724. The resulting document, designated WCH-HNF-11724, was applicable only to the 324 and 327 Building and 618-10 and 618-11 Burial Ground scope that WCH assumed from FH in the 300 Area. It did not apply to other RCCC scope.

FH implementing procedures referenced within WCH-HNF-11724 were also adopted through blue sheeting, but in some cases replacement documents were substituted. Blue sheeted FH procedures referenced within WCH-HNF-11724 may contain text referring to Hanford Site facilities other than 324/327 and 618-10/618-11; however, those sections are not applicable as they are outside the scope of the RCCC. FH procedures blue sheeted by WCH are effectively frozen as of the date of the blue sheet; subsequent revisions issued by FH are not applicable to WCH unless specifically evaluated by WCH (e.g., through the USQ process).

Through this process, WCH established a core set of implementing documents at transition. Following transition, this core set of implementing documents was assessed for the 324 and 327 facilities through a disciplined implementation validation review process. The intent of the implementation validation review was to confirm the following:

- Administrative requirements have been met
- The facilities can be operated within their technical safety requirements
- New procedures have been implemented

- Any compensating measures have been identified when necessary, and facility operations and maintenance personnel have been trained on the modified SMP approach, the administrative procedures, and any technical changes.

The set of implementing documents was established to ensure SMP compliance was maintained under configuration control by responsible project management. For the 324/327 Project, WCH Standing Instruction SI-300A-017, "Control and Use of Procedures Applicable to Work in the 324/327 Facilities," links to the current table of implementing documents. This table, titled *Use of Non-WCH 300D4 and 618-10/618-11 Burial Grounds*, is updated frequently as migration to a single WCH procedure set continues. The 618-10/618-11 Project uses the same table to control procedure use.

WCH and DOE have revised the DSAs for the 324/327 and 618-10/618-11 facilities. During these revisions, FH procedure references in the DSA (including technical safety requirements) documents were replaced with appropriate WCH procedures. At this point, there is no longer a need to maintain a crosswalk matrix from FH procedures to WCH procedures for safety basis implementation. SI-300A-017 is now maintained to provide a link to a small number of remaining documents that may be used until no longer needed or replaced.

It should be noted that Volumes 1 through 3 of NF-100, *324 and 327 Buildings 618-10 and 618-11 Burial Grounds*, contain FH SMPs adopted at transition with modifications that mapped positions, titles, and responsibilities, and clarified applicability. Volume 4 of NF-100 adopted FH documents not requiring modifications that were adopted in their entirety. Use of these documents has been managed via SI-300A-017, "Control and Use of Procedures Applicable to Work in the 324/327 Facilities."

The number of documents remaining in NF-100 has been reduced as WCH programs have been developed and adopted as replacements. The remaining documents are in place to indicate they are still available for use at these facilities. The NSF-100 volumes will need to be maintained in the interim and are not anticipated to be eliminated near term.

APPENDIX H
WORKER SAFETY AND HEALTH PROGRAM PLAN (10 CFR 851)

APPENDIX H

WORKER SAFETY AND HEALTH PROGRAM (10 CFR 851)

H.1 INTRODUCTION

On February 9, 2006, the U.S. Department of Energy (DOE) published the final rule of Title 10, *Code of Federal Regulations* (CFR), Parts 850 and 851 (10 CFR 850 and 851), "Chronic Beryllium Disease Prevention Program and Worker Safety and Health Program." The final rule established a framework for a worker protection program that reduces or prevents occupational injuries, illnesses, and accidental losses by requiring DOE contractors to provide their employees' with safe and healthful workplaces. In addition, the program established procedures for investigating whether a requirement has been violated, for determining the nature and extent of such violation, and for imposing an appropriate remedy.

In accordance with the final rule, contractors are required to:

- Provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers; and
- Ensure that work is performed in accordance with all applicable requirements of 10 CFR 851 and the worker safety and health program for the workplace.

Contractors are required to develop and implement a written worker safety and health program that describes how compliance is achieved with requirements. In addition, the rule requires the contractor to integrate the regulatory requirements with other related site-specific worker protection activities and with the Integrated Safety Management System (ISMS). This appendix contains the Washington Closure Hanford (WCH) 10 CFR 851 written safety and health program plan and associated compliance matrix and is planned to be updated on an annual basis in parallel with the ISMS Description (ISMSD) annual revision. In addition, Appendix J of this ISMSD contains the WCH subcontractor worker safety and health program plan.

Portions of WCH procedures that implement the rule have been revised to identify in italics and brackets implementation of a specific requirement. The effective date of both program plans is May 25, 2007, or 90 days after approval by DOE, Richland Operations Office (RL) of the final plan, whichever is earlier. Prior to that date, the existing safety and health program for WCH will be implemented as written in existing policies and procedures.

H.2 PURPOSE AND SCOPE

The purpose of this attachment is to document WCH's worker safety and health program and demonstrate integration of the program with the ISMS. The scope of the program plan is applicable to all WCH personnel and facilities. This program plan does not apply to vendors, delivery persons, and others who do not have service contracts with DOE or who are not subcontractors to such contractors. In addition, the program plan does not apply to radiological hazards to the extent they are regulated by 10 CFR Parts 820, 830, and 835. All WCH subcontractors will be required to comply with Appendix J (of the ISMSD) that contains the WCH Subcontractor Worker Safety and Health Program Plan.

H.3 BACKGROUND

The final rule codified the DOE's worker protection program requirements established in DOE O 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*. Consistent with the intent of Congress, DOE O 440.1A forms the basis for the rule's substantive requirements. The DOE structured the final rule:

- To take advantage of existing and effective comprehensive worker protection programs that have been implemented by contractors at DOE sites
- To minimize the burden on DOE contractors by clarifying that contractors need not establish redundant worker protection programs to comply with the rule
- To build on a successful program, given that DOE O 440.1A is consistent with Section 234C of the National Defense Authorization Act which directs the Department to promulgate regulations which provide a level of protection that is "substantially equivalent to the level of protection that is currently provided to these workers."

The final rule consists of five subparts:

- General Provision (Subpart A)
- Program Requirements (Subpart B)
- Specific Program Requirements (Subpart C)
- Variances (Subpart D)
- Enforcement Process (Subpart E).

Specifically, Subpart C of the rule identifies specific program requirements that are to be covered within the worker safety and health program plan. Contractors are required to have a structured approach to their worker safety and health program, including provisions for functional areas.

In addition, the rule applies the graded approach when developing the program plan in that it recognizes that the complexity and level of effort needed to develop and implement the worker safety and health program is to be greatly dependent on the complexity, duration, and scope of the activities covered (*Federal Register* February 9, 2006, Vol. 71, No. 27, pg. 6878).

H.4 APPLICATION OF 10 CFR 851 CLOSURE FACILITY DEFINITION

The River Corridor Closure Contract (RCCC) is a cost-plus-incentive fee contract for the cleanup of the Hanford Site river corridor that includes safety and cost performance and schedule performance incentives. In accordance with the RCCC, WCH has direct control over the RCCC work scope, when it is performed, how the work is performed, and who will perform the work. Per 10 CFR 851, a closure facility is defined as a facility that is nonoperational and is, or is expected to be, permanently closed and/or demolished, or title to which is expected to be transferred to another entity for reuse. All facilities listed in Contract No. DE-AC06-05RL14655, as contained within Section J, Attachment J-1, Table of River Corridor Closure Contract Workscope, meet the definition of "closure facility" under 10 CFR 851 because they are managed as either a remedial action and field work site (p. C-4 of the RCCC). These facilities support characterization and remediation of past-practice waste sites, technology development,

application of innovative remediation technologies, N Reactor deactivation, and decontamination and decommissioning activities. Exceptions include mobile offices procured after award of the contract that are expected to meet requirements of 10 CFR 851 for nonclosure facilities. In addition, facilities associated with the Environmental Restoration Disposal Facility (ERDF) are also expected to meet requirements of 10 CFR 851 for nonclosure facilities.

During the execution of the RCCC hazards are identified and hazard controls are developed and applied via two fundamental mechanisms: job hazards analysis (JHA) and a health and safety plan (HASP).

The JHA process is used during all work that is performed through the application of a work package. The JHA process is described in PAS-2, *Integrated Work Control Program*, PAS-2-1.1, "Integrated Work Control" and PAS-2-1.4, "Job Hazard and What If Analysis." The work package process is controlled by the Integrated Work Control Program (IWCP) and is independent of where the facility, location, or work activity is in the project life cycle. The IWCP is used to plan and implement field work for WCH-managed facilities. The IWCP utilizes multi-disciplinary teamwork and worker involvement to support the identification and analysis of work site hazards, development of the work package, performance of work, and observational approach for newly identified hazards. Also covered are administrative work package closeout activities. Work packages are developed and approved for release using a graded approach based on risk and complexity of the work hazards and worker competence.

For all other activities outside of the IWCP process, a HASP¹ is used to identify hazards and hazards controls. The development and maintenance of the HASP is described in SH-1, *Safety and Health*, SH-1-6.1, "Project/Facility Safety Planning and Documentation." Examples of types of activities (i.e., specialty, custom and/or routine operations, repairs, or services) that may be performed outside the IWCP are as follows:

- Routine operation, repair, and servicing of vehicles including automobiles, trucks, graders, forklifts, etc. Routine repair and servicing includes fueling, vehicle tire changes, engine repair, battery testing, fluid replacement, etc. All generated wastes must be compliantly managed.
- Routine operation, repair, and servicing of office equipment including computers, drives, scanners, fax machines, copiers, telephones, electric punching/cutting and stapling equipment, typewriters, office furniture, date/time stamps, postage meters, shredders, blueprint machines, printers, etc. Any hazardous waste generated must be compliantly managed.
- Routine plumbing work, including rework/replacement of restroom fixtures or plumbing (or unplugging/cleanout of drains), gas bottle changeout, rework/replacement of filter assemblies, and period replacement of filter cartridges.
- Routine support services including snow removal; warehouse pickup, delivery, storage/stocking; commodity vendor services (e.g., paper/office suppliers, refilling vending machines); janitorial services; office moves, furniture moves, office cubical reconfigurations

¹ The information in the health and safety plan would provide input into the WCH Employee Job Task Analysis (EJTA) process. The EJTA may be used in lieu of the health and safety plan for some field activities (e.g., field administrative, field clerical services).

(not involving electrical work), and lawn care and grounds maintenance (e.g., mowing grass, tree trimming), excluding activities resulting in soil disturbances.

- Routine administrative and clerical services, including filing, typing, and writing of manuals, instructions, job aids, procedures, or guides.
- Routine performance of technical or professional services, inspections, walkdowns, or assessments as long as hands-on work is not performed (i.e., opening containers, and moving equipment/material).
- Routine shop operations including noncoded welding, metal fabrication and assembly, the set up of transmitters and controllers, small tool repair and maintenance, carpentry, maintenance of electronic equipment, sign making, label making, laminating, and component painting.
- Non-RCRA or nonradiological painting performed by WCH resources.
- Routine surveys, including scoping surveys, performed in accordance with RC-100, *Radiological Control Support Procedures*, RC-100-4.4, "Radiological Routines."
- Routine Industrial Hygiene monitoring for asbestos, mercury, lead, beryllium, etc.

A full description of the IWCP is contained in Section 5.0 of the ISMSD. The list of facilities qualifying as "closure facilities" per 10 CFR 851 will be internally managed by WCH and updated on an annual basis to reflect buildings that transition into "closure."

Hazard controls associated with buildings that are occupied for supporting remedial actions and field work sites are managed via administrative controls (such as posting and safety and health surveillances). Hazard controls identified for unoccupied buildings include administrative controls (see above for examples), access controls (such as locking of buildings and security north of the Wye Barricade), and implementation of the IWCP.

H.5 ROLES AND RESPONSIBILITIES

The WCH Safety, Health and Quality (SH&Q) organization is responsible for maintaining the company's 10 CFR 851 program plan(s). SH&Q is responsible for program development, implementation, and oversight and for performing the actions associated with the *Price-Anderson Amendments Act* program as described in QA-1, *Quality Assurance*, QA-1-1.8, "Identification, Tracking, and Reporting of Price-Anderson Amendments Act Noncompliance." WCH projects are responsible for implementation of the overall worker safety and health program and appropriate integration into subcontracting and work planning activities.

H.6 INTERFACING WITH OTHER HANFORD SITE PRIME CONTRACTORS

WCH may, from time to time, provide products and/or services to and receive products and/or services from other Hanford Site prime contractors by Memoranda of Agreement (MOA). An MOA is used to establish a solid framework for providing work between prime contractors, to clarify the responsibilities and processes, and to create consistency among the multi-prime contractors. The MOA will include standard definitions, work request elements, generalized

decision analysis, and a rigorous dispute resolution process. The use of an MOA and/or the use of any term contained within does not create a subcontractor or supplier relationship.

Once an MOA with another Hanford Site prime contractor is in place, WCH receives or requests work to be performed by issuance of a work order in accordance with BSC-1, *Business Services and Communication*, BSC-1-8.5, "Providing WCH Services to Other Hanford Site Contractors," or with BSC-1, *Business Services and Communication*, BSC-1-8.6, "Obtaining Services From Other Hanford Site Contractors," respectively. The work order is a written formal request from/to an other Hanford Site contractor that describes, as a minimum, the scope of work to be performed by WCH; estimated costs; proposed schedule; roles and responsibilities of the other Hanford Site contractor and WCH; environmental, safety, health, and quality requirements; and the payment method.

When products and/or services between prime contractors are offered and accepted, DOE does not expect the requesting prime contractor to review or otherwise validate top-level crosscutting quality control, health, safety, and/or environmental protection requirements that have been reviewed and approved by DOE. The requesting prime contractor may assume that such contract requirements (e.g., ISMS, quality program/plan) are acceptable to DOE.

The performing prime contractor will be expected by DOE and the requesting prime contractor to provide products and/or services in a manner that is consistent with the requirements of the performing prime contractor's prime contract, including quality assurance, health and safety, and environmental compliance requirements, and the task instructions provided by the requesting prime contractor.

The requesting prime contractor is obligated to provide sufficient specifications; requirements; hazard information; and unique quality, technical, safety, and environmental requirements for the work to be performed. The performing prime contractor is expected to seek clarification of requirements that conflict with, or are greater than, its own baseline requirements. Specific details on requirements associated with interfacing with other Hanford Site prime contractors may be found in Contract No. DE-AC06-05RL14655, Clause H.33.

In general, performance of work authorized under MOAs will be implemented via the following:

- When WCH is performing work on the Hanford Site for another prime contractor, safety and health requirements will be implemented via the worker safety and health plan (WSHP) of the contractor in control of the work location. WCH personnel will, as a general rule, work under the host contractor's approved 10 CFR 851 WSHP while working within their facilities or other workplaces. If the project for another prime contractor is controlled by a subcontract, the relationship and responsibility for the WSHP will be defined in the subcontracting documents.
- When WCH is performing work for another prime contractor and the work is performed within a WCH-controlled location, then safety and health requirements will be implemented via the WCH or WCH subcontractor WSHP. In some cases, oversight responsibilities for safety and health may be shared by both WCH and the other prime contractor.
- Prime contractors, or their subcontractors, that perform work for WCH in WCH facilities or workplaces will use the WCH or WCH subcontractor WSHP in the conduct of their work activities.

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- Prime contractors performing work in areas that are controlled by both contractors (i.e., energy savings and performance contract), the applicable WSHP and associated requirements will be implemented via an MOA.

H.7 SAFETY AND HEALTH PROGRAM FUNCTIONAL AREAS

The WCH safety and health program is structured to address specific functional areas of the rule. PSD-8 contains a compliance matrix that demonstrates implementation of WCH policies and procedures to 10 CFR 851 requirements. A summary of each programmatic functional area is presented below.

NOTE: DOE-Headquarters Office of General Counsel has provided guidance that in considering the application of external standards to the regulation, that unless the regulation states otherwise, the entire standard, including its scope and other instructions as to how the standard is to be applied as part of the regulation. Therefore, if the standards adopted in 10 CFR 851 indicate that they are not to be applied retroactively or they apply only to design and construction as opposed to existing facilities, they would not apply to existing facilities that are not undergoing new construction.

H.7.1 Safety and Health Program Management

WCH is committed to developing and maintaining a culture based on an "injury-free" workplace philosophy, under which all accidents are preventable and occupational injuries and illnesses are not acceptable. WCH places the highest value on the welfare of the worker, instilling a sense of ownership for the program, and embraces excellence in all aspects of performance. The WCH safety and health policy and program is instrumental to successfully meeting that commitment through the following:

- Integration of safety and health considerations into business planning and decision-making processes, including project research, development, planning, design, construction, and demolition
- Establishment of safety performance indicators, and conducting trend analyses to identify opportunities for continuous improvement
- Holding management and supervision responsible and accountable for procedure compliance.

General safety and health program requirements address organizational and program roles and responsibilities, access controls for facilities from a safety and health perspective, general safety and health rules for WCH, and the Lessons Learned program for continuous improvement.

H.7.2 Construction and Industrial Safety

The WCH construction and industrial safety program establishes and implements those standards and requirements that ensure the following:

- Project design and plans are reviewed to ensure that adequate safeguards are in place to ensure compliance
- Hazards are addressed when selecting or purchasing equipment, products, or services

- Work plans, hazards analyses, and pre-job activities identify and address the hazard associated with the site and/or work to be performed
- An overall chemical management system is in place that governs the safe acquisition, storage, use, and disposal of chemicals
- Routine safety and health inspections and/or self-assessments are conducted and the results are documented
- Site and facility personnel are informed of potential safety and health hazards that may be encountered during performance of work
- Investigations are conducted to establish the cause(s) of incidents and events that resulted or could have resulted in injuries, death, or significant property loss and the identify methods to prevent recurrence
- Analyses of accidents and injury data are performed to evaluate performance, identify trends, identify potential problem areas, and develop lessons learned.

Specific hazards addressed through implementation of the construction and industrial safety program include the following:

- Hazard communication
- Excavations
- Fall protection
- Portable ladders
- Confined spaces
- Safety showers and eyewashes
- Machine guards
- Cleanup and housekeeping
- Scaffolding
- Forklift trucks
- General deactivation and demolition
- Elevating work platforms
- Office safety
- Nonionizing radiation sources.

H.7.3 Fire Protection

The WCH fire protection program (FPP) establishes and implements standards and requirements necessary to ensure facilities and projects are provided an adequate level of fire protection that will meet legal and contractual commitments. Identification, interpretation, and implementation of codes and requirements are key elements of the WCH FPP. These key elements include, but are not limited to, the following:

- Review and approve design documents, work packages, procedures, specifications, analyses
- Provide technical support for implementation of project and field activities,

- Interface with Security and the Hanford Fire Department to ensure integration on security and other onsite fire protection activities.

Appraisals and fire protection facility assessments for the FPP will be conducted in accordance with the frequencies and category areas identified in 10 CFR 851 and contractor requirements document (CRD) 440.1A and 420.1B.

An agreement exists with the Hanford Fire Department for the following services:

- Maintain command of emergency response forces to perform the necessary actions to control and terminate fire-related incidents, to provide emergency medical patient care, and to act as the incident command agency for hazardous materials emergency incidents
- Perform fire alarm and protection system functional testing for all WCH-managed facilities and maintain self-contained breathing apparatus equipment
- Maintain an active fire prevention program through facility tours and inspections and develop pre-fire emergency plans
- Maintain a highly trained emergency response organization whose members are certified under a 3-year, Washington State-approved firefighter apprenticeship program.

Per Contract No. DE-AC06-05RL14655, Attachment J-13, WCH is required to use the Hanford Fire Department and Hanford Site Emergency Preparedness services when responding to an emergency or for fire protection services.

H.7.4 Firearms Safety

NOTE: WCH does not currently have a firearms safety program; therefore, there are no requirements necessary to ensure firearms are used safely and in accordance with 10 CFR 851.

If at a later date it becomes necessary for WCH or a WCH subcontractor to have a firearms safety program (e.g., animal control), an assessment to 10 CFR 851 will be performed prior to implementation.

H.7.5 Explosives Safety

The WCH explosives safety program establishes information and requirements needed to ensure effective management and oversight of transportation, storage, use of explosives, and discovery of unexploded ordinance (UXO) by WCH and subcontractors. Roles and responsibilities are defined for the following:

- Interfacing with other entities such as RL and Energy Northwest
- General safety requirements
- General transportation and vehicle requirements
- Response to abnormal conditions
- Storage of explosives and blasting agents
- Storage magazine facilities
- Storage magazine operations
- Loading of explosives

- Blasting requirements
- Inventory control
- Records.

The WCH use of explosives is planned to be implemented using subcontractors. Therefore, program requirements will be flowed down to subcontractors with an emphasis on subcontractor oversight.

H.7.6 Pressure Safety

The WCH pressure safety program establishes and implements requirements for the following:

1. Surveillance and maintenance of existing pressurized system vessels and piping
2. Testing and procuring, storing, and using compressed gas cylinders, air compressors/compressed air, and pneumatic testing.

All activities meet the requirements of 10 CFR 851 and are executed in accordance with the applicable codes and standards identified in the governing procedures.

Specific procedures of the pressure safety program address the following:

- Surveillance, maintenance, testing, and certification (as applicable) of active pressure vessels and associated equipment and piping
- General air compressor and compressed gas cylinder safety requirements
- Use, safe handling, and storage requirements for compressed gas cylinders
- Pneumatic testing with compressed air
- Responsibility for monitoring safety procedures associated with compressed air and pneumatic testing
- Specific testing requirements for pneumatic tests
- Management of manifold-type cylinders.

H.7.7 Electrical Safety

The WCH electrical safety program establishes and implements requirements necessary to be compliant with the following:

- 10 CFR 851, "Worker Health and Safety"
- 29 CFR 1910, "Occupational Safety and Health Standards," Subpart S
- 29 CFR 1926, "Safety and Health Regulations for Construction," Subpart K
- CRD O 420.1B, *Facility Safety*, U.S. Department of Energy, Washington, D.C.
- CRD O 440.1A, "Worker Health and Safety" (Supplemented Rev. 2)
- NFPA 70E, *Standard for Electrical Safety in the Workplace*
- NFPA 70, *National Electrical Code*.

The electrical safety program applies to all electrical and electronic work activities associated with operations managed by WCH. Elements of the electrical safety program are identified in SH-1, *Safety and Health*, SH-1-1.1, "Program Organization and Responsibilities." The program does not apply to the following: (1) electrical utilities work on transmission, transformation, and metering equipment, and (2) work performed on or near energized parts that operate at less than 50 volts. Program procedures address the following electrical considerations:

- General electrical safety
- Control of hazardous energy and materials (lock out/tag out)
- Access control to exposed live parts
- Voltage-rated tools
- Using electrical test equipment
- Ground-fault protection for personnel
- Ground-fault circuit interrupters
- Assured equipment grounding conductor program
- Flexible cords and cables
- Excavations/subsurface penetration, drilling into walls, floors, or outdoor slabs
- Resetting tripped protective devices
- Performing work affecting electrical utilities
- Training.

H.7.8 Industrial Hygiene

The WCH industrial hygiene (IH) program focuses on the protection of the health of workers by minimizing exposure to physical, chemical, and biological hazards. This is accomplished through identifying, analyzing, controlling, and monitoring IH hazards during work planning activities and implementation.

Industrial hygienists provide oversight; technical support and direction; exposure monitoring for chemical, biological, and physical agent hazards; staff and subcontractor training; and communications necessary for IH safety awareness. The IH program procedures address the following:

- General and specific IH standards including asbestos, lead, beryllium, cadmium, and bloodborne pathogens
- Hazards recognition and control
- Exposure monitoring
- Hazard-related training
- Records management of general area and personal exposure monitoring.

H.7.9 Occupational Medicine

The WCH occupational medicine program establishes and implements requirements necessary to be compliant with 10 CFR 851 and other standards. Program procedures address identification of roles and responsibilities, maintaining a healthy work force, promoting a

healthful work environment, and establishing worker protection requirements, including the development and maintenance of the employee job task analysis. Additionally, program requirements are established for ensuring employees receive the appropriate medical attention during an on-the-job injury/illness. Per Contract No. DE-AC06-05RL14655, H.8 WCH is required to use the Hanford Site Occupational Medical Contractor for all occupational medical services, including occupational medical records.

H.7.10 Biological Safety

There are no biological etiologic agents associated with the River Corridor Closure Project. Should biological etiological agents be found or identified, work activities will stop and a program will be developed to address and manage the hazard.

H.7.11 Motor Vehicle and Aviation Safety

The WCH motor vehicle and aviation safety programs establish and implement requirements necessary to be compliant with 10 CFR 851 and other standards. Specific procedures of the motor vehicle and aviation safety program address the following:

- General vehicle and aviation safety requirements
- Hanford supplemental requirements related to aviation
- New/initial/existing flight service contracts
- Aviation point of contact
- Personnel qualifications
- Aviation safety program elements
- Pre-and post-flight requirements
- Off-road driving on the Hanford Site
- Vehicle maintenance
- Personal travel safety.

Per Contract No. DE-AC06-05RL14655, Attachment J-13, WCH is required to use the Hanford Patrol for security and implementation of motor vehicle/traffic laws. PSD-8, "Washington Closure Hanford 10 CFR 851 Compliance Matrix" demonstrates WCH compliance to 10 CFR 851 and is provided space to subcontractor to provide information on how they address applicable criteria based upon their work scope.

APPENDIX I
ISMS REQUIREMENTS IMPLEMENTATION MATRIX

APPENDIX I

ISMS REQUIREMENTS IMPLEMENTATION MATRIX

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
10 CFR 708	DOE Contractor Employee Protection Program	<ul style="list-style-type: none"> SEM-3-3.1, Employee Concerns Program 	Safety, Health, and Quality/ Security and Emergency Management
10 CFR 830	Nuclear Safety Management	<ul style="list-style-type: none"> NS-1-2.1, Hazard Categorization NS-1-2.3, Safety Analysis Documentation NS-1-2.5, Unreviewed Safety Question Process for Hazard Category 1, 2, or 3 Nuclear Facilities 	Engineering Services/ Nuclear Safety
10 CFR 835	Radiation Protection for Occupational Workers	<ul style="list-style-type: none"> QA-1-1.8, Identification, Tracking and Reporting of Price-Anderson Amendments Noncompliance WCH-57, <i>WCH Radiological Control Manual</i> WCH-57, Part 1, General Provisions WCH-57, Part 2, Statement of Policy WCH-57, Part 3, Dose Limits/ Individual Monitoring WCH-57, Part 4, Monitoring/Instruments and Equipment WCH-57, Part 5, Entry Control WCH-57, Part 6, Posting and Labeling WCH-57, Part 7, Records WCH-57, Part 8, Reports WCH-57, Part 9, Radiation Safety Training WCH-57, Part 10, ALARA/Design and Work Control WCH-57, Part 11, Radioactive Material and Contamination Control WCH-57, Part 12, Radioactive Sources and Radiation Generating Devices WCH-57, Part 13, Emergency Exposure Situations/Abnormal Events WCH-57, Glossary RC-1, <i>Radiation Protection Procedures</i> 	Safety, Health, and Quality/ Radiological Control

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
10 CFR 835 (Continued)	Radiation Protection for Occupational Workers	<ul style="list-style-type: none"> • RC-1-1.1, Use of Radiation Protection Procedures • RC-1-3.1, External Dosimetry Program • RC-1-3.2, Internal Dosimetry Program • RC-1-3.3, Dose Limits and Administrative Control Levels • RC-1-3.4, Pregnancy Declaration for Radiological Workers • RC-1-5.1, Conducting Radiological Work • RC-1-5.2, Radiological Access Control • RC-1-6.1, Designating and Controlling Radioactive Material Areas (RMAs) • RC-1-9.1, Radiation Safety Training • RC-1-9.2, Escort Responsibilities • RC-1-10.1, Planning Radiological Work • RC-1-11.1, Self Survey Practice • RC-1-11.2, Radioactive Material Control • RC-1-12.1, Sealed Radioactive Sources • RC-1-12.2, Radiation Generating Devices (RGDs) • RC-100, <i>Radiological Control Support Procedures</i> • RC-100-1.1, Use of Radiological Control Procedures • RC-100-2.2, Radiological Control Assessment Program • RC-100-3.3, Investigating Dosimeter Results • RC-100-3.4, Investigating Exposures • RC-100-3.5, Reviewing Dosimetry Evaluation Summaries • RC-100-3.6, Determining Individual Monitoring Requirements for RWPs • RC-100-3.7, Special Dosimetry (Extremity, Multiple, and Eye/Skin Dosimetry) • RC-100-4.1, Monitoring and Evaluating Airborne Radioactive Material 	Safety, Health, and Quality/ Radiological Control

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
10 CFR 835 (Continued)	Radiation Protection for Occupational Workers	<ul style="list-style-type: none"> • RC-100-4.2, Estimating Airborne Radioactivity Levels • RC-100-4.3, Area Monitoring Program • RC-100-4.4, Radiological Routines • RC-100-5.1, High and Very High Radiation Area Entry • RC-100-7.1, Managing Radiological Records • RC-100-9.1, Radiological Control Technician Training Program • RC-100-9.2, Radiological Control Supervisor Training Program • RC-100-9.3, Radiological Engineer Training Program • RC-100-9.4, RadCon Continuing Training Program for Exempt Staff • RC-100-10.1, Radiological Work Permits • RC-100, 10.3, Survey Requirements Technical Assessment and Radiological Survey Plans • RC-200, <i>Radiological Control Field Procedures</i> • RC-200-3.1, Lapel Air Sampling and DAC-h Tracking • RC-200-4.1, Field Air Sampling • RC-200-4.2, Radiological Surveys • RC-200-4.4, Material Release • RC-200-4.5, Radioactive Material Shipment Surveys and Receipt • RC-200-5.1, Radiological Access Control • RC-200-6.1, Radioactive Material Labeling and Packaging • RC-200-6.2, Posting Radiological Areas • RC-200-6.3, Fixed Contamination Area Controls • RC-200-10.2, Temporary Shielding • RC-200-11.1, Personal Effects Decontamination • RC-200-11.2, Hot Particle Control • RC-200-12.1, Sealed Radioactive Source Controls • RC-200-12.2, Radiation Generating Device (RGD) Controls • RC-200-13.1, Response to Personnel Contamination Event 	Safety, Health, and Quality/ Radiological Control

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
10 CFR 835 (Continued)	Radiation Protection for Occupational Workers	<ul style="list-style-type: none"> • RC-200-13.2, Response to CAM Alarms • RC-200-13.3, Response to Personnel Survey Device (PSD) Alarms • RC-200-13.4, Response to Radiation Area Monitor Alarms • RC-200-13.5, Response to Injury or Illness in a Radiological Area • RC-200-13.6, Response to a Radiological Spill • RC-300, <i>Radiological Instrumentation Procedures</i> • RC-300-2.1, Performance Checks of Portable Instruments • RC-300-4.1, Radiological Counting Facility Quality Control • RC-300-4.2, Instrument Calibration and Maintenance Quality Assurance • RC-300-6.4, Radiological Counting Facility Instrument Preventive Maintenance • RC-300-8.1, Portable Environmental Survey Instrument Operation 	Safety, Health, and Quality/ Radiological Control
10 CFR 850	Chronic Beryllium Disease Prevention Program	<ul style="list-style-type: none"> • SH-1-4.9, Chronic Beryllium Disease Prevention Program 	Safety, Health and Quality/ Safety & Health
10 CFR 851	Worker Safety and Health	<ul style="list-style-type: none"> • WCH-4 Appendix H, Worker Safety and Health Program Plan (10 CFR 851) • WCH-4 Appendix J, WCH Subcontractor Worker Safety and Health Program Plan (10 CFR 851) • PSD-8, "Washington Closure Hanford (WCH) 10 CFR 851 Compliance Matrix" • ENG-1-3.1, Design Process and Control • ENG-1-4.1, Design Basis and Criteria • PAS-2-1.1, Integrated Work Control • PM-ESHQ-4, Stop Work • SEM-3-2.1, Accident/Incident Investigating and Reporting Requirements • PAS-1-2.3, WCH Electrical Safety Program • SH-1-2.5, OSHA Compliance 	Safety, Health and Quality/ Safety & Health

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
10 CFR 851	Worker Safety and Health	<ul style="list-style-type: none"> • SH-1-2.6, Subcontractor Safety and Health Program • SH-1-2.7, Occupational Health Program • SH-1-3.21, Occupational Health • SH-1-3.22, Fleet and Vehicle Safety • SH-1-4.1, Industrial Hygiene • SH-1-4.2, Using Non-Ionizing Radiation Sources • SH-1-4.3, Industrial Hygiene Surveys • SH-1-4.4, Reporting Industrial Hygiene Sampling and Monitoring • SH-1-4.5, Temperature Extremes • SH-1-4.6, Respiratory Protection • SH-1-4.11, Ergonomics • SH-1-4.16, Hazard Communications • SH-1-6.1, Project/Facility Safety Planning and Documentation 	Safety, Health, and Quality/ Safety & Health
CRD O 225.1A (Supplement Rev. 0)	Accident Investigations	<ul style="list-style-type: none"> • SEM-3-1.2, Occurrence Categorization and Reporting* • SEM-3-2.1, Accident/Incident Investigating and Reporting Requirements • SEM-3-2.2, Event Management • SEM-3-2.4, Type A/B Accident Investigation Plan 	Safety, Health and Quality/ Security and Emergency Management
CRD O 226.1A (Supplement Rev. 0)	Implementation of Department of Energy Oversight Policy	<ul style="list-style-type: none"> • See WCH-4, Section 12.0, "WCH Assurance System Description" 	
CRD M 231.1-1A, C-2, O 231.1A, M 231.1-2	Environment, Safety and Health Reporting	<ul style="list-style-type: none"> • SEM-3-1.2, Occurrence Categorization and Reporting* • SEM-3-2.1, Accident/Incident Investigating and Reporting Requirements • SEM-3-2.2, Event Management • SEM-3-2.4, Type A/B Accident Investigation Plan 	Safety, Health and Quality/ Security and Emergency Management
CRD O 251.1B	Directive System	<ul style="list-style-type: none"> • River Corridor Closure Contract No. DE-AC06-05RL14655, Section I, Clause I.104, Section J, Attachment J-2, and specific written direction from the RL Contracting Officer for each directive proposed for revision to the Attachment J-2 • BSC-1-8.7, Contract Requirements 	Project Services/Contracts

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 413.3, C-1	Program and Project Management for the Acquisition of Capital Assets	<ul style="list-style-type: none"> • WCH-2, <i>Project Management Plan</i> • WCH-4, <i>ISMSD</i> • WCH-6, <i>Performance Management System Description</i> • WCH-51, <i>Quality Assurance Program Description</i> • WCH-56, <i>General Design Criteria for River Corridor Closure Project</i> • ENG-1-3.1, <i>Design Process and Control</i> • ENG-1-3.3, <i>Configuration Management</i> • ENG-1-4.1, <i>Design Basis and Criteria</i> • ENG-1-4.4, <i>Independent Design Review</i> • ENG-1-4.14, <i>Value Engineering</i> • PI-1-2.1, <i>Organization</i> • PI-1-2.2, <i>Estimating</i> • PI-1-2.3, <i>Project Schedules</i> • PI-1-2.4, <i>Budget Planning and Management</i> • PI-1-2.5, <i>Collecting Actual Costs</i> • PI-1-2.6, <i>Subcontracts</i> • PI-1-2.7, <i>Material Control</i> • PI-1-2.8, <i>Earned Value, Variance Analysis, and Estimate at Completion</i> • PI-1-2.9, <i>Portfolio Management</i> • PI-1-2.10, <i>Risk Management</i> • PI-1-2.11, <i>Reporting</i> • PI-1-2.12, <i>Trending</i> • PI-1-2.13, <i>Work Authorization/ Authorized Changes</i> • PI-1-2.14, <i>Performance Management System Surveillance</i> • PM-PI-1, <i>Performance Management System Policy</i> • PM-ESHQ-1, <i>Integrated Environment, Safety and Health Management System (ISMS) Implementation Policy</i> 	Project Integration

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 414.1C	Quality Assurance	<ul style="list-style-type: none"> • QA-1-1.2, Corrective Action Management & Tracking System • QA-1-1.3, Trend Analysis • QA-1-1.4, Root Cause Analysis • QA-1-1.5, Self-Assessment • QA-1-1.6, Nonconformance Control • QA-1-1.7, WCH Surveillances – Internal, Subcontractor and Other Hanford Contractors • QA-1-1.8, Identification, Tracking, and Reporting of Price-Anderson Amendment Act Noncompliance • QA-1-1.9, Suspect/Counterfeit Item Control • QA-1-1.11, Independent Assessment • QA-1-1.12, Management Assessments • PM-ESHQ-11, Graded Approach 	Safety, Health, and Quality/ Quality Assurance
CRD O 420.1B (Supplement Rev. 4)	Facility Safety	<ul style="list-style-type: none"> • ENG-1-1.1, Engineering Services Overview • ENG-1-3.1, Design Process and Control • ENG-1-3.3, Configuration Management • ENG-1-4.1, Design Basis and Criteria • ENG-1-4.3, ALARA Design Review • ENG-1-4.6, Operations Monitoring Plan • ENG-1-5.1, Engineering Qualification and Training • WCH-56, <i>General Design Criteria for River Corridor Closure Project</i> • PM-ESHQ-5, Fire Protection • NS-1-1.1, Washington Closure Hanford Criticality Safety Program • NS-1-2.1, Hazard Categorization • NS-1-2.2, Criticality Safety Reviews • NS-1-2.3, Safety Analysis Documentation 	Safety, Health, and Quality/ Safety & Health/ Nuclear Safety Engineering Services

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 420.1B (Supplement Rev. 4) (Continued)	Facility Safety	<ul style="list-style-type: none"> • NS-1-2.4, Safety Basis Implementation • NS-1-2.5, Unreviewed Safety Question Process for Hazard Category 1, 2, or 3 Nuclear Facilities • NS-1-2.6, Authorization Agreements • QA-1-1.2, Corrective Action Management • QA-1-1.6, Nonconformance Control • QA-100-1.4, Supplier QA Program Evaluations and Assessments • RC-1-10.1, Planning Radiological Work • RC-1-10.2, ALARA Program • SH-1-2.7, Occupational Health Program • SH-1-3.1, Industrial Safety • SH-1-4.1, Industrial Hygiene • SH-1-5.1, Fire Protection • SH-1-5.2, Portable Fire Extinguishers • SH-1-5.3, Fire Protection System Winterization • SH-1-5.4, Criticality Safety for Fire Suppression • SH-1-5.5, Employee Fire Protection Training • SH-1-5.6, Fire Protection Document Reviews • SH-1-5.7, Fire Protection Design/ Operations Criteria • SH-1-5.8, Fire Hazard Analysis Requirements • SH-1-5.9, Flammable and Combustible Liquids • SH-1-5.10, Fire Protection Systems Testing, Inspection, and Maintenance • SH-1-5.11, Fire Protection System Discrepancies • SH-1-5.12, Fire Marshall Permits • SH-1-5.13, Controlling Hot Work • SH-1-5.15, Exemptions and Equivalencies • WMT-1-1.1, Waste Minimization and Recycling 	Safety, Health, and Quality/ Safety & Health/ Nuclear Safety / Engineering Services

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 425.1C (Supplement Rev. 4)	Startup and Restart of Nuclear Facilities	<ul style="list-style-type: none"> • ENG-1-4.16, Operational Readiness Reviews and Readiness Assessments 	Engineering Services
CRD O 433.1A (Supplement Rev. 1)	Maintenance Management Program for DOE Nuclear Facilities	<ul style="list-style-type: none"> • WCH-37, <i>WCH Maintenance Implementation Plan</i> • BSC-1-2.4, Training Requirements • BSC-1-2.8, Developing and Conducting Training • BSC-1-2.10, Assigned Training • BSC-1-2.11, Required Reading • BSC-1-2.12, Training Policies • BSC-1-4.1, Prime Contract Procurement Requirements • BSC-1-4.2, Unauthorized Procurements • ENG-1-1.1, Engineering Services Overview • ENG-1.3.3, Configuration Management • ENG-1-5.1, Engineering Qualifications and Training • NS-1-2.2, Criticality Safety Reviews • PAS-1-1.1, Technical Procedure Development • PAS-1-1.3, Access Control and Administration for RCCC Facilities • PAS-1-1.4, Logkeeping Instructions • PAS-1-1.8, Lessons Learned • PAS-1-2.2, Control of Hazardous Energy and Materials (Lockout/Tagout) • PAS-1-2.5, Scheduled Maintenance Package Development • PAS-1-2.6, Cold Weather Protection • PAS-1-2.7, Permitting and Inspection of Electrical Work • PAS-1-2.10, Measurement and Test Equipment (M&TE) • PAS-1-2.11, Cross-Connection Control • PAS-1-2.13, Radioactive Air Emissions • PAS-1-3.2, Control of Mobile Equipment Pool 	D4/Surveillance and Maintenance Utilities

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 433.1A (Supplement Rev. 4) (Continued)	Maintenance Management Program for DOE Nuclear Facilities	<ul style="list-style-type: none"> • PAS-1-4.5, Subcontractor Technical Representative (STR) for Field Work • PAS-2-1.1, Integrated Work Control • PAS-2-1.2, Preventive Maintenance • QA-1-1.2, Corrective Action Management and Tracking • QA-1-1.4, Root Cause Analysis • QA-1-1.5, Self Assessment • QA-1-1.7, Surveillance • QA-1-1.12, Management Assessments • QA-1-1.14, Management Walkthroughs • SEM-3-2.2, Event Management 	D4/Surveillance and Maintenance Utilities
CRD O 435.1, C-1 (Supplement Rev. 0)	Radioactive Waste Management	<ul style="list-style-type: none"> • PM-ESHQ-2, Environmental Protection and Compliance Policy • PM-ESHQ-6, ALARA Policy • WMT-1, Section 1, Waste Management and Transportation Manual 	Waste Operations Project
CRD O 440.2B	Aviation Management and Safety	<ul style="list-style-type: none"> • SH-1-3.12, Contract Aviation Safety Requirements 	Safety, Health, and Quality/ Safety & Health
CRD O 442.1A (Supplement Rev. 1)	Department of Energy Employee Concerns Program	<ul style="list-style-type: none"> • SEM-3-3.1, Employee Concerns Program 	Safety, Health, and Quality/Security and Emergency Management
CRD O 450.1A	Environmental Protection Program	<ul style="list-style-type: none"> • WCH-63, <i>Environmental Protection and Compliance Plan</i> • ENV-1-1.1, Air Quality • ENV-1-1.2, Water Quality • ENV-1-1.4, Protection of Natural Resources on the Hanford Site • ENV-1-1.5, Protection of Cultural Resources on the Hanford Site • ENV-1-1.7, Environmental Reporting • ENV-1-1.11, Chemical Management Program • WMT-1-1.1, Waste Minimization and Recycling 	Environment and Regulatory Management/ Environmental

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD M 450.4-1	Integrated Safety Management System Manual	<ul style="list-style-type: none"> • <i>WCH-4, ISMSD</i> • PM-ESHQ-1, Integrated Environment, Safety and Health Management System (ISMS) Implementation Policy • QA-1-1.15, Development, Review, Approval and Submittal of ISMS Performance Objectives, Measures, and Commitments 	Safety, Health, and Quality/ Safety & Health
CRD O 460.1B	Packaging and Transportation Safety	<ul style="list-style-type: none"> • WMT-1, Section 2, Waste Management and Transportation Manual 	Waste Operations Project
CRD O 460.2A (Supplement Rev. 0)	Departmental Materials, Transportation, and Packaging Management	<ul style="list-style-type: none"> • WMT-1, Section 2, Waste Management and Transportation Manual 	Waste Operations Project
CRD M 460.2-1	Radioactive Material Transportation Practices Manual	<ul style="list-style-type: none"> • WMT-1, Section 2, Waste Management and Transportation Manual 	Waste Operations Project
CRD O 470.2B (Supplement Rev. 2)	Independent Oversight and Performance Assurance Program	<ul style="list-style-type: none"> • QA-1-1.11, Independent Assessment 	Safety, Health, and Quality/ Quality Assurance
DOE O 5400.5, C-2	Radiation Protection of the Public and the Environment	<ul style="list-style-type: none"> • ENV-1-1.1, Air Quality • ENV-1-1.2, Water Quality • <i>WCH-57, WCH Radiological Control Manual</i> • <i>WCH-57, Part 11, Radioactive Material and Contamination Control</i> • RC-1, <i>Radiation Protection Procedures</i> • RC-1-11.2, Radioactive Material Control • RC-100, <i>Radiological Control Support Procedures</i> • RC-100-10.3, Survey Requirements Technical Assessment and Radiological Survey Plans • RC-200, <i>Radiological Control Field Procedures</i> • RC-200-4.4, Material Release 	Safety, Health, and Quality/ Radiological Control Regulatory and Environmental Management/ Environmental

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
CRD O 5480.19,C-2 (Supplement Rev. 4)	Conduct of Operations Requirements for DOE Facilities	<ul style="list-style-type: none"> • WCH-98, <i>WCH Conduct of Operations Applicability Matrix</i> • Washington Closure Hanford Conduct of Operations Implementation Matrix/May 2008 • CONOPS-1, Conduct of Operations Manual 	Project Services/ Human Resources Safety, Health, and Quality/ Security and Emergency Management
CRD O 5480.20A, C-1 (Supplement Rev. 1)	Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities	<ul style="list-style-type: none"> • WCH-38, <i>Training Implementation Matrix for River Corridor Cleanup Contract-Managed Nuclear Facilities</i> 	Project Services/Human Resources Engineering Services
DOE/RL-0223	RL Emergency Implementing Procedures	<ul style="list-style-type: none"> • SEM-2, <i>Emergency Management Program</i> 	Safety, Health, and Quality/ Security and Emergency Management
DOE/RL-2002-12, dated September 2001	Hanford Site Radiological Health and Safety Manual	<ul style="list-style-type: none"> • WCH-57, <i>WCH Radiological Control Manual</i> • WCH-57, Part 2, Statement of Policy • WCH-57, Part 3, Dose Limits/Individual Monitoring • WCH-57, Part 4, Monitoring/ Instruments and Equipment • WCH-57, Part 5, Entry Control • WCH-57, Part 6, Posting and Labeling • WCH-57, Part 7, Records • WCH-57, Part 9, Radiation Safety Training • WCH-57, Part 12, Radioactive Sources and Radiation Generating Devices • WCH-57, Glossary • RC-1, <i>Radiation Protection Procedures</i> • RC-1-3.1, External Dosimetry Program • RC-1-3.2, Internal Dosimetry Program • RC-1-9.1, Radiation Safety Training • RC-1-9.2, Escort Responsibilities • RC-100, <i>Radiological Control Support Procedures</i> • RC-100-3.4, Investigating Exposures 	Safety, Health, and Quality/ Radiological Control

Directive Identifier	Title	WCH Implementing Documents	Responsible Organization
DOE/RL-2002-12, dated September 2001 (Continued)	Hanford Site Radiological Health and Safety Manual	<ul style="list-style-type: none"> • RC-100-4.5, Resolving Instruments as Found Out-Of-Tolerance Notices • RC-100-6.1, Soil Contamination Area and Underground Radioactive Material Area Programs • RC-100-7.1, Managing Radiological Records • RC-200, <i>Radiological Control Field Procedures</i> • RC-200-6.2, Posting Radiological Areas 	Safety, Health, and Quality/ Radiological Control
DOE/RL-94-02, Rev. 3	Hanford Emergency Management Plan	<ul style="list-style-type: none"> • SEM-2, <i>Emergency Management Manual</i> 	Safety, Health, and Quality/ Security and Emergency Management
DOE/RL-96-68, Rev. 2	Hanford Analytical Services Quality Assurance Requirements	<ul style="list-style-type: none"> • ENV-1-2.36, Attachment 1, Field Sampling Quality Assurance Program Plan 	Safety, Health, and Quality/ Quality Assurance
RRD 005, Rev. 3	Worker Safety	<ul style="list-style-type: none"> • PAS-1-2.3, WCH Electrical Safety Program • PAS-1-3.11, Rigging • PM-ESHQ-9, Worker Bill of Rights • SH-1-4.9, Chronic Beryllium Disease Prevention Program • PAS-1-2.3, WCH Electrical Safety Program • SH-1-2.7, Occupational Health Program 	Safety, Health, and Quality/ Safety & Health

APPENDIX J

**WCH SUBCONTRACTOR WORKER SAFETY AND HEALTH
PROGRAM PLAN
(10 CFR 851)**

APPENDIX J

WCH SUBCONTRACTOR WORKER SAFETY AND HEALTH PROGRAM PLAN (10 CFR 851)

For purposes of this subcontractor program plan, the term SUBCONTRACTOR means subcontractor and their lower-tier subcontractors.

J.1 INTRODUCTION

On February 9, 2006, the U.S. Department of Energy (DOE) published the final rule of Title 10, *Code of Federal Regulations*, Parts 850 and 851 (10 CFR 850 and 851), "Chronic Beryllium Disease Prevention Program and Worker Safety and Health Program." The final rule established a framework for a worker protection program that reduces or prevents occupational injuries, illnesses, and accidental losses by requiring DOE contractors and their SUBCONTRACTOR(S) (including subtier subcontractors) to provide their employees' with safe and healthful workplaces. In addition, the program established procedures for investigating whether a requirement has been violated, for determining the nature and extent of such violation, and for imposing an appropriate remedy.

In accordance with the final rule, SUBCONTRACTOR(S) are required to:

- Provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers; and
- Ensure that work is performed in accordance with all applicable requirements of 10 CFR 851 and the worker safety and health program for the workplace.

Per 10 CFR 851, SUBCONTRACTOR(S) are required to develop and implement a written worker safety and health program that describes how compliance is achieved with requirements. In addition, the rule requires SUBCONTRACTOR(S) to integrate regulatory requirements with other related site-specific worker protection activities and with the Integrated Safety Management System (ISMS).

Beginning in May 25, 2007, no work may be performed at a WCH facility unless an approved worker safety and health program is in place.

J.2 PURPOSE AND SCOPE

This program plan applies to any subcontractor at any tier that has responsibilities for performing work at a DOE site in furtherance of a DOE mission. For purposes of the regulation, SUBCONTRACTOR(S) must have a subcontract to perform services, as opposed to merely providing supplies, in order to fall within the scope of 10 CFR 851. In addition, a SUBCONTRACTOR who employs personnel for staff augmentation will be required to comply with either the WCH Worker Safety and Health Program Plan or the program plan of the employing SUBCONTRACTOR. This program plan does not apply to vendors, delivery

persons, and others who do not have service contracts with SUBCONTRACTOR(S). In addition, the program plan does not apply to radiological hazards to the extent they are regulated by 10 CFR Parts 820, 830, and 835. Every SUBCONTRACTOR will be required to comply with 10 CFR 851 and the flowdown of such requirements from WCH.

J.3 APPLICATION OF 10 CFR 851 CLOSURE FACILITY DEFINITION

The River Corridor Closure Contract (RCCC) is a cost-plus-incentive fee contract for the cleanup of the Hanford Site river corridor that includes safety and cost performance and schedule performance incentives. In accordance with the RCCC, WCH has direct control over the RCCC work scope, when it is performed, how the work is performed, and who will perform the work. Per 10 CFR 851, a closure facility is defined as a facility that is nonoperational and is, or is expected to be, permanently closed and/or demolished, or title to which is expected to be transferred to another entity for reuse. The list of facilities qualifying as "closure facilities" per 10 CFR 851 will be internally managed by WCH and updated on an annual basis to reflect buildings that transition into "closure."

During the execution of the RCCC hazards are identified and hazard controls are developed and applied via two fundamental mechanisms: job hazards analysis (JHA) and a Health and Safety Plan (HASP).

Hazard controls associated with buildings that are occupied for supporting remedial actions and field work sites are managed via administrative controls (such as posting and safety and health surveillances). Hazard controls identified for unoccupied buildings include administrative controls, access controls (such as locking of buildings and security north of the Wye Barricade), and implementation of the IWCP. A full description of the IWCP is contained in Section 5.0 of the ISMSD.

J.4 FLOW DOWN OF REQUIREMENTS TO SUBCONTRACTOR(S)

As a minimum, every affected SUBCONTRACTOR (i.e., operating under as services contract) must meet the requirements of 10 CFR 851 as delineated in PSD-8 or comply with the WCH Worker Safety and Health Program Plan. Further every affected SUBCONTRACTOR is required to identify their procedures and specific sections of their procedures that implement requirements of 10 CFR 851.

J.5 ROLES AND RESPONSIBILITIES

Every affected SUBCONTRACTOR is required to identify personnel or management responsible for roles and responsibilities related to their program.

J.6 SAFETY AND HEALTH PROGRAM FUNCTIONAL AREAS

Every affected SUBCONTRACTOR is required to identify functional areas of 10 CFR 851 as relevant to their program plan related to their proposed work activity. The functional areas as defined by 10 CFR 851 and flowed down from WCH are described below.

J.6.1 Safety and Health Program Management

WCH is committed to developing and maintaining a culture based on an “injury-free” workplace philosophy, under which all accidents are preventable and occupational injuries and illnesses are not acceptable. WCH places the highest value on the welfare of the worker, instilling a sense of ownership for the program, and embraces excellence in all aspects of performance. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan:

- Integration of safety and health considerations into business planning and decision-making processes, including project research, development, planning, design, construction, and demolition
- Establishment of safety performance indicators, and conducting trend analyses to identify opportunities for continuous improvement (information is provided to WCH who maintains responsibility for overall reporting of performance indicators and trend analyses)
- Holding management and supervision responsible and accountable for procedure compliance.

General safety and health program requirements (as found in Exhibit G) address organizational and program roles and responsibilities, access controls for facilities from a safety and health perspective, general safety and health rules for WCH, and the Lessons Learned program for continuous improvement.

J.6.2 Construction and Industrial Safety

The WCH construction and industrial safety program establishes and implements those standards and requirements that ensure compliance with codes and requirements as defined in 10 CFR 851. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan:

- Project design and plans are reviewed to ensure that adequate safeguards are in place to ensure compliance.
- Hazards are addressed when selecting or purchasing equipment, products, or services.
- Work plans, hazards analyses, and pre-job activities identify and address the hazard associated with the site and/or work to be performed.
- An overall chemical management system is in place that governs the safe acquisition, storage, use, and disposal of chemicals.
- Routine safety and health inspections and/or self-assessments are conducted and the results are documented.

- Site and facility personnel are informed of potential safety and health hazards that may be encountered during performance of work.
- Investigations are conducted to establish the cause(s) of incidents and events that resulted or could have resulted in injuries, death, or significant property loss and the identify methods to prevent recurrence.
- Analyses of accidents and injury data are performed to evaluate performance, identify trends, identify potential problem areas, and develop lessons learned (information is provided to WCH who maintains responsibility for overall reporting of performance indicators, trend analyses, and Lessons Learned – see Exhibit G for additional interface requirements).

Specific hazards addressed through implementation of the construction and industrial safety program for a SUBCONTRACTOR must include the following:

- Hazard communication
- Excavations
- Fall protection
- Portable ladders
- Confined spaces
- Safety showers and eyewashes
- Machine guards
- Cleanup and housekeeping
- Scaffolding
- Forklift trucks
- General deactivation and demolition
- Elevating work platforms
- Office safety
- Nonionizing radiation sources.

J.6.3 Fire Protection

The WCH fire protection program (FPP) establishes and implements standards and requirements necessary to ensure facilities and projects are provided an adequate level of fire protection that will meet legal and contractual commitments. Identification, interpretation, and implementation of codes and requirements are key elements of the WCH FPP. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan:

- Review and approve design documents, work packages, procedures, specifications, analyses
- Provide technical support for implementation of project and field activities.

WCH will have responsibility for interfacing with Security and the Hanford Fire Department to ensure integration on security and other onsite fire protection activities. Appraisals and fire protection facility assessments for the FPP are required to be conducted in accordance with the

frequencies and category areas identified in 10 CFR 851 and Contractor Requirements Document (CRDs) 440.1A and 420.1B.

Per Contract No. DE-AC06-05RL14655, Attachment J-13, WCH is required to use the Hanford Fire Department and Hanford Site Emergency Preparedness services when responding to an emergency or for fire protection services. All such needed interfaces, with the exception of fires, by the SUBCONTRACTOR(S) are required to be coordinated through WCH and their subcontract technical representative (STR) prior to performing work relevant to this functional area.

J.6.4 Firearms Safety

NOTE: WCH does not currently have a firearms safety program; therefore, there are no requirements necessary to ensure firearms are used safely and in accordance with 10 CFR 851.

If at a later date it becomes necessary for WCH or a WCH subcontractor to have a firearms safety program (e.g., animal control), an assessment to 10 CFR 851 will be performed prior to implementation.

J.6.5 Explosives Safety

The WCH explosives safety program establishes information and requirements needed to ensure effective management and oversight of transportation, storage, use of explosives, and discovery of unexploded ordinance (UXO) by WCH and SUBCONTRACTORS. A SUBCONTRACTOR is required to interface with WCH in defining and implementing responsibilities associated with the following:

- Interfacing with other entities such as RL and Energy Northwest
- General safety requirements
- General transportation and vehicle requirements
- Response to abnormal conditions
- Storage of explosives and blasting agents
- Storage magazine facilities
- Storage magazine operations
- Loading of explosives
- Blasting requirements
- Inventory control
- Records.

All such needed interfaces by the SUBCONTRACTOR(S) are required to be coordinated through WCH and the STR prior to performing work relevant to this functional area.

J.6.6 Pressure Safety

The WCH pressure safety program establishes and implements requirements for the following:

1. Surveillance and maintenance of existing pressurized system vessels and piping
2. Testing and procuring, storing, and using compressed gas cylinders, air compressors/compressed air, and pneumatic testing.

All activities are required to meet the requirements of 10 CFR 851 and be executed in accordance with the applicable codes and standards identified in the governing procedures. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan (as applicable to the proposed scope of work):

- Surveillance, maintenance, testing, and certification (as applicable) of active pressure vessels and associated equipment and piping
- General air compressor and compressed gas cylinder safety requirements
- Use, safe handling, and storage requirements for compressed gas cylinders
- Pneumatic testing with compressed air
- Responsibility for monitoring safety procedures associated with compressed air and pneumatic testing
- Specific testing requirements for pneumatic tests
- Management of manifold-type cylinders.

J.6.7 Electrical Safety

The WCH electrical safety program establishes and implements requirements necessary to be compliant with the following:

- 10 CFR 851, "Worker Health and Safety"
- 29 CFR 1910, "Occupational Safety and Health Standards," Subpart S
- 29 CFR 1926, "Safety and Health Regulations for Construction," Subpart K
- CRD O 420.1B, *Facility Safety*, U.S. Department of Energy, Washington, D.C.
- CRD O 440.1A, "Worker Health and Safety" (Supplemented Rev. 2)
- NFPA 70E, *Standard for Electrical Safety in the Workplace*
- NFPA 70, *National Electrical Code*.

The electrical safety program applies to all electrical and electronic work activities associated with operations managed by WCH. The program does not apply to the following: (1) electrical utilities work on transmission, transformation, and metering equipment, and (2) work performed on or near energized parts that operate at less than 50 volts. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan (as applicable to the proposed scope of work and as defined in Exhibit G):

- General electrical safety
- Control of hazardous energy and materials (through compliance to the contractor lockout/tagout procedure)
- Access control to exposed live parts
- Voltage-rated tools
- Using electrical test equipment
- Ground-fault protection for personnel
- Ground-fault circuit interrupters
- Assured equipment grounding conductor program
- Flexible cords and cables
- Excavations/subsurface penetration, drilling into walls, floors, or outdoor slabs
- Resetting tripped protective devices
- Performing work affecting electrical utilities
- Training (provided by the contractor).

J.6.8 Industrial Hygiene

The WCH IH program focuses on the protection of the health of workers by minimizing exposure to physical, chemical, and biological hazards. This is accomplished through identifying, analyzing, controlling, and monitoring IH hazards during work planning activities and implementation.

Industrial hygienists provide oversight, technical support and direction, exposure monitoring for chemical, biological, and physical agent hazards, staff and subcontractor training, and communications necessary for IH safety awareness. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan (as applicable to the proposed scope of work):

- General and specific IH standards including asbestos, lead, beryllium, cadmium, and bloodborne pathogens
- Hazards recognition and control
- Exposure monitoring
- Hazard-related training

- Records management of general area and personal exposure monitoring.

J.6.9 Occupational Medicine

The WCH occupational medicine program establishes and implements requirements necessary to be compliant with 10 CFR 851 and other standards. Program procedures address identification of roles and responsibilities, maintaining a healthy workforce, promoting a healthful work environment, and establishing worker protection requirements, including the development and maintenance of the employee job task analysis (EJTA). Additionally, program requirements are established for ensuring employees receive the appropriate medical attention during an on-the-job injury/illness.

Per Contract No. DE-AC06-05RL14655, H.8 WCH is required to use the Hanford Site Occupational Medical Contractor for all occupational medical services, including occupational medical records. WCH will manage all occupational medical requirements including physical examinations as specified through the Hanford Site Occupational Medicine Provider. SUBCONTRACTORS shall contact their STR to coordinate access to site medical services. All time spent by SUBCONTRACTOR's employees and transportation costs for medical examinations shall be at the expense of the SUBCONTRACTOR.

J.6.10 Biological Safety

There are no biological etiologic agents associated with the River Corridor Closure Project. Should biological etiological agents be found or identified, SUBCONTRACTORS will stop work and contact their STR.

J.6.11 Motor Vehicle and Aviation Safety

The WCH motor vehicle and aviation safety programs establish and implement requirements necessary to be compliant with 10 CFR 851 and other standards. A SUBCONTRACTOR is required to demonstrate the following through their Worker Safety and Health Program Plan (as applicable to the proposed scope of work):

- General vehicle and aviation safety requirements
- Hanford Site supplemental requirements related to aviation
- New/initial/existing flight service contracts
- Aviation point of contact
- Personnel qualifications
- Aviation safety program elements
- Pre-and post-flight requirements
- Off-road driving on the Hanford Site
- Vehicle maintenance
- Personal travel safety.

Per Contract No. DE-AC06-05RL14655, Attachment J-13, DOE contracts through other Hanford Site prime contractors for maintenance and enforcement of infrastructure security and motor vehicle/traffic laws. PSD-8, "Washington Closure Hanford 10 CFR 851 Compliance Matrix" demonstrates WCH compliance to 10 CFR 851 and is provided space to subcontractor to provide information on how they address applicable criteria based upon their work scope.

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