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February 23, 2006 06-ATL-022

Ms. C. B. Reid, Contracting Officer
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CONTRACT NO. DE-AC27-05RV1458 – TRANSMITTAL OF ADVANCED TECHNOLOGIES AND LABORATORIES, INTERNATIONAL, INC. INTEGRATED ENVIORNMENT, SAFETY AND HEALTH MANAGEMENT SYSTEMS DESCRIPTION FOR THE 222-S ANALYTICAL SERVICES PRODUCTION CONTRACTOR

Dear Ms. Reid:

Attached is the Advanced Technologies and Laboratories International, Inc., (ATL) Integrated Environment, Safety and Health Management System (ISMS) Description for the Analytical Services Production Contractor, ATL-MP-1009. ATL would appreciate your review and approval of the ISMS document.

If you have any questions, please feel free to contact me at 943-2758, extension 228, or Mr. Robin Loeffler, Operations Support Program Manager, at 372-3306.

Sincerely,

Heather Anastasi FOR

Jou G. Hwang, PhD.
Project Manager

Attachment

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FEB 23 2006
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Attachment

ATL-MP-1009
INTEGRATED ENVIRONMENT, SAFETY AND HEALTH MANAGEMENT SYSTEM DESCRIPTION

Consisting of 52 pages, including coversheet

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ACRONYMS

AB	Authorization Basis
AIA	Administrative Interface Agreement
AJHA	Automated Job Hazard Analysis
ALARA	As Low As Reasonably Achievable
AMH	AdvanceMed Hanford
ASPC	Analytical Services Production Contractor
ATL	Advanced Technologies and Laboratories International, Inc.
BHI	Bechtel Hanford, Inc.
BNI	Bechtel National, Inc.
BTR	Buyer's Technical Representative
CAMS	Corrective Action Management System
COO	Chief Operating Officer
CFR	Code of Federal Regulations
DEAR	Department of Energy Acquisition Regulation
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy - Headquarters
DOE-ORP	U.S. Department of Energy, Office of River Protection
DOE-RL	U.S. Department of Energy, Richland Operations Office
DSA	Documented Safety Analysis
Ecology	Washington State Department of Ecology
EFCOG	Energy Facility Contractors Group
EJTA	Employee Job Task Analysis
EPA	U.S. Environmental Protection Agency
ES&H	Environment, Safety, and Health
ESH&Q	Environment, Safety, Health, and Quality
EWP	Enhanced Work Planning
FHI	Fluor Hanford, Inc.
FOM	Facility Operations Manager
FWS	Field Work Supervisor
HAMTC	Hanford Atomic Metal Trades Council
HASQARD	Hanford Analytical Services Quality Assurance Requirements Documents

ICD	Interface Control Document
ISMS	Integrated Environment, Safety, and Health Management System
JHA	Job Hazard Analysis
NEPA	National Environmental Policy Act
ORR	Operational Readiness Review
PAAA	Price-Anderson Amendments Act
PER	Problem Evaluation Request
PNNL	Pacific Northwest National Laboratory
PNSO	Pacific Northwest Site Office
POC	Point of Contact
POW	Plan of the Week
PSOP	Peer Safety Observer Program
QA	Quality Assurance
QAIM	Quality Assurance Program Description Implementation Matrix
RA	Readiness Assessment
RCRA	Resource Conservation and Recovery Act
RPP	River Protection Project
RWP	Radiological Work Procedure
SAF*T	Safety Awareness Focus Team
SAS	Safeguards and Security
SEPA	State Environmental Policy Act of 1971
SIP	Safety Improvement Plan
S/RID	Standards/Requirements Identification Document
STOP	Safety Training Observation Program
TFC	Tank Farm Contractor
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question
VPP	Voluntary Protection Program

WBS	Work Breakdown Structure
WCH	Washington Closure Hanford
WDOH	Washington State Department of Health
WTP	Waste Treatment Plant

1.0 INTRODUCTION

1.1 Background

The U.S. Department of Energy (DOE) Integrated Environment, Safety, and Health Management System (ISMS) is structured to integrate environment, safety, health, and quality (ESH&Q) into work planning and execution. Integration is accomplished at the company, facility, and activity levels. Total ESH&Q integration enables the assigned missions to be efficiently and effectively accomplished while protecting the workers, the public, and the environment, and is embodied in the overall ISMS objective to "Do Work Safely."

In October 1995, the Defense Nuclear Facilities Safety Board (DNFSB) issued Recommendation 95-2 regarding Nuclear Facility Safety Management. The DOE's acceptance of Recommendation 95-2 resulted in the development and implementation of the Integrated Safety Management Implementation Plan for Board Recommendation 95-2, dated April 1996.

Since publication of the DOE's implementation plan, DOE has published the following Code of Federal Regulations (CFR) Department of Energy Acquisition Regulation (DEAR) clauses, and associated DOE Policies and Guide, which contain the requirements and guide to develop, implement, sustain, and continuously improve a safety management system for DOE and its contractors (see Table 1).

Table 1. ISMS Structure Requirements/Guide

Title	Publication Date
DOE P 450.4, *Safety Management System Policy*	October 1996
48 CFR DEAR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution* (Contract DE-AC27-99RL14047, Clause I.114)	December 2000
48 CFR DEAR 970.5204-2, *Laws, Regulations, and DOE Directives* (Contract DE-AC27-99RL14047, Clause I.106)	December 2000
DOE P 450.5, *Line Environment, Safety and Health Oversight* (Contract DE-AC27-99RL14047, Section J, Appendix C)	June 1997
DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy.* Not applicable for Contractors.	January 1997
DOE P 450.7, *Environment, Safety, and Health (ESH) Goals*	August 2004
48 CFR DEAR 970.5215-3, *Conditional Payment of Fee, Profit, Or Incentives* (DEC 2000) – Alternate 1 (DEC 2000) (Contract DE-AC27-99RL14047, Clause I.110)	December 2000
DOE G 450-4-1B, *Integrated Safety Management System Guide*	March 2001

The contract between Advanced Technologies and Laboratories International, Inc. (ATL) as the Analytical Services Production Contractor (ASPC) and the DOE Office of River Protection (DOE-ORP) (Contract DE-AC27-05RV14548 hereinafter referred to as "the contract") requires, in Section C.2, Scope of Work:

> "The ASPC shall develop an Integrated Safety Management System (ISMS) as required in Section H. The ISMS will be limited to the scope of this contract and describe interfaces and interactions with safety programs of other contractors. The ISMS shall be developed by the ASPC and implemented in coordination with the TFC's ISMS to provide overall Integrated Safety Management for the 222-S Complex."

By including key provisions and clauses in the contract, DOE-ORP has a mechanism to define the mission, direct implementation, and monitor the effectiveness of ISMS, integrate ESH&Q throughout activities performed within the defined scope of work, and achieve integration of contractor internal and external activities.

In accordance with the ASPC and TFC contracts, ASPC is responsible for 222-S analytical services and testing operations and the TFC is responsible for the facility, its maintenance, and related infrastructure. In this context ASPC will implement ISMS for radioactive sample chemical analysis and TFC will implement ISMS that safely supports the ASPC analysis program. Safe operations will require close coordination and careful interfacing between the two companies, including the use of existing TFC safety documents, processes, and training to support ASPC operations. In addition, a number of FHI documents and procedures, primarily in the area of safeguards and security (SAS), will continue to be utilized by ASPC as part of the Administrative Interface Agreement (AIA) between FHI, TFC, and the ASPC dated 5/15/2005. Usage of these procedures will maintain continuity and reinforce established safety systems at 222-S. As experience with this arrangement is gained, ASPC will continue to develop specific safety documents, to the extent that is necessary, to continue to carry out its ISMS Program. Control processes, such as Price-Anderson Amendments Act (PAAA), occurrence reporting, and the assessment program, already have established ASPC documents developed since contract assumption. Also, ASPC submitted to ORP for approval the Quality Assurance Program Plan, the Project Management Plan, and the Legal Plan.

To successfully manage the interface between the TFC and the ASPC and to ensure clarity regarding the appropriate procedures in use for the ASPC, the following two management plans are in place:

- ATL-MP-1016, *Interface Control Document*
- ATL-MP-1001, *Procedures Acceptable for Use by the ATL 222-S Analytical Services Production Contractor*

ATL-MP-1016, *Interface Control Document* (ICD), outlines the ASPC and TFC systems interface, including roles and responsibilities, within the 222-S Laboratory Complex. This ICD identifies the post-transition interface agreements. ASPC and TFC provide services in accordance with their individual ORP contracts and approved TFC/ASPC programs and procedures.

In summary, TFC is responsible for providing facilities, equipment, established programs, and services to support ASPC work scope and ASPC is responsible for integrating its services within TFC facility operational requirements. Specific emphasis is placed on TFC maintenance of a nuclear safety program; implementing a Documented Safety Analysis (DSA) and supporting nuclear safety management programs identified in the DSA (as shown in Section J of the ASPC Contract); and other safety and security management programs. ASPC will be required to comply with and support TFC nuclear safety program implementation and other safety and security programs implementation. The ICD describes the interface of TFC and ASPC systems and the roles and responsibilities associated with those roles. The ICD is reviewed and updated as necessary to reflect changes in the interface agreement.

ATL-MP-1001, *Procedures Acceptable for Use by the ATL 222-S Analytical Services Production Contractor,* identifies the TFC or FHI procedures that the ASPC will use to maintain continuity of operations. This management plan is reviewed and updated as necessary as new ASPC procedures are developed and implemented.

1.2 Purpose

The purpose of this document is to describe the ISMS structure, policies, programs, processes, and implementing mechanisms developed and used by ASPC to ensure that protection of the environment and the safety and health of the workers and the public, and quality is integrated into management and work practices at various levels for work performed under the contract. For the purpose of ISMS, the term "safety" includes environmental protection, safety and health management, engineering support, radiological protection, industrial hygiene, emergency preparedness, occupational safety, chemical safety, training, maintenance, waste management, fire protection, quality assurance, pollution prevention, waste minimization, and safeguards and security. This ISMS Description along with related ISMS implementing mechanisms fulfills the intent of the ASPC contract requirements in Sec. H.1 "Environment, Safety, Health, and Quality Assurance; Sec. I.122, 48 CFR DEAR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*; Sec. I.120, 48 CFR DEAR 970.5204-2, *Laws, Regulations, and DOE Directives*; Sec. B.5, 48 CFR DEAR 970.5215-3, *Conditional Payment of Fee, Profit, Or Incentives*; and Sec. J, Appendix 1, DOE P 450.4, *Safety Management System Policy;* DOE P 450.5, *Line Environment, Safety and Health Oversight*; and DOE P 450.7, *Environment, Safety, and Health (ESH) Goals.*

1.3 Scope

The scope of this document includes the ASPC ISMS policies, programs, processes, and implementing mechanisms with reference to implementing documents containing the detailed integration of ESH&Q into work planning and execution. The ISMS described herein applies to work performed by the ASPC under the contract, and to work subcontracted out by the ASPC.

2.0 ISMS OVERVIEW

The structure of the ASPC ISMS contains seven guiding principles and five core functions. The guiding principles and core functions of the Safety Management Systems provide a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work. The ASPC ISMS program is part of the Safety Management System institutionalized through Department of Energy (DOE) directives and contracts to establish the Department-wide safety management objectives, guiding principles, and functions.

This structure is based on the requirements and guidance contained in DOE P 450.4, *Safety Management System Policy*; DOE P 450.5, *Line Environment, Safety and Health Oversight*; DOE P 450.7, *Environment, Safety, and Health (ESH) Goals*; 48 CFR DEAR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution* (Contract DE-AC27-99RL14047, Clause I.114); and DOE G 450-4-1B, *Integrated Safety Management System Guide*. The system encompasses all levels of activities and documentation related to safety management throughout the DOE complex.

The DOE Safety Management System, as outlined in DOE P 450.4, *Safety Management System Policy*, establishes a hierarchy of components to facilitate the orderly development and implementation of safety management throughout the DOE complex. The Safety Management System consists of six components: 1) the objective, 2) guiding principles, 3) core functions, 4) mechanisms, 5) responsibilities, and 6) implementation. The objective, guiding principles, and core functions of safety management shall be used consistently in implementing safety management throughout the DOE complex and at all business levels by the contractor. The mechanisms, responsibilities, and implementation components are established for all work and will vary based on the nature and hazard of the work being performed.

2.1 ISMS Business Levels

There are three business levels within an ISMS structure.

2.1.1 The Company Level

At the company level, the contract provides the mechanism for DOE-ORP to manage ASPC.

The contract establishes the work scope, specifications, standards, and requirements for the work to be performed. The contract establishes the mechanisms for DOE-ORP to provide technical direction. ASPC establishes programs, policies, and plans for work accomplishment; manages work interfaces, and directs work. Work may include operations and maintenance, evaluation of performance, and reporting. Budgets are developed using estimates provided by the line organizations. These budgets include the ESH&Q resources required to execute the work safely to maintain the infrastructure of the facilities. After DOE approves the program requirements, project work requirements flow down to the facility level for planning, scheduling, and work execution.

The 222-S facility and its operation are uniquely different from typical company operations. In this case there is a company and activity embedded within another company's facility, which is responsible for the safe operations of all activities. Therefore, the TFC's ISMS Program will represent the company, facility, and other supporting activities ISMS Program, while the ASPC ISMS Program will represent the analytical services and testing activity. These two documents must be coordinated and integrated to ensure that the two ISMS Programs meet the intent and spirit of DOE's seven guiding principles and five core functions. The ASPC and TFC maintain an ICD (ATL-MP-1016), which includes the understanding that the ASPC will implement the ISMS system in coordination with the TFC ISMS.

2.1.2 The Facility Level

At the facility level, work is managed at the functional or project level and schedules are prepared. Authorized work established at the company level is implemented at the facility level. For example, at nuclear facilities, authorized work activities are bound by the HNF-12125, *222-S Laboratory Documented Safety Analysis (DSA)*, and HNF-14733, *222-S Laboratory Technical Safety Requirements (TSR),* and implemented through procedures and training. These documents, along with environmental permits, and other safety documents, form the authorization basis for the facility. Schedules are addressed at the plan of the week meetings, and work release is controlled to ensure work is performed within the Authorization Basis (AB).

In 222-S these bounding documents will be TFC and FHI documents, and appropriate ASPC employees will be utilizing TFC and FHI procedures and training, as appropriate, to ensure that

laboratory operations are performed within the AB. As the ASPC develops new plans and procedures, the process defined in ATL-312, *Section 1.41, Review and Approval of ATL Documents,* will ensure that work will be performed within the AB. As part of the process, the TFC will provide an additional check for AB compliance as appropriate.

2.1.3 The Activity Level

The activity level includes review, authorization, and expectations to execute authorized work, including but not limited to testing and laboratory analysis. Working documentation is prepared (e.g., work packages, procedures, unreviewed safety question [USQ] screenings), scheduled work is communicated at the plan of the day meetings, and field work supervisors, leads, and workers perform the work. The 222-S Laboratory has an approved technical authorization basis, HNF-12125, that establishes controls for operations so that safety of the public and workers is maintained. This document is maintained by the TFC, and ASPC personnel are trained to the requirements of this document as needed.

At the time of contract assumption, many of the implementing documents used by the ASPC are TFC and FHI documents. ASPC has developed its own management systems and procedures, where needed to increase efficiency and clarify requirements. The TFC was intimately involved in reviewing and approving these documents to ensure that work will be performed within the DSA. In both cases ASPC complies with the technical authorization basis and associated safety management programs.

The flow down of authority and responsibility for safety throughout the business levels and more details of the activity level are discussed in Section 4.2, "Guiding Principle 2 – Clear Roles and Responsibilities."

2.2 ISMS Guiding Principles

The seven guiding principles are attributes applied to and achieved through execution of ASPC's mechanisms (e.g., processes and procedures) that implement the five core functions.

Guiding principles 1 through 3 are applied to each activity within each core function at each business level, and are specifically discussed in Section 4.0, "Work Execution Within ISMS." Guiding principles 4 through 7 align with specific core functions as illustrated in Table 2, and are discussed per core function in Section 4.0. The seven guiding principles are defined in DOE Policy P 450.4.

1. **Line Management Responsibility for Safety.** Line management is directly responsible for the protection of the workers, the public, and the environment. As a complement to the line management, the Department's Office of Environment, Safety and Health provides safety policy, enforcement, and independent oversight functions.

2. **Clear Roles and Responsibilities.** Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the Department and its contractors.

3. **Competence Commensurate with Responsibilities.** Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.

4. **Balanced Priorities.** Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the workers, the public, and the environment shall be a priority whenever activities are planned and performed.

5. **Identification of Safety Standards and Requirements.** Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of safety standards and requirements shall be established, which, if properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

6. **Hazard Controls Tailored to Work Being Performed.** Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and the associated hazards.

7. **Operations Authorization.** The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed-upon.

2.3 ISMS Core Functions

The following five core functions, as defined in DOE P 450.4 and illustrated in Figure 1, provide the overall framework and structure of an ISMS.

1. **Define the Scope of Work.** Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.

2. **Analyze the Hazards.** Hazards associated with the work are identified, analyzed, and categorized.

3. **Develop and Implement Hazard Controls.** Applicable standards and requirements are identified and agreed-upon, controls to prevent/mitigate hazards are identified, the safety envelope [authorization basis] is established, and controls are implemented.

4. **Perform Work within Controls.** Readiness is confirmed and work is performed safely.

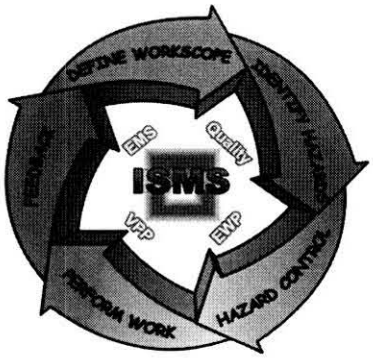

Figure 1. ISMS Structure

5. **Provide Feedback and Continuous Improvement.** Feedback information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight is conducted, and, if necessary, regulatory enforcement actions occur.

2.4 Integration of Other Initiatives and Systems

Prior to the establishment of the ISMS structure, numerous environmental and safety initiatives were developed by a variety of entities (e.g., Enhanced Work Planning [EWP], Voluntary Protection Program [VPP]). These initiatives, together with quality assurance (QA), complement the ISMS and support the ISMS objective. The elements of these initiatives have been incorporated into the ASPC ISMS program. Table 2 illustrates the correlation between ISMS and the supporting program elements.

Table 2. ISMS Guiding Principles and Core Functions Correlation to Supporting Program Elements

ISMS Guiding Principle	ISMS Core Functions	Environmental Mgmt System Elements	Enhanced Work Planning Elements	DOE-VPP Elements	Quality Assurance Criteria
1. Line Management Responsibility	All Five Core Functions	1. Policy 2. Planning 3. Implementation & Operation	1. Line Management Ownership	1. Management Leadership	1. Program
2. Clear Roles and Responsibilities			3. Worker Involvement	2. Employee Involvement	1. Program
3. Competence per Responsibilities			2. A Graded Approach to Work Management 4. Organizationally Diverse Teams	5. Safety and Health Training	1. Program 2. Personnel Training and Qualification
4. Balanced Priorities	1. Define Scope of Work				1. Program
	2. Identify and Analyze Hazards			3. Worksite Analysis	5. Work Processes 6. Design
5. Identification of Safety Standards 6. Tailor Hazard Controls to Work	3. Develop and Implement Hazard Controls			4. Hazard Prevention and Control	5. Work Processes 7. Procurement 8. Inspection/ Acceptance Testing
7. Operations Authorization	4. Perform Work Within Controls				4. Documents/Records 5. Work Processes
	5. Feedback and Continuous Improvement	4.Checking and Corrective Actions 5. Management Review	5. Organized, Institutionalized Communications	All Five Elements	3. Quality Improvement 9. Management Assessments 10. Independent Assessments

- Enhanced work planning (EWP) is used to evaluate and improve the way higher risk or complex work is identified, planned, approved, controlled, and executed at the 222-S Laboratory. Although the majority of ASPC work is performed by approved laboratory technical procedures, some high risk or complex analytical evolutions are controlled by work packages and utilize the EWP process. Key elements of EWP include line management ownership; a graded approach to work management based on risk and complexity, worker involvement, and integrated work planning teams. As a part of this process, ASPC workers are directly involved in work planning, hazard identification and control, work execution, and post-job reviews when performed. Enhanced work planning is integrated into the work control process, which is defined in TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control.* The ASPC is responsible for the control and performance of analytical work within the work control process at 222-S.

- The DOE-VPP promotes safety and health excellence through cooperative efforts among labor, management, and government at DOE contractor sites. Key elements of VPP include management leadership and commitment, employee involvement, work site analysis, hazard prevention and control, and safety and health training. STAR status is awarded to outstanding contractor safety and health programs that have successfully implemented the VPP elements. The ASPC has established a goal of achieving STAR status recognition under the DOE-VPP program. The ASPC has established a VPP description document ATL-MP-1021, *ATL VPP Champions Team Charter,* to outline the strategy for achieving STAR status.

- ASPC QA program was established and implemented in compliance with 10 CFR, Part 830, Subpart A, *Quality Assurance Requirements*, and DOE O 414.1C, *Quality Assurance.* The ASPC QA Program Description is contained in ATL-MP-1002, *Quality Assurance Program Description.* It reflects the QA requirements imposed by the contract and regulatory requirements. The QA Program Description is organized to address the management, performance, and assessment criteria of paragraph 10 CFR, Part 830, Subpart A, as indicated in Table 2. The project/activity specific implementation plan is documented in ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory.* The *Hanford Analytical Services Quality Assurance Requirements Documents* (HASQARD; DOE/RL-96-68) was prepared to ensure that uniform quality assurance standards were utilized at all laboratories that support Hanford cleanup activities. ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory,* describes quality assurance requirements for analytical chemistry work in support of Hanford environmental remediation activities conducted at the 222-S Laboratory. This document is a full description of how HASQARD is implemented at the 222-S Laboratory.

- Additionally, QA criteria and practices are embedded in all work processes and procedures that control analytical work and relate to safety. Therefore, the actions to implement the QA criteria are integrated and consistent with the ISMS structure.

- The Quality Assurance Program Implementation Matrix (QAIM) is in ATL-MP-1015. It was developed to provide a correlation between regulatory (10 CFR 830, Subpart A), and DOE O 414.1A, consensus standard invoked for implementation of the QA criteria (NQA-1-1989), ASPC QA program requirements, and implementing documents. The QAIM provides visibility to implementing procedures and serves to ensure consistency in the management and implementation of QA program requirements.

These initiatives minimize safety impacts, proactively ensure compliance, and effectively respond to worker needs. Open and effective communication between management, workers, and support professionals is essential to achieve human/environment protection and regulatory compliance.

2.5 Document Hierarchy

The document hierarchy is multi-tiered beginning with the contract. The document hierarchy identifies policies that convey company topical positions and management plans that establish the method to accomplish a given scope of work or a specific task. The procedure manuals contain specific activity level procedures that provide direction where a common product or service is desired. Laws, regulations, and DOE directives will flow down through the hierarchy placing the requirements associated with specific activities within the procedures that govern those activities. Figure 2 is the document hierarchy as established by the ASPC. The ASPC issues Standing Orders on an interim basis to establish and/or clarify a process or expectation on an immediate basis until the guidance can be incorporated into the appropriate policy, plan, or procedure.

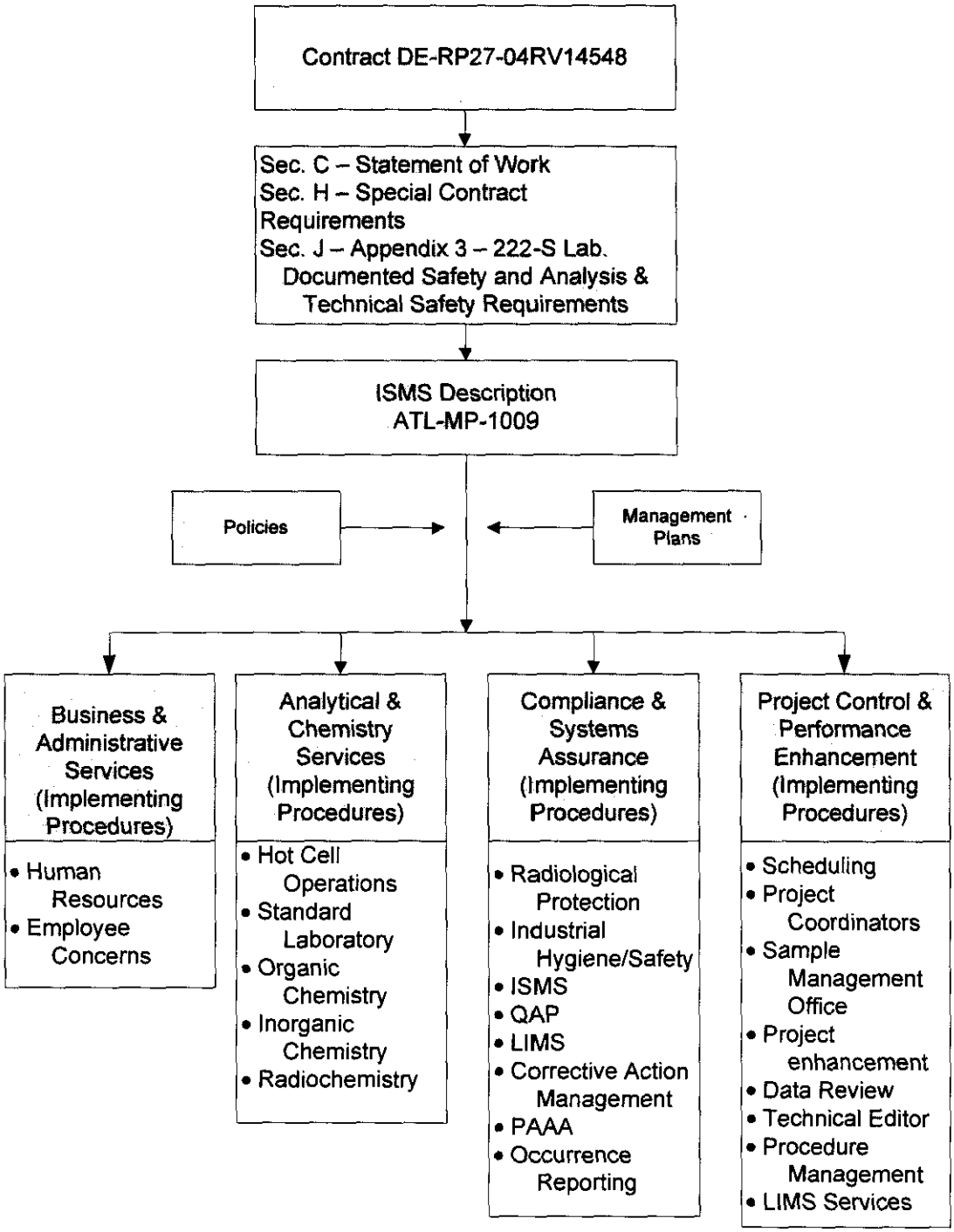

Figure 2. Document Hierarchy

2.6 ES&H Minimum Performance Requirements

A brief summary of the ES&H minimum performance requirements cited in the contract, DE-AC27-05RV14548, is noted as follows:

- Safety encompasses environment, safety, and health, including pollution prevention and waste minimization.
- Employees include subcontractor employees.
- The ASPC shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work.
- The ASPC shall exercise a degree of care commensurate with the work and the associated hazards.
- The ASPC shall ensure that management of environment, safety and health functions and activities becomes an integral but visible part of the work planning and execution processes.
- Compliance with applicable laws, regulations, and DOE requirements.
- Full and effective implementation of the ISMS.
- Full compliance with the contract (DE-AC27-05RV14548) and all requirements flow down to subcontractors.

3.0 RIVER PROTECTION PROJECT OVERVIEW

3.1 River Protection Project

The mission of the U.S. Department of Energy (DOE) Office of River Protection (ORP) is to manage the River Protection Project (RPP) to clean up the Hanford Site's high-level wastes contained in the tank farms. The Hanford Site, in southeastern Washington State, has one of the largest concentrations of radioactive waste in the world. Approximately 54 million gallons of waste stored in 177 aging underground tanks represent major environmental, social, and political challenges for DOE. Because of this major challenge, ORP has contracted with a number of companies and has been utilizing many specialized facilities to conduct this cleanup mission. One such facility is the 222-S Laboratory that performs analyses of highly radioactive samples and mixed wastes and provides process technology support (e.g., methods, development, process troubleshooting) for other contractors involved in the site's cleanup.

In January 2005, ORP selected the ASPC to manage the analytical services production functions within the 222-S Laboratory facilities. Therefore, the 222-S facility has two prime contractors and two ISMS programs managed by ORP. The TFC ISMS program will represent the facility, and other supporting activities, while the ASPC ISMS program will represent the analytical services and testing activity. These two documents are coordinated to ensure that both programs meet the intent of the ISMS seven guiding principals and five core functions. ASPC and TFC have established ATL-MP-1016, *Interface Control Document,* which details the expectation that ASPC will implement the ISMS system in coordination with the TFC ISMS.

3.2 Office of River Protection Program Office Support

Detailed DOE-ORP project definition, roles, and responsibilities are defined in ORP M 411.1-1 R1, *Safety Management Functions, Responsibilities, and Authorities Manual for the U.S. Department of Energy, Office of River Protection.* Figure 3 shows the line authority from the U.S. Department of Energy-Headquarters (DOE-HQ) Secretary of Energy to the Manager of DOE-ORP to ASPC, TFC, and other Hanford contractors.

The ORP Program Office integrates the RPP activities as defined in DOE/ORP-2000-06, *River Protection Project-Project Management Plan.* This function assists with the RPP integration activities among DOE-ORP, ASPC, WTP, and TFC. The ORP Program Office performs cost effective integration of RPP activities by establishing processes and/or systems to accomplish this integration, identifying and tracking integration issues to completion, communicating plans/accomplishments at the RPP level, and providing project status information. Additionally, expectations received from ORP Program Office as part of the field budget call are translated into tasks that permit identification of resource requirements, priorities, and performance metrics. ORP budget and work expectations are authorized and communicated to the ASPC. Expectations for tasks flow from ORP Program Office to the ASPC to the individual facility, process or work task as appropriate.

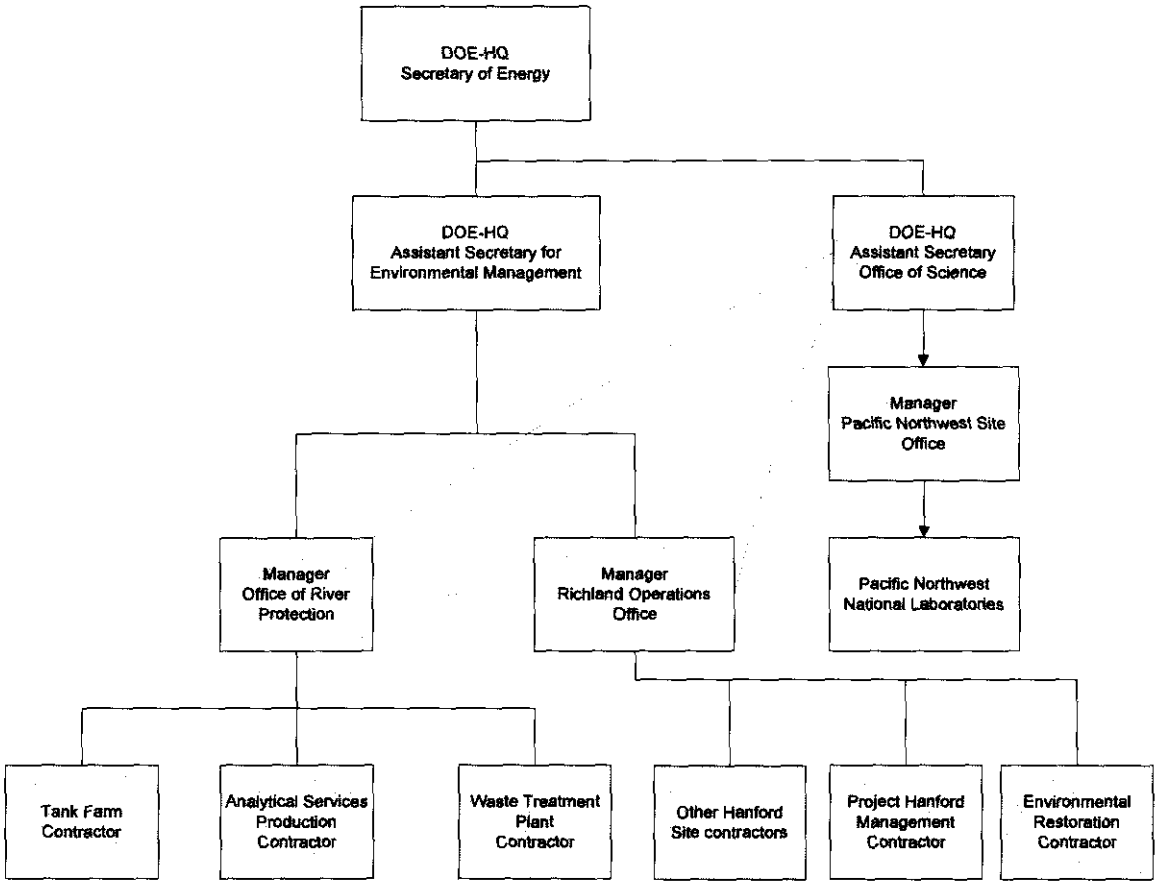

Figure 3. Organizational Relationships for the DOE-ORP

3.3 Hanford Interfaces

At the Hanford Site, the ASPC interfaces with the DOE-ORP office and several Hanford Site contractors in accomplishing ASPC work. These interfaces allow use of common infrastructures and services that represent cost savings for the contractors and the government. ASPC uses services provided by the U.S. Department of Energy – Richland Operations Office (DOE-RL), Pacific Northwest Site Office (DOE-PNSO), and DOE-ORP contractors through task orders, memorandums of agreement, interface control documents, service pool arrangements, and other contracting mechanisms. The following are the major DOE Offices and Hanford Site contractors, with which ASPC will interface:

- DOE-RL manages DOE activities at the Hanford Site except for the RPP and PNSO. Prime contractors include AdvanceMed Hanford (AMH); Fluor Hanford, Inc. (FHI) and Washington Closure Hanford (WCH).

- **AMH** manages the Hanford Site occupational health services for Hanford workers. AMH provides medical qualifications, medical monitoring, and occupational medical services. The ASPC interface with AMH is through the DOE-ORP ESH&Q organization, which then interfaces with the DOE-RL ESH&Q.

- **WCH** manages the Hanford Site River Corridor contract which DOE has defined closure as completion of all activities required to deactivate, decontaminate, decommission, and demolish excess facilities; place former production reactors in an interim safe and stable condition; remediate waste sites and burial grounds; meet regulatory requirements; and transition to long-term stewardship. WCH interfaces with the ASPC for sampling services.

- **FHI** manages the Project Hanford Management Contract, which provides most of the Hanford Site infrastructure and support services activities (e.g., groundwater/vadose zone project, training support, roads/electricity/water, emergency management, fire system management, site security, payroll/benefits management). Principal subcontractors to FHI, which interface with ASPC include the following:

    - Duratek Federal Services of Hanford Inc. provides waste management and sludge retrieval and disposition services. Duratek interfaces with the ASPC by providing certified waste shipping support.
    - Framatome ANP supports the Spent Nuclear Fuel Project and interfaces with ASPC for sampling services.
    - Lockheed Martin Information Technology provides Information Resource Management for Hanford Site contractors.
    - Day and Zimmerman Protection Technology Hanford provide safeguards and security planning and services for the Hanford contractors.
    - Westinghouse Safety Management Solutions manages the Plutonium Finishing Plant and interfaces with the ASPC for sampling services.

- **DOE-PNSO** manages DOE activities associated with the Office of Science and the HAMMER training facility. The prime contractor includes the Pacific Northwest National Laboratory (PNNL).

- **PNNL** provides radiological instrumentation, dosimetry services, environmental monitoring analysis and associated records support.

- **DOE-ORP** manages DOE activities associated with the River Protection Project. Prime contractors include CH2M HILL Hanford Group, Inc. (CH2M HILL), Bechtel National Inc (BNI) and Advanced Technologies and Laboratories International, Inc. (ATL).

- **CH2M HILL** manages the Tank Farm Contract, the 222-S facility and safety systems which provides and/or coordinates the following services/programs, by Contract or ICD, to the ASPC:
  - Radiological control program to manage work with radiological exposure and contamination, including Radiological Control Technician (RCT) support to implement the program.
  - Nuclear safety program to implement and maintain the Documented Safety Analysis (DSA) and maintain nuclear safety in the laboratory.
  - Safety management programs required to maintain both personnel and nuclear safety.
  - Security program and security personnel to maintain physical security for the laboratory and inventory.
  - Emergency response program and support to integrate the ASPC into the Hanford Site Emergency Response Program.
  - Fire protection program to maintain the laboratory within the requirements of the 222-S Fire Hazard Analysis.
  - Waste management program and services.
  - Certified waste shipment support.
  - Facility/equipment maintenance program.
  - Environmental/regulatory support.
  - Training support services.
  - Document control support.

Section 4.8.4, "Subcontractor ISMS Flowdown," identifies mechanisms by which ATL flows down ISMS requirements and performs oversight of subcontractors.

3.4 External Regulatory and Oversight Agencies

Table 3 provides an overview of 222-S's external regulatory and oversight agencies that are in addition to DOE, and their primary focus. DOE is discussed in Section 4.2, "Guiding Principle 2 – Clear Roles and Responsibilities," and Section 4.12.4, "Oversight and Enforcement." The TFC retains the responsibility for all permits and facility safety basis, therefore, the interface of the ASPC with these agencies is often one of support to the TFC. The ASPC is a key party responsible for implementing the requirements needed to comply with the permits and authorizing documents, therefore, ASPC support is often needed during interface with external regulators and oversight agencies.

Table 3. External Regulatory and Oversight Agencies Primary Focus for ASPC

External Regulatory and Oversight Agencies	Environmental Protection Agency	Washington Department of Ecology	Washington Department of Health	Washington Department of Transportation	Defense Nuclear Facilities Safety Board
Regulates all treatment/storage/disposal permits under Resource Conservation and Recovery Act (RCRA) and the Washington State Hazardous Waste Management Act	X	X			
Regulates radioactive air emissions	X		X		
Regulates non-radioactive air emissions		X			
Regulates liquid effluents		X	X		
Regulates offsite transportation of radioactive hazardous wastes				X	
Regulates offsite transportation of non-radioactive hazardous wastes				X	
Ensures and enhances the safety of DOE's defense nuclear facilities operations					X

4.0 WORK EXECUTION WITHIN ISMS

The preceding portions of this document discussed the basic structure of an ISMS and the RPP. Expectations are communicated, and programs are established to provide management and workers with the guiding principles and structure to ensure safety, quality, and environmental protection are an integral part of each work activity.

The hazards and complexity of the work determine the level of rigor applied to training, procedures, and control of work. This section describes how the integration of ESH&Q within

management processes establishes a common set of controls essential for the safe and efficient performance of work.

4.1 Guiding Principle 1 – Line Management Responsibility for Safety

ASPC fully endorses the guiding principle that line management is directly responsible and accountable for the protection of the workers, the public, and the environment by integrating ESH&Q into the planning, hazard analysis and control, and performance of work. As published in DOE G 450.4-1B, line management is defined as "*any management level within the line organization, including Contractor management, which is responsible and accountable for directing and conducting work.*" Work is broadly defined to include physical work, design, engineering, maintenance, operations, testing, administrative, and assessment.

An ISMS provides line management with the technical resources necessary to fulfill their responsibility. To build on the technical sources and strengthen the existing safety culture, ASPC will utilize the training program services of the TFC. The training and qualification programs at 222-S are designed to help line management and staff examine, evaluate, and promote their role in safety leadership, incident investigation, and field auditing. To meet this expectation, ASPC has developed ATL-MP-1025, *ATL Training Implementation Matrix,* that provides documentation of compliance with DOE O 5480.20A, *Personnel Selection Qualification and Training Requirements for DOE Nuclear Facilities.*

4.1.1 ASPC Flow Down of Authority

Line direction for company and facility/project work activities flows down from DOE-ORP through the ATL President/Project Manager to the project coordinators and group managers (see Figure 4).

Within the functional organization, integrated job-specific teams are used in the planning and execution of work in accordance with a common set of procedures. Under ASPC procedures, based on a job complexity approach, line management uses chemists and chemical technologists as subject matter experts in work planning to assist with:

- Identifying work scope and hazards
- Performing job hazard analyses
- Conducting As Low As Reasonably Achievable (ALARA) reviews to minimize radioactive and non-radioactive hazard exposure
- Implementing the necessary controls to ensure protection of the worker, the public, and the environment

- Implementing self-assessments
- Providing input and output for continuous improvement.

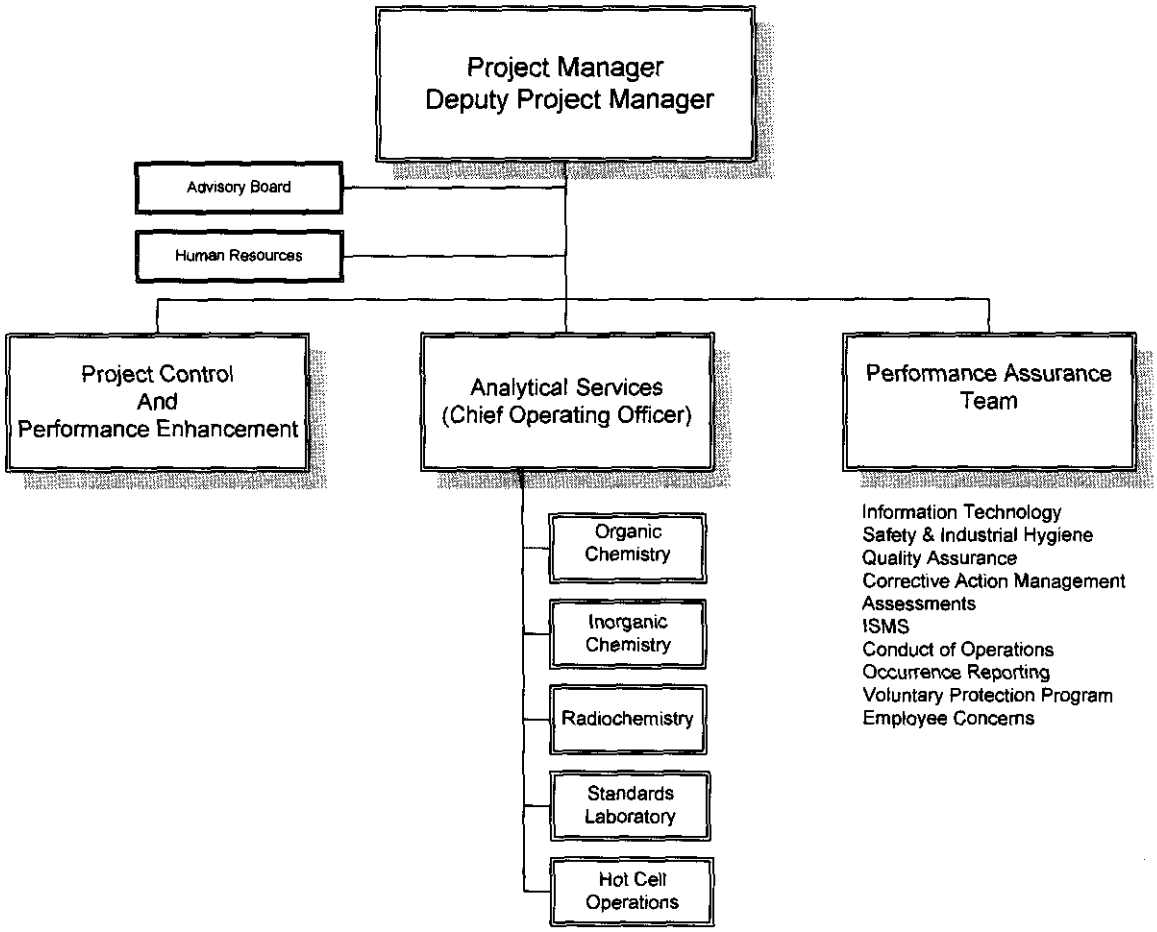

Figure 4. ATL Organization Chart

Work direction flows down through the Project Manager to the project coordinators and group managers, for the work activity. The Chief Operating Officer (Analytical Services Team Manager) is responsible for releasing work and ensuring that the work to be performed is within the authorization basis. ASPC line management is responsible for the safe conduct of the work.

4.1.2 Laboratory Analytical Activities

The ASPC Chief Operating Officer (Analytical Services Team Manager) and group managers have overall responsibility for work execution. The group managers (reporting to the Chief Operating Officer) are directly accountable for monitoring and control of analytical activities. All ASPC laboratory analytical activities are performed by trained chemical technicians using approved technical procedures as identified in ATL-MP-1019, *ATL Conduct of Operations Applicability Matrix.*

ASPC ESH&Q experts provide monitoring and oversight of laboratory analytical activities to ensure the protection of the workers, the public, and the environment. Every employee is required to perform in accordance with requirements and expectations and is empowered and expected to exercise "stop work" authority to prevent performance of an unsafe act or to correct an unsafe condition. ASPC employees are trained to use the same stop work procedure (TFC-ESHQ-S_SAF-C-04, *Stop Work Responsibility*) as the TFC employees at 222-S to ensure consistency of application. ATL-MP-1001, *Procedures Acceptable for Use by the ATL 222-S Analytical Services Production Contractor,* identifies this procedure for use.

4.1.3 Committees

Committees are used to achieve integration and oversight of activities at 222-S laboratory. ASPC has developed specific committees for several worker lead safety functions such as the SAF*Team and VPP Champions. In addition, the ASPC participates in committees and boards sponsored by other site wide Hanford organizations to support a strong safety program and fulfill contractual requirements. Participation on these committees facilitates information exchange, the development of common approaches where appropriate and cost effective, and networking to enhance functional area cooperation. The following is a list of committees that the ASPC leads or participates in to promote a strong safety culture at the 222-S facility:

- **Safety Awareness Focus Team (SAF* Team):** The ASPC specific, employee accident prevention council that provides a partnership of labor and management to improve safety performance and reduce injury and illness rates through the application of VPP principles and the ISMS structure. The SAF*Team ensures the effectiveness of safety programs by establishing goals and programs; supports the resolution of employee safety concerns; serves as a forum to address safety concerns and issues to resolution; supports effective communication of safety information through various means; supports the workplace safety observation program; and fosters safety and environmental awareness, compliance, and stewardship in the workforce. ATL-MP-1023, *The ATL 222-S Safety Awareness Focus Team (SAF*T) Charter,* direct the activities of this committee.

- **ATL Voluntary Protection Program (VPP) Champions Team:** The ATL VPP Champions Team is a sub-committee of the Safety Awareness Focus Team (SAF*T). The VPP Champions team is a collaborative effort between workers and management focus on

preparing the required documentation to apply for VPP recognition. Members of the VPP Champions Teams lead the performance of the VPP annual self-assessments, support the SAF*T in development of the Safety Improvement Plan (SIP) and submit the application for VPP recognition for the company. ATL-MP-1021, *ATL Voluntary Protection Program Champions Team Charter,* direct the activities of this committee.

- **Site Wide VPP Champions Committee:** Representatives from the projects on the Hanford Site provide information, support, and mentoring to assist each facility in their pursuit and/or maintenance of VPP recognition status.

- **222-S Laboratory ALARA Committee:** The ASPC/TFC facility committee coordinates actions to achieve ALARA goals, evaluates incidents reported through the corrective action management system, disseminates lessons learned, and provides a forum for exchange of new technologies and techniques used to achieve ALARA goals.

- **222-S Chemical Hygiene Committee:** ASPC lead facility committee that ensures the current training program adequately covers the requirements of the Chemical Hygiene Plan; evaluates laboratory practices and policies for compliance with the Chemical Hygiene Plan and other regulatory requirements; recommends improvements in the Chemical Hygiene Plan; and reviews and updates the Chemical Hygiene Plan annually.

4.1.4 Safety Meetings

Safety meetings are scheduled monthly for ASPC employees (including selected subcontractors). The meetings promote safety by addressing a different health or safety topic each month, including information on basic issues, control methods, and established programs. Employees are encouraged to ask questions and participate in each meeting by sharing their ideas on safety issues.

4.2 Guiding Principle 2 – Clear Roles and Responsibilities

Roles and responsibilities are defined by: (1) assignment within the organization, and (2) the function or activity being performed, which are contained in ASPC policies and procedures. ATL-MP-1007, *ATL Roles and Responsibilities*, is the management plan that provides detailed roles and responsibilities for the ASPC organization. This plan identifies positions by job title and job responsibilities. Additionally, specific roles and responsibilities for individuals are delineated in the HAMTC Agreement, position descriptions, performance expectations, and procedures. The expectations and requirements for ISMS, including DEAR clause requirements, are communicated to the ASPC management and workers through these documents that define roles and responsibilities.

Management and workers at every level are responsible and accountable for understanding and implementing established company standards for safety, environmental protection, quality, and

efficiency. Personnel are accountable for their personal safety and the safety of their peers, the public, and the environment.

Several mechanisms are used to communicate and impose personnel accountability. The ASPC has communicated the expectations, values, and role of employee safety awareness and behavior in an internal memo to all employees at contract transition. The expectations have been formalized in ATL-MP-1022, *ATL Safety and Health Policy* (i.e., Master Safety Rules, Worker Bill of Rights, etc.), and ATL-312, Section 2.15, *Employee Discipline.*

Formal training, memoranda, and other less formal means of communication continue to reinforce the expectations at all levels. The annual performance appraisal process, as described in ATL-ASD-HR-03-05, *ATL-ASD Procedure for Completing the Appraisal Process,* provides the mechanism for formal annual review.

ASPC operates a "flat" organization so that there is a minimum distance between upper management and workers and a maximum of direct communication. Management at every level ensures that employees understand their role in implementing these standards as an integral part of meeting company objectives and customer expectations.

- 222-S Laboratory Analytical Services Chief Operating Officer (COO) is responsible for all areas of analyses of client samples. The 222-S Laboratory COO focuses on providing technical competency and effective resource utilization while providing necessary quality and quantity of sample analyses. The COO provides a place of employment that is free from hazards that may cause physical harm to workers and communicates safety expectations to ASPC personnel. Additionally, the COO implements direction, training, and evaluation of the 222-S Laboratory Analytical Services group's production and technical functions and coordinates the efforts of 222-S Laboratory Analytical Services to ensure that the function operates efficiently and safely.
- **Group Managers** report to the COO and are responsible for directing work activities and managing a safe work environment. Their focus is on the activity level for each ISMS core function. Group Managers participate in work planning, hazard identification and control, work performance within the controls, and feedback and continuous improvement. Group Managers are also responsible for ensuring that the work environments are producing safe results that support and advance company and customer objectives. Their focus is on the activity and facility level for each ISMS core function. Group Managers also ensure company policies and procedures are effectively implemented. Group Managers coordinate resources and work activities with other organizations, provide technical direction according to their qualification, provide direction for work, and report work progress and the quality of performance.
- **Project Coordinators** perform three general functions applying individual technical expertise and professional interest: (1) proactively serve customers (2) provide management and coordination to ensure timely and high quality final analytical deliverables, and (3) provide leadership and team support to others with specialty skills. Their focus is on the

activity level, with support to management and Team Managers on company- and facility-level matters. They ensure barriers affecting the timely, high-quality, and safe performance of work are addressed and that analytical services meet budgets, schedules, milestones, and customer expectations.

- **Advisory Board** is responsible for providing advice and assistance to the Project Manager. The Project Manager will from time to time engage the advisory board in assessments of both technical and business operations and will seek input and recommendations on how to improve overall efficiency and effectiveness of analytical services without compromising safety.

- **ATL President/Project Manager** is responsible for the overall management and safe operation of ASPC and is fully responsible and accountable for all project related matters. The Project Manager serves as the primary interface with ORP.

- **DOE-ORP** interfaces with ASPC to ensure continued excellence in mission execution and ESH&Q management. The DOE-ORP and ASPC managers collaborate to clearly define company and project performance expectations and priorities.

4.3 Guiding Principle 3 – Competence Commensurate with Responsibilities

ASPC Human Resources, Training Coordinator, and line management work together to ensure qualified workers perform work safely using approved procedures. The work to be performed by an organization is evaluated against standards and requirements, and management determines the staffing, training, and qualification requirements for the organization's positions. Human Resources supports this activity by (1) reviewing position descriptions that define position titles, education, and experience requirements for ASPC work, and (2) supporting the preparation of new position descriptions as needed. Personnel are selected from sources within or outside the company. In either case, training, education, and experience are evaluated before personnel are assigned to a position to ensure each worker meets the predefined requirements. Once people are assigned to a position, their manager determines the company, facility, activity, position or task training, and qualifications required to be completed.

ATL-MP-1024, *ATL Training and Qualification Plan*, provides the program for ASPC management to assure ASPC employees are trained to safely, competently, and effectively perform their job functions. The management plan identifies 1) the level of TFC training service and 2) the process to interface with TFC training procedures required to successfully manage the ASPC training program. The ASPC has developed ATL-MP-1025, *ATL Training Implementation Matrix*, that provides documentation of compliance with DOE O 5480.20A, *Personnel Selection Qualification and Training Requirements for DOE Nuclear Facilities.* The training plan and matrix provide the mechanism for ASPC management to establish training criteria for their employees, revise the plan/matrix as needed, approve training plans, and interface with TFC training services and procedures. Additionally, ATL-312, Section 4.25, *ATL*

Supervision of Fieldwork is implemented to provide direction in the qualification of ASPC supervisors for analytical activities.

4.4 Guiding Principle 4 – Balanced Priorities

The processes, tools, and controls used to translate annual expectations from DOE-ORP field budget calls into contract period plans that identify resource requirements and priorities is described in ATL-MP-1003, *ATL Project Management Plan.* Execution year work is captured and authorized by DOE-ORP for performance through the ATL Annual Service Level Agreement, as described in ATL-312, Section 1.19, *ATL Budget Formulation.* Work is then performed in accordance with the ATL Annual Service Level Agreement and the requirements established in the contract that includes ESH&Q commitments, requirements, and performance objectives. Scope and requirements are then translated into a more specific scope, schedule, and cost at the activity level. The scope and requirements are communicated and implemented through the application of ASPC procedures and work packages.

At the activity level, resources are allocated effectively to address ES&H, programmatic, and operational considerations. Conduct of quality analytical services while protecting people, environment, and facilities is the basis during the planning and performance of work. The ASPC management adopted the ATS-310, Section 1.16, *Integration of Facility Prioritization Activities,* to establish the methods for ensuring a proper balance among competing priorities at 222-S Laboratory. These include risk-based processes for reconciling internal and external conflicts, ensuring change control, and ensuring a balance in resource allocation. The ASPC provides participants to the Analytical Production, 0650 Plan of the Day, Plan of the Week (POW), and weekly Planning, Prioritization, and Backlog Review meetings. The goal is to define work and allocate resources so that work is done safely and contributes to the accomplishment of the DOE mission.

4.5 Guiding Principle 5 – Identification of Safety Standards and Requirements

Prior to the performance of work, hazards are evaluated and the ASPC identifies, selects and approves an agreed-upon set of safety standards and requirements that, when properly implemented, provide adequate assurance that workers, the public, and the environment are protected from adverse conditions. The standards and requirements applicable to the ASPC are specified in the contract, 222-S facility DSA, Radiation Protection Program, Fire Protection Program, Chemical Hygiene Plan, etc. These standards and requirements include federal, state, and local laws and regulations, and specific DOE Directives. The TFC, as described in Section 3.3 of this document, contractually provide and maintain many of these services for the ASPC. To ensure all contractual safety standards and requirements are met, ATL-MP-1026, *ATL Contract Requirement Implementation Matrix,* is in place to identify requirements, control implementation, and manage changes. The flowdown of these standards and requirements to implementing ASPC documents occurs in the facility work control and procedure development/review/approval processes.

4.6 Guiding Principle 6 – Hazard Controls Tailored to Work Being Performed

For hazards, ASPC employs a hierarchy of controls. The order of the hierarchy is design/ engineered controls, administrative controls, and personal protective equipment. Engineering and administrative controls to prevent and mitigate hazards are tailored to the work being performed and the associated hazards. The ASPC applies a graded approach to individual work activities based on risk and complexity to implement safe, environmentally protective, and cost-effective work practices. Likewise, the work planning process considers routine versus non-routine tasks where the nature of the task contributes to determining the proper balance of work instructions, worker supervision, and craft skills. Controls are addressed at all aspects of the work, e.g., initiation, review, authorization, and execution, in the process. Once risk and complexity of the task have been defined, the facility history and worker experience are considered to adequately establish a set of controls and facility job authorization requirements. All types of controls, e.g., radiation protection, pollution prevention, RCRA, CERCLA, etc., are addressed. Engineered hazard controls, i.e., fume hoods, ventilation, ergonomic tools, etc., have been installed in the 222-S Complex to minimize exposure to radioactive materials and chemical vapor exposure. Approved Laboratory procedures address hazards specific to the analysis being performed.

4.7 Guiding Principle 7 – Operations Authorization

At the analytical services and testing activity level, the following processes provide operations authorization to perform ASPC work. The ASPC management and 222-S Facility Operations Manager (FOM) will provide review and approval of all analytical procedures to ensure that only approved, authorized work is performed in an integrated and consistent approach. The details of this process are described in ATL-312, Section 1.41, *Review and Approval of ATL Documents.* For ASPC activities performed by a facility work package, operational authorization is performed via work release approval as described in TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control.*

4.8 Core Function 1 – Define the Scope of Work

Defining work scope is a process in which DOE mission expectations are defined, prioritized, and divided into discrete activities that account for the associated hazards, requirements, controls, and funding needed to complete the mission. As the facility owner, DOE defines the mission and requirements. ASPC establishes the mechanisms for accomplishing the mission, to assign responsibility, and to implement work priorities through risk-informed planning for the effective and efficient use of resources.

Sections 4.8.1 through 4.8.4 describe definition of work scope and balanced priorities primarily at the company level as part of the ASPC business, budget,

Applicable Guiding Principles

1. *Line Management Responsibility*
2. *Clear Roles and Responsibilities*
3. *Competence Commensurate with Responsibilities*
4. **Balanced Priorities**

and contract process. Section 4.8.5 describes how this element is accomplished at the facility/activity level.

4.8.1 Translate Mission into Work

The processes, tools, and controls used to translate the ASPC life-cycle work breakdown structure (WBS) into contract period plans and execution year work is described in ATL-MP-1003, *ATL Project Management Plan.* Execution year work is captured and authorized by DOE-ORP for performance through the ATL Annual Service Level Agreement. Work is then performed in accordance with the ATL Annual Service Level Agreement and the requirements established in the contract that includes ESH&Q commitments and performance objectives. ASPC life-cycle baseline is an integral subset of the RPP integrated baseline, which describes the combined activities of the DOE-ORP, TFC, WTP, and ASPC. The scope and requirements of ASPC life-cycle baseline are described and assigned through the *RPP Mission Analysis and Requirements Report* (DOE/ORP-2000-10) and the contract. Scope and requirements are then translated into a more specific scope, schedule, and cost basis at the activity level and implemented through the application of ASPC procedures.

4.8.2 Set Expectations

The WBS development process establishes the expectations for accomplishing work, prioritizing tasks, and allocating resources. A hierarchy of mechanisms is used such that each successively lower tier provides an increasing level of detail on "what" work is to be performed and "how" integration occurs (i.e., broad mission objectives are translated into discrete tasks). Expectations are set by establishing performance objectives, including ESH&Q performance, whereby cost and schedule considerations can never override safety considerations for the assigned work. The formality of these objectives depends on the scope of work, its complexity, and the hazards associated with the work.

Safety objectives and expectations for tasks flow from DOE-ORP to ASPC employees in this process, as described in 4.8.1, to ASPC procedures and plans. ATL-312, Section 4.26, *ATL Analytical Project Process Flow,* describes how analytical services clients' expectations are incorporated into the ASPC process.

At the activity level, as stated in Section 4.2, "Guiding Principle 2 – Clear Roles and Responsibilities," employee expectations are set annually and periodically reviewed.

4.8.3 Prioritize Tasks and Allocate Resources to Minimize Risk

The WBS development process establishes the expectations for accomplishing work, prioritizing tasks, and allocating resources to minimize risks. The processes, tools, and controls used to translate the ASPC WBS into contract period plans with prioritization and resources is described in ATL-MP-1003, *ATL Project Management Plan.*

At the activity level, ASPC tasks are then prioritized and resources are allocated to minimize risk, by adopting and utilizing the 222-S Laboratory work control process and procedure TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control.* As part of the ICD, ASPC workscope is integrated under this 222-S process to ensure safe and efficient control of work at the facility. The facility work control process is intended to balance priorities by using risk-based analysis to meet regulatory requirements and control hazards and environmental impacts during performance of work. Programmatic and technical risk management activities are conducted throughout projects and activities. Risk is considered in prioritizing and scheduling work during the integrated planning process and work package preparation. The ASPC maintains a schedule to assist with the integration of analytical and facility maintenance activities within the 222-S Complex (ATS-310, Section 1.16, *Integration of Facility Prioritization Activities*).

At this activity level, as described in Section 4.4, "Guiding Principle 4-Balanced Priorities", quality analytical services will be performed to support customer expectations while protecting people, environment, and the facilities.

4.8.4 Subcontractor ISMS Flow Down

The procurement process is described in ATL-312, Section 1.16, *Procurement Process Interface.* This defines an integrated supply chain to consistently acquire the highest quality and best value products and services while ensuring necessary technical standards and requirements are met. The following paragraphs describe the specific mechanisms by which the ASPC ensures flow down of ISMS and performs oversight of subcontractor safety, health, and quality work performance.

Specific safety requirements for subcontractors, temporary employees, vendors, etc., are documented during the procurement process. Subcontracts are written and managed within two major categories: (1) products that include materials, supplies, equipment and commercial items, and (2) services that are technical services obtained from subcontractors. These subcontracts contain standard provisions and include Special Provision 5, which contains ISMS requirements from 48 CFR DEAR 970.5223-1. Contract requirement details reflect a graded approach that depends on the magnitude and complexity of the task order.

4.8.5 Facility/Activity Level

ASPC performs work using approved technical procedures for laboratory analytical services and testing operations. The ASPC has the responsibility for technical procedures as follows:

- Laboratory Analytical procedures (designated LA)
- Laboratory Reference Material procedures (designated LR)
- Laboratory Quality Control and Quality Assurance procedures (designated as LQ)

ASPC personnel are listed as Technical Owners for certain, based on task, Laboratory Operating (LO) procedures and Laboratory Computer (LC) procedures. ASPC personnel are responsible for reviewing and revising the procedures in response to client analysis requirements and in accordance with periodic review requirements. ASPC personnel perform technical work in accordance to the most recent releases of these procedures.

The analytical procedures are developed and performed using hazard identification and control such as standing job hazard analyses (JHA), Procedure Review Job Hazards Checklists, and general radiological work permits (RWP) for pre-defined standard work scope. ASPC worker reviews of the procedure for hazard identification/mitigation are also performed as part of the process.

A subset of ASPC work, based on risk or complexity, is performed using approved work packages. The 222-S work control processes use Enhanced Work Planning (EWP) for high risk or complex work to ensure face-to-face work planning participation. High risk or complex evolutions within the ASPC work scope requires ASPC workers, line management, and the ESH&Q support personnel conduct a EWP. The EWP elements are used to involve the ASPC workers in hazard identification and mitigation.

ASPC activities are captured in the facility work schedule, addressed at the plan of the week meetings, and communicated during the plan of the day meetings within the 222-S work control process. ASPC managers, as an integral part of the process, ensure all analytical activities relating to safety (e.g., worker safety and health, radiological control, and quality assurance) are resource-loaded by coordination with the facility managers as part of the work control process.

Regardless of whether the job requires the full-scope of a EWP, or development of routine procedures, preparations are identified to:

1) Reduce the possibility of injury or exposure of the worker and minimize the impact on the public and the environment, and 2) ensure the work scope is properly defined. The entire process of defining and planning the work is improved through the ASPC assessment program, which provides feedback to the planning process. The ASPC assessment program is described in ATL-MP-1020, *Assessment Program Plan.*

Applicable Guiding Principles

1. *Line Management Responsibility*
2. *Clear Roles and Responsibilities*
3. *Competence commensurate with Responsibilities*

4.9 Core Function 2 – Analyze Hazards

Identifying and analyzing potential hazards and environmental impacts is important to ensuring hazards are adequately controlled and requirements are met. Hazard analysis methods address all types of hazards including nuclear, chemical, fire, industrial, etc. Hazards and environmental impacts are identified as part of baseline development, a process that continues throughout the

facility or project life-cycle. Work performed as part of the mission is evaluated against the bounding conditions of the safety basis. For ASPC, hazard identification and analysis are defined at the company level, but they are implemented at the facility and activity level.

The responsibility for development, implementation, and maintenance of the primary facility safety programs is retained by the TFC. The ASPC will support the TFC as needed to assure facility safety programs, such as the Safety Basis, JHA, Fire Hazard Analysis, and Emergency Preparedness, are implemented. While the TFC retains responsibility to maintain these programs, the ASPC has responsibilities to follow and implement their actions relative to these programs. This interface is described in ATL-MP-1016, *Interface Control Document.*

4.9.1 Identify Hazards

ASPC performs work using approved technical procedures for laboratory analytical services and testing operations. The analytical procedures are developed and performed using hazard identification and controls such as a standing JHA, Procedure Review Job Hazards Checklists, and general radiological work permits (RWP) for pre-defined standard work scopes. Subject matter experts and ASPC worker reviews, verifications and validations of the procedure for hazard identification/mitigation are also performed as part of the process.

The 222-S work control processes use Enhanced Work Planning (EWP) for high risk or complex work to ensure face-to-face work planning participation. High risk or complex evolutions within the ASPC work scope requires ASPC workers, line management, and the ESH&Q support personnel conduct a EWP. The EWP elements are used to involve the ASPC workers in hazard identification and mitigation.

ASPC workers are educated of the facility chemical inventories and the proper use of chemicals at 222-S Laboratory through the ATS-310, Section 4.05, *222-S Laboratory Complex Chemical Hygiene Plan,* and communications from line management. Chemical hazards are evaluated at the time of purchase through LO-150-063, *Chemical Management.* An Employee Job Task Analysis (EJTA) is developed for each ASPC employee by their manager and safety professional to assess work place hazards and provide data to determine appropriate levels of medical monitoring.

The EJTA, JHA (TFC-ESHQ-S_SAF-C-02, *Job Hazard Analysis),* and chemical compatibility review processes are used to identify hazards at the activity level and include ASPC employee involvement and the appropriate participation of other support personnel. It is the responsibility of ASPC line management to assure these programs are implemented. Work that is the responsibility of ASPC but performed by subcontractors is managed in a similar manner. Hazards identification and analysis of work performed by subcontractors is managed by the Project Manager who administers the terms and conditions of the contract through the procurement process.

4.9.2 Categorize Hazards

At the facility level, TFC uses the results of the hazards analyses performed under guidance from TFC-PRJ-PM-C-02, *Project Management for DOE O 413.3*, to determine whether existing NEPA documentation and environmental permits adequately address the identified hazards to the public, cultural and natural resources, and the environment. The final hazard category is determined at 222-S, as described in TFC-ENG-SB-C-06, *Safety Basis Development*. The hazard categorization is documented in the DSA or other safety basis documentation. The ASPC implements, supports, and participates in the 222-S facility nuclear safety program in the analytical services area of responsibility.

At the activity level, ASPC work is categorized based on risk and complexity as defined in the work control procedure (TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control*). ASPC tasks are planned to minimize risk, by adopting and utilizing the 222-S Laboratory work control process. Work categorization sets the level of ASPC management rigor required for planning and authorizing work. The hazard and urgency of proceeding with work is specifically considered in work planning. The work prioritization process has bins for addressing a range of hazard priorities, from high-level emergencies to less pressing outage work. As part of the ICD, ASPC work scope is integrated under this 222-S process to ensure safe and efficient control of work at the facility.

4.10 Core Function 3 – Develop and Implement Hazard Controls

4.10.1 Identify Safety Standards and Requirements

In accordance with 48 CFR DEAR 970.5204-2, *Laws, Regulations, and DOE Directives* (Dec 2000) (contract clause I.120), and 48 CFR DEAR 970.5223-1 *Integration of Environment, Safety, and Health into Work Planning and Execution* (Dec 2000), (contract clause I.122), the ASPC is responsible for compliance with standards and requirements applicable to 222-S Laboratory. Requirements are diverse, derived from multiple sources, and captured in many different forms. Requirements are extracted from approved documents issued for action (e.g., contracts, statutes, regulations, applicable DOE Orders, consent agreements, and permits). ASPC will comply with contract Sec. J Appendix 1, DOE Directives applicable to the 222-S Laboratory to meet this requirement. To ensure all contractual standards and requirements are met ATL-MP-1026, *ATL Contract Requirement Implementation Matrix,* is in place to identify, select and approve standards and

Applicable Guiding Principles

1. *Line Management Responsibility*
2. *Clear Roles and Responsibilities*
3. *Competence Commensurate with Responsibilities*
4. **Identification of Safety Standards and Requirements**
5. **Hazard Controls Tailored to Work Being Performed**

requirements, control implementation and manage changes. The safety standards and requirements are incorporated into implementing procedures, as required, for ASPC workers training and operation.

4.10.2 Identify and Implement Controls to Prevent/Mitigate Hazards

At the company level through the activity level, ASPC is required to comply with the requirements of applicable federal, state, local laws, and regulations (including DOE regulations), and environmental permits and approvals in developing and implementing controls, unless relief is granted in writing by the appropriate regulatory agency. The requirements and controls necessary for the protection of the workers, and the quality performance of safe and environmentally sound operations constitute the authorization basis. ASPC is responsible to ensure that analytical work complies with the documented authorization basis. For hazards, ASPC employs a hierarchy of controls. The order of the hierarchy is design/ engineered controls, administrative controls, and personal protective equipment. The design and planning processes recognize and integrate the controls as appropriate. The controls are tailored to the hazards associated and addressed for all activities that comprise the analytical work.

To ensure the safe operation of nuclear facilities and to reduce the potential risk to the workers and the public from uncontrolled releases of radioactive material or from unplanned radiation exposure, the DSA and TSRs are developed and implemented. The DSA identifies hazard prevention programs for the life of the 222-S facility and addresses all types of controls specific to the hazards identified. The DSA and TSRs for the 222-S Facility are determined by the TFC and approved by DOE-ORP. ASPC personnel will be trained to the requirements of the DSA and TSRs to the extent needed to perform ASPC work scope safely and compliantly within the 222-S Complex. The safety basis is updated by the TFC to incorporate appropriate changes as a result of mission progress or operating changes, facility operating experience or facility modifications. As updates occur, the ASPC is retrained as needed. The TFC has a process to document request(s) for DSA clarification and subsequent evaluation to ensure safety basis requirements are understood and properly implemented. ASPC can request a DSA clarification by submitting an ATL Issue Identification Form per ATL-312, Section1.04, *ATL Corrective Action Management.*

Another important element of controls is the development and implementation of appropriate emergency management systems and plans for the facility or an individual. The emergency management program (TFC-OPS-EP-C-01, *Emergency Management*), at 222-S is maintained by the TFC. The TFC uses facility hazards and environmental impact analyses as a technical basis for planning emergency response training, drills, exercises, and emergency procedures are developed to mitigate and control hazards. The ASPC fully supports and participates in the planning and execution of the emergency preparedness program at 222-S. The details of this interface are described in ATL-MP-1016, *Interface Control Document.*

At the activity level, the procedure-based work control system provides defense-in-depth for work to be accomplished through a hierarchy of analyses and documentation. The TFC's

Environmental and Waste Management organizations are responsible to ensure that environmental controls are identified and met. The ASPC performs actions to support these activities as described in ATL-MP-1016, *Interface Control Document.* The TFC's Radiological Control organization reviews proposed work activities and confirms that the work can be accomplished under HNF-MP-5184, *Radiation Protection Program*, and HNF-5183, *Tank Farm Radiological Control Manual.* ASPC personnel will implement, support, and operate under this program in the ASPC area of responsibility for analytical services. Controls necessary to prevent and/or mitigate radiological exposures or release of radioactive contamination are developed and inserted into the work control document and/or governing Radiological Work Permit. Field work practices are monitored for compliance with prescribed controls and limits.

Monthly interface meetings between the ASPC and TFC are conducted to communicate changes and assure both contractors' business interests, safety standards and contractual requirements are satisfied. The results from these meetings are incorporated into the periodic revision of ATL-MP-1016, *Interface Control Document.*

Controls specific to the hazard and risk are developed during the planning process and incorporated into the governing work control documents and permits. As determined by the risk and/or complexity of the work, planning and procedure development are performed using a EWP "team" approach. The TFC and ASPC management ensure that the team includes an appropriate mix of worker expertise and ESH&Q professional support. The team reviews planned work and develops necessary controls for the work hazards. Field work supervisors confirm that designated work controls are included in the work package. The EWP team approach uses a multidisciplinary team to walk down a proposed work activity, to evaluate the hazards, and to confirm that the controls are in place. Through the job hazard analysis, controls and work instructions are documented for work media (TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control*) and are communicated to the work force (TFC-OPS-MAINT-C-02, *Pre-Job Briefing*).

The effectiveness of design, engineered, administrative, and personal protective equipment controls are confirmed through exposure monitoring during performance of work. Medical monitoring is also performed. Prior to work, individuals are evaluated and appropriate medical qualifications and monitoring are initiated based on the employee's job function, tasks performed, anticipated hazards encountered, and workplace standards. AMH, by contract, ensures that Hanford Site workers receive appropriate medical qualification, monitoring, and related occupational medical services. This process includes use of the EJTA, which is the primary mechanism used to ensure that personnel have appropriate medical qualifications and medical monitoring based on assigned job functions and hazards. Changes identified by work place sampling programs (i.e., radiological, chemical, ergonomic, etc.) are factored into the controls identified in the EJTA and are used to revise the medical monitoring program as necessary. The EJTA, in conjunction with exposure monitoring, provides the primary data input components for occupational health. AMH effectively supports pre-placement, periodic, return to work, and termination health examinations specified by DOE O 440.1. An EJTA is completed

for each employee and the adequacy of hazard controls is routinely assessed based on periodic medical monitoring results. An EJTA is prepared for subcontractors when hazards are identified in the statement of work.

4.11 Core Function 4 – Perform Work within Controls

The contract provides ASPC legal authority to plan and conduct work within the 222-S Facility. Such work includes laboratory analysis and testing. Combined with the TFC's responsibilities, it also includes a broad scope of activities such as studies, planning, engineering, design, research, waste packaging, and environmental sampling. The safety controls for work are derived from laws, regulations, DOE Orders, and other standards invoked in the contract and hazard analysis performed and implemented in the company, facility, and activity level procedures. The ASPC ISMS identifies the systems and programs to ensure that the safety controls remain in effect as long as the hazard is present. ASPC personnel are responsible/accountable for the performance of work within the established controls, and the safety controls are a discernible part of ASPC procedures, plans, and work packages. DOE-ORP oversight, as described in Section 4.12.4, ensures work is performed within the established controls.

Operational activities are conducted in accordance with the facility conduct of operations program that ensures 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. Conduct of operations is implemented using thorough and clear procedures based on identified requirements. Operations policies, expectations, roles and responsibilities, and specific implementation matrix are contained in ATL-MP-1019, *Conduct of Operations Implementation Plan*. The process requires that roles and responsibilities are clearly defined, adequate training is provided, and procedures are followed.

Maintenance activities are performed by the TFC and are conducted in accordance with the facility maintenance program that ensures systems are returned to operable status and maintenance activities are performed as intended and when needed (TFC-PLN-29, *Maintenance Implementation Plan*).

4.11.1 Confirm Readiness

The ASPC, as discussed in Section 4.8.5, performs analytical activities by technical laboratory procedures or work packages. For work performed by technical procedure, readiness is confirmed in several methods. First, scheduling the activity on the 222-S Facility plan of the day per ATS-310, Section 1.16, *Integration of Facility Prioritization Activities,* confirms readiness with other required facility systems and that the necessary safety support functions and resources are established. Performance of the pre-job briefing by the ASPC group performing the work confirms another level of readiness and performance of prerequisites identified in the laboratory

technical procedures completes confirmation prior to performance. This process confirms prior to commencement of work:

- implemented controls are adequate to mitigate hazards and ensure safe work performance
- operability of necessary support systems,
- availability of necessary safety support resources
- ASPC personnel are adequately trained and qualified.

For ASPC activities performed via a facility work package, readiness to perform the activity is confirmed in the same methods as previously discussed for technical procedures and, additionally, by operational release authorization by the 222-S Facility as described in TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control.*

4.11.2 Operations Authorization

Conduct of operations at the analytical services and testing activity level is authorized by a process appropriate to the work. The ASPC management and 222-S Facility Operations Manager (FOM) will provide review and approval of all analytical procedures to ensure that only approved, authorized work is performed in an integrated and consistent approach. The details of this process are described in ATL-312, Section 1.41, *Review and Approval of ATL Documents.*

For ASPC activities performed by a facility work package operational authorization is performed by the 222-S Facility Operations Manager (FOM) via work release approval as described in TFC-OPS-MAINT-C-01, *Tank Farm Contractor Work Control.*

At a 222-S facility level, changes to the DSA are managed by the TFC per the contract with DOE-ORP verification and authorization. ASPC provides input, as appropriate, to any DSA revisions.

4.11.3 Perform Work Safely

The conduct of operations and maintenance programs establish the requirements, roles, responsibilities, ESH&Q integration, and expectations for ASPC work execution. Work is performed by personnel who are trained and, as necessary, qualified to perform their assigned task. Pre-job briefings are conducted and the work procedures or instructions, results of hazard analysis, and required permits and controls necessary to the job are reviewed with the worker. ASPC work scope is performed in a disciplined manner with strict adherence to approved analytical procedures containing sufficient controls to mitigate identified hazards in the analytical process.

ASPC group managers are responsible for worker safety and ensure that controls remain in place during work execution. ASPC group managers are experienced personnel who receive the necessary training and qualifications to carry out their assigned duties and responsibilities.

Employee hazard communication training stresses hazard recognition and acceptance of individual roles and responsibilities for worker safety. ASPC employees are also trained on their rights and responsibilities regarding their stop work authority (TFC-ESHQ-S_SAF-C-04, *Stop Work Responsibility*).

ASPC work is performed according to approved analytical procedures that are maintained under configuration control. By following approved procedures that have been developed, reviewed, and approved in accordance with established requirements, workers ensure that their work is in compliance with the approved safety basis, requirements basis, and applicable environmental permits and regulations.

The TFC Engineering function maintains configuration management of the technical baseline. Baseline management activities, such as the USQ process, are performed to ensure proposed modifications to the technical baseline are properly reviewed and are consistent with requirements and standards. Engineering supports line management by preparing or approving proposed technical baseline changes and reviewing the field work scope to provide assurance that operational activities are also consistent with safety requirements. Administrative and technical procedure revisions are implemented and controlled through the procedure change authorization process (ATL-312, Section 1.01, *Administrative Procedure Control Process;* ATL-312, Section 11.16, *Technical Procedure Control Process;* ATL-312, Section 1.41, *Review and Approval of ATL Documents).* This process includes USQ screening by a TFC qualified USQ screener. The details of this interface are described in ATL-MP-1016, *Interface Control Document*

4.12 Core Function 5 – Provide Feedback and Continuous Improvement

As identified in DOE P 450.5, *Line Environment, Safety and Health Oversight*, DOE has established that DOE line oversight and contractor self-assessments together ensure adequate implementation of ISMS. At a minimum, a credible contractor self-assessment program addresses the following elements:

- Performance measures and performance indicators
- Information on the effectiveness of the ISMS and the adequacy of controls is gathered.
- Opportunities to improve work execution and planning

Applicable Guiding Principles

1. *Line Management Responsibility*
2. *Clear Roles and Responsibilities*
3. *Competence commensurate with Responsibilities*

- Line and independent oversight
- Compliance with applicable regulatory requirements
- Data collection, analysis, and corrective actions
- Continuous feedback and performance improvement

4.12.1 Collect Feedback Information

ASPC has contractual and corporate commitments to continuously improve executing the ASPC mission. The process of feedback and continuous improvement involves collection of formal and informal feedback, self-identification and implementation of opportunities for improvement, and acting on feedback from self-assessment, oversight, and enforcement activities. Systems are in place to collect and analyze operations and safety performance data to support these efforts as described below. Improvements may be accomplished through resolution of single specific issues or may involve interface with TFC program and process improvements, facility or equipment design changes, or changes to specifications and procedures. Employees are encouraged to provide feedback and identify safety issues as highlighted in ATL-MP-1022, *ATL Safety and Health Policy.*

ISMS program elements are subject to continuous improvement through assessment and feedback processes. Feedback and continuous improvement occurs at each level of work and at every stage in the work process to verify work is performed within agreed upon controls. Sources of feedback at a minimum include the following:

- Work management feedback
- Management/Independent assessments
- Event investigations/critiques
- Trend analysis
- SAF*Team
- VPP Champions Team
- ATL Issues Identification Form
- Performance indicators
- VPP self-assessments
- ATL Quarterly All-Employee Meetings
- Lessons learned
- ATL Staff meetings
- Peer Safety Observer Program
- ATL Safety Meetings

ASPC has implemented a corrective action management process outlined in ATL-312, Section 1.04, *ATL Corrective Action Management*, which reviews all identified ASPC issues and provides feedback to the ATL management team at weekly staff meetings. Additionally, ASPC has implemented an occurrence reporting process (ATL-312, Section 1.10, *ATL Occurrence Reporting and Processing of Operations Information)* that includes a quarterly performance/trend analysis of both reportable and non-reportable ASPC issues. This quarterly analysis provides a leading edge performance indicator process to identify trends prior to meeting reportability criteria.

Event investigations are performed for ASPC events that occur in the facility and adversely affect laboratory operations, personnel safety, or DOE requirements. The results of investigations provide feedback, lessons learned, and corrective actions to strengthen the ASPC safety program. The ASPC established ATL-312, Section 10.02, *Responding and Reporting Injuries, Illnesses, and Accident Events,* and ATL-312, Section 10.01, *Accident/Incident Event Recordkeeping (CAIRS-OSHA 300),* to investigate, identify, and record conditions and causes of employee occupational injuries and illness. Based on complexity and severity, the management team using ATL-312, Section 11.06, *ATL Event Investigation Process,* may elect to initiate an event investigation to evaluate near misses and other issues with real or potential impact to the environment, safety, health, and quality, and that are directly related to human performance issues. The ASPC HAMTC Safety Representative will be involved in the investigation and feedback from the investigation will be provided to the organization. In addition, ASPC personnel may support or participate in investigations initiated by the TFC.

4.12.2 Monitor and Measure Performance

10 CFR 830, Subpart A, *Quality Assurance Requirements*, requires that performance be monitored, measured, and evaluated to identify and implement improvement opportunities. Within the context of the ISMS, monitoring, measuring, evaluating, and making decisions for improvement occur at multiple levels.

The DOE-HQ has identified five ISMS complex-wide performance indicators that will be monitored on a DOE-wide basis and reported to DOE. Additional indicators are established based on input from DOE-HQ, DOE-ORP, and ASPC, as needed. ISMS performance indicators are reviewed and approved by DOE annually. The five complex-wide performance indicators are as follows:

1. Total Recordable Case Rate
2. Safety Cost Index per 100 Work Hours
3. Hypothetical Radiation Dose to the Public
4. Reportable Occurrences of Releases to the Environment
5. Average Dose per Worker Receiving Measurable Dose.

ASPC publishes a monthly status report, as required by the contract, to the DOE Contracting Officer that contains these and other company performance indicators to meet the objectives of DOE O 210.1, *Performance Indicators and Analysis of Operations Information.*

Annually, ASPC management establishes goals, such as the Safety Improvement Plan (SIP), to achieve the mission in a safe manner and identify suitable safety and operating metrics and leading indicators. ASPC analytical activities are then monitored to measure performance relative to established metrics. Information is gathered, analyzed, and trended by line

management and disseminated to communicate performance, need for improvement, and progress toward implementation of corrective/improvement actions. The specific ASPC procedures that contribute to this effort are:

- ATL-MP-1023, *ATL 222-S Safety Awareness Focus Team (SAF*T) Charter*
- ATL-312, Section 1.11, *ATL Corrective Action Data Analysis and Trending*

4.12.3 Identify and Implement Improvement Opportunities

As defined in Section 4.12, a strong ISMS includes an internal oversight component to measure the adequacy of work performed in complying with applicable requirements and identify opportunities for improvement. The ASPC ISMS accomplishes this important component as follows:

- Procedure compliance
- Safety inspections
- Recognition programs
- ALARA Concerns/Suggestion Program
- Employee concern program
- ATL Assessment Program
- Corrective Action Management
- Lessons Learned

ASPC employees are trained to recognize hazardous conditions in the work place, to perform work to procedures, to stop when the procedure is incorrect and report unsafe work conditions to their supervisors. Monthly ASPC workers and professionals lead inspections (SAF* Team, PSOP, etc.) of the work place to identify and recognize unsafe conditions, safe/unsafe behaviors, and opportunities for improvement.

Shared facility recognition mechanisms (ATS-310, Section 1.30, *Safety STARZ (Participation) Program*) are used with awards given on a defined frequency to recognize safe behavior (e.g., monthly, annually, and on-the-spot) and to a range of employee categories (e.g., hourly, non-exempt, exempt, management, and teams) to recognize employees' contributions and improvement suggestions. The recognition programs reinforce the ASPC Safety Slogan, "At ATL, Safety Is Our Value."

For issues that cannot be resolved at the worker or management level, ATL-312, Section 2.03, *Employee Concerns Program,* ensures appropriate attention and response to any concern relative to safety, health, security, quality, environmental protection, and business ethics, compliance with laws and regulations, fraud, abuse, mismanagement, and/or physical working conditions.

Internal independent quality program audits and assessments are performed to (1) evaluate management effectiveness, adequacy of work performance, item/product/process quality and product effectiveness, and (2) promote improvement in analytical operations. The audits/ assessments, in addition to the monthly review of performance indicators discussed in 4.12.2, provide ASPC management with accurate, timely, and consistent feedback to measure the effectiveness in accomplishing the mission, while assuring adherence to requirements. The total assessment program is described in ATL-MP-1020, *Assessment Program Plan.* Independent assessments are described in ATL-312, Section 1.13, *Performance of Independent Assessments.* Management assessments are described in ATL-312, Section 1.14, *Performance of Management Assessments.* Surveillances and Operational Awareness assessments are described in ATL-312, Section 1.15, *Performance of Surveillances and Operational Awareness Assessments.* The assessment program assesses performance, supports continuous improvement, and integrates ESH&Q with business and operations reviews. The assessment program tasks managers with assessing management processes, including the principles of ISMS, the effectiveness of existing hazard analysis and established controls, and provides real-time field hazard identification. The assessment program provides a management structure that integrates management observations, assessments, requirements-based reviews, corrective actions, and lessons learned activities to achieve continuous improvement of business systems throughout the ISMS structure (define scope of work, identify/analysis hazards, implement controls, perform work within controls, and provide feedback and continuous improvement).

ASPC has instituted a process that provides all personnel the ability to initiate a corrective action for any quality, safety, health, operability, and environmental-related deficiency or process evaluation as described in ATL-312, Section 1.04, *ATL Corrective Action Management.* ASPC workers can use the corrective action management system to submit safety process improvement suggestions for evaluation. Additionally, the joint 222-S Facility ALARA Program offers the ALARA Suggestion/Concerns Program for ASPC workers to submit safety suggestions.

The lessons learned program (ATL-312, Section 1.05, *Lessons Learned*) uses designated personnel to oversee and facilitate operation of the lessons learned program. Personnel generate lessons learned using feedback from the participants' operating experience, reviews, pre-job/post-job briefings, critiques, and assessments. Site-specific lessons learned, including successes, are reviewed and factored into future activities including work planning and execution. In addition, lessons learned from relevant operating events across the DOE complex are incorporated into the program.

At the activity level, management presence in the field and observation of activities are an effective means of feedback. Pre-job briefings, post-job review, and management observations provide the opportunity for face-to-face, two-way communication between the worker and management.

4.12.4 Oversight and Enforcement

ASPC uses the results of external oversight reviews and regulatory inspections and investigations as feedback to ensure compliance and identify opportunities for improvement.

The DOE-ORP Facility Representative Program, within DOE-ORP Operations and Safety Oversight, is responsible for inspecting ongoing and completed work to ensure compliance with federal, state, local, and contractual requirements. It also oversees line management assessment of contractor readiness to start up new operations.

The DOE-HQ, Office of Environmental Management and Office of Independent Oversight and Performance Assurance, perform regular assessments of specific programs at DOE sites that have significant amounts of special nuclear material or other hazards; perform follow-up reviews to ensure corrective actions are effective to prevent recurrence; perform complex-wide studies of issues and generic weaknesses in specific programs; and develop and validate reports that identify findings and issues, and opportunities for improvement.

External oversight reviews performed by DOE, non-DOE clients and regulatory agencies are considered to be external assessments. ASPC will participate in, evaluate results of, and provide a response to, external assessments in accordance with the requirements of the assessing organization as described in ATL-MP-1020, *Assessment Program Plan.* Issues identified as the result of external oversight reviews are submitted to the corrective action management process outlined in ATL-312, Section 1.04, *ATL Corrective Action Management,* for resolution, response, and to ensure regulatory compliance and enforcement as required.

5.0 MAINTAINING AND SUSTAINING ISMS

The ASPC ISMS documentation required by the contract, ATL-MP-1009, *Integrated Environmental, Safety, and Health Management System Description for the 222-S Analytical Services Production Contractor,* has been placed under configuration control.

To maintain and sustain a robust ISM per DOE G 450.4-1B, *Integrated Safety Management System Guide*, ***annually*** the ASPC shall:

- Perform a self- assessment of the ISMS program effectiveness.
- Review the status of ISMS verification and assessment activities that include completion of the implementation process, resolution of opportunities for improvement identified by the verification process, and expanding noteworthy practices, as appropriate.

- Review the status of current ISMS performance measures and indicators.
- Submit update/revision of ATL-MP-1009, *Integrated Environmental, Safety, and Health Management System Description for the 222-S Analytical Services Production Contractor,* to DOE-ORP for approval that reflects significant changes or continued improvements in response to DOE oversight and contractor self-assessment, including progress in meeting performance measures, objectives, and commitments
- Select appropriate ISMS performance measures and indicators for the upcoming year and submit to DOE-ORP for approval.
- Submit an ASPC ISMS Declaration of Readiness to DOE-ORP.

The annual tasks listed above to maintain the ASPC ISMS shall be placed in the corrective action management system per ATL-312, Section 1.04, *ATL Corrective Action Management,* to ensure timely completion and tracking.

Both ASPC internal processes and DOE external processes as previously described in Section 4.12, *Core Function 5 – Provide Feedback and Continuous Improvement*, oversee the effectiveness of ASPC ISMS structure. The DOE annual reviews, coupled with the Facility Representative Program provide valuable oversight and input to maintaining and continuously improving the ISMS structure that is in place.

Institutionalizing ISMS is accomplished through adequate processes and a safety culture endorsed by ASPC personnel. Each matures through training, mentoring, changing and monitoring processes, programs, procedures, and work practices as they are improved. Continuous improvement comes from issue identification, disposition, implementation, verification, and effectiveness monitoring. A strong safety culture supports a healthy ISMS which in turn strengthens the safety culture; thus, continuous improvement is achieved.

ASPC is fully committed to continuous improvement of the ISMS while accomplishing the ASPC mission. ASPC firmly believes, as does DOE-ORP, that performance of quality work in a safe manner is our single most important objective during the execution of the RPP mission. ASPC commits to providing the support to cultivate the culture to enable that to happen.

6.0 RECORDS

NOTE: The Hanford Site remains under a full moratorium on the destruction of record material until further notice

The documents outlined in Section 5.0 that result from the annual update to the ASPC ISMS will be managed as records under ATL-312, Section 1.04, *ATL Corrective Action Management.*

7.0 SOURCES

7.1 Requirements

10 CFR, Part 830, Subpart A, *Quality Assurance Requirements*
48 CFR DEAR 970.5204-2, *Laws, Regulations, and DOE Directives*
48 CFR DEAR 970.5215-3, *Conditional Payment of Fee, Profit, or Incentives*
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