DOE/RL-99-86
U.S. Department of Energy
Richland Operations Office


# grated Safety Management System Phase I Verification

Volumes I and II

Richland, Washington

January 10 to January 28, 2000

## CORRESPONDENCE DISTRIBUTION COVERSHEET

| Author | Addressee | Document No. |
|---|---|---|
| C. R. Richins | K. A. Klein | DOE/RL-99-86 |

Subject: CONTRACT NUMBER DE-AC06RL13200 – TRANSMITTAL OF INTEGRATED SAFETY MANAGEMENT SYSTEM VERIFICATION FOR THE HANFORD PLUTONIUM FINISHING PLANT PROJECT, PHASE I

## DISTRIBUTION

| Approval | Date | Name | Location | w/att |
|---|---|---|---|---|
| | | Correspondence Control | A3-01 | X |
| | | Defense Nuclear Facilities Safety Board | | |
| | | M. Sautman | A5-52 | X |
| | | Fluor Daniel Hanford, Inc. | | |
| | | B. A. Austin | H8-67 | X |
| | | R. D. Hanson | H5-20 | X |
| | | G. A. Harvey | H8-60 | X |
| | | R. D. Redekopp | T5-15 | X |
| | | FEB Library | H8-66 | X |
| | | Hanford Advisory Board | | |
| | | J. H. Richards | | X |
| | | Hanford Technical Library | P8-55 | X |
| | | U.S. Department of Energy, Richland Operations Office | | |
| | | S. L. Johnson | A5-54 | X |
| | | P. M. Knollmeyer | A5-11 | X |
| | | P. G. Loscoe | S7-41 | X |
| | | L. D. Romine | R3-79 | X |
| | | R. M. Rosselli | A7-50 | X |
| | | D. S. Shoop | A5-55 | X |
| | | S. A. Sieracki | A7-80 | X |
| | | L. J. Voigt | A4-35 | X |
| | | DOE Reading Room | H2-53 | X |
| | | Central Files | B1-07 | X |
| | | Document Processing Center | A3-94 | X |
| | | Verification Team Members | | X |
| | | U.S. Department of Energy, Headquarters | | |
| | | J. DiNunno | | X |
| | | M. Frei | | X |
| | | C. L. Huntoon | | X |
| | | R. Kaltreider | | X |
| | | D. M. Michaels | | X |
| | | J. Turi | | X |
| | | M. Whitaker | | X |
| | | T. A. Wyka, Jr. | | X |
| | | Westinghouse System Management Solutions | | |
| | | G. W. Jackson | H8-70 | X |
| | | R. L. McQuinn | T5-51 | X |

DOE F 1325.8
(08-93)
**United Stated Government** **Department of Energy**

# Memorandum

DATE: February 2, 2000

REPLY TO
ATTN OF: C. Richins, 372-4020

SUBJECT: INTEGRATED SAFETY MANAGEMENT SYSTEM VERIFICATION FOR THE HANFORD PLUTONIUM FINISHING PLANT PROJECT, PHASE I

TO: Mr. Keith Klein, Manager, Richland Operations Office
Mr. Robert Rosselli, Assistant Manager, Richland Operations Office

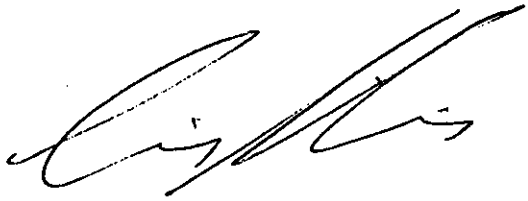
The attached Final Report, Volumes I and II, documents the Integrated Safety Management System (ISMS) Verification that was conducted between January 10 and 25, 2000, for the Plutonium Finishing Plant (PFP) Project. The verification was conducted in accordance with the Department of Energy (DOE) ISMS Guide 450.4-1A, the *ISMS Verification Team Leader's Handbook* (DOE-HDBK-3027-99), and with full consideration of the guidance and comments contained in my commission by your memorandum of January 10, 2000.

The ISMS Verification Team has concluded the Phase I review of PFP and recommends that the plant be allowed time to more fully develop ISM under the new PFP management prior to assessing Phase II implementation. While the team found that significant progress has been made in establishing an ISM system at PFP, there are systemic weaknesses that need to be addressed. The team recommends that Fluor Hanford make improvements to the PFP Project-level System Description, supporting documentation and current work processes.

The Final Report specifies Noteworthy Practices and Areas for Improvement to further guide the project. The Noteworthy Practices observed by the team are evidence of a commitment to ISMS that should be reinforced and continued. The implementation of ISMS and worker safety are being aggressively pursued by the PFP Project's leadership.

The Areas for Improvement detailed in the report delineate the systemic weaknesses captured by the team. It is highly recommended that these Areas for Improvement as a minimum be soundly addressed by the contractor prior to proceeding to Phase II.

If I can be of any assistance to you in clarifying this report, please contact me at (509) 376-0746 or (509) 372-4020. Thank you for the opportunity to conduct this verification.



Craig R. Richins
Team Leader,
ISMS Verification PFP Project

Attachments (Volumes I and II)

DOE/RL-99-86
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE

# Plutonium Finishing Plant

# Integrated Safety Management System Phase I Verification


Volume I

Richland, Washington
January 10 - January 28, 2000

Available to the U.S. Department of Energy
and its contractors from
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831
(615) 576-8401

Available to the public from the U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

Printed in the United States of America

DISCLM-5.CHP (8-91)

# RELEASE AUTHORIZATION

| | |
|---|---|
| **Document Number:** | DOE/RL-99-86, Rev. 0 |
| **Document Title:** | Plutonium Finishing Plant Integrated Safety Management System Phase I Verification Volumes 1 and 2 |

**This document, reviewed in accordance with DOE Order 241.1, "Scientific and Technical Information Management," and DOE G 241.1-1, "Guide to the Management of Scientific and Technical Information," does not contain classified or sensitive unclassified information and is:**

**APPROVED FOR PUBLIC RELEASE**

Christine Willingham — 2/2/2000

C. Willingham — Date

Lockheed Martin Services, Inc.
Document Control / Information Clearance

Reviewed for Applied Technology, Business Sensitive, Classified, Copyrighted, Export Controlled, Patent, Personal/Private, Proprietary, Protected CRADA, Trademark, Unclassified Controlled Nuclear Information.

## SIGNATURE PAGE

By signature below, I concur with the ISMS Verification team, Team Leader and Senior Advisor in the issues, Opportunities for Improvement, Noteworthy Practices, and recommendations of this report.

Craig R. Richins
Team Leader

Shivaji S. Seth
Senior Advisor

Patty G. Ensign
Business, Budgets, and Contracts

Dave E. Stromberg
Business, Budgets, and Contracts

John B. Hall
Business, Budgets, and Contracts

Kimberly L. Williams
Business, Budgets, and Contracts

Steve Bertness
Hazards

Rudy S. Ollero
Hazards

Henry P. Himpler
Hazards

Richard P. Grill
Hazards

Nelda J. (Joyce) Beck
Hazards

Carrie Swafford-Chube
Management

Michael J. Silvia
Management

Mark R. Steelman
Management

Paul M. Pak
Management

Joseph Waring
Management

Robert M. (Mat) Irwin
Operations

Dennis C. Humphreys
Operations

Robert G. Hastings
Operations

Wayne M. Glines
Operations

Richard G. Bartlett
Operations

January 27, 2000
Date

# EXECUTIVE SUMMARY

## INTRODUCTION

U. S. Department of Energy (DOE) Policy 450.4, *Safety Management System Policy* commits to institutionalizing an Integrated Safety Management System (ISMS) throughout the DOE complex as a means of accomplishing its missions safely. DOE Acquisition Regulation 970.5204-2 requires that contractors manage and perform work in accordance with a documented safety management system.

## SCOPE

The Manager, DOE, Richland Operations Office (RL) initiated a combined Phase I/II ISMS Verification to confirm that the Plutonium Finishing Plant (PFP) had successfully established its documented ISMS and that the system had been effectively implemented. This report provides the RL Manager with a recommendation on the adequacy of the PFP ISMS and an evaluation of the extent and maturity of ISMS implementation at PFP.

The PFP Project-level System Description and associated documents were reviewed for consistency with the objectives, guiding principles, and core functions of ISM and the Fluor Hanford (FH) company-level System Description (HNF-MP-003; FH 1999a). The review also briefly explored implementation of the associated processes used to govern the facility and the recent ongoing changes in upper management.

## RESULTS

The ISMS Verification Team has concluded the Phase I review of PFP and recommends FH be allowed a period of time to more fully develop ISM under the new PFP management prior to assessing Phase II implementation of ISMS. The team recommends that FH use this time to make improvements to the PFP Project-level System Description, supporting documentation, and current work processes.

PFP planned and implemented a workforce redesign in fiscal year 1999 that significantly altered the work process and the overall management strategy at the PFP. This redesign was implemented in October 1999 with additional fine tuning and system maturity continuing since that time. The ISMS Verification Team viewed the redesign effort quite favorably for the proactive, pro-workforce direction envisioned. However, the review indicated that the PFP ISMS System Description, infrastructure, and documentation were lagging actual implementation of the redesign. The System Description did not adequately describe all work practices observed, nor was all documentation current. In several cases, redesigned or new processes were not adequately integrated into the PFP ISM infrastructure.

FH has contracted with Westinghouse Safety Management Solutions (WSMS) to provide management augmentation for operation of the PFP. The initiation of this new arrangement coincided with the scheduled Phase I/II ISMS Verification. The ISMS Verification Team determined that the management and process changes proposed by WSMS for operation of the PFP, although robust, called into question the long-term use of some of the policies, procedures, and work practices specified in the System Description and the effectiveness of the team's Phase II efforts.

Preliminary Phase II observations indicated that the plant operations could use improvement. As an example, the Work Management Process Description and Job Control System process procedure is not being consistently applied. Work packages that have been released and delayed are not routinely suspended, but remain in a released status contrary to the procedure. These packages may not be actively controlled for compatibility with current plant conditions, schedule adherence, or completion of all pre-job requisites.

The ISMS Verification Team's recommendation is based heavily but not solely on information collected for the Phase I status of PFP. The data indicated that broad systemic issues exist within the PFP ISMS and that the system is still somewhat immature. The current state of the PFP ISMS, coupled with the new leadership change, suggests that it would be prudent to allow the plant to further develop the ISMS infrastructure (documentation and processes) prior to fully assessing implementation. Therefore, the scope of the review associated with Phase II verification was not fully performed and will need to be completed at some point in the future.

## CONCLUSIONS

The ISMS Verification Team concluded that the essence of ISM is observable at the PFP and is well represented by the workforce redesign effort. The staff displayed a positive attitude and an understanding of the guiding principles and core functions of ISM and are enthusiastic about their roles and responsibilities within the new structure. Ownership was clearly demonstrated at all levels of PFP, and line management was clearly responsible for safety. While the review team found that significant progress has been made in establishing an ISM system at the PFP, there are systemic weaknesses (summarized below and detailed in Section 6.0 of this report) that need to be addressed prior to continuing the verification process.

### Areas for Improvement

The Areas for Improvement presented represent systemic challenges to the PFP ISMS rather than isolated issues. Therefore, the ISMS Verification Team recommends that at a minimum, the plant fully address each Area for Improvement prior to declaring readiness to reinitiate the verification process. PFP management should avoid forming a corrective action strategy that solely addresses the specific concerns detailed in the body of this report but should realize that the individual concerns viewed together indicate that the PFP ISMS is not fully described nor implemented.

### Plutonium Finishing Plant ISM System Description

While all of the ISMS core functions are addressed, other policy and procedure documents must be accessed to get the complete understanding of the PFP ISM System Description. Integration of the work process across all operations was not readily demonstrated. Ties to most ISM elements were observed through a review of a multitude of policies and procedures, but some outdated documentation was encountered and several expected connections to higher-order procedures were not found. When the anticipated change to the FH company-level ISM System Description occurs, reconciliation with the PFP ISM System Description will be necessary. **(PFP-1)**

The ISMS Verification Team recommends that the PFP ISM System Description fully document the integration of the business, safety, and work practices of PFP and fully incorporate elements of the workforce redesign and management change.

**Documentation of the Work Process**

The PFP Project has established the necessary base procedures and mechanisms to support work planning and execution; however, not all of these documents reflect the current organization or field work team practices. Documentation has lagged implementation. Additionally, the tools available to the teams (procedures regarding Automated Job Hazard Analysis [AJHA] applicability, scheduling, release and suspension of work, feedback and improvement) are not mature or integrated within the plant ISMS. WSMS modifications to the PFP management and work practices are expected to affect some procedures. Although the modifications are considered to be appropriate and proactive, the changes should be incorporated into the overall business strategy. **(PFP-2)**

**Roles and Responsibilities**

Roles and responsibilities have not been clearly defined and were spread widely among various documents, some of which were obsolete. In addition, changes pending the introduction of the new management team at the PFP were shown to affect the current representation of assignments. The newly created Authorization Basis Team could not identify where their roles and responsibilities had been defined and documented. Position descriptions for several key Subject Matter Experts could not be found. Of particular concern, due to past issues, was the lack of defined qualifications for Criticality Safety Engineers. **(PFP-3)**

**Operations Authorization**

The Work Management Process Description and Job Control System process procedure is not being consistently applied. Work packages that have been released and delayed are not routinely suspended, but remain in a released status contrary to the procedure. These packages may not be

actively controlled for compatibility with current plant conditions, schedule adherence, or completion of all pre-job requisites. **(PFP-4)**

**Hazards Analysis**

The establishment and use of the AJHA process is commendable but is not fully mature. The documentation governing the applicability, timing, and integration of AJHA has not been fully developed. Observation of AJHA implementation, although limited, indicated that use of the tool is not fully understood, nor were all requisite personnel involved. **(PFP-5)**

PFP has integrated Environmental Compliance/Chemical Management into work planning to ensure hazard identification and controls are evaluated and in place. However, there is no documented process for a consistent, systematic approach for performing and tracking internal environmental reviews of facility procedures and documents. **(PFP-6)**

**Feedback and Improvement (PFP-7)**

PFP has established feedback mechanisms to gather, analyze, and close out issues. While it is evident that programs are in place to provide feedback and improvement, PFP procedures do not provide sufficient requirements to ensure that such input is evaluated and applied during future work activities. Also, procedures governing the feedback process do not provide acceptable process definitions. Concerns were identified in PFP procedures governing the post-job review process, training and qualification, and generation of lessons learned.

The tie between feedback processes and the business cycle was not fully developed. No documented, required procedure was identified for assuring that newly identified hazards are prioritized in such a manner that they are carried forward to the feedback, management review, and work scope definition loops of the ISM process.

## NOTEWORTHY PRACTICES

### Worker Involvement

The PFP Project has demonstrated a noteworthy commitment to worker involvement by establishing a strong team approach to planning and execution of work. The workforce has clearly played a significant part in developing and implementing the workforce redesign and is actively engaged in planning work and striving for continuous improvement.

One of the Zero Accident Committee's responsibilities is to utilize Voluntary Protection Program principles in strategic planning and implementation of safety programs; this is commendable. PFP also continues to pursue DOE Voluntary Protection Program Star Status.

### Field Presence

The co-location of training specialists in the PFP work areas augments other PFP training programs and is an excellent method for maximizing the competence of employees performing PFP Project tasks.

Senior management is involved with weekly inspections (outlined by procedure), which reflects positively on their commitment to a safe work environment.

### Restart Activities

PFP uses Activity Based Startup Review Plans to verify readiness to restart certain activities. Attachment A to these plans includes the five major core functions of ISMS and provides objective evidence that an AJHA has been completed for the activity. This practice is considered to be a strength and will reportedly be included by FH in the next revision to HNF-PRO-055, *Facilities Start-Up Readiness* (FH 1999b).

## RECOMMENDATION

The team recommends the Areas for Improvement described above be fully addressed prior to approval of the ISM System Description and conduct of the Phase II ISMS Verification at PFP.

# TABLE OF CONTENTS

1.0 INTRODUCTION ..... 1

2.0 PURPOSE ..... 1

3.0 BACKGROUND ..... 2

4.0 SCOPE ..... 3

5.0 PREREQUISITES ..... 4

6.0 INTEGRATED SAFETY MANAGEMENT SYSTEM ASSESSMENT RESULTS ..... 4
- 6.1 INTRODUCTION ..... 4
- 6.2 FUNCTIONAL AREA SUMMARIES ..... 5
  - 6.2.1 Business, Budgets, and Contracts ..... 5
  - 6.2.2 Hazard Identification and Standard Selection ..... 6
  - 6.2.3 Management ..... 9
  - 6.2.4 Operations ..... 12

7.0 CONCLUSION AND RECOMMENDATIONS ..... 14

8.0 LESSONS LEARNED ..... 16

9.0 REFERENCES ..... 18

## ACRONYMS

| | |
|---|---|
| AB | Authorization Basis |
| ALARA | As Low As Reasonably Achievable |
| AJHA | Automated Job Hazard Analysis |
| BBC | Business, Budgets, and Contracts (subteam) |
| CRAD | Criteria and Review Approach Document |
| DEAR | Department of Energy Acquisition Regulations |
| DOE | U. S. Department of Energy |
| ES&H | Environment, Safety, and Health |
| FH | Fluor Hanford |
| HAZ | Hazard Identification and Standard Selection (subteam) |
| ISM | Integrated Safety Management |
| ISMS | Integrated Safety Management System |
| MG | Management Oversight (subteam) |
| OP | Operations (subteam) |
| PFP | Plutonium Finishing Plant |
| PHMC | Project Hanford Management Contract |
| PTH | Protection Technologies Hanford |
| RL | DOE, Richland Operations Office |
| SSW | Senior Supervisory Watch |
| SME | Subject Matter Expert |
| USQ | Unreviewed Safety Questions |
| WSMS | Westinghouse Safety Management Solutions |
| VPP | Voluntary Protection Program |
| ZAC | Zero Accident Council |

## 1.0 INTRODUCTION/BACKGROUND

The U. S. Department of Energy (DOE) policy (DOE P 450.4) requires that safety be integrated into all aspects of the management and operation of its facilities. In simple terms, the DOE will "Do work safely." The purpose of this Integrated Safety Management System (ISMS) Phase I and II Verification Review was to determine whether ISMS programs and processes are sufficiently institutionalized within the Plutonium Finishing Plant (PFP) to accomplish the goal of "Do work safely." The goal of an institutionalized ISMS is to integrate Environment, Safety, and Health (ES&H) requirements in the work planning and execution processes to ensure the protection of the worker, public, environment, and federal property while accomplishing mission goals in an effective and efficient manner.

The guidance and direction provided in this review has been adapted from DOE P 450.4, DOE G 450.4, and the *Integrated Safety Management Systems (ISMS) Verification Team Leader's Handbook* (DOE 1999).

## 2.0 PURPOSE

The objectives of the PFP Phase I/II ISMS Verification were to accomplish the following:

- Assess the adequacy of the ISMS documentation (Phase I) at the PFP Project managed and operated by Fluor Hanford (FH)
- Verify FH's implementation status of its ISMS documentation (Phase II)
- Ascertain whether, within the PFP facility operations, the work planning and execution processes were in place and functioning so as to effectively protect the health and safety of the workers, public, environment, and federal property at the current facility life cycle stage.

The Phase I portion of the review identified substantial areas for improvement within the PFP ISMS documentation. Accordingly, only the first objective of the review was completed. The remaining objectives will be assessed at a later date.

## 3.0 BACKGROUND

The PFP ISMS supports the *Hanford Strategic Plan* (DOE-RL 1996) to safely clean up and manage legacy plutonium materials and waste; deploy science and technology while incorporating the ISMS central theme to "Do work safely"; and protect human health and the environment.

The PFP is a nuclear facility at the Hanford Site under the scope of the Project Hanford Management Contract (PHMC) managed by FH. The PFP mission includes stabilization of plutonium-bearing materials, interim storage and/or shipment of special nuclear materials, and preparation for stabilization and deactivation. The current mission and support activities of the PFP include the following:

- Receiving, storing, and shipping plutonium material, including certain glovebox-transfer operations
- Stabilization of reactive plutonium-bearing material
- Stabilization of plutonium-bearing solution
- Providing laboratory and engineering support
- Handling waste
- Surveillance of active and inactive facilities
- Operation of facility support systems (e.g., heating, ventilation, air conditioning; radiation monitoring; steam; electricity, etc.)
- Safeguard the material inventory.

The *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan* (HNF-MP-003 [FH 1999a]) represents the safety management system documentation required by DOE Acquisition Regulations (DEAR) clause 970.5204-2 for the PHMC. HNF-MP-003, Rev. 0 was originally approved by the DOE, Richland Operations Office (RL) based on a review against the existing contractual requirements (derived from an earlier draft of the 970.5204-2 DEAR clause) for that document. The PHMC was recently modified to incorporate the 970.5204-2 DEAR clause, and HNF-MP-003 (FH 1999a) was revised accordingly. During October 1999, RL conducted an ISMS Phase I verification of the FH System Description. FH has developed and submitted a Corrective Action Plan to RL. Upon FH's completion of the Corrective Action Plan, RL will review and validate completion of the actions and recommend approval of the FH company-level System Description. Pending that approval, it is recognized that lower-tier reviews, such as this effort, will be impacted by any final actions taken.

An ISMS Description document is required to address documentation and implementation of the FH ISMS plan at the PFP Project level. In September 1998, PFP staff completed a facility level "gap analysis" and a plan for the implementation of HNF-MP-003 (FH 1999a). Subsequently, they developed a project-level system description that augments HNF-MP-003 with facility-specific policies and procedures. In the August to September 1999 timeframe, the facility conducted a separate internal readiness review for ISMS. Based on this review, FH declared readiness for an ISMS Phase I/II verification review. This verification was commissioned by the RL manager (Klein 2000) and was initiated on January 10, 2000.

## 4.0 SCOPE

The scope of this review was associated with the PFP Project and operations conducted by FH and its lower-tiered contractors and subcontractors. Other than verifying processes that provide for the flow down of requirements, this review did not verify the implementation of ISM within the RL organization, but did include interfaces between DOE and FH at the facility level.

The PFP verification also did not address the ISMS status of site partners or service providers within the FH system. Where these separate entities interfaced or provided significant support to PFP, assessment was made of the PFP management process governing external interfaces and of the external entities' process for providing the appropriate services and resources. As discussed in the Verification Team Leader letter of appointment (Klein 2000), the results of external reviews of the PFP since January 1998 were considered during this review to avoid unnecessary duplication of effort.

The original scope of this verification included both Phase I and II ISMS verification objectives. The ISMS Verification Team, however, recommended that PFP be allowed a period of time between Phase I and Phase II to consolidate documentation and further prepare. This recommendation was based on the significance of the areas for improvement derived from the Phase I effort; the imminent transition to new management at PFP; and preliminary Phase II concerns raised by the team.

The objectives accomplished during this ISMS Phase I verification were the following:

- Verify that the PFP Project-level System Description and associated plans, manuals of practice, and procedures are consistent with the objectives, guiding principles, and core functions of ISM and HNF-MP-003

- Explore the impact of the recent ongoing changes in upper management personnel and the related new contractual relationship with Westinghouse Safety Management Solutions (WSMS)

- Develop lessons learned from this verification effort to improve the effectiveness of future ISMS reviews at the Hanford Site

- Use members of the FH Facility Evaluation Board to allow FH to develop a capability to evaluate implementation of ISMS at other PHMC facilities

- Determine whether the PFP ISM System is in a condition to support a Phase II verification.

## 5.0 PREREQUISITES

Overall acceptance by RL to proceed with the PFP ISMS Phase I and II verification was based on the contractor's assertion of the following:

- Substantial demonstration of compliance with the requirements of the PHMC DEAR clause H.5.E (DEAR 970.5202-2).

- Corrective actions with known deficiencies will not require or result in changes to the ISM System Description and related policies, plans, procedures, and products to the extent that significant reexamination of a sizeable portion of the ISM System Description would be required.

## 6.0 INTEGRATED SAFETY MANAGEMENT SYSTEM ASSESSMENT RESULTS

### 6.1 INTRODUCTION

The verification team was organized into four subteams that followed functional areas of review tracing integration of ISM horizontally across the organization. Additionally, four Subject Matter Experts (SME) were commissioned to provide vertical slices of the PFP ISMS following specific topical lines. Each of the SMEs was hosted by a subteam.

Assessment results are presented as Functional Area Summaries of the work completed by the four subteams. Information provided by each SME was rolled up into one of the four subteams as proposed by the Review Plan (contained in Volume II). The functional area summaries provide a narrative of the conclusions reached by the ISMS Verification Team for these topical areas. Where crosscutting issues were identified, generally one subteam was given the task to summarize.

At the end of each summary is a listing of the strengths and concerns noted by the ISMS Verification Team. Detailed discussions for each strength or concern can be found in the Assessment Form section contained in Volume II. Numbers associated with each issue will guide the reader to the corresponding Assessment Form.

## 6.2 FUNCTIONAL AREA SUMMARIES

### 6.2.1 Business, Budgets, and Contracts

The PFP ISM System Description meets the intent of the criteria established for evaluation of the Business, Budgets, and Contracts (BBC) Criteria and Review Approach Documents (CRAD). The BBC subteam assessed how the PFP Project ISMS was incorporated into work processes by performing document reviews and conducting interviews with PFP Project personnel. The focus of the review was on the following:

- Identification of resource requirements
- Relative prioritization
- Performance measures
- Change control
- ISMS flow down requirements to lower-tier subcontractors
- Hazards analysis
- Adequate DOE involvement
- Commitment to stakeholder concerns
- Competence of PFP Project personnel to accomplish these specific ISMS goals.

The existing procedures are adequate to ensure that the core ISMS functions are met. DOE mission expectations are incorporated into PFP work plans through a well-documented hierarchy of policies, procedures, and directives that ensure the identification of resource requirements, the proper prioritization of mission objectives, and the development of performance measures consistent with DOE requirements. However, the PFP Project does not have a stand-alone system description but rather relies in part on the FH company-level System Description. While all pertinent areas are addressed through a multitude of policies and procedures, there is no single document that ties all of the elements into a cohesive whole. Even though the management team and the documentation supporting the PFP Project is evolving and changing, there are no substantial gaps in the documentation incorporating balanced priorities into the budget or business systems of PFP. Documentation for resource allocation indicates that safety, programmatic, and operational considerations are incorporated into these processes. Hazard analyses are comprehensively covered in the existing documentation both for incorporation into work plans and to ensure adequate funding. Performance incentives and/or measures both explicitly and implicitly incorporate the proper safety considerations. The primary responsibility for ensuring employee competency is held by each employee's supervisor. With the exception of the lack of a training procedure for writing work scopes, the existing documentation adequately addresses the training required to ensure the competency of PFP Project employees. PFP Project employees clearly demonstrated competence in all reviewed areas, including competence related to the writing of work scopes.

**Strengths**

- The in-house weekly publication of the five top priorities is a strength. **(BBC.2-1)**

- The PFP has training specialists located in the field (facility). **(BBC.3-1)**

**Concerns**

- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Section 13.4 does not properly address the accountability of determining priority, nor reference the correct table. **(BBC.1-1)**

- The decision criteria for requiring full ISMS flow down has not been institutionalized. HNF-MD-4821, *Guidance for Flow Down of ISMS Requirements to Lower Tier Subcontracts* (FH 1999c) does not explicitly state the determination process for full flow down of ISMS requirements. **(BBC.1-2)**

- The Plan of the Day, Plan of the Week, and Job Control System are not linked to the top five priorities list. **(BBC.2-2)**

- Training for writing (defining) work scopes is lacking. **(BBC.3-2)**

### 6.2.2 Hazard Identification and Standard Selection

The PFP Redesign Initiative has resulted in changes to organizations, processes, and procedures since early 1998. Overall, the Hazards Identification and Standard Selection (HAZ) subteam found the changes to be productive and have moved the project in a positive direction. The HAZ subteam highly recommends that incoming management continue the Redesign Initiative efforts. There were indications that as a result of the significant changes made in Hazards Identification and Control processes, such as the formation of an Authorization Basis (AB) Team, the Redesign effort had not been fully implemented.

The HAZ subteam was not provided documentation describing the objectives, methods, and results of the Redesign Initiative. Therefore, it was not possible for the HAZ subteam to evaluate the progress of the Redesign Initiative. However, The ISMS Verification Core Team was given a briefing by a PFP Redesign Team that confirmed the HAZ subteam conclusions that the Redesign Initiative is still maturing.

In the areas of industrial hygiene/safety and fire protection, there is a strong evidence of management commitment and employee involvement in ISM at PFP. Interviews indicated that employees believe ISM is a value-added concept and will continue to improve operations at the plant. The Zero Accident Council (ZAC) and the Voluntary Protection Program (VPP) were identified as key elements for successful implementation. Management endorsement of Stop Work Authority was cited as an indication of commitment to providing a work place free of hazards.

The HAZ subteam had a general concern that the PFP ISM System Description did not meet the DEAR requirements of describing the system PFP has in place for governing all work conducted

at PFP and how that system addresses the core functions of ISM. The FSP-PFP-5-8 manual does an adequate job of describing the processes, procedures, and mechanisms in place for conducting work at PFP. Currently, the PFP ISM System Description is contained in the FSP-PFP-5-8 manual and does not serve the required purpose. Additionally, the PFP ISM System Description, even when combined with the FH System Description, does not address the integration of business systems/practices and work practices/procedures.

These concerns became clearly evident during observations that indicated roles and responsibilities had not yet been clearly defined. For example, the newly created AB Team could not identify where that team's roles and responsibilities were defined and documented. An AB Team Redesign Handbook was provided to the ISMS Verification Review Core Team that partially addressed this concern, but the inability of the AB Team to readily identify this document confirms conclusions that the Redesign Initiative has not yet matured.

While the AB Team Redesign Handbook did partially address roles and responsibilities, the HAZ subteam was unable to review position descriptions for key SME positions that contained minimum expectations for qualifications and competency. These SME positions included Unreviewed Safety Questions (USQ), Operational Safety Requirements (OSR), Work Control, Criticality Safety Engineer, and Configuration Management. Of particular concern, due to past criticality issues at PFP, was the lack of defined qualifications for Criticality Safety Engineers.

Gaps in procedures were also evident as demonstrated by incomplete Automated Job Hazard Analysis (AJHA) processes observed during the course of the verification. These observations also indicated a lack of integration of hazard identifications activities performed at PFP. There was no consistent determination on when to apply the AJHA process to work performed at PFP (see OP.1-1). Further indications of this concern were evident by the lack of a procedural link between the hazard identification process and the budgeting/funding prioritization process.

The HAZ subteam has concluded that a system is in existence at PFP. This system, with reservation, does meet the objectives contained in the HAZ CRADs. However, the PFP System is not yet mature enough to undergo a Phase II ISMS verification.

**Strengths**

- The redundant processes used to assure that any/all proposed changes to the PFP AB documents are rigorously reviewed and remain in compliance is a strength. **(HAZ.2-1)**

- Consultation and collaboration with RL has resulted in expeditious approval of the Authorization Agreement. **(HAZ.2-2)**

- The Hanford Fire Department is a DOE Center for Excellence for fire protection. PFP fire protection personnel exchange technical information and participate in activities though the Center of Excellence. **(SME.1-1)**

- There is a level of confidence, from the personnel interviewed, that the philosophy and concept of ISM exists and will continue at PFP. **(SME.1-2)**

- There appears to be good interaction between industrial hygiene and safety and fire protection personnel with other SMEs onsite. For example, consultation with radiological personnel is apparent. Through the As Low As Reasonably Achievable (ALARA) committee, the fire protection engineer was alerted to a concern at the laundry facility. This demonstrates that personnel know when SMEs need to be involved in the planning and execution of work. **(SME.1-3)**

- In the ZAC Charter, one of the committee responsibilities is to utilize VPP principles in strategic planning and implementation of safety programs. Also, during an interview with the co-chair of the ZAC, it was mentioned that PFP continues to pursue DOE VPP Star Status. **(SME.1-4)**

- PFP workers have clear authority to enforce Stop Work Authority. This demonstrates PFP management's commitment for employee empowerment and responsibility for safety. This authority is communicated to workers and is effectively practiced. **(SME.1-5)**

**Concerns**

- PFP procedures lack clearly defined requirements, criteria, and procedures linking the discovery and analysis of newly discovered risks to the administrative and management review and decision-making processes utilized in establishing or changing work or funding priorities. **(HAZ.1-1)**

- The Redesign Initiative is not mature in its development, resulting in unclear roles and responsibilities, procedure gaps, and a general lack of awareness of the goals, objectives, methodologies, and status of the effort. **(HAZ.1-2)**

- The USQ process has been identified by site reviews to be rigorous but cumbersome. **(HAZ.2-3)**

- The Plant Review Committee does not have a formal charter. **(HAZ.2-4)**

- The annual Standards/Requirements and Identification Documents review (due December 1999) was not completed on schedule. **(HAZ.2-5)**

- Some SMEs that were reviewed have position descriptions in place and the required competencies (entry-level education, experience and/or training requirements) to do the job are identified in the position descriptions that were reviewed. The other SMEs (USQ, Operational Safety Requirements, Work Control, Criticality Safety Engineer, and Configuration Management SMEs) position descriptions are not documented. **(HAZ.3-1)**

- The Configuration Management SMEs qualification program to maintain their proficiency in their assigned systems is not defined in a procedure. **(HAZ.3-2)**

- Some hazards analysis and control mechanisms are in place that are not integrated into the cycle of ISM. **(SME.1-6)**

- Roles and responsibilities are inconsistent and inadequately defined in procedures. **(SME.1-7)**

### 6.2.3 Management

The Management Oversight (MG) subteam assessed the institutionalization of the PFP ISM System Description through document reviews and interviews with PFP personnel. The MG subteam review focused on three major areas: the PFP ISM System Description, roles and responsibilities, and feedback and improvement. .The MG subteam also included a SME who assessed Environmental Compliance and Chemical Management (SME.4).

The MG subteam review of the PFP ISM System Description revealed some instances where some HNF procedures (HNF-PROs) were not listed in the System Description and contained several outdated references. The MG subteam also found that the PFP ISM System Description listed procedures and directives that address all of the ISMS core functions, but the narrative did not tie the documentation flow downs and linkages together in a standalone manner. Other policy and procedure documents must be accessed to get a complete understanding of the PFP ISM System Description. Additionally, the PFP ISM System Description was reviewed to determine if alignment/linkage to the HNF-MP-003 (FH 1999a) was present. Due to the current FH restructuring effort and the future revision to HNF-MP-003 (FH 1999a), reconciliation will be necessary to manage changes to the PFP ISM System Description.

Contractor roles and responsibilities were spread among various procedures, including obsolete procedures. However, the MG subteam was able to verify through procedural review that safety responsibilities of both line managers and supervisors, as well as individual employees, are present. The PFP Project has sufficient procedures and/or mechanisms, such as the PFP Integrated Management Plan, PFP ISM System Description (FSP-PFP-5-8, Section 3.24), job descriptions, and PFP administrative procedures, which define line management roles and responsibilities for safety. Interviews with various PFP line managers confirmed they understood their responsibility for safety. Also, sufficient procedures and/or mechanisms were found to be in place, such as PFP administrative procedures and HNF-PROs, that require functional and job analysis to identify the educational, experience, and training requirements to safely perform work. These procedures ensure that both managers/supervisors and workers receive appropriate training for qualification and certification, thereby enabling them to be competent to safely perform their assigned work activities.

PFP has established feedback mechanisms to gather, analyze, and close out issues. However, the MG subteam found that the procedures governing the feedback process do not provide acceptable process definition. Concerns were identified in areas where PFP procedures governing the post-job review process, training and qualification, and generation of lessons learned is less than adequate. This same overall concern was also identified in other CRADs. PFP has integrated Environmental Compliance/Chemical Management into work planning to ensure hazard identification and controls are evaluated and in place. The staff understood their roles and responsibilities and demonstrated a high level of competence through training and maintaining of qualifications. However, there were two concerns; the first was with the facility organization redesign and the new Management Assessment Program not being incorporated into

the Environmental Compliance/Chemical Management self-assessment program. The second concern was that there is no documented process for a consistent systematic approach for tracking and performing internal environmental reviews of facility procedures and documents within the Environmental Team.

**Strengths**

- Use of Activity Based Startup Review Plans includes the major core functions of ISMS and provides objective evidence that an AJHA has been completed. **(MG.1a-1)**

- PFP line managers and team leaders are reviewing their employee Training Matrix at least weekly to ensure employees are qualified and to identify any changes that may need to be made to the Training Matrix. Line managers and team leaders are also reviewing a monthly report showing the 90-day look ahead for training to further ascertain their employees' training requirements are maintained current. This is considered a Noteworthy Practice. **(MG.2-1)**

- FSP-PFP-5-8, Volume 1, Section 2.27, provides a program to monitor and mentor operating performance in order to improve PFP operations by identifying and resolving operational problems, and providing a process for trending and tracking conditions. **(MG.3-1)**

- FSP-PFP-5-8, Volume 1, Section 1.51, establishes the standards and responsibilities for housekeeping within PFP. Senior management is involved with weekly inspections and this reflects positively on their commitment to a safe work environment. **(MG.3-2)**

- PFP Senior Director's Memorandum 99-04, *Safety Log*, Rev. 1, has implemented the use of four Safety Logbooks located at strategic locations in the facility to provide an easy to use supplemental, written method to bring safety concerns to the attention of PFP employees and management. **(MG.3-3)**

**Concerns**

- When the FH ISM System Description is changed, reconciliation will be necessary to manage changes to the PFP ISM System Description. **(MG.1a-2)**

- The PFP ISM System Description contains several outdated references and some HNF documents are not listed. Also, due to the recent restructuring and the newly formed Westinghouse Management team at the PFP, the ISM System Description will need to be revised. **(MG.1a-3)**

- Although PFP uses management assessments and performance measures, an institutionalized program for measuring ISMS effectiveness was not found to be in place. **(MG.1a-4)**

- Although mechanisms are in place that define clear roles and responsibilities for safety at various management levels within the PFP Project, they are found in multiple procedures. Additionally, no implementing mechanism (e.g., project charter) or procedure exists that

identifies the management positions at PFP and a listing of key functional responsibilities for those positions. **(MG.2-2)**

- Although it was found that training requirements of HNF-MP-011, *Site Training and Qualification Plan* (FH 1999d), are consistently and effectively crosswalked to FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*. FSP-PFP-1121 makes no reference to HNF-MP-011. Additionally, no description is found in FSP-PFP-5-8, Section 3.24, regarding a process (e.g., mechanism) by which the PFP Project is using to train, qualify, and certify its personnel as a means to implement the ISMS Guiding Principle 3. **(MG.2-3)**

- FSP-PFP-5-8, Volume 1, Section 1.14, does not address generating lessons-learned from good work practices, post-job reviews, and mock-up training. **(MG.3-4)**

- The training specified in FSP-PFP-1121 is inadequate for occurrence report investigators/writers since formal training in root cause analysis is not required. **(MG.3-5)**

- BWHC letter 15000-99-085, Rev. 5 (Crawford 1999), has not been updated to include the most recent qualified critique leader at PFP as required by HNF-PRO-058, *Critique Process* (FH 1999e). **(MG.3-6)**

- FSP-PFP-5-8, Volume 2, Section 13.4 lacks the specific requirements as stated in HNF-MP-003 to ensure a thorough post-job review, which should include reviews of the accuracy and completeness of the AJHA. **(MG.3-7; see also OP.1-5, OP.2-4, and OP.2-5)**

- FSP-PFP-5-8, Volume 2, Section 13.4 does not require that lessons learned generated during a post-job review be sent to the PFP Lessons Learned Point of Contact. **(MG.3-8; see also OP.1-5 and OP.2-4)**

- FSP-PFP-5-8, Volume 1, Section 2.27 does not specify which management personnel are designated as the Senior Supervisory Watch (SSW), or as a minimum, the qualifications and experience that would be required to serve as SSW. **(MG.3-9)**

- FSP-PFP-5-8, Volume 1, Section 2.27 requires the SSW to conduct an end-of-shift discussion with the Building Emergency Directory based on observations recorded in the SSW narrative notebook, but does not require the SSW to discuss these observations with the manager of the work team performing the activity observed. **(MG.3-10)**

- In the Environmental Compliance area, there is no formalized process or procedure that ensures a consistent, systematic approach is used when performing environmental reviews for work packages and technical documents. **(SME.4-1)**

- The PFP redesign of the Environmental Team and Management Assessment Program has not been incorporated into the Environmental Compliance/Chemical Management Self-Assessment Program under Project Assessments. **(SME.4-2)**

### 6.2.4 Operations

The Operations (OP) functional area subteam assessed Phase I work planning and execution through document reviews and interviews with key PFP Project personnel. In addition, the OP subteam evaluated Safeguards and Security and Radiation Protection as subject matter areas.

The PFP Project has established the necessary base procedures and mechanisms to support work planning and execution; however, not all of these documents reflect the current organization and details of field work team practices. The PFP Project has demonstrated a noteworthy commitment to worker involvement by establishing a strong team approach to planning and execution of work. The workforce has clearly played a significant part in developing and implementing the "redesign" and teams are actively engaged in planning work and striving for continuous improvement. However, tools available to work teams (procedures regarding AJHA applicability, scheduling, release and suspension of work, feedback and improvement) are not mature and do not allow for clear roles and responsibilities. An effort to update documentation in these areas to support field work team implementation and continued maturation of the teams will strengthen the ISMS.

Furthermore, the uncertainties associated with impending changes in senior management and the organization will impact how these tools are changed and/or applied. The outcome of these changes is expected to strengthen the PFP ISMS; however, it is impossible for the ISMS Verification Team to draw this conclusion at this time.

An additional significant concern involves the scheduling and authorization of work. Currently, the scheduling process does not describe what work is scheduled and released and the basis and justification for those items, which do not require formal scheduling or release. Moreover, interviews with personnel and a limited review of work documentation indicate the existing work package process is not effectively implemented to suspend inactive packages, remove unnecessary controls, and re-institute work controls when the package is subsequently completed. A robust process must be established which schedules work, implements controls, and authorizes work in a manner that demonstrates line management responsibility for safety.

These concerns, coupled with initial Phase II observations, indicate that PFP should be given the opportunity for additional maturation prior to commencing the Phase II verification. The integrated team approach that has been implemented is noteworthy, and if the necessary tools and resources are provided to the teams, significant improvement is expected.

The Radiation Protection subject matter area has concluded that the ISMS documentation is adequate, with two minor concerns. The development of integrated field work teams, including dedicated Radiation Protection personnel, has greatly enhanced the integration and implementation of appropriate radiological controls. Qualification standards are in place to demonstrate competency for radiological control technicians; however, a similar qualification standard for radiation protection support personnel has not been finalized and institutionalized in plant procedures. A second concern is related to application of feedback and improvement information. While it is evident that programs are in place to provide feedback and improvement, PFP procedures do not provide sufficient requirements to ensure that such input is evaluated and applied during future work activities.

The technical support and safeguards roles provided by Protection Technology Hanford (PTH) are integrated within the PFP work processes. PTH patrol responsibilities are adequately defined, hazards are analyzed and controlled, and the interface with PFP is established.

A conceptual error was noted within the PFP construct of ISM. At the plant, the definition of "work" or "work processes" is generally interpreted as relating to the Job Control System process rather than in the broader sense of "all activities" used by ISM. Observations made by the team indicate that within the Job Control System, ISM principles are being developed. The unique PFP definition of "work;" however, seems to have allowed non-Job Control System activities to remain underdeveloped.

**Strengths**

- Formation of the field work teams has maximized worker participation in work planning and safe execution of assigned work. **(OP.1-1)**

- Based on numerous DOE and FH reviews, PFP has made significant improvements in the analysis, integration, and implementation of appropriate radiological controls during the past 2 years. The development of integrated work teams with dedicated Radiation Protection personnel, and the establishment of the AJHA as a work-planning tool, has greatly accentuated this improvement. **(SME.2-1)**

**Concerns**

- Applicability of the AJHA for hazards analysis is not institutionalized for all forms of PFP work documents. **(OP.1-2)**

- Work scheduling and release criteria are not formalized and do not reflect current work practices. **(OP.1-3)**

- Work planning and execution procedures do not reflect current roles and responsibilities. **(OP.1-4)**

- Work feedback mechanisms are not formalized to the point that they can be effective at supporting continuous improvement of work execution. **(OP.1-5)**

- FSP-PFP-5-8, Section 13.4 is not being followed for control of released work packages that are not being actively worked. **(OP.2-1)**

- FSP-PFP-5-8, Section 6.1 is out-of-date and does not reflect PFP's organizational redesign or the current scheduling practices. **(OP.2-2)**

- The differences between the Person in Charge and Field Work Supervisor qualified personnel and their authority is either described in error or inadequately described in PFP procedures. **(OP.2-3)**

- PFP procedures do not adequately define methods to capture and disseminate post-job reviews and lessons learned for No Planning Required work packages. **(OP.2-4; see also OP.1-5)**

- PFP procedures do not require or provide for adequate feedback in the form of post-job reviews and feedback mechanisms for Planning Required work packages. **(OP.2-5)**

- PFP has a process for identifying training requirements and qualification standards for Radiation Protection support personnel; e.g., radiological engineers. While this process is currently being implemented, this process has not yet been formally institutionalized. **(SME.2-2)**

- While several programs for feedback and continuous improvement in Radiation Protection have been established at PFP, formal requirements for incorporating the results of these programs in the planning for future work activities have not been established. **(SME.2-3)**

## 7.0 CONCLUSION AND RECOMMENDATIONS

The ISMS Verification Team concluded that although significant progress has been made in establishing an ISMS at PFP, there are systemic weaknesses that should be addressed by the contractor prior to continuing the verification effort. Therefore, the team recommends that the new PFP management be allowed a period of time to more fully develop ISM within PFP. Improvements should be made to the PFP Project-level System Description, supporting documentation, and current work processes.

The following are specific areas for improvement that need to be addressed prior to reinitiating the ISMS verification process:

- The ISMS Verification Team recommends that the PFP ISM System Description fully document the integration of the business, safety, and work practices of PFP and fully incorporate elements of the workforce redesign and management change. While all of the ISMS core functions are addressed, other policy and procedure documents must be accessed to get the complete understanding of the PFP ISM System Description. Integration of the work process across all operations was not readily demonstrated. Ties to most ISM elements were observed through a multitude of policies and procedures, but some outdated documentation was encountered and several expected connections to higher-order procedures (HNF-PROs) were not found. **(PFP-1)**

- Not all necessary base procedures and mechanisms to support work planning and execution reflect the current organization or field work team practices. Documentation has lagged behind implementation. The tools available to the teams (procedures regarding AJHA,

applicability, scheduling, release and suspension of work, feedback and improvement) are not mature or integrated within the PFP ISM System Description. WSMS modifications to the PFP system should be incorporated into the overall business strategy. **(PFP-2)**

- Roles and responsibilities have not been clearly defined and were spread widely among procedures, some of which were obsolete. In addition, changes pending the introduction of the new management team to PFP affect the current representation of assignments. Work teams should identify where their roles and responsibilities are defined and documented. Position descriptions for several key SMEs could not be found. Of particular concern, due to past issues, was the lack of defined qualifications for Criticality Safety Engineers. **(PFP-3)**

- The Work Management Process Description and Job Control System process procedure (FSP-PFP-5-8, Section 13.4) is not being consistently applied. Work packages that have been released and delayed are not routinely suspended, but remain in a released status contrary to the procedure. These packages may not be actively controlled for compatibility with current plant conditions, schedule adherence, or completion of all pre-requisites. **(PFP-4)**

- The establishment and use of the AJHA process is commendable but is not fully mature. The documentation governing the applicability, timing, and integration of AJHA has not been fully developed. Observation of AJHA implementation, although limited, indicated that use of the tool is not fully understood, nor were all requisite personnel involved. **(PFP-5)**

- PFP has integrated Environmental Compliance/Chemical Management into work planning to ensure hazard identification and controls are evaluated and in place. However, there is no documented process for a consistent, systematic approach for performing and tracking internal environmental reviews of facility procedures and documents. **(PFP-6)**

- **(PFP-7)** PFP has established feedback mechanisms to gather, analyze, and close out issues. While it is evident that programs are in place to provide feedback and improvement, PFP procedures do not provide sufficient requirements to ensure that such input is evaluated and applied during future work activities. Also, procedures governing the feedback process do not provide acceptable process definitions. Concerns were identified in PFP procedures governing the post-job review process, training and qualification, and generation of lessons learned.

  The tie between feedback processes and the business cycle was not fully developed. No documented, required procedure was identified for assuring that newly identified hazards are prioritized in such a manner that they are carried forward to the feedback, management review, and work scope definition loops of the ISM process.

## 8.0 LESSONS LEARNED

Lessons learned were generated by the ISMS Verification Team based on their current and previous ISMS verification experience. Several points should be of value to contractor forces as well as to DOE.

**Team Preparation**

- Need a full week of orientation without immediately beginning the ISMS review. This week would allow for completion of administrative activities, finalization of the Review Plan, and strategic planning without overlapping with commencement of the review. Furthermore, the contractor presentation should provide information regarding each subject area involved in the review.

- Additional training/orientation is necessary for ISMS Verification Team members, especially those new to the ISMS review process. In addition to the training provided on the basic development and conceptual bases for an ISM, such training/orientation needs to address review approaches, boundaries between Phase I and Phase II reviews, depth of reviews, expected outputs, level of detail, format of outputs, and criteria for acceptance of an ISMS (both at the Phase I and Phase II levels).

- The ISMS Verification Team needs to verify a clear understanding of the scope of all SME reviews prior to commencement of the review.

- Lessons learned from previous ISMS verifications are not being carried forward. One segment of team orientation should be devoted to Lessons Learned.

- Trainees should function in an on-the-job category rather than as observers. Observers should receive instruction as to non-interference during the review.

**Contractor Preparation**

- ISMS verifications should not be performed during or immediately following significant organizational changes. The PFP workforce restructuring was followed almost immediately by decisions to change contractors, contracts, and top-level management.

- The preparation of Smart Books that contained helpful information such as the mission of PFP, list of key personnel, basic plant procedures, maps, and ISMS implementation was helpful to team members unfamiliar with PFP. Additionally, Smart Books directly focused at each CRAD, and containing pertinent documentation is advisable.

- Have a facility point of contact that is available 75% of the time to assist the team/attend daily meetings and that tracks with the team from beginning to end.

- Facility briefing should be focused on the topical areas and should also have FH as well as the Facility present ISMS in total.

- Obtaining needed information was problematic throughout the review. Requested information critical to the determination of Phase I criteria verification was not provided until report finalization was in progress almost 2 weeks into the verification. Repeated unsuccessful attempts were made to acquire the necessary documentation to support the review. In the end, the necessary minimum amount of information was provided to support the Phase I review. The contractor should do everything possible to ensure that information is free flowing and timely. "Spoon-feeding" is allowed.

- Team members should not worry about wasting the contractor's time. Schedule interviews to accommodate team needs. Panel interviews only work when adequate coordination has occurred between team participants prior to the meeting.

- Contractor organizations scheduled for review in the future should send a representative to ongoing closeout meetings.

**Administration**

- Need for increased focus on successful logistics. The facilities (e.g., computers and workspaces) provided to the ISMS Verification Team were inadequate. A lack of adequate facilities decreases the efficiency of the team and also sends a not-so-subtle message as to the importance of the review activities.

- The size of the PFP ISMS Verification Team was too large to be efficient. Future reviews should use smaller, more focused groups on a shorter schedule.

- If subteam leaders are used, then make the process work; i.e. the subteam lead speaks for their team members. Otherwise, develop smaller teams and assign the subteam lead their own CRAD.

- A line representative assigned to the team would be useful. This individual should help facilitate and provide information but not give direction to the team.

**Decision Process**

- Need for a core team advisor with extensive ISMS experience whose sole purpose is to mentor the team and evaluate the "big picture." This is too much for the Team Lead to accomplish while managing the intricacies of the team and communication with the facility.

- During a Phase I /II verification, if it appears that the Phase I portion has significant concerns, a one- or two-day break should be scheduled to allow team discussion and finalize decisions and necessary actions to either proceed or terminate Phase II. This will allow time to formulate a meeting on how to present the findings to the facility and amend the verification schedule to facilitate an orderly and efficient termination of the Phase I

verification. This may include extending Phase I activities one or two more days in the field to close out areas identified or not completed under Phase I/II assessment process.

- Allow more time for the "thinking process" when compiling the findings (separating the less significant from the more significant issues)" before an overall conclusion is reached.

## 9.0 REFERENCES

48 CFR 970.5204-78, "Laws, Regulations, and DOE Directives," Title 48, Code of Federal Regulations, (DEAR) Section 970.5204-78, as amended, U.S. Department of Energy, Washington, D.C.

48 CFR 970.5204-2, "Integration of Environment, Safety, and Health Into Work Planning and Execution," Title 48, Code of Federal Regulations, (DEAR) Section 970.5204-2, as amended, U.S. Department of Energy, Washington, D.C.

Crawford, F. R., 1999, *Revision 5 of PFP List for Personnel Assigned to Perform Work Associated with Compliance Order (EA-1999-04)*, Letter 15000-99-085, to Distribution, B&W Hanford Company, Richland, Washington.

DOE, 1999, *Integrated Safety Management Systems (ISMS) Verification DOE Team Leader's Handbook*, DOE-HDBK-3027-99, U. S. Department of Energy, Washington, D.C.

DOE G 450.4-1A, *Integrated Safety Management System Guide*, DOE G 450.4-1A, Volume 1, "Guidance," and Volume 2, "Appendixes," U. S. Department of Energy, Washington, D.C.

DOE P 450.4, *Safety Management System Policy*, U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.5, *Line Environment, Safety, and Health Oversight*, U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.6, *Secretarial Policy Statement Environment, Safety and Health Purpose and Scope*, U. S. Department of Energy, Washington, D.C., as amended.

DOE-RL, 1996, *Hanford Strategic Plan*, DOE/RL-96-92, U. S. Department of Energy, Richland Operations Office, Richland, Washington.

FH, 1999a, *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan*, HNF-MP-003, Rev. 2, Fluor Hanford, Richland, Washington.

FH, 1999b, *Facilities Start-Up Readiness*, HNF-PRO-055, Rev. 2, Fluor Hanford, Richland, Washington.

FH, 1999c, *Guidance for Flow Down of ISMS to Lower Tier Subcontracts*, HNF-MD-4821, Rev. 0, Fluor Hanford, Richland, Washington.

FH, 1999d, *Site Training and Qualification Plan*, HNF-MP-011, Rev. 1, Fluor Hanford, Richland, Washington.

FH, 1999e, *Critique Process*, HNF-PRO-058, Rev. 2, Fluor Hanford, Richland, Washington.

FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Vol. 1 and 2, Plutonium Finishing Plant, Fluor Hanford, Richland, Washington, as amended.

Section 1.14, "Managing Lessons Learned," Rev. 2, Change 0, October 4, 1999
Section 1.51, "Housekeeping Responsibilities," Rev. 3, December 21, 1999
Section 2.27, "Senior Supervisory Watch Program," Rev. 8, October 4, 1999
Section 3.24, "Plutonium Finishing Plant and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
Section 6.1, "PFP Maintenance Scheduling," Rev. 2, January 28, 1999
Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000.

FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Plutonium Finishing Plant, Fluor Hanford, Richland, Washington, as amended.

Klein, K. A., 2000, *Appointment as Team Leader for Integrated Environment, Safety, and Health Management System Phase I/II (ISMS-I/II) Verification at the Hanford Plutonium Finishing Plant (PFP)*, Letter AMS: DSS/00-AMS-015 to Craig R. Richins, dated January 14, U. S. Department of Energy, Richland Operations Office, Richland, Washington.

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**BBC.1**- Contractor procedures ensure that missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated. (CE I/II-1, CE I/II-2, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Contractor procedures translate mission expectations from DOE into tasks that permit the identification of resource requirements, relative prioritization, and performance measures that are consistent with DOE requirements. (DEAR 970.5204-2, DOE P 450.5)

2. Contractor procedures provide for DOE approval of proposed tasks and prioritization. Work-planning procedures provide for feedback and continuous improvement.

3. Contractor procedures provide for change control of approved tasks, prioritization, and identification of resources.

4. Contractor procedures provide for flow down of DEAR 970.5204-2, *Integration of Environment, Safety and Health into Work Planning and Execution* requirements into subcontracts involving complex or hazardous work.

**NOTES**:

- Verification of these criteria includes an actual review of lower-tier subcontractor mechanisms and methods for meeting ISMS contract requirements. The reviewer should ensure alignment of their ISMS plans or equivalent to facility ISMS plans.

- "Contractor procedures" refers to all procedures used at PFP, including both the Project Hanford Management System and the FDH policy and procedure system.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing requirements for translation of missions into tasks and activities.

- Review representative samples of completed records.

- Review internal approval of proposed tasks and prioritization.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

- Review the DOE implementing procedures.
- Determine if there is adequate guidance for DOE involvement in developing clear definitions of the scope of work.
- Determine the following: 1) if the mechanisms for translation of the missions and policies from higher authority are appropriate, 2) if a mechanism for assigning priorities has been established, and 3) if performance objectives are reviewed and approved.
- Review mission prioritization procedures to determine if tailoring of resources is appropriate.
- Review Hanford Site manuals of practice that describe the budget and planning process, and documents that identify mission requirements, approval authorities for contractor plans, and address the assignment of budget priorities.
- Review Hanford Site procedures for formally documenting change control.
- Review procedures that define how safety requirements are included in subcontracts as well as the flow down of the DEAR clauses into subcontracts for hazardous work.
- Review future year planning and current year authorized work.
- Select several current-year authorizations and track change control.
- Select several project-specific subcontracts and review for incorporation of the ISMS DEAR clauses.

**Interviews**

- Interview project contractor personnel responsible for management of the budget process.
- Interview line managers responsible for DOE-Headquarters-directed mission accomplishment.
- Interview the ES&H manager to determine how the process for integration of safety into mission tasks is accomplished.
- Interview managers at selected project levels to determine their understanding and implementation of the defined process for translation of mission into work authorization.
- Interview selected ES&H professionals and line managers to determine how safety is incorporated into the budget plans and task authorization.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

- Interview project contractor procurement personnel regarding subcontract flow down requirements.

- Interview selected personnel responsible for translating missions into tasks and activities.

- Personnel interviewed should include those responsible for identifying and prioritizing tasks and activities, setting expectations, and allocating resources.

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the project contractor.

**Record Review**

- 9951526/99-PID-034, *Contract No. DE-AC06-96RL13200 – Hanford Mission Planning Guidance (MPG) for FY 2001 – Amendment #2*, Correspondence from J. C. Hall, RL, to R. D. Hanson, FDH, March 6, 1999
- 9954322A/99-PID-105/LMHC, *Contract No. DE-AC06-96RL13200, Fiscal Year (FY) 2000 Baseline Updating Guidance for Multi-Year Work Plans (BUG-MYWP)*, Letter from K. A. Klein, RL, and R. T. French, Office of River Protection, to R. D. Hanson, FDH, June 21, 1999
- DE-AC06-RL13200, Mod 086, *Project Hanford Management Contract*, October 1, 1999
- DOE P 450.4, *Safety Management System Policy*, October 15, 1996
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 2.3, "Training Program Administration," Rev. 9, December 9, 1999
  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 3.24, "Plutonium Finishing Plant and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
  - Section 6.3, "Person in Charge," Rev. 2, July 1, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
  - Section 13.8, "Baseline Requirements," Rev. 1, September 18, 1998
- FY 2000 Performance Incentives, *PHMC-CP2, FDH-CP-2SS, and FDH-Comprehensive*
- HNF-3617, *Integrated Project Management Plan (IPMP) for the PFP Stabilization & Deactivation Project*, Rev. 0, April 28, 1999
- HNF-MD-029, *Hanford Site Technical Baseline Change Control*, Rev. 1, May 17, 1999
- HNF-MD-4821, *Guidance for Flow Down of ISMS Requirements to Lower Tier Subcontracts*, Rev. 0, July 30, 1999

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

- HNF-MP-003, *Integrated Environmental and Health Management System Plan,* Rev. 2, September 21, 1999
- HNF-PRO-067, *Managing Lessons Learned,* Rev. 1, November 24, 1998
- HNF-PRO-078, *Subcontractor Safety & Health Management*, Rev. 2, August 10, 1999
- HNF-PRO-079, *Job Hazard Analysis*, Rev. 4, September 9, 1999
- HNF-PRO-123, *The Material Request/Purchase Requisition/Contract Requisition Process,* Rev. 6, July 22,1999
- HNF-PRO-183, *Preacquisition Planning Requirements,* Rev. 4, June 18, 1999
- HNF PRO-186, *Preparing a Statement of Work For Services*, Rev. 2, September 8, 1999
- HNF-PRO-192, *Assignment and Duties of the Buyers Technical Representative (BTR),* Rev. 1, September 24, 1999
- HNF-PRO-533, *Change Control,* Rev. 0, February 26, 1998
- HNF-PRO-1819, *PHMC Engineering Requirements*, Rev. 3, June 22, 1999
- HNF-PRO-3468, *Stop Work Responsibility,* Rev. 1, October 22, 1999
- Multi-Year Work Plan (MYWP)
- Nuclear Materials Stabilization Project Review, December 1999
- PFP ISMS Phase I/II, *Readiness Review*, Senior Management Review Board Presentation, September 15, 1999
- PFP Plant Objectives and Performance Indicators, November 1999.

**Interviews Conducted**

- Assistant Manager, PFP Infrastructure Services
- Buyer, PFP Acquisitions and Contracts
- Lead, PFP Health & Safety
- Manager, PFP Acquisitions and Contracts
- Manager, PFP Baseline Control
- Manager, PFP Cost Control and Administration
- Manager, PFP Environment, Safety, Health, and Quality (ESH&Q)
- Manager, PFP Infrastructure Services
- Mechanical Engineer, PFP Technical Support
- Project Cost Analyst, PFP Baseline Control
- Senior Director, PFP Stabilization & Deactivation.

**Observations**

None.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Contractor procedures translate mission expectations from DOE into tasks that permit the identification of resource requirements, relative prioritization, and performance measures that are consistent with DOE requirements. (DEAR 970.5204.2, DOE P 450.5).*

PFP Project tasks flow from a hierarchy of plans, policies, guidance, and implementing procedures. HNF-3617, *Integrated Project Management Plan (IPMP) for the PFP Stabilization and Deactivation Project*, was created to address the concerns contained in the Defense Nuclear Facility Safety Board (DNFSB) 94-1, *Recommendation Implementation Plan (IP)*. A review of the contractor's documentation and interviews with PFP Project personnel indicate that the IPMP is the top life-cycle planning document and is consistent with DOE mission expectations. The actual incorporation of IPMP expectations into PFP tasks occurs via the annual MYWP using the available tools and procedures related to work planning, scheduling, and cost estimating. The tasks are resource-loaded within the schedule and captured at the lowest level of detail within the Basis of Estimate documentation. For each budget year, the tasks are prioritized within the Integrated Priority List (IPL) in accordance with DOE, Richland Operations Office (RL) direction via the Hanford Mission Planning Guidance.

FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Section 2.34, "Plutonium Finishing Plant and Deactivation Project Integrated Safety Management System Program Description," and HNF-MP-003, *Integrated Environmental and Health Management System Plan*, taken together, provide the overall plan as to how the core functions of the ISM requirements will be met. The Project Hanford Management Contract (PHMC) and PFP ISM system/program descriptions contain summary level guidance and cross-reference appropriate implementing procedures, respectively. There is evidence that these documents provide links to the core functions and guiding principles of the applicable DOE Policy 450.5 and DEAR clause 970.5204-2. The Appendices to the PFP System Description cite the procedures and directives that address all of the ISMS Core Functions, but the narrative does not tie the flow downs and linkages together in a standalone manner. Other policy and procedure documents must be accessed to get a complete understanding of the PFP ISM System, as discussed within the MG.1a Assessment Form.

Performance measures consistent with DOE requirements take two forms. There are the overall PHMC/Fluor Hanford (FH) performance incentives, which include PFP-specific goals as well as overall ISMS goals (see BBC.2, criterion 6). The PFP project also has project-specific ESH&Q metrics. Safety objectives for which metrics are tracked and corrective actions taken if necessary include "Operate the Plutonium Finishing Plant in a manner ensuring a safe workplace for all employees;" "Keep radiation and hazardous substance exposure as low as reasonably achievable;" and "Maintain rigorous compliance with the facility safety basis."

There is extensive cross-referencing between pertinent documents so that issues addressed in one procedure are linked to further guidance in other pertinent procedures. The use of one or multiple policies, directives, or procedures adequately addresses each of the core functions and

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

guiding principles. The PHMC/PFP documentation is thorough in addressing each of the ISMS core functions and guiding principles.

**Criterion 2:** *Contractor procedures provide for DOE approval of proposed tasks and prioritization. Work planning procedures provide for feedback and continuous improvement.*

Each MYWP is developed and the Project Baseline Summaries are assigned to a responsible RL project manager. RL must approve that scope of work, schedule, and budget to ensure the balance of priorities are appropriate to meet DOE's goals and mission. Until this package is authorized by signature, spending authority is reserved. RL approves the MYWP and subsequent changes to the approved baseline in accordance with the Baseline Change Control process.

The policy and process for feedback and continuous improvement has been institutionalized through HNF-MP-003 and FSP-PFP-5-8, Section 3.24. The tenets of the Automated Job Hazard Analysis (AJHA) approach combined with such examples as the Voluntary Protection Program and Chemical Management Program, show high level programmatic commitment for improvement through lessons learned and feedback from workers, work teams, and PFP management. In addition, FSP-PFP-5-8, Section 13.8, "Baseline Requirements," Rev. 0, includes a feedback process for challenging requirements that are unnecessary or inappropriate. This opportunity for improvement demonstrates potential for more effective and efficient baseline management.

**Criterion 3:** *Contractor procedures provide for change control of approved tasks, prioritization, and identification of resources.*

PFP has a documented and institutionalized process for planning and allocating resources through utilization of multiple policies and procedures. This process provides the means to prioritize resources based on input from the work scope and associated AJHA, and Standards/Requirements Identification Documents resulting in Basis of Estimates (resource-loaded activities). These systems are clearly documented. As daily priorities are established, changes in work scope may trigger a Baseline Change Request based of established thresholds in HNF-PRO-533, *Change Control*. PFP complies with HNF-PRO-533, which demonstrates change control is institutionalized for baseline revisions or additions. Clear criteria for application of change control is evident.

FSP-PFP-5-8, Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 18, does not explicitly define who determines work priority and who is held accountable. In addition, Section 4.3.5 of this procedure references the wrong table (Table 5) for priority determination. The correct priority table is Table 4. **(BBC.1-1)**

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

**Criterion 4:** *Contractor procedures provide for flow down of DEAR 970.5204-2, Integration of Environment, Safety and Health into Work Planning and Execution requirements into subcontracts involving complex or hazardous work.*

The controlling document for ensuring that ISM requirements are properly imposed on subcontractors is HNF-MD-4821, *Guidance for Flow Down of ISMS Requirements to Lower Tier Subcontracts*. This management directive is referenced in HNF-MP-003, but is not included in the appendix of FSP-PFP-5-8, Section 3.24. HNF-MD-4821 specifically mandates that DEAR clause 970.5204-2 requirements be flowed down to subcontractors. The process used to accomplish this is adequately described in this management directive and cross-references to other necessary documents are included.

The determination of flow down requirements is made using the "ISMS Clause Flow Down Prescreening Questions" (Attachment B, HNF-MD-4821) to determine the appropriate level of ISM and/or standard ESH&Q requirements to flow down to subcontractors. All onsite services are subject to either special provision 5A (SP-5A) or special provision 5B (SP-5B). SP-5A imposes full ISMS provisions and is flowed down to all onsite subcontractors performing work considered complex or hazardous, as determined by the prescreening process. SP-5B is flowed down to all other onsite subcontractors where the work does not require the full rigor of ISMS. The AJHA may also be used to assist in the determination of the appropriate flow down requirements.

Through interviews, it was found that the PFP Project determination process is to mandate full flow down of ISMS requirements (SP-5A) whenever there is at least one confirmed "yes" answer on the prescreening questionnaire. This determination process is not explicitly stated within the subject, controlling document (HNF-MD-4821). Therefore, PFP's special provision determination process is not documented. **(BBC.1-2)**

A document referenced in HNF-MD-4821 that strengthens the application of ISMS core functions is HNF-PRO-186, *Preparing a Statement of Work for Services,* that requires each Statement of Work satisfy the basic core functions as described in HNF-MP-003 for defining the scope of work, analyzing hazards, and implementing hazard controls.

**Conclusion**

The existing procedures are adequate to ensure that the core ISMS functions are met. RL mission expectations are incorporated into PFP work plans through a well-documented hierarchy of policies, procedures, and directives that ensure the identification of resource requirements, the proper prioritization of mission objectives, and the development of performance measures consistent with RL requirements. However, the Appendices to the PFP System Description cite the procedures and directives that address all of the ISMS Core Functions, but the narrative does not tie the flow downs and linkages together in a standalone manner. Other policy and procedure documents must be accessed to get a complete understanding of the PFP ISM System. MYWPs are developed annually and the development process ensures that the individual work scope

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.1**<br>DATE: 1/26/00 |
|---|---|

definitions, allocated resources, and schedule are adequate to meet RL mission expectations. There are multiple systems for providing and incorporating feedback to ensure continuous improvement. The change control process ensures that proper considerations is given to new or revised work scope and that decisions are based on the criteria established by the IPL and RL's mission expectations. Flow down of ISMS requirements to lower-tier subcontractors is adequately addressed via an explicit procedure that contains the decision criteria used.

This objective has been met.

**Strengths:**

None.

**Concerns:**

- FSP-PFP-5-8, Section 13.4 does not properly address the accountability of determining priority, nor reference the correct table. **(BBC.1-1)**
- The decision criteria for requiring full ISMS flow down has not been institutionalized. HNF-MD-4821 does not explicitly state the determination process for full flow down of ISMS requirements. **(BBC.1-2)**

| | |
|---|---|
| Submitted: David E Stromberg<br>**David E. Stromberg**<br>***Team Member*** | **Approved:**<br>**Craig R. Richins**<br>***Team Leader*** |

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**BBC.2** - Contractor budgeting and resource assignment procedures include a process to ensure the application of balanced priorities. Resources are allocated to address safety, programmatic, and operational considerations. Protecting the public, workers, and environment is a priority whenever activities are planned and performed. (CE I/II-2, CE I/II-6, CE I/II-8)

## Criteria

1. The prioritization and allocation process clearly addresses both ES&H and programmatic needs. The process involves line management input and approval of the results.

2. Priorities include commitments and agreements to DOE as well as to stakeholders.

3. Contractor procedures allow for adequate analysis of hazards associated with the work being planned.

4. Contractor procedures for allocating resources include provisions for implementation of hazard controls for tasks being funded.

5. Resource allocations reflect the tailored hazard controls.

6. The incentive and performance fee structure promotes balanced priorities.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing requirements for application of balanced priorities (safety, programmatic, operational considerations) in the establishment of missions, tasks, and activities.

- Review representative samples of completed records.

- Review Hanford Site documents, manuals of practice, and procedures that describe the budget and planning process and those documents that address the assignment of budget priority. Also review the procedures for their development.

- Review DOE procedures used for identification of mission requirements, balancing of resource allocations, and approval of contractor plans in the work authorization documents.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

- Verify that the budget process allows adequate resources for standards selection, hazard controls, and work authorization processes to support work planning and scope definition.

- Select several mission tasks from the DOE requirements and the outyear planning documents to determine if the contractor adequately address the assignment of resources with balanced priorities.

- Select several current year authorizations and review selected funded tasks at the individual task level to verify balanced priorities.

- Review applicable performance incentives to ensure application of balanced priorities.

- Review previous self-assessments.

**Interviews**

- Interview contractor personnel responsible for managing the budget process to determine their understanding of the priority for assigning resources.

- Interview line managers responsible for DOE mission accomplishment.

- Interview the ES&H manager to determine the process used for integration of safety into mission tasks. Interview selected managers at each level of the Fluor Daniel Hanford Company organization to determine their understanding of the allocation of resources with appropriate priority.

- Interview selected personnel responsible for developing and prioritizing missions, tasks, and activities.

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the contractor.

**Record Review**

- 9951526/99-PID-034, *Contract No. DE-AC06-96RL13200 – Hanford Mission Planning Guidance (MPG) for FY 2001 – Amendment #2*, Correspondence from J. C. Hall, RL, to R. D. Hanson, FDH, March 6, 1999
- 9954322A/99-PID-105/LMHC, *Contract No. DE-AC06-96RL13200, Fiscal Year (FY) 2000 Baseline Updating Guidance for Multi-Year Work Plans (BUG-MYWP)*, Letter from K. A. Klein, DOE-RL, and R. T. French, Office of River Protection, to R. D. Hanson, FDH, June 21, 1999

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

- DOE P 450.4, *Safety Management System Policy*, October 15, 1996
- DOE/RL-99-72, *Integrated Safety Management System Phase 1 Verification*, Final Report, October 28, 1999
- FDH DE-AC06-RL13200, Mod 086, DEAR 970.5204-2, *Integration of Environmental Safety, and Health into Work Planning and Execution*, October 1, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 3.1, "General Safety Rules," Rev. 7, TBD
  - Section 3.24, "Plutonium Finishing Plant and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.8, "Baseline Requirements," Rev. 1, September 18, 1998
- HNF-3617, *Integrated Project Management Plan (IPMP) for the PFP Stabilization & Deactivation Project*, Rev. 0, April 28, 1999
- HNF-MP-001, *Management and Integration Plan*, Rev. 1, May 16, 1997
- HNF-MP-003, *Integrated Environmental safety and Health Management System Plan*, Rev. 2, September 21, 1999
- HNF-PRO-074, *Safety Responsibilities*, Rev. 1, July 8, 1997
- HNF-PRO-079, *Job Hazard Analysis*, Rev. 4, September 9, 1999
- HNF-PRO-1819, *PHMC Engineering Requirements*, Rev. 3, June 22, 1999
- HNF-PRO-3468, *Stop Work Responsibility*, Rev. 1, October 22, 1999
- HNF-PRO-533, *Change Control*, Rev. 0, February 26, 1998
- Performance Incentive Number FDH-Comprehensive, *Comprehensive Performance*, October 28, 1999
- Performance Incentive Number PHMC-CP-2, *Stabilize Pu*, October 28, 1999
- Performance Incentive Number PHMC-CP-2SS, *Stabilize Additional Pu*, October 28, 1999
- PFP Program Full Baseline Schedule, Computer Printout, January 14, 2000.

**Interviews Conducted**

- Assistant Manager, PFP Infrastructure Services
- Buyer, Contract Administration
- Lead, PFP Health & Safety
- Manager, PFP Acquisitions and Contracts
- Manager, PFP Baseline Control
- Manager, PFP Cost Control and Administration
- Manager, PFP Environment, Safety, Health, and Quality
- Manager, PFP Infrastructure Services
- Mechanical Engineer
- Mechanical Engineer, PFP Technical Support
- Project Cost Analyst, PFP Baseline Control
- Project Cost Analysts

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

- Senior Director, PFP Stabilization and Deactivation
- Senior Project Manager, Project Management.

**Observations**

None.

**Discussion of Results**

**Criterion 1:** *The prioritization and allocation process clearly addresses both ES&H and programmatic needs. The process involves line management input and approval of the results.*

Prioritization has been established by policies and procedures including the Integrated Priority List (IPL) and Job Control System (JCS). PFP procedures align with DOE direction and require that all activities be processed through the JCS as a primary management tool for PFP's systems engineering approach. All activities are prioritized by applying weighted numerical criteria as they are entered into the PFP Baseline Schedule. These criteria are consistent with core functions by establishing policy, identifying scope of work, and analyzing hazards with an ultimate result of performing work safely.

Team leads or individual contributors in the line organization define potential work scopes. Each scope of work is resource-loaded by developing a Basis of Estimate (BOE) and resource loading it into the scheduling system (P3). The combined package is formatted into a unit of analysis, which is consistent with the Work Breakdown Structure functional level. This is consistent with DOE's Mission Planning Guidance in the planning years and PFP's JCS in the execution years. Line management reviews and approves the priority of the unit of analysis (work scope) through submittal of the Project Priority Lists for incorporation into the IPL annual submittal.

The current management at PFP has a good business practice for in-house publication of the five top priorities for each week. Senior management meets with PFP responsible managers to determine and provide direction for these top priorities. This process demonstrates management commitment and provides an opportunity for continuous feedback and improvement. **(BBC.2-1)** The Plan of the Day, Plan of the Week, and JCS are not linked to the top five priorities list. **(BBC.2-2)**

**Criterion 2:** *Priorities include commitments and agreements to DOE as well as to stakeholders.*

Interviews and document reviews demonstrated the priority ranking consider commitments and agreements to stakeholders. Priority considerations include Federal Facility Compliance Agreements (Tri-Party Agreement and others), laws, regulations, DOE Orders, Executive Orders, and rules. Consideration is also given to Defense Nuclear Facilities Safety Board recommendations and input by stakeholders such as the Hanford Advisory Board. The budget is reviewed by stakeholders in public hearings each year and all comments are considered.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

PFP's Program Plan approach goes beyond stakeholder expectations by initiating an accelerated plan fulfilling their responsibilities to meet stabilization and deactivation goals early. HNF-3617, *Integrated Project Management Plan (IPMP) for the PFP Stabilization & Deactivation Project*, was developed beginning in fiscal year (FY) 1998 and finalized in FY1999 for application to FY2000 activities. This approach targets 2016 as the eventual completion goal in contrast to previous expectation beyond FY2035, which ultimately supports stakeholders' goals for early cleanup.

**Criterion 3:** *Contractor procedures allow for adequate analysis of hazards associated with the work being planned.*

PFP procedures, such as HNF-3617, HNF-MP-001, and HNF-PRO-079, provide resources that adequately analyze hazards associated with planned work. The IPMP delineates the scope, management, control, baseline, and endpoint for the PFP Project. The PFP safety Authorization Basis is maintained by two primary documents, Final Safety Analysis Report and the Operational Safety Requirements. Another efficient tool used as a key element of safety is the Automated Job Hazard Analysis (AJHA). This computer-based tool screens each work activity to help the work team identify potential hazards and those activities warranting a more detailed review by a subject matter expert. This tool serves as a catch-all mechanism because it ensures that the hazard controls are not only implemented at the procedural level, but it provides the work team a chance to take one final look at the potential for hazards before performing the work assignment.

**Criterion 4:** *Contractor procedures for allocating resources include provisions for implementation of hazard controls for tasks being funded.*

PFP procedures for allocating resources include direct capabilities for ensuring that hazard controls are implemented for funded tasks. As a general rule, PFP incorporates ISMS into their work planning process per requirements in their management system. During the work planning process, safety is a key factor for deciding the prioritization of work. The plans, organization, and control systems for managing the PFP Stabilization and Deactivation Project are located in the IPMP. The facility uses this plan, the IPL, and the BOE to development a Multi-Year Work Plan. The IPMP serves as the baseline of direction that translates PFP work into subprojects. It is at the facility level that environment, safety, and health is implemented through a procedural process. The Advanced Work Authorization, AJHA, and Unreviewed Safety Question are examples of the procedural processes in place at PFP.

**Criterion 5:** *Resource allocations reflect the tailored hazard controls.*

As work scopes are developed, the AJHA is applied to each proposal. This process assesses and rates hazards within each scope of work. When the work task information is considered in accordance with the JCS procedure, tasks are prioritized. The BOE documentation directly reflects through resource loading the hazard component by including safety support, and resource loading for time, personnel, and resultant projected costs. Weighting processes within

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

the AJHA and JCS procedures provide ranking criteria that result in tailored controls as the work scope is accomplished.

**Criterion 6:** *The incentive and performance fee structure promotes balanced priorities.*

The PFP project does not have procedures regarding the incentive fee structure. The Contractor's priorities are driven by the FH contract (DE-AC06-RL13200, through Modification M090) that reflects the fee structure imposed by DOE, Richland Operations Office (RL). The flow down of the performance incentives within the Project Hanford Management Contract (PHMC) incorporates RL's balanced priorities. For FY2000, there are three performance incentives that are applicable to the PFP project. Two incentives are focused on PFP's primary mission, the stabilization of Plutonium. Incentive PHMC-CP-2 contains regular and stretch goals, while incentive FDH-CP-2SS contains superstretch goals for the primary plutonium stabilization activities. Even though it is not explicitly stated, each of these PFP-specific tasks requires that work be performed safely as contractually required through the comprehensive portion of the fee structure. The goals of the specific PFP incentives are to safely accelerate the work scope to deactivate PFP. This implies through the acceleration of work scope that the reduction of risks to public health and safety, worker health and safety, and the environment would ultimately be reached in an accelerated fashion. Therefore, this would achieve the ultimate end state of reducing safety risk and meeting ISMS goals.

The comprehensive incentive (FH-Comprehensive) explicitly incorporates protection of worker safety and health, public safety and health, and the environment through the following clauses in performance objective/measure 1, *Protection of worker safety and health, public safety and health, and the environment*. Section A of this performance objective, "Maintain Environmental Compliance," addresses protection of the environment and public health. Section B, "Implement Integrated Safety Management System (ISMS)," requires the implementation of an ISM System that adequately addresses protection of worker safety and health, public safety and health, and the environment.

**Conclusion**

Even though management and documentation supporting PFP is evolving and changing, this review has not revealed any substantial gaps in documentation incorporating balanced priorities into the budget or business systems of PFP. Documentation for resource allocation indicates that safety, programmatic, and operational considerations are incorporated into these processes.

This objective has been met.

**Strengths:**

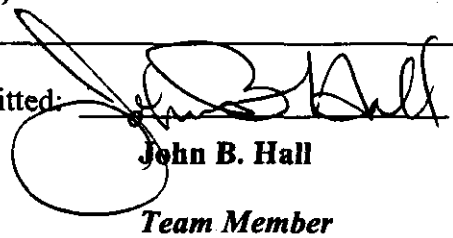
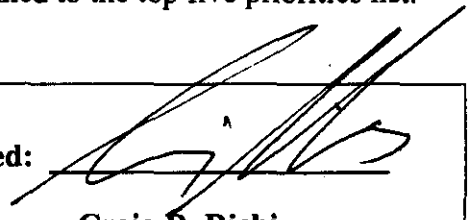
The in-house weekly publication of the five top priorities is a strength. **(BBC.2-1)**

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.2**<br>DATE: 1/26/00 |
|---|---|

**Concerns:**

The Plan of the Day, Plan of the Week, and JCS are not linked to the top five priorities list. **(BBC.2-2)**

| | |
|---|---|
| Submitted:  <br>**John B. Hall**<br>***Team Member*** | **Approved:**  <br>**Craig R. Richins**<br>***Team Leader*** |

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.3**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**BBC.3** - The contractor procedures and practices ensure that personnel who define the scope of work and allocate resources have competence that is commensurate with their assigned responsibilities. (CE I/II-8)

## Criteria

1. Contractor procedures ensure that the personnel, including line management who define, prioritize, and approve the scope of work and allocate resources, have competence that is commensurate with their assigned responsibilities.

2. Personnel who actually participate in the definition of the scope of work and allocate resources demonstrate competence to prioritize and approve work with tailored hazard controls.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing qualification, training and experience requirements for personnel responsible for defining, prioritizing, and approving scope of work and for allocation of resources.

- Review selected completed personnel training records.

- Review organizational documentation to determine the personnel positions with responsibility associated with this objective.

- Review the position description for those positions.

- Review the personnel records that identify the individual qualifications that meet the elements of the position descriptions.

- Review any training or qualification material, including Hanford Site manuals that support gaining or verifying competence to fill the positions.

### Interviews

Interview selected individuals and managers whose responsibilities include defining the scope of work and allocation of resources to determine their competence in prioritizing and approving work with tailored hazard controls.

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.3**<br>DATE: 1/26/00 |
|---|---|

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the contractor.

**Record Review**

- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Rev. 9, October 4, 1999
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Rev. 9, October 4, 1999
- HNF-MP-011, *Sitewide Qualification and Training Plan*, Rev. 1, April 6, 1999
- HNF-PRO-079, *Job Hazard Analysis*, Rev. 4, September 9, 1999
- HNF-PRO-170, *Analyzing Training Requirements*, Rev. 1, June 30, 1998
- HNF-PRO-533, *Change Control*, Rev. 0, February 26, 1998
- Job Descriptions for Project Cost Administrator/Analyst/Scheduler (Sr. Mgr., Mgr., Sr., I, II, III).

**Interviews Conducted**

- Assistant Manager, Infrastructure
- Manager, Baseline Control & Administration
- Manager, PFP Engineering
- Manager, PFP Management Infrastructure Services
- Senior Manager, PFP Baseline Control
- Senior Program Manager, PFP
- Specialist, PFP Human Resources
- Specialist, PFP Training.

**Observations**

None.

**Discussion of Results**

**Criterion 1:** *PFP Project procedures ensure that the personnel including line management who define, prioritize, and approve the scope of work and allocate resources have competence that is commensurate with the assigned responsibilities.*

Fluor Hanford (FH) and the PFP Project have procedures that ensure personnel have competence that is commensurate with their assigned responsibilities. DOE Order 5480.20A ensures the development and implementation of contractor-administered training programs. HNF-PRO-170, *Analyzing Training Requirements*, ensures that FH personnel are trained and qualified using a systematic approach to training. This systematic approach includes performing an analysis to identify requirements for developing and designing performance-based training programs and

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.3**<br>DATE: 1/26/00 |
|---|---|

courses. The FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, and FSP-PFP-5-8, *Plutonium Finishing Plant Administration* both flow out of HNF-PRO-170. FSP-PFP-1121 is driven by an outline of the development of FH training programs; this outline is referred to as a training implementation matrix (TIM). The PFP TIM (FSP-007), formerly approved by FH and DOE, Richland Operations Office (RL) was recently updated to reflect the redesigned structure of FH. It is currently going through concurrence for approval. A direct tie between HNF-PRO-170, FSP-PFP-5-8, and FSP-PFP-1121 is evident demonstrating a flow down of management requirements (DOE Order to facility-specific procedure). The PFP TIM defines and describes the application of selection, qualification, certification, and other applicable training requirements. FSP-PFP-5-8 requires the PFP Training Program to be developed, administered, and maintained in accordance with the requirements of FSP-PFP-1121.

The training office has a training program that tracks personnel training records to completion. Although the training office keeps records of all personnel training, it is the employee's manager that is charged with ensuring that the employee has the appropriate training. Personnel responsible for operating equipment, performing maintenance activities, providing support, or supervising other personnel are required to go through a continued training program. The program is structured according to the specific position needs. Employees go through continued training cycles not exceeding 2 years. Employees are reevaluated in certain types of training depending on their training needs.

The PFP has conveniently located training specialists in the field. Currently, there are two out of three of these positions filled. These training specialists are individuals that actually work in the field, but are certified to administer training to other personnel in their specific area of expertise. This aids the training office in keeping employees trained and in enhancing time management at PFP. The PFP training office selects these specialists based upon the individual's qualifications and hands-on experience. A specific example is the placement of a nuclear operator/training specialist, who has 10 years of experience, into the field. The specialist has hands-on, as well as, training development experience. The role of the training specialist is to look for vulnerabilities, immediate procedure changes, and administer training to personnel. These duties are performed in conjunction with normal assigned duties. This ensures the maintenance of his expertise. **(BBC.3-1)**

**Criterion 2:** *Personnel who actually participate in the definition of the scope of work and allocate resources demonstrate competence to prioritize and approve work with tailored hazard controls.*

PFP personnel who participate in allocating resources based on defined scope of work demonstrate competence commensurate to prioritizing and approving work with tailored hazard controls. It was not evident; however, that formal training for writing/defining work scopes is provided or encouraged. **(BBC.3-2)** PFP has established procedural processes to ensure that personnel have the tools needed to prioritize and approve work with tailored hazard controls. The Job Control System (FSP-PFP-5-8, Section 13.4, "Work Management Process Description and Job Control System Process") and Automated Job Hazards Analysis

| FUNCTIONAL AREA: **Business, Budgets, and Contracts** | OBJECTIVE: **BBC.3**<br>DATE: 1/26/00 |
|---|---|

(HNF-PRO-079, *Job Hazard Analysis*) are used to channel the chain of database entries for work activities. The Job Control System affords PFP the opportunity to monitor the prioritization and resource allocation of various work packages via a 90-Day Look Ahead System. A Near-Term Planning Team was formed to evaluate which work gets done in 90-day cycles. Re-prioritization of work packages and allocation of funds within the PFP project work scope follows the established procedures. The facility implements Environment, Safety, & Heath input to job activities through the Automated Job Hazards Analysis, Advanced Work Authorization, and Baseline Change Control (HNF-PRO-533, *Change Control*, Rev. 0) processes. This ensures the inclusion and prioritization of safety-related work, thereby evaluating risk ranking of work activities.

**Conclusion**

The ability of PFP personnel responsible for defining, prioritizing, and approving work scope and allocating resources is commensurate with the required competency levels. These job responsibilities are conducted in accordance with established procedures and are consistent with the BBC.3 objective. The work planning processes are understood by personnel and used. The responsibility for ensuring that personnel maintain an adequate level of training falls on the employee's manager, as opposed to the individual employee.

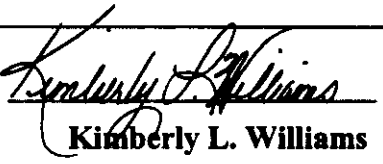
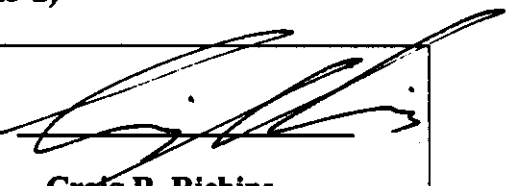
This objective has been met.

**Strengths:**

The PFP has training specialists located in the field (facility). **(BBC.3-1)**

**Concerns:**

Training for writing (defining) work scopes is lacking. **(BBC.3-2)**

| | |
|---|---|
| Submitted:  <br>**Kimberly L. Williams**<br>***Team Member*** | **Approved:**  <br>**Craig R. Richins**<br>***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**HAZ.1** - The full spectrum of hazards associated with the scope of work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. (CE I/II-3, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms are in place and used by personnel to ensure that the full spectrum of hazards associated with the work throughout the facility have been identified, analyzed and categorized, and they reflect accepted rigor and methodology. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensures personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. These mechanisms ensure direction and approval from line management and integration of the requirements.

2. Procedures and/or mechanisms are in place and used by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

## Approach

- Review pertinent Hanford Site procedures that govern the identification of hazards throughout the facility and those that describe the roles and responsibilities of personnel assigned to identify and analyze hazards.

- Review representative samples of completed records.

- Interview selected personnel responsible for identification and analysis of hazards. Personnel interviews should be of sufficient depth to verify the competence of those personnel to execute their responsibilities.

### Record Review

- The contractor's procedures for identifying, analyzing, and categorizing hazards at both the site and at the facility level.

- Determine that these procedures are adequate to address the hazards associated with the work and operations.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

- Review the documents that govern the conduct, review, and approval of facility or activity hazard analysis and documentation such as Process Hazards Analysis (PHA), Preliminary Hazards Review (PHR), Preliminary Safety Analysis Report (PSAR), job hazards analysis (JHA), and Work Control Permits (WCP).

- The approved or proposed hazard analysis documentation for selected facilities and activities to verify consistency and compliance with contractor procedures and mechanisms, as well as compliance with DOE review and approval mechanisms.

- Contractor procedures for identification and designation of standards that become contract requirements and assess their adequacy.

- Verify that these records conform to the hazard analysis requirements.

- Coordinate the review of work-related documents such as AJHAs, and JCSs with the OP and SME functional area reviewers.

- The procedures established to ensure that the appropriate requirements are included in the contract as specified in List A or List B.

- Contractor organization documentation to identify personnel including all levels of management to whom this objective applies.

- The position descriptions for those personnel to determine the required competencies.

- Corporate/site training manuals and qualification and competency procedures.

- Selected training and qualification records for those personnel identified above to determine how the required competency has been gained, retained, and validated.

- Verify that these records conform to the hazard analysis requirements. (Coordinate the review of work-related documents, such as JHAs, and WCPs with the OP and SME functional area reviewers.)

- A sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include AAs, SARs, TSRs, HASPs, RWPs, operating procedures, etc.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

**Interviews**

- Corporate/site personnel responsible for identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements.

- Selected contractor individuals to verify their understanding of the required competencies and the degree to which they meet them.

- Personnel responsible for the identification and analysis of work hazards. For example, in nuclear facilities this should include personnel responsible for USQ determination, lock and tag preparation, procedure technical reviews, etc.

**Observations**

- Contractor activities involving the preparation, review, approval and/or maintenance of the selected set of standards and requirements.

- If possible, observe the actual preparation and field implementation of the analysis of hazards. This should include an Unreviewed Safety Question Determination, preparation of a JHA, SAR/TSR/OSR, and other Authorization Basis documents as available.

- Observe effective integration of ISMS with Enhanced Work Planning (EWP), the Environmental Management Systems (EMS), and the Voluntary Protection Program (VPP) at the activity level.

**Record Review**

- DOE/RL-99-86, *U.S. Department of Energy, Richland Operations Office, Plutonium Finishing Plant Integrated Safety Management System Phase I/II Verification Review Plan*, Volume 2, January 2000
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4, November 16, 1999
  - Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 1, October 4, 1999
  - Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
  - Section 3.3, "Criticality Safety," Rev. 12, October 4, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

- HNF-MP-003, *Integrated Environment, Safety and Health Management System Plan*, Rev. 2, September 21, 1999
- HNF-PRO-430, *Safety Analysis Program*, Rev. 1, November 16, 1999
- HNF-PRO-533, "Change Control," Rev. 0, February 26, 1999
- HNF-1950, *Price-Anderson Amendments Act (PAAA) Guidance for the Determination of Significance and Reportability of 10 CFR 835 Potential Noncompliances Price-Anderson Amendments Act, RDH Radiation Protection Interpretive Authority*," February 11, 1999
- HNF-3617, *Integrated Project Management Plan (IPMP) for the PFP Stabilization & Deactivation Project*
- *Plutonium Finishing Plant Integrated Environmental Safety and Health Management System Phase I/II Readiness Review Report*, September 14, 1999.

**Interviews Conducted**

- Authorization Basis Team Leader
- Authorization Basis Team Leader/Unreviewed Safety Question (USQ) Core Evaluator
- Deputy Manager, Infrastructure
- Environmental Team Leader
- Lead DOE PFP Facility Representative
- Manager, Engineering/Acting Environmental, Safety, Health, and Quality (ESH&Q) Manager (New Westinghouse System Management Solutions Management)
- Manager, PFP Baseline Cost Control and Administration
- Manager, Technical Support Division
- Nuclear Safety Engineer/Authorization Basis
- Operational Specialist/USQ Evaluator
- PFP Criticality Safety Representative/Authorization Basis Team Member
- Quality Assurance Team Lead/Plant Review Committee Member
- Senior DOE Facility Representative/Authorization Basis Team Member
- Technical Support Manager.

**Observations**

- Automated Job Hazard Analysis (AJHA) meeting, January 18, 2000
- PFP Project Accident Analysis Meeting – Magnesium Hydroxide and Cementation, January 19, 2000.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place and used by personnel to ensure that the full spectrum of hazards associated with the work throughout the facility have been identified, analyzed and categorized, and they reflect accepted rigor and methodology. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensures personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. These mechanisms ensure direction and approval from line management and integration of the requirements.*

PFP management and staff have constructed a system of procedures and mechanisms that adequately assure the identification and evaluation of hazards at the facility. Line management is clearly shown to be responsible for safety under these procedures, beginning with HNF-MP-003, *Integrated Environment, Safety and Health Management System Plan,* which outlines general responsibility expectations. PFP management and staff have developed their own plant-specific procedures such as FSP-PFP-5-8, *Plutonium Finishing Plant Administration,* Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Description," Rev. 1, which explicitly delineates responsibility for identification of the hazards inherent in the PFP Project.

Facility-specific procedures have been developed that require identification of hazards at each level of planning and execution of projects. Detailed procedures, such as FSP-PFP-5-8, Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, specifies the manner in which work is to be conducted and job activities controlled, while FSP-PFP-5-8, Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 1, details the manner in which new hazards are identified and analyzed. Constant awareness of the changing hazards presented by specific projects during the stabilization and deactivation of PFP is maintained by requiring rigorous and detailed use of the USQ process for each plant modification or work evolution, along with a linked AJHA process.

There is an effort underway to accomplish integration of the various procedures and requirements by establishing a "teaming" effort through a recent "redesign" restructuring of the work force. While the path forward presented to the Team appears promising, actual implementation of the process is not mature enough at this point to evaluate success or failure.

However, one area of the hazard identification and control structure of the PFP ISM procedures seems incomplete. Search of the procedures and numerous interviews with management and staff have failed to identify a documented, required procedure for assuring that newly identified hazards are prioritized in such a manner that they are carried forward to the feedback, management review, and work scope definition loops of the ISM process. **(HAZ.1-1)**

FSP-PFP-5-8, Section 13.4, Table 4, utilizes a prioritization scheme based partially on hazards, for scheduling maintenance tasks. However, that system does not directly address new hazards,

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

or hazards now determined to present more risk than previously assumed, identified through either the USQ or AJHA processes. Change control procedures are detailed in HNF-PRO-533, *Change Control*, Rev. 0, which describes the manner in which funding allocations are to be modified. This procedure contains direction in subsection 2.4, "Advance Work Authorization (AWA)" that provides an emergency method for authorizing funds for rare or unusual situations when funds should be expended before the normal change request process could be completed. One of the justifications for using this procedure is "risk factors," but no criteria are provided for applying this justification.

When questioned, PFP management stated that there was "no single procedure or requirement" that directly links discovery of new hazards to priority or funding changes, but that a "combination of procedures,"(as discussed above) leads to management review and appropriate action.

**Criterion 2:** *Procedures and/or mechanisms are in place and used by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.*

Procedures and mechanisms have recently been developed and issued at PFP that clearly establish the roles and responsibilities of various levels of the work force and management in carrying out the ISM objectives and principles. For example, FSP-PFP-5-8, Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4, establishes the responsibilities for development, implementation, and maintenance of safety basis documents and hazard analysis. This leads to development and maintenance of a comprehensive authorization basis, including the Safety Analysis Report, which clearly delineates the overall range of risks presented, for judging risks to the worker, the public, and the environment.

In addition, the PFP Project has recently developed systems and procedures that serve to further augment this definition of roles and responsibility, as well as broadening the base for identification of hazards. In particular, there is a conceptual model for more closely integrating and coordinating the work at the facility by reorganizing a portion of the work force into "teams." This effort shows promise in facilitating interchange of hazard awareness and hazard identification information, but also more clearly describes the interfaces and roles and responsibilities of each worker. However, it has not yet been fully implemented, resulting in gaps in roles and responsibilities and a lack of awareness relative to over all progress of the effort. It is not clear the all procedures needed to perform assigned functions have been developed **(HAZ.1-2)**

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.1**<br>DATE: 1/26/00 |
|---|---|

**Conclusion**

PFP has in place an ISMS that includes workable plans and procedures for identifying, analyzing, and categorizing hazards. The documentation to support the program is currently in place, and acceptably meets DOE expectations. The PFP "Redesign Initiative" has resulted in changes to organizations, procedures and processes but has not progressed sufficiently to allow the Team to proceed to Phase II of the ISMS Verification process.

This objective, from a Phase I perspective, has been met.

**Strengths:**

None.

**Concerns:**

- The PFP procedures lack clearly defined requirements, criteria, and procedures linking the discovery and analysis of newly discovered risks to the administrative and management review and decision-making processes utilized in establishing or changing work or funding priorities. **(HAZ.1-1)**

- The Redesign Initiative is not mature in its development, resulting in unclear roles and responsibilities, procedure gaps and a general lack of awareness of the goals, objectives, methodologies, and status of the effort. **(HAZ.1-2)**

| | |
|---|---|
| **Submitted:**  | **Approved:**  |
| **Richard P. Grill** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**HAZ.2** - An integrated process has been established and is used to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensures adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE I/II-4, CE I/II-5)

## Criteria

1. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce and to effectively and accurately implement all aspects of the Authorization Basis.

2. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and used by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

3. Standards and requirements are appropriately tailored to the hazards.

4. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements (AA).

## Approach

- Review pertinent Hanford Site procedures that 1) govern the approval and establishment of facility authorization basis and 2) subsequently maintain and implement identified controls.

- Review a representative sample of approved current authorization basis documents.

- Interview selected personnel responsible for development, review, approval, implementation and configuration control of authorization basis documents. Personnel interviews should be of sufficient depth to verify that all aspects of the authorization bases are effectively and accurately implemented.

### Record Review

- The approved or proposed hazard analysis documentation for selected facilities and activities to verify consistency and compliance with contractor procedures and mechanisms, as well as compliance with DOE review and approval mechanisms.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

- Contractor procedures for identification and designation of standards that are incorporated into facility Authorization Basis documentation and assess their adequacy.

- The approach to tailoring the selection of standards and requirements to the identified hazards and maintenance of an appropriate set of standards over time.

- The processes established to develop, approve, and maintain authorization protocols and AAs as applicable.

- The documents that govern the conduct, review, and approval of facility or activity hazard analysis and documentation such as PHAs, PHRs, PSARs, JHAs, and WCPs.

- Procedures and mechanisms to ensure accurate and effective implementation of Authorization Basis documentation. Sample actual implementing documentation. (Coordinate the review of work-related documents such as RWPs and operating procedures with the OP and SME functional area reviewers.)

**Interviews**

- Contractor site/corporate personnel responsible for the selection and approval of standards.

- Determine the understanding and compliance with the procedures for identification, tailoring, review, submittal, approval, and maintenance of the set of standards.

- Personnel responsible for the identification and analysis of work hazards. For example, in nuclear facilities this should include personnel responsible for USQ determination, lock and tag preparation, procedure technical reviews, etc.

- Personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR preparations and implementation, ALARA review requirements, PHA activities, etc.

**Observations**

- Contractor activities that are scheduled to develop, approve, or maintain authorization protocols and Authorization Agreements, as applicable.

- If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination, preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

- Observe the actual processes development, review, approval, and implementation of SAR/TSR, AA, and other Authorization Basis documents as available.

**Record Review**

- DE-AC06-96RL13200, Contract Sections H, Special Contract Requirements, I, Contract Clauses, and J, Exhibits and Other Attachments, August 6, 1996
- DOE-RL: 99-TPD-023, *Contract No. DE-AC06-96RL13200 – Plutonium Finishing Plant (PFP) Standards/Requirements Identification Document (S/RID), HNF-SD-MP-SRID-003*, Letter, December 3, 1998
- 995567A/99-TPD-321, *Contract No. DE-AC06-96RL13200 – Issuance of the Plutonium Finishing Plant (PFP) Authorization Agreement (AA)*, Letter from K. A. Klein, DOE-RL, to R. D. Hanson, FDH, August 12, 1999
- FSP-PFP-5.8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 21, October 4, 1999
  - Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4, November 16, 1999
  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 3.24, "PFP Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.3, "Operational Safety Requirement Compliance," Rev. 5, July 2, 1999
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
  - Section 13.5, "Processing PFP Technical Documents," Rev. 14, January 6, 2000
  - Section 13.6, "Technical Document Control System," Rev. 4, August 30, 1999
  - Section 13.7, "PFP Technical Procedure Use Policy," Rev. 2, August 30, 1999HNF-PRO-062, *Identifying and Resolving Unreviewed Safety Questions*, Rev. 0, July 1, 1997
- HNF-PRO-265, *Standards/Requirements Identification Document Process*, Rev. 3, April 12, 1999
- HNF-PRO-2701, *Authorization Envelope and Authorization Agreement*, Rev. 0, July 29,1999
- HNF-PRO-700, *Safety Analysis and Technical Safety Requirements*, Rev. 2, December 2, 1999
- HNF-PRO-701, *Safety Analysis Process, Existing Facilities*, Rev. 1, December 2, 1999
- HNF-PRO-702, *Safety Analysis Process, Facility Change or Modification*, Rev. 1, December 3, 1999
- HNF-PRO-703, *Safety Analysis Process, New Construction Project*, Rev. 1, December 7, 1999
- HNF-PRO-704, *Hazard and Accident Analysis Process*, Rev. 1, September 9, 1999
- HNF-PRO-705, *Safety Basis Planning, Documentation, Review, and Approval*, Rev. 2, November 5, 1999.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

**Interviews Conducted**

- DOE Senior Technical Representative, PFP
- Lead, Authorization Basis (AB) Team
- Lead, Environmental Team
- Manager, Baseline Cost Control and Administration
- Manager, Engineering (PFP)
- Manager, Engineering (Westinghouse System Management Solutions)
- Nuclear Safety Engineer (Final Safety Analysis Report [FSAR]), AB Group (2)
- Operations Specialist, Operational Safety Requirement (OSR) Coordinator
- Plant Review Committee Secretary, Unreviewed Safety Question (USQ) Coordinator
- Standards/Requirements Identification Documents (S/RID) Coordinator.

**Observations**

PFP Projects Accident Analysis Meeting - Magnesium Hydroxide and Cementation, January 19, 2000.

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place to develop, review, approve, and maintain current all elements of the facility Authorization Basis documentation with an integrated workforce and to effectively and accurately implement all aspects of the Authorization Basis.*

All PFP AB documents are listed in the approved Authorization Agreement (99-TPD-321). These documents are also listed in Appendix A of FSP-PFP-5.8, *Plutonium Finishing Plant Administration*, Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 21, and the Authorization Envelope procedure FSP-PFP-5.8, "PFP Authorization Envelope," Rev. 20. DOE has approved the documents listed in a series of letters. The list includes 9 AB documents, 2 Requirements Basis documents, and 10 Environmental Program documents. There is a robust review system established to identify impacts to any of the AB initiated by any proposed modification to the facility configuration or procedures.

The PFP ISM System Description FSP-PFP-5.8, Section 3.24, "PFP Stabilization and Deactivation Project Integrated Safety Management Program System Description," Rev. 1, provides a crosswalk of the relevant site procedures to ISMS Core Functions for both the facility and activity levels. These are contained in Appendices A and B of FSP-PFP-5-8, Section 3.24 and are considered, upon review, to be complete for hazard controls. The principal procedures involved are those listed in the Records Review section of this Form 1.

The USQ process noted above prescribes a review of any proposed modification to PFP configuration or procedures for compliance with the AB. The same procedure describes a

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

limited set of documents/changes excluded from explicit review. This procedure specifies roles, responsibilities, and qualification requirements for USQ evaluators and core personnel who become qualified to review completed USQs. The USQ process has been determined by the contractor to be rigorous but cumbersome and has identified an improvement action scheduled for March 2000 completion. The PFP AB Team has collected information on best practices from both onsite and offsite facilities and is committed to USQ process improvement, scheduled for completion by March 2000. **(HAZ.2-3)**

The FSAR maintenance procedure (FSP-PFP-5.8, Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4) describes the development, update and maintenance processes, including individual responsibilities, of the FSAR portion of the AB.

The OSR compliance procedure (FSP-PFP-5.8, Section 13.3, "Operational Safety Requirements Compliance," Rev. 5) establishes administrative controls necessary to ensure compliance with the OSR part of the AB. It also addresses roles and responsibilities of those overseeing the processes.

The facility Authorization Envelope procedure (FSP-PFP-5.8, Section 2.39, Rev. 2) identifies, documents, and prescribes maintenance for the Authorization Envelope, of which the AB is a part.

All of these AB-related procedures and controls provide for feedback and communications so that work may be reviewed, approved, and effectively accomplished.

The various redundant processes described above are used to ensure compliance with the AB is considered a strength. **(HAZ.2-1)**

The Plant Review Committee oversees operations within the approved AB and ensures correct implementation of all procedures related to development, review, approval, and maintenance of the AB. The only documentation that describes this committee is found in paragraphs 4.3.3 and 4.4 of the USQ process. The implementation and use of the Plant Review Committee is a good practice; however, there is no formal charter for the committee. **(HAZ.2-4)**

**Criterion 2:** *Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and used by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.*

PFP has procedures and mechanisms (primarily, the HNF-PRO-700 through HNF-PRO-705 series and the FSP-PFP-5.8 sections cited in Criterion 1) that are designed to ensure the AB is fully identified, documented, and maintained so operations are conducted within the PFP Authorization Envelope. At the activity level, the FSP-PFP-5.8, Sections 6.0, "Work Control", and 13.0, "Administration" procedures govern work planning and execution such that deviations must be both rigorously reviewed and approved by line management prior to work being

performed. Workers are involved in each step of this process that also provides for feedback through the change control system. The system as implemented is effective in preventing violations of limits, requirements, and standards. DOE, Richland Operations Office (RL) is also in the approval chain and controls are invoked through established work control processes.

The Automated Job Hazard Analysis (AJHA) program has been cited by the contractor as tool that assists workers in verifying that operations are in compliance with the ABs and Authorization Envelope. The AJHA is used in conjunction with procedures FSP-PFP-5.8, Sections 13.4, "Work Management Process Description and Job Control System Process," and 13.5, "Processing PFP Technical Documents." Those procedures reviewed in accordance with this criterion (see above) were verified to ensure that line management is responsible for developing approved safety bases and overseeing effective implementation that includes workers as part of the planning, development, and implementation process.

**Criterion 3:** *Standards and requirements are appropriately tailored to the hazards.*

The Contract DE-AC06-96RL13200 provides for the use of S/RIDs in lieu of environment, safety, and health clauses in section H.14, "Laws, Regulations, and DOE Directives." In paragraph C, S/RIDs and work smart standards are permitted to supersede ISMS List B requirements. These requirements are found in Section J, Appendix C, "DOE Directives," which also stipulates that "Unless specifically non-applicable by its terms, the actual applicability of given Directives to a specific facility or work activity/project will be determined through the Standards/Requirements Inventory Document (S/RID) process, as approved by the appropriate DOE authority." The most current versions of S/RIDs are found on the Hanford Local Area Network as part of the START menu under PROGRAMS in a database described as, Database for Requirement & Assessment Management.

Standards and requirements are established through the S/RID process, procedure HNF-PRO-265, *Standards/Requirements Identification Document Process*, Rev. 3, for both the contract and facility levels. This process encourages individual projects and programs to develop their site-specific procedures, but does not preclude this procedure from use. PFP has decided to use the HNF-PRO-265 procedure, which does address tailoring requirements to hazards and specifies roles and responsibilities of implementing personnel. The process utilizes subject matter experts in 18 of 20 established and approved areas to identify, verify, and validate that the S/RIDs are accurate and complete. The remaining two elements are exempted and include Environmental Restoration and Decontamination & Decommissioning. The mechanisms employed (i.e., the tie-in of AB, Authorization Agreement, Authorization Envelope and their procedures to the approved S/RIDs) result in a set of standards/requirements tailored specifically to the hazards of the facility.

Upon approval, assessment processes described HNF-PRO-265 are designed to identify errors and verify completeness. Assessment reports are formally generated in response to a prescriptive process to demonstrate both compliance and completeness. The procedure also contains a disclaimer that regulations omitted from the S/RID are still enforceable requirements despite

inadvertent omission. The assessment reports are disseminated by approval letter and are quite voluminous; therefore, the team members reviewed only a small sample of the assessment documentation.

An area of concern is that the annual review of the approved S/RID, scheduled for December 1999, is only partially complete, although no S/RIDs are considered to be outdated. **(HAZ.2-5)**

**Criterion 4:** *Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.*

The PFP Authorization Agreement was approved in August 1999. Site and facility procedures (HNF-PRO-2701 and FSP-PFP-5.8, Section 2.39) governing the development and review of these documents (i.e.; AB elements, S/RIDs elements, and Environmental elements) prescribe maintenance and compliance with each element contained in the agreement. The Authorization Agreement is established on an annual review schedule. An approved Authorization Envelope, with the above-listed procedures is used to ensure the facility AB is also maintained and consistent with the ISMS. A trail of implementing procedures is defined in the Authorization Envelope, while the Authorization Agreement is focused on definition of the AB documentation and related procedures.

Consultation and collaboration with RL has been cited as being responsible for expeditious approval of the Authorization Agreement and is considered to be a strength. **(HAZ.2-2)**

**Conclusion**

This objective has been met.

**Strengths:**

- The redundant processes used to assure that any/all proposed changes to the PFP AB documents are rigorously reviewed and remain in compliance is a strength. **(HAZ.2-1)**

- Consultation and collaboration with RL has resulted in expeditious approval of the Authorization Agreement. **(HAZ.2-2)**

## PFP PROJECT ISMSV-I ASSESSMENT FORM

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.2**<br>DATE: 1/26/00 |
|---|---|

**Concerns:**

- The USQ process has been identified by site reviews to be rigorous but cumbersome. **(HAZ.2-3)**
- The Plant Review Committee does not have a formal charter. **(HAZ.2-4)**
- The annual S/RID review (due December 1999) was not completed on schedule. **(HAZ.2-5)**

| | |
|---|---|
| **Submitted:** FOR | **Approved:** |
| **Henry (Hank) P. Himpler** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**HAZ.3** - Contractor procedures ensure that contractor personnel responsible for analyzing the hazards and developing, reviewing, or implementing the controls, have competence that is commensurate with their responsibilities. Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. (CE I/II-8)

## Criteria

1. Contractor procedures have clearly defined roles and responsibilities for personnel assigned to oversee, review, approve the analysis of hazards, and establish controls associated with facilities and activities.

2. Contractor procedures require that personnel responsible for analyzing hazards and identification of adequate controls have competence that is commensurate with their responsibilities.

## Approach

- Review pertinent contractor procedures that define roles and responsibilities and identify personnel assigned responsibility for overseeing and/or reviewing activities, or those responsible for implementing hazards mitigation and control functions.

- Review position descriptions for those personnel to determine the required competencies.

- Review site and facility training manuals and qualification and competency procedures.

- Review selected training and qualification records for those personnel identified above to determine how the required competency has been gained, retained, and validated.

### Record Review

- Review procedures that establish and define roles and responsibilities to identify those personnel responsible for oversight and/or reviewing activities and those responsible for implementing hazards mitigation and control functions.

- Review appropriate position descriptions to verify both inclusion and adequacy of core competencies.

- Review site and facility training manuals, lesson plans, and related documentation.

- Select and review samples of personnel training and qualification records.

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

**Interviews**

- Contractor personnel responsible for the oversight, review, or implementation of controls.
- Contractor personnel who are assigned to oversee, review, and approve the analysis of hazards, and establish controls associated with facilities and activities.
- Facility training organization managers and trainers.

**Observations**

There are no recommended observations for this CRAD.

**Record Review**

- *Document Approval Authorization,* Interoffice Correspondence from S. E. Zeller, BWHC, to Distribution, January 4, 2000
- FSP-PFP-0848, *PFP Facility Engineering Directives*, Section 1.16, "Engineering Design File," Rev. 5, July 2, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1
  - Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 21, October 4, 1999
  - Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4, November 16, 1999
  - Section 3.3, "Criticality Safety," Rev. 12, October 4, 1999
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 2.3, "Training Program Administration," Rev. 9, December 9, 1998
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 2
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19 Change 0, January 5, 2000
  - Section 13.5, "Processing PFP Documents," Rev. 14 Change 1, January 6, 2000
  - Section 15.1, "Quality Assurance Program Plan," Rev. 3, October 4, 1999
  - Section 15.2, "Nonconforming Item Reporting and Control," Rev. 1, November 11, 1998
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*
  - Chapter 13.0, "Unreviewed Safety Question Evaluator (USQE) Training Program, Rev. 2, October 4, 1999
  - Chapter 11.0, "Person-in-Charge Training Program, Rev. 5, October 4, 1999
  - Chapter 9.0, "Engineering Training Program," Rev. 5, October 4, 1999
  - Chapter 15.0, "Quality Assurance Training, Qualification, and Certification Program," Rev. 4, October 4, 1999
  - Chapter 18.0, "Instructor and Support Staff Training Program," Rev. 3, October 4, 1999
- HNF-PRO-1819, *PHMC Engineering Requirements,* Rev. 3, June 22, 1999
- HNF-PRO-186, *Preparing A Statement of Work For Services,* Rev. 2, September 8, 1999

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

- HNF-PRO-233, *Review and Approval of Documents,* Rev. 0, September 30, 1997
- HNF-PRO-263, *Qualification and Certification of Inspection and Test Personnel*, Rev. 3, December 21, 1999
- HNF-PRO-268, *Control of Purchased Items and Services*, Rev. 5, October 19, 1999
- Position Descriptions of the Criticality Safety Representative, Quality Assurance Engineer, Quality Assurance Technician
- ZAP-000-002, *PFP Configuration Management Plan,* Rev. B, July 8, 1999.

**Interviews Conducted**

- Contract Administrator, Contracts and Procurement
- Criticality Safety Engineer, Authorization Basis Team
- Criticality Safety Representative, Authorization Basis Team
- Manager, Contracts and Procurement
- Manager, PFP Baseline Control
- Manager, PFP Technical Support
- Manager, Training Team
- Nuclear Safety Engineer, Authorization Basis Team
- Operations Specialist, Authorization Basis Team
- Project Cost Analyst, Project Business Management
- Safety Engineer, Authorization Basis Team
- Team Lead, Quality Team
- Team Lead, Authorization Basis Team
- Training Subject Matter Expert (SME), Training Team
- Work Control Coordinator, Near-Term Planning.

**Observations**

None.

**Discussion of Results**

**Criterion 1:** *Contractor procedures have clearly defined roles and responsibilities for personnel assigned to oversee, review, approve the analysis of hazards, and establish controls associated with facilities and activities.*

All personnel interviewed (Authorization Basis Team, Work Control SME, Criticality Safety Representative, Criticality Safety Engineer, Training SMEs, Quality Assurance SME, and Configuration Management SME) have clearly defined roles and responsibilities in regard to overseeing, reviewing, approving the analysis of hazards, and establishing controls associated with facilities and activities. The roles and responsibilities of PFP personnel in the Authorization Basis Team are defined in FSP-PFP-5-9, *Plutonium Finishing Plant Administration*, Volume 1,

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 21, and Section 2.34, "Final Safety Analysis Report Revisions," Rev. 4.

The roles and responsibilities of the work control coordinator are defined in FSP-PFP-5-8, Volume 2, Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, and Section 13.5, "Processing PFP Documents," Rev. 14, Change 1.

The roles and responsibilities of the Criticality Safety Representative and Criticality Safety Engineer are defined in FSP-PFP-5-8, Volume 1, Section 3.3, "Criticality Safety," Rev. 12.

The roles and responsibilities of the Training SME are defined FSP-PFP-5-8, Volume 1, Section 2.3, "Training Program Administration," Rev. 9.

The PFP Training Team also teaches the "Stop Work Authority" of PFP personnel in Training Course # 200075, PFP Procedure Compliance. The Stop Work Authority is defined in FSP-PFP-5-8, Volume 1, Section 1.1, "Safety Policy," Rev. 9.

The roles and responsibilities of the Quality Assurance SMEs are defined in the following procedures:

- FSP-PFP-5-8, Volume 1, Section 2.23, Rev. 21
- FSP-PFP-5-8, Volume 2, Section 15.1, "Quality Assurance Program Plan," Rev. 3
- FSP-PFP-5-8, Volume 2, Section 15.2, "Nonconforming Item Reporting and Control," Rev. 1
- FDH Interoffice Correspondence, *Document Approval Authorization*, Memorandum from S. E. Zeller, BWHC to Distribution, January 4, 2000. This memo identifies the individual assignments and responsibilities of the Quality Assurance (QA) Team personnel.

The roles and responsibilities of the Configuration Management SMEs are defined in the following procedures:

- HNF-PRO-1819, *PHMC Engineering Requirements*, Rev. 3
- HNF-PRO-233, *Review and Approval of Documents*, Rev. 0
- ZAP-000-002, *PFP Configuration Management Plan*, Rev. B
- FSP-PFP-0848, *PFP Facility Engineering Directives*, Section 1.16, "Engineering Design File," Rev. 5
- FSP-PFP-5-8, Volume 2, Section 13.4, Rev. 19.

Position descriptions were also reviewed to determine the required competencies to do the job. Some SMEs that were reviewed have position descriptions in place that identify the required competencies (entry-level education, experience and/or training requirements). The other SMEs (Unreviewed Safety Question [USQ], Operational Safety Requirements [OSR], Work Control,

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

Criticality Safety Engineer, and Configuration Management SMEs) position descriptions are not documented. **(HAZ.3-1)**

**Criterion 2:** *Contractor procedures require that personnel responsible for analyzing hazards and identification of adequate controls have competence that is commensurate with their responsibilities.*

Contractor procedures are in place to ensure that the personnel who are responsible for analyzing hazards and identification of adequate controls have competence that is commensurate with their responsibilities. The following are the qualification programs of the personnel who are responsible for analyzing hazards and identification of controls:

- The personnel in the Authorization Basis Team are qualified in Training Course #200630, PFP Unreviewed Safety Question Evaluators under FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Chapter 13.0, "Unreviewed Safety Question Evaluator (USQE) Training Program," Rev. 2.

- The Work Control Coordinator is qualified and certified in Training Course #200550, PFP Person-In-Charge under FSP-PFP-1121, Section 11.0, "Person-in-Charge Training Program," Rev. 5.

- The Criticality Safety Representative is qualified and certified in Training Course #202212, Criticality Safety Representative under FSP-PFP-1121, Section 9.0, "Engineering Training Program," Rev. 5.

- The Criticality Safety Engineer is qualified in Training Course #202214, PFP Criticality Safety Engineer Checklist under FSP-PFP-1121, Section 9.0, Rev. 5.

- The QA personnel assigned to PFP are qualified and certified in HNF-PRO-263, *Qualification and Certification of Inspection and Test Personnel*, Rev. 3, and also the PFP-specific requirements in FSP-PFP-1121, Section 15.0, "Quality Assurance Training, Qualification, and Certification Program," Rev. 4. Two personnel in the QA Team are also qualified USQ Evaluators under the FSP-PFP-1121, Section 13.0, "Unreviewed Safety Question Evaluator (USQE) Training Program," Rev. 2.

- The Training SMEs in the Training Team are qualified under FSP-PFP-1121, Section 18.0, "Instructor and Support Staff Training Program," Rev. 3.

- The Configuration Management SME's qualification program to maintain proficiency in their assigned systems is not defined in a procedure. **(HAZ.3-2)**

Contractor procedures are also in place to ensure that personnel from outside of PFP (e.g., Fluor Federal Services personnel, etc.) have the necessary qualification to analyze hazards and identify

| FUNCTIONAL AREA: **Hazards Identification and Standard Selection** | OBJECTIVE: **HAZ.3**<br>DATE: 1/26/00 |
|---|---|

controls at PFP. The requirements to ensure that the outside personnel performing work at PFP are qualified are contained in the following procedures:

- HNF-PRO-186, *Preparing A Statement of Work for Services,* Rev. 2
- HNF-PRO-268, *Control of Purchased Items and Services*, Rev. 5.

**Conclusion**

This objective has been met.

**Strengths:**

None.

**Concerns:**

- Some SMEs that were reviewed have position descriptions in place and the required competencies (entry-level education, experience and/or training requirements) to do the job are identified in the position descriptions that were reviewed. The other SMEs (USQ, OSR, Work Control, Criticality Safety Engineer, and Configuration Management SMEs) position descriptions are not documented. **(HAZ.3-1)**

- The Configuration Management SMEs qualification program to maintain their proficiency in their assigned systems is not defined in a procedure. **(HAZ.3-2)**

| | |
|---|---|
| **Submitted:** R S Ollero | **Approved:** |
| **Rudy S. Ollero** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**SME.1** - Within the Industrial Hygiene and Safety and Fire Protection areas, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Industrial Hygiene and Safety and Fire Protection areas, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas contain clear roles and responsibilities. Industrial Hygiene and Safety and Fire Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that within the subject area, feedback and continuous improvement occur.

## Approach

- Review the applicable HNF-PRO series and PFP procedures and selected records that define the activities and interactions for these activities.

- Assess the adequacy of the documents to meet the criteria and determine that the individual subject areas are effectively integrated into the facility or activity procedures.

- Review any lessons learned that provide an opportunity to assess that lessons learned have been effectively used within the subject areas.

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

- Review personnel training records in the subject area to determine that they meet competency.

- Interview personnel and responsible managers in the subject areas assigned. Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview personnel assigned to the subject areas to assess the level of competence.

- Observe events such as the development of procedures, development of hazards analyses (e.g., RWP or JHA) or the approval process for individual work items, which includes interactions with personnel of the subject areas.

**Record Review**

- Review the manuals of practice and selected records that define the procedures and interactions required for Industrial Hygiene and Safety and Fire Protection at the facility or activity.

- Assess the adequacy of the documents to meet the criteria above and determine that the Industrial Hygiene and Safety and Fire Protection are effectively integrated into facility and activity-level procedures.

- Review selected lessons learned to assess that lessons learned have been effectively used within the Industrial Hygiene and Safety and Fire Protection areas.

- Review training records of personnel in the Industrial Hygiene and Safety and Fire Protection areas to determine if they meet competency standards.

**Interviews**

- Interview personnel and responsible managers assigned to the Industrial Hygiene and Safety areas to assess their level of competence.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

**Observations**

- Observe events such as the development of a procedure, development of a hazards analysis such as an AJHA, or the approval process for an individual work item, which includes

interactions with personnel in the subject area.

- Observe field conditions and work performed to validate that work as planned is executable and meets established requirements. Interview appropriate personnel to ensure they believe this is true.

**Record Review**

- B&W Hanford Company Zero Accident Council Charter
- Blank Automatic Job Hazard Analysis (AJHA) Checklist
- Blank PFP Pre-Job Briefing Checklist
- DI-PFPSafety-004-0, *PFP Safety Desk Instruction, Industrial Hygiene Monitoring Forms*, May 25, 1999
- DI-PFPSafety-005-00, *PFP Safety Desk Instruction, Safety Inspections*, June 14, 1999
- DI-PFPSafety-007-0, *PFP Safety Desk Instruction, PFP Health and Safety Team Risk Ranking and Inspection Frequencies' Determinations for PFP Complex*, Rev. 0, January 3, 2000
- DI-PFPSafety-008, *PFP Safety Desk Instruction, PFP Health and Safety Team Inspections*, Rev. 0, January 3, 2000
- DYN-9959067 A1, *Request for Interpretation of HNF-PRO-351, "Fire Protection System Testing/Inspection and Maintenance*, Memorandum from the Hanford Fire Marshal to C. T. Sadanaga, FDH, January 6, 2000
- FDH-9959067, *Request for Interpretation*, Memorandum from FDH, to R. E. Jordan, Hanford Fire Marshal, December 13, 1999
- FSP-PFP-0263, *Building Emergency Plan for Plutonium Finishing Plan Complex*, Rev. 9, November 3, 1999
- FSP-PFP-0760, *Authorization Testing of the Emergency Response Organization for PFP*, Rev. 11, September 30, 1999
- FSP-PFP-0821, *PFP Conduct of Operations*, Sections 1-22
- FSP-PFP-1054, *Plutonium Finishing Plant Emergency Response Guides*, Rev. 9, October 15, 1999
- FSP-PFP-1228, *Personnel Accountability System*, Rev. 1, October 28, 1999
- FSP-PFP-445, *Design Verification Requirements*, Rev. 0, August 18, 1997
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 1.13, "Chemical Discharge Control and Hazardous Material Spill Reporting," Rev. 5, October 4, 1999
  - Section 1.14, "Managing Lessons Learned," Rev. 2, October 4, 1999
  - Section 1.21, "Control of 'On Mask-Chemical' Posting and Removal," Rev. 5, October 4, 1999
  - Section 2.27, "Senior Supervisory Watch Program," Rev. 8, October 4, 1999

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 3.7, "Fire Protection Systems," Rev. 9, October 4, 1999
  - Section 3.11, "Control of Flammable Gases," Rev. 7, October 4, 1999
  - Section 3.13, "Written Hazard Communication Program," Rev. 8, October 4, 1999
  - Section 3.16, "Deactivation/Reactivation of Equipment," Rev. 3, October 4, 1999
  - Section 7.1, "Hazardous Material Management Plan/EPCRA 312 and 313," Rev. 6, October 4, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 18, Change 0, December 6, 1999
- HNF-4467, *Feedback and Improvement Policy*, Rev. 0, May 7, 1999
- HNF-5053, *Policy for Environment, Safety and Health*, Rev. 2, October 18, 1999
- HNF-MP-001, *Management and Integration Plan*, Rev. 1, May 16, 1997
- HNF-MP-003, *Integrated Environment, Safety and Health Management System Plan*, Rev. 2, September 21, 1999
- HNF-MP-599, *Project Hanford Quality Assurance Program Description*, Rev. 3, March 10, 1999
- HNF-POL-EMERPLN, *Emergency Planning Policy*, Rev. 0, May 16, 1997
- HNF-POL-OPEN, *Open Door Policy*, Rev. 0, May 16, 1997
- HNF-PRO- 083, *Personal Protection*, Rev. 2, December 29, 1998
- HNF-PRO-011, *Sitewide Qualification and Training Program*, Rev. 1, April 6, 1999
- HNF-PRO-042, *Fitness for Duty*, Rev. 2, August 12, 1998
- HNF-PRO-044, *Employee Orientation*, Rev. 0, November 14, 1997
- HNF-PRO-052, *Corrective Action Management*, Rev. 3, January 10, 2000
- HNF-PRO-055, *Facilities Start-up Readiness*, Rev. 2, December 16, 1999
- HNF-PRO-057, *Hanford General Employee Training*, Rev. 0, December 31, 1997
- HNF-PRO-058, *Critique Process*, Rev. 2, July 20, 1999
- HNF-PRO-060, *Occurrences and Processing Operations Information*, Rev. 2, September 1, 1999
- HNF-PRO-066, *Electrical Utilities Lock and Tag Program*, Rev. 0, June 1, 1997
- HNF-PRO-067, *Managing Lessons Learned*, Rev. 1, November 24, 1998
- HNF-PRO-068, *Site Maintenance Training*, Rev. 0, September 29, 1997
- HNF-PRO-069, *Maintenance Management*, Rev. 3, January 14, 2000
- HNF-PRO-074, *Safety Responsibilities*, Rev. 1, July 1, 1997
- HNF-PRO-075, *Safety Communication*, Rev. 2, December 31, 1997
- HNF-PRO-076, *Safety Inspections*, Rev. 2, September 15, 1997
- HNF-PRO-077, *Reporting, Investigating, Managing Events*, Rev. 2, March 31, 1999
- HNF-PRO-078, *Subcontractor Safety and Health Management*, Rev. 2, August 10, 1999
- HNF-PRO-079, *Job Hazard Analysis*, Rev. 4, September 9, 1999
- HNF-PRO-080, *Worksite First Aid*, Rev. 1, July 1, 1997

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

- HNF-PRO-081, *Hazardous Energy Control Program*, Rev. 4, August 18, 1999
- HNF-PRO-084, *Safety Showers and Eyewashes*, Rev. 3, November 14, 1997
- HNF-PRO-085, *Hand and Portable Hand Power Tools*, Rev. 1,July 1, 1997
- HNF-PRO-086, *Machine Guarding*, Rev. 0, May 1, 1997
- HNF-PRO-087, *Storing Using and Handling Compressed Gasses*, Rev. 2, June 17, 1999
- HNF-PRO-088, *Electrical Work Safety*, Rev. 2, September 18, 1998
- HNF-PRO-089, *Electrical Installation Safety*, Rev. 2, September 22, 1998
- HNF-PRO-090, *Excavating, Trenching, and Shoring*, Rev. 2, May 12, 1999
- HNF-PRO-091, *Walking/Working Surfaces*, Rev. 1, July 1, 1997
- HNF-PRO-092, *Fall Protection*, Rev. 1, July 1, 1997
- HNF-PRO-093, *Elevating Work Platforms*, Rev. 2, December 21, 1999
- HNF-PRO-094, *Portable Ladders*, Rev. 1, July 1, 1997
- HNF-PRO-095, *Scaffolding*, Rev. 3, September 9, 1999
- HNF-PRO-096, *Material Handling and Storage*, Rev. 0, July 1, 1997
- HNF-PRO-100, *Transportation Safety*, Rev. 1, July 1, 1997
- HNF-PRO-101, *Signs, Tags, and Barriers*, Rev. 1, July 1, 1997
- HNF-PRO-103, *Control of Working Hours and Working Alone*, Rev. 1, April 13, 1999
- HNF-PRO-105, *Steam Distribution System Safety*, Rev. 0, May 1, 1997
- HNF-PRO-110, *Confined Space*, Rev. 0, July 1, 1997
- HNF-PRO-111, *Occupational Medical Qualifications and Monitoring*, Rev. 0, July 1, 1997
- HNF-PRO-115, *Hearing Conservation*, Rev. 0, July 1, 1997
- HNF-PRO-119, *Lead Program*, Rev. 0, July 1, 1997
- HNF-PRO-120, *Respiratory Protection Program*, Rev. 1, February 18, 1999
- HNF-PRO-154, *Responsibilities and Procedures for all Hazardous Material*, Rev. 0, October 1, 1997
- HNF-PRO-156, *Nonradioactive Hazardous Materials/Hazardous Waste (HM-HW) Shipments*, Rev. 0, July 1, 1997
- HNF-PRO-1618, *ALARA Management Commitment and Policy*, Rev. 0, August 17, 1998
- HNF-PRO-166, *Transportation Safety Training Requirements*, Rev. 0, July 1, 1997
- HNF-PRO-168, *Employee Training*, Rev. 0, February 16, 1998
- HNF-PRO-2258, *Chemical Management*, Rev. 0, August 31, 1998
- HNF-PRO-233, *Review and Approval of Documents*, Rev. 0, September 30, 1997
- HNF-PRO-246, *Management Assessment*, Rev. 2, October 25, 1999
- HNF-PRO-2701, *Authorization Envelope and Authorization Agreement*, Rev. 0, July 26, 1999
- HNF-PRO-298, *Nonconforming Item Reporting and Control*, Rev. 2, October 6, 1999
- HNF-PRO-326, *Contamination Areas Controls*, Rev. 0, September 8, 1997
- HNF-PRO-328, *Personnel Monitoring*, Rev. 0, September 8, 1997
- HNF-PRO-331, *Work Place Air Monitoring*, Rev. 0, September 8, 1997
- HNF-PRO-338, *Asbestos Control-Construction Industry*, Rev. 0, September 30, 1997

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

- HNF-PRO-3468, *Stop Work Responsibility*, Rev. 1, October 22, 1999
- HNF-PRO-350, *Fire Hazard Analysis Requirements*, Rev. 3, October 28, 1999
- HNF-PRO-356, *Controlling Hot Work*, Rev. 2, January 6, 2000
- HNF-PRO-3678, *Emergency Planning and Community Right to Know*, Rev. 0, October 14, 1999
- HNF-PRO-379, *External Dosimeter Program*, Rev. 3, June 10, 1999
- HNF-PRO-380, *Internal Dosimeter Program*, Rev. 2, September 28, 1999
- HNF-PRO-408, *Asbestos-Facility Management/General*, Rev. 0, September 30, 1997
- HNF-PRO-409, *Exposure Monitoring, Reporting, and Exposure Records Management*, Rev. 0, June 30, 1997
- HNF-PRO-410, *Resolving Employee Concerns*, Rev. 0, March 1, 1998
- HNF-PRO-423, *Radiological Work Permits*, Rev. 0, September 8, 1997
- HNF-PRO-424, *Emergency Preparedness Program*, Rev. 3, October 26, 1999
- HNF-PRO-453, *Spill and Release Reporting*, Rev. 1, October 13, 1999
- HNF-PRO-4616, *Supervision of Field Work Activities*, Rev. 2, June 30, 1999
- HNF-PRO-473, *Performing Excavation Activities*, Rev. 0, September 30, 1997
- HNF-PRO-576, *Demolition*, Rev. 1, July 1, 1997
- HNF-PRO-577, *Concrete and Masonry, Construction*, Rev. 1, July 1, 1997
- HNF-PRO-578, *Hazard Communication*, Rev. 0, September 30, 1997
- HNF-PRO-579, *Carcinogen Control*, Rev. 0, July 1, 1997
- HNF-PRO-580, *Process Safety Management*, Rev. 0, May 1, 1997
- HNF-PRO-582, *Using Nonionizing Radiation*, Rev. 0, July 1, 1997
- HNF-PRO-583, *Laser Safety*, Rev. 0, July 1, 1997
- HNF-PRO-584, *Bloodborne Pathogens*, Rev. 0, July 1, 1997
- HNF-PRO-587, *Laboratory Safety*, Rev. 1, October 20, 1999
- HNF-PRO-591, *Erecting Steel Structures*, Rev. 1, July 1, 1997
- HNF-PRO-653, *Deficiency Tracking System*, Rev. 1, July 12, 1999
- HNF-PRO-653, *QA Deficiency Tracking System*, Rev. 1, June 12, 1999
- HNF-PRO-696, *Conduct of Operations Policy*, Rev. 0, September 30, 1997
- HNF-PRO-699, *Storing and Handling of Chemicals*, Rev. 0, October 1997
- HNF-PRO-702, *Safety Analysis Process-Facility Change or Modification*, Rev. 1, December 3, 1999
- HNF-PRO-704, *Hazard Accident Analysis Process*, Rev. 1, September 2, 1999
- HNF-SD-CP-TI-145, *Boundary Definitions for Plutonium Finishing Plant – Cognizant Engineers Areas of Responsibility*, Rev. 6, May 7, 1997
- HNF-SD-PRP-HA-002, *Plutonium Finishing Plant Hazards Assessment*, Rev. 4
- Infrastructure Services Team Boundaries
- Near-Term Planning Team Charter, November 30, 1999
- Occupational Safety & Health Cycle Schedule of Assessments (S/RID Assessment Cycle), October 1, 1999 through September 30, 2002

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

- RLID 5480.7, *Fire Protection*, January 17, 1994
- Work Package for Replacing OMEGA Sprinkler Heads
- ZAP-000-002, *PFP Configuration Management Plan*, Rev. A, Mod 1, September 2, 1998
- ZAP-000-010, *PFP Chemical Hygiene Plan*, Rev. A Mod 1, September 2, 1998
- ZCR-003, *Personnel Contamination*, Rev. 1, Change 5, October 4, 1999
- ZCR-004, *Medical Emergency*, Rev. A, Change 6, October 4, 1999
- ZCR-005, *Fire Alarm/Fire/Explosion*, Rev. A, Change 11, December 17, 1999
- ZCR-100-001, *Personnel Decontamination*, Rev. B, Mod 1, November 3, 1998.

**Interviews Conducted**

- Electrician/Co-Chair Zero Accident Committee (ZAC)
- Fire Safety Engineer
- Human Resource Specialist
- Industrial Hygienists (2)
- Industrial Safety Engineers (2)
- Manager, Infrastructure Services
- Work Coordinator/ AJHA Point of Contact.

**Observations**

AJHA Process/High-Efficiency Particulate Air (HEPA) Filter Change-314, January 17, 2000.

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.*

There are adequate procedures and/or mechanisms for industrial hygiene and safety and fire protection to ensure that hazards are identified, analyzed, controlled, or mitigated. A review of a work package for changing sprinkler heads noted industrial hygiene and safety and fire protection involvement in the planning of the work. The AJHA checklist contains industrial hygiene and safety and fire protection questions to answer and ensure hazards are identified. Several procedures address the inclusion of industrial hygiene and safety and fire protection into the work process. For example, HNF-PRO-704, *Hazard Accident Analysis Process*, states that the Hazard Analysis Team should include representatives from industrial safety and hygiene and fire protection. Procedures in HNF-PRO-079, *Job Hazard Analysis*, states to include worker and Environment, Safety, Health, and Quality (ESH&Q) technical representative involvement as part of the hazard/impact identification, analysis and control phases of job hazard analysis. FSP-242, *Engineering Drawing Requirements*, includes fire protection review of drawings and diagrams. HNF-PRO-576, *Demolition*, has a requirement to coordinate all demolition with industrial

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

hygiene, radiation safety, and fire protection organizations. HNF-PRO-079 requires worker and ESH&Q technical representative involvement as a part of the hazard/impact identification, analysis, and control phases of job hazard analysis. Many of the above-listed records contain procedures and/or mechanisms for industrial hygiene and safety and fire protection to ensure that hazards are analyzed and controls are identified.

There are some mechanisms in place that are not integrated into the cycle of ISM; e.g., in the cycle for identifying hazards and hazard control. Efforts by the PFP Health and Safety Team are not captured in these cycles. The Health and Safety Team "risk rank" facilities and operations in PFP and document the results on a risk-ranking matrix list. The risk-ranking process is not noted in the PFP ISM System. Also, the process is not used in conjunction with the AJHA process. The information gathered as a result of the process can be used to identify hazards in an area and/or operation prior to an AJHA. **(SME.1-6)**

While observing the AJHA process for a HEPA filter change in 314, it was noted that Subject Matter Experts (SME) for industrial hygiene and safety and fire protection were not present at this particular AJHA. However, after interviewing the SMEs for these functional areas, it was emphasized that the SMEs would be consulted prior to the job beginning. In addition, the AJHA report for change out of the HEPA filters in 313 was reviewed. It was noted on the report that the nuclear safety professional was involved in the AJHA; this professional is in the same organization as the industrial hygiene and safety and fire protection personnel. It is understood that the AJHA is the primary tool for hazard analysis but it is not the only mechanism for identifying hazards. Many PFP hazards are documented by the SME for industrial hygiene and safety and fire protection. An example of this documentation is the Risk Ranking Master List prepared by the PFP Health and Safety Team.

**Criterion 2:** *Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas contain clear roles and responsibilities. Industrial Hygiene and Safety and Fire Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.*

Adequate procedures and mechanisms exist that contain clear roles and responsibilities for industrial hygiene and safety and fire protection area personnel. The PFP Health and Safety Team has several desk instructions that address industrial hygiene and safety and fire protection roles and responsibilities as appropriate. Interviews with SMEs in these functional areas verified that line managers demonstrate responsibility and accountability for worker safety. For example, on the Senior Supervisory Watch (SSW), the Senior Director for Nuclear Material Stabilization Project performs regularly scheduled walk-throughs of the PFP. This demonstrates top management's commitment to accepting their role and responsibility for worker safety.

Personnel interviewed reported that PFP workers have clear authority, without fear of reprisal, to enforce Stop Work Authority. This shows PFP management's commitment for employee

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

empowerment and responsibility for safety. This authority is communicated to workers and is effectively practiced. **(SME.1-5)**

In general, PFP personnel understand their roles and responsibilities for the safe performance of work. However, roles and responsibilities are inconsistent and inadequately defined in procedures. **(SME.1-7)** Some procedures have more defined clear roles and responsibilities. HNF-PRO-408, *Asbestos-Facility Management/General*, is a good example of documenting the responsibilities of line management. HNF-PRO-080, *Work Site First Aid*, does not specifically address roles and responsibilities. This procedure alludes to roles and responsibilities under the heading "Requirements." This makes the roles and responsibilities for first aid unclear. A related PFP procedure, ZCR-004, *Medical Emergency*, does not specifically address roles and responsibilities for first aid. It states "administer first aid to the level you feel comfortable or get help."

There is a level of confidence from the personnel interviewed that the philosophy and concept of ISM exists and will continue at PFP. **(SME.1-2)** In the Zero Accident Committee (ZAC) Charter, one of the committee responsibilities is to utilize Voluntary Protection Program (VPP) principles in strategic planning and implementation of a safety program. During the interview with the co-chair of the ZAC, it was mentioned that PFP continues to pursue DOE VPP Star Status. **(SME.1-4)** Through the As Low As Reasonably Achievable (ALARA) Committee, the fire protection engineer was alerted to a concern at the laundry facility. This demonstrates that personnel know when SMEs need to be involved in the planning and execution of work. **(SME.1-3)**

**Criterion 3:** *Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.*

The AJHA is the primary tool used by workers to ensure that industrial hygiene and safety and fire protection controls are effectively integrated into work planning and the performance of work. However, there are other tools used by the SMEs in these functional areas to ensure that work is being planned and performed safety. For example, there are regularly scheduled safety inspections by the PFP Health and Safety Team. Another example is in HNF-PRO-115, *Hearing Conservation*, which allows for the use of other appropriate hazard identification processes, such as qualitative exposure assessments, to ensure work is safely performed.

**Criterion 4:** *Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.*

The SMEs for industrial hygiene and safety and fire protection maintain a familiarity with current development in standards, guides, and codes. When necessary, these SMEs consult with knowledgeable individuals to obtain technical assistance as needed. PFP fire protection

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

personnel exchange technical information and participate in activities with the Hanford Fire Department. The Hanford Fire Department is recognized as a DOE Center of Excellence for fire protection. **(SME.1-1)** There appears to be good interaction between industrial hygiene and safety and fire protection personnel with other SMEs onsite. For example, consultation with radiological personnel is apparent. The SMEs for industrial hygiene and safety and fire protection maintain familiarity with all operations at the PFP by conducting and/or participating in walk-through, assessments, AJHAs, etc. During interviews with the electrician and work coordinator, it was stressed that workers believe there is a satisfactory level of competence in the industrial hygiene and safety and fire protection personnel. In addition, the SMEs in these functional areas are well qualified to perform their jobs.

**Criterion 5:** *Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that within the subject area, feedback and continuous improvement.*

There are several procedures and mechanisms for feedback and continuous improvement, such as FSP-PFP-5-8, *Plutonium Finishing Plant Administration,* Section 1.2, "Joint Review Group"; Section 1.4, "Occurrence Reporting"; and Section 1.14, "Managing Lessons Learned." There is also a PFP Lessons Learned web page that links other Lessons Learned processes and programs. There are also HNF-PROs that require feedback and continuous improvement (e.g., HNF-PRO-410, *Employee Concerns*; HNF-PRO-067, *Managing Lessons Learned*; and HNF-PRO-058, *Critique Process*). These mechanisms may not be specific to industrial hygiene and safety and fire protection; however, these mechanisms and procedures can be used to address these subject areas. Also, interviews with industrial hygiene and safety and fire protection personnel, a work coordinator, and an electrician indicate that there are numerous mechanisms for providing feedback and continuous improvement (e.g., the Employee Safety Logs, the Employee Concerns Program, ZAC, safety meetings, etc.).

**Conclusion**

This objective has been met within the industrial hygiene and safety and fire protection areas.

**Strengths:**

- The Hanford Fire Department is a DOE Center for Excellence for fire protection. PFP fire protection personnel exchange technical information and participate in activities though the Center of Excellence. **(SME.1-1)**

- There is a level of confidence, from the personnel interviewed, that the philosophy and concept of ISM exists and will continue at PFP. **(SME.1-2)**

- There appears to be good interaction between industrial hygiene and safety and fire protection personnel with other SMEs onsite. For example, consultation with radiological

| FUNCTIONAL AREA: **Subject Matter Expert Industrial Hygiene and Safety/Fire Protection** | OBJECTIVE: **SME.1**<br>DATE: 1/26/00 |
|---|---|

personnel is apparent. Through the ALARA committee, the fire protection engineer was alerted to a concern at the laundry facility. This demonstrates that personnel know when SMEs need to be involved in the planning and execution of work. **(SME.1-3)**

- In the ZAC Charter, one of the committee responsibilities is to utilize VPP principles in strategic planning and implementation of safety program. Also, during an interview with the co-chair of the ZAC, it was mentioned that PFP continues to purse DOE VPP Star Status. **(SME.1-4)**

- PFP workers have clear authority to enforce Stop Work Authority. This demonstrates PFP management's commitment for employee empowerment and responsibility for safety. This authority is communicated to workers and is effectively practiced. **(SME.1-5)**

**Concerns:**

- Some mechanisms are in place that are not integrated into the cycle of ISM. **(SME.1-6)**

- Roles and responsibilities are inconsistent and inadequately defined in procedures. **(SME.1-7)**

| | |
|---|---|
| **Submitted:** | **Approved:** |
| **Nelda J. (Joyce) Beck** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**MG.1a** - The ISMS Description is consistent and responsive to DOE Policies 450.4, 450.5, and 450.6; the DEAR; and the direction to the contractor from the Approval Authority. The contractor policies and procedures ensure that the ISMS Description is maintained, implemented, and that implementation mechanisms result in integrated safety management. (CE I/II-1)

**NOTE:** This MG.1a objective should be addressed at the program/project level. Demonstrate alignment/linkage of the PFP ISMS program description, e.g., system description, with the *Project Hanford Management Contract Integrated Environment, Safety Management System Plan* (FDH 1999, Appendix B). This objective should focus on the PFP "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description" to determine their adequacy as a roadmap for implementation of ISMS at PFP.

## Criteria

1. The ISMS Description is consistent and responsive to DOE Policies 450.4, 450.5, and 450.6; the DEAR; and the direction to the contractor from the Approval Authority.

2. The contractor has mechanisms in place to direct, monitor, and verify the integrated implementation of the ISMS as described in the ISMS Program System Description.

3. The contractor has assigned responsibilities and established mechanisms to ensure that the ISMS Program System Description is maintained current and that annual update information is prepared and submitted.

4. The contractor has established a process that establishes, documents, and implements safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance. The ISMS describes how system effectiveness will be measured.

## Approach

- Review pertinent policies and procedures to assure that there are mechanisms in place to direct, monitor, and verify implementation of ISMS at all levels of facility and activity organizational functions.

- Review procedures covering the maintenance, annual updating, performance measurement, and submittal of the ISMS information.

- Interview selected personnel responsible for implementation and operation of the ISMS program.

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

**Record Review**

- Review the ISMS Program System Descriptions and the directions concerning the guidance on the preparation, content, review and approval of the ISMS and PFP.
- Review Hanford Site and PFP procedures for the implementation review, and maintenance of the ISMS Program System Descriptions and associated items, including provisions for the annual reviews and updates and transmittal to DOE.
- Review charters and "output documentation" from any ISMS coordinating committees.
- Review contractor assessment activities that determine the adequacy of implementation of ISMS.
- Review implementation planning efforts and any "gap analysis" reports, which may have been developed.
- Review the process established to measure the effectiveness of the ISMS to ensure that the methods support the establishment, documentation, and implementation of safety performance objectives that support DOE program and budget execution guidance.

**Interviews**

- Interview contractor managers who are responsible for the development and maintenance of the ISMS Description.
- Interview contractor line managers who are, or will be, responsible for administering the mechanisms of the ISMS.
- Interview chairpersons and key members of any ISMS coordinating committees, if established.
- Interview managers, supervisors, and workers to determine if they are aware of and understand the various performance measures/indicators. What do the measures mean to them? Do they feel the measures are valuable for ensuring continuous improvement?

**Observations**

None required.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

**Record Review**

- 15000-99-062, *Addendum to FY1999 Management Assessment Plan*, August 2, 1999
- 15000-99-074, *FY2000 Project Assessment Plan*, August 17, 1999
- 15000-99-REH-012, *HNF-PRO-246, Management Assessment (Waiver 1), Effective September 13, 1999*, Letter from R. E. Heineman, BWHC, to J. R. Kelly, FDH, October 28, 1999
- 15000-RDR-99-074, *Results of Integrated Safety Management Systems Survey*, Interoffice Correspondence from R. D. Redekopp, FDH, to F. R. Crawford, BWHC, January 7, 2000
- 2000-0001, *PFP Action Tracking Program, Conduct Annual Review of PFP ISMS Program Description*, January 3, 2000
- 48 CFR 97.5204-78, Federal Register, Volume 62, No. 124, "Laws, Regulations, and DOE Directives," June 27, 1997
- Activity Basis Startup Plan for the Three New Muffle Furnaces, October 27, 1999
- DOE Policy 450.4, *Safety Management System Policy*, October 15, 1996
- DOE Policy 450.5, *Line Environment, Safety and Health Oversight*, June 26, 1997
- DOE Policy 450.6, *Secretarial Policy Statement, Environment, Safety and Health*, April 14, 1998
- FDH-9955419, *Contract No. DE-AC06-96RL13200 – Direction for Implementation of Integrated Environment, Safety and Health Management System*, Letter from G. A. Harvey, FDH, to Distribution, August 5, 1999
- FH-9959324, *Transition Plan*, Letter from L. J. Hunter, FH, to A. Clark, BWHC, December 28, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1, Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
- HNF-MD-4821, *Guidance for Flow Down of ISMS Requirements to Lower Tier Subcontracts*, Rev. 0, July 30, 1999
- HNF-MP-003, *Integrated Environment Safety and Health Management System Plan*, Rev. 3, Draft – January 2000
- HNF-MP-003, *Integrated Environment, Safety and Health Management System Plan*, Rev. 2, September 21, 1999
- HNF-PRO-055, *Facilities Start-up Readiness*, Rev. 2, December 16, 1999
- HNF-PRO-074, *Safety Responsibilities*, Rev. 1, July 1, 1997
- HNF-PRO-075, *Safety Communications*, Rev. 2, December 31, 1997
- Memorandum for distribution from the Deputy Secretary of Energy, *Implementation of Integrated Safety Management Performance Measures*, from T. J. Glauthier, to Distribution, December 3, 1999
- PFP Automated Job Hazards Analysis (AJHA) Participation Graph, December 31, 1999
- PFP Plant Objectives and Performance Indicators, November 1999

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

- RLPD 450.1, DOE-RL Environmental, Safety, and Health (ES&H) Policy, *Hanford Environment, Safety and Health Policy*, May 12, 1998.

**Interviews Conducted**

- Lead, Coach
- Lead, Quality Team
- Manager, ESH&Q
- Manager, Infrastructure Services
- Manager, PFP Acquisition and Contracts
- Manager, PFP Baseline Control Group
- Manager, Technical Support
- PFP Contract Administrator
- PFP Project Cost Analyst
- PFP Project Cost Analyst
- PFP Senior Scientist (ISMS MG Point of Contact)
- Senior Director, PFP Stabilization & Deactivation
- Senior Project Manager
- Westinghouse Operations Director.

**Observations**

- Daily PFP staff meeting, January 17, 2000
- PFP Plant Performance Indicator Meeting, January 18, 2000.

**Discussion of Results**

**NOTE:** *Demonstrate alignment/linkage of PFP ISMS Program Description with the Project Hanford Management Contract Integrated Environment, Safety Management System Plan (FDH 1999, Appendix B).*

The PFP ISMS Program Description was reviewed to determine if alignment/linkage to the HNF-MP-003, *Integrated Environment Safety and Health Management System Plan*, was present. Specific linkages were found throughout the PFP ISMS Program Description. Specifically, Sections 3.0 and 5.0 describe the guiding principles, core functions, and expectations established in the HNF-MP-003, discusses how they are applied within the PFP, and lists the implementing documents. Appendices A and B include references to HNF-MP-003 expectations and a list of applicable documents. The HNF-MP-003 contains site, facility, and activity-level expectations that define a requirements-based safety management system. The facility and activity-level expectations were linked within the PFP ISMS Program Description. There were; however, instances where some HNF PRO's were not listed in the PFP document.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

Also, during the DOE verification of the Fluor Hanford (FH) ISM System Description, the ISMS Verification Team found that HNF-MP-003 did not provide adequate program crosswalk to subcontractor implementing documents. Additionally, the management system that had been implemented to satisfy ISMS was found to be overly complex and difficult to follow. The Verification Team concluded that FH had not effectively demonstrated that mechanisms were in place to direct, monitor, and verify the integrated implementation of ISMS in accordance with their ISM System Description (HNF-MP-003).

Due to the current FH restructuring effort, several actions are underway to redefine the FH business management system. This effort will result in the development of a Management Systems Requirements Plan (which will eventually replace HNF-MP-001, *Management and Integration Plan*), facility transition plans, and facility/organizational project execution plans. A significant portion of this effort will directly affect implementation mechanisms relative to ISMS, especially at the project/facility level. The process as currently described in the PFP Program Description is focused on work activities at the facility and activity level. When the FH ISM System Description is changed, reconciliation will be necessary to manage changes to the PFP ISMS Program Description. **(MG.1a-2)**

**Criterion 1:** *The ISMS Description is consistent and responsive to DOE Policies 450.4, 450.5, and 450.6; the DEAR; and the direction to the contractor from the Approval Authority.*

PFP has developed, reviewed, and approved FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1, Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1. The PFP ISMS Program Description along with the FH HNF-MP-003, (draft Rev. 3) were reviewed and found to be consistent with DOE Policies 450.4, 450.5 and 450.6, and the DEAR clause 970.5204-2. The PFP ISMS Program Description (FSP-PFP-5-8, Section 3.24, subsection 5.1, "Overview") contains the statement, "The Integrated Safety Management System Program Description is designed to encompass the Core Functions and Guiding Principles in the Project Hanford Management Contract (PHMC) Integrated Safety Management Plan, HNF-MP-003."

Each PFP Project manager interviewed adequately described the integrated implementation of ISMS in accordance with their ISMS Program Description. All senior managers that were interviewed demonstrated a keen awareness and dedication to the ISMS program and to the principles of ISM. These interviews included line managers as well as support managers. All understood the principle that the line manager had responsibility for safety and that first-line supervision and worker involvement supported the identification and development of safety controls. All managers recounted the benefits of employee involvement in that same safety process of hazard identification and development of hazard controls. Each manager interviewed was focused on results.

PFP Project oversight activities, as well as the incorporation of lessons learned from the PFP Phase I/II Readiness Review, has improved the PFP Project ISMS Program Description. However, the description contains several outdated references and some HNF documents are not

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

listed (e.g., HNF-MD-4821, *Guidance for Flow Down of ISMS Requirements to Lower Tier Subcontracts*). Also, due to the recent restructuring and the new Westinghouse Management team at the PFP, the PFP ISMS Program Description will need to be revised. **(MG.1a-3)**

**Criterion 2:** *The contractor has mechanisms in place to direct, monitor, and verify the integrated implementation of the ISMS as described in the ISMS Program System Description.*

This broad criterion has been judged and reported upon throughout this report. Though areas for improvement have been identified in each functional area, most objectives for this ISM verification have been met. Within the PFP ISMS Program Description, there are statements related to how the PFP Project communicates the ES&H policy to the PFP workforce. This is communicated through the use of the FH ES&H Policy and implementing procedures, through staff meetings, employee briefings, check-in procedures, and training programs (e.g., Hanford General Employee Training).

HNF-PRO-074, *Safety Responsibilities*, and HNF-PRO-075, *Safety Communications* describe employee and manager responsibilities with respect to safety and methods of communication. HNF-PRO-074 includes the "Master Safety Rules" and the "Worker Bill of Rights," which are required by HNF-PRO-075 to be posted in the work place. Employee Zero Accident Council meetings, pre-job safety briefings, and periodic employee safety meetings were found to be several methods of communicating this safety policy. Also, a PFP performance indicator management meeting was observed and found to serve the integration needs of the multiple PFP Project activities. The meeting focused on project status, schedule validation, resource challenges, stakeholder commitments, and safety.

Implementation of requirements for job hazard analysis at the working level provides assurance that work is performed in accordance with applicable standards and requirements. Compliance with applicable standards and requirements for work performed at PFP is assured in two ways. The top down assurance is the Standards/Requirements Identification Document assessment. In Phase I of the Standards/Requirements Identification Document assessment, an assessment is performed to assure that documents that implement standards and requirements comply with those standards and requirements. In Phase II, compliance with implementing documents in the field is assessed. The bottoms up assurance rely on the subject matter expert. During preparation of a work package in accordance with FSP-PFP-5-8, Section 13.4, or a procedure in accordance with FSP-PFP-5-8, Section 13.5, an AJHA is performed.

PFP also uses Activity Based Startup Review Plans to verify the readiness to restart certain activities. Attachment A to these plans include the five major core functions of ISMS and provide objective evidence that an AJHA has been completed for the activity. This practice is considered to be a strength and will be included by FH in the next revision to HNF-PRO-055, *Facilities Start-up Readiness*. **(MG.1a-1)**

## PFP PROJECT ISMSV-I ASSESSMENT FORM

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

**Criterion 3:** *The contractor has assigned responsibilities and established mechanisms to ensure that the ISMS Program System Description is maintained current and that annual update information is prepared and submitted.*

PFP has developed, reviewed, and approved FSP-PFP-5-8, Section 3.24, Rev. 1. The description is controlled in accordance with the PFP Action Tracking Program (2000-0001*), Conduct Annual Review of PFP ISMS Program Description.*

Through interviews and review of the ISMS Program Description, the mechanisms within the PFP Project to direct, verify, evaluate, maintain, and improve the integrated implementation of the ISMS were identified. For example, the Director of Operations is responsible for overall coordination of the PFP ISMS Program Description including an annual review to ensure that it is maintained current.

The ISMS Program Description was recently updated to include new procedures that were part of ISMS at PFP, providing evidence that the process to maintain and update the Program Description exists and is functional.

**Criterion 4:** *The contractor has established a process that establishes, documents, and implements safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance. The ISMS describes how system effectiveness will be measured.*

A discussion of the DOE program and PFP budget execution guidance is contained in the BBC.1 Assessment Form.

PFP has conducted two all-employee ISM surveys. The first ISMS survey identified improvement areas of 1) greater worker involvement during planning, including hazard identification and control; 2) Use of the AJHA during pre-job briefings with a focus on the hazards and the controls in place to limit those hazards; 3) improvement feedback to workers on how the hazards are mitigated or controlled; and 4) improvement of post-job reviews and lessons learned following job completions. The first three areas did not show up as obvious improvement targets in the second survey. The fourth area, improving post-job review, repeated as an improvement area. This improvement area was identified during the limited scope survey conducted in August 1999.

The November 1999, PFP Plant Objectives and Performance Indicators Report was reviewed. The performance indicators included nine categories and 44 performance measures that included the following:

**Occupational Health and Safety**

- DOE Safety Cost Index at PFP
- Lost/Restricted Workday Cases per 200,000 Hours at PFP

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

- Lost/Restricted Workday DAYS per 200,000 man-hours at PFP
- PFP Lost/Restricted Workday Case Rate
- OSHA Recordable (including LWD/RWD) Cases per 200,000 man-hours at PFP
- First Aid Cases per 200,000 man-hours PFP
- Plutonium Finishing Plant Fire Alarm Occurrences
- Fire System Impairments or Restrictions at End-of-Month
- Plutonium Finishing Plant Alarm Occurrence.

**Redesign Metrics**

- PFP Monthly Work Package Task Completions
- Average Age of Corrective Maintenance
- Average Days to Complete RU/GU Work Tasks
- Timeliness of Published Documents
- Procedure Changes
- Redesign Procedure Changes
- Baseline Requirement Management.

**Radiological Control and ALARA**

- CY 1999 Exposure
- Plutonium Finishing Plant Contamination Events
- Total RPR's
- RPR Event Code Prefix.

**Nuclear and Criticality Safety**

- PFP LCO Equipment Operability
- HEPA Filter Systems Replacement
- ZSR – HEPA DOS Testing
- ZSE - HEPA DOS Testing
- PFP *Operational Safety Requirements*
- PFP OSR Surveillance Activities Entering Extension
- Criticality Safety Engineer Reviews
- PFP Criticality Non-Conformances/Infractions and Sources
- PFP Criticality Non-Conformances Resolution FY99.

**Conduct of Operations and Event History**

- Conduct of Operations Event Index at PFP
- Occurrence Reports Over 45 Days.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

**Training**

- Training By Level 3 Manager
- No Show Training
- Training.

**Quality Assurance**

Average Age of Open Nonconformance Reports.

**Work Management**

- PFP Backlog
- PFP Plan of the Day Schedule Performance Delays by Category
- PFP Overdue Periodic Maintenance Activities
- PFP Overdue Maintenance Activities for Outside Craft.

**Issues Management**

- DTS (CAMS) Currency
- Corrective Action
- Plutonium Finishing Plant Security Incidents
- Recognition
- Overtime
- Vault Safety and Inventory System Status.

Interviews with senior management demonstrated an understanding of the purpose and goals for using performance indicators. The performance indicators are used to measure those areas that have the greatest impact on the PFP Project. Several of these are related to ISM. Specifically, PFP senior management all expressed interest in the AJHA participation. PFP AJHA participation is measured monthly.

PFP's performance indicators compare favorably with those specified by the Deputy Secretary of Energy in a December 3, 1999 memorandum. The Deputy Secretary listed five interim indicators for effective ISM implementation:

- Total Recordable Case Rate
- Occupational Safety and Health Cost Index
- Worker Radiation Dose
- Reportable Occurrences of Releases to the Environment
- Hypothetical Radiation Dose to the Public.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

PFP monitors the first three indicators listed above. The data for the fourth indicator is available through the PFP occurrence reporting system, but is not tracked separately. The fifth indicator has not been implemented at PFP. This data is tracked on a sitewide basis and is published annually by Pacific Northwest National Laboratory. PFP does not plan to have a separate performance indicator for this parameter.

The PFP Management Assessment Plan, 15000-99-074, *PFP FY 2000 Project Assessment Plan*, and the FY 2000 Management Assessment Plan and schedule is another tool used to look at the total picture of how well the description met customer requirements and expectations. Senior management is personally involved with the management assessment program. Although PFP uses management assessments and performance measures, an institutionalized program for measuring ISMS effectiveness was not found to be in place. **(MG.1a-4)**

**Conclusion**

PFP has developed an ISMS Program Description that embraces the precepts of the DOE Policies 450.4, 450.5 and 450.6. PFP has a process to maintain and update the ISMS Program Description and has successfully used this process. PFP practices were found to be consistent with their ISMS Program Description when used in conjunction with HNF-MP-003.

This objective has been met.

**Strengths:**

Use of Activity Based Startup Review Plans includes the major core functions of ISMS and provides objective evidence that an AJHA has been completed. **(MG.1a-1)**

**Concerns:**

- When the FH ISM System Description is changed, reconciliation will be necessary to manage changes to the PFP ISMS Program Description. **(MG.1a-2)**

- The PFP ISMS Program Description contains several outdated references and some HNF documents are not listed. Also, due to the recent restructuring and the newly formed Westinghouse Management team at the PFP, the ISMS Program description will need to be revised. **(MG.1a-3)**

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.1a**<br>DATE: 1/26/00 |
|---|---|

- Although PFP uses management assessments and performance measures, an institutionalized program for measuring ISMS effectiveness was not found to be in place. **(MG.1a-4)**

| | |
|---|---|
| **Submitted:** Mark R. Steel | **Approved:** |
| **Mark R. Steelman** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**MG.2** - Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE I/II-8)

## Criteria

1. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

2. Facility or activity procedures specify that line management is responsible for safety. Contractor procedures identify line management as responsible for ensuring that the implementation of hazard controls is adequate to ensure that work is planned and approved and conducted safely. Procedures require that line managers are responsible for the verification of adequate implementation of controls to mitigate hazards prior to authorizing work to commence.

3. Procedures and/or mechanisms are in place that ensure personnel who supervise work have competence commensurate with their responsibilities.

4. Procedures and/or mechanisms are in place that ensure personnel performing work are competent to safely perform their work assignments.

## Approach

### Record Review

- Review facility or activity manuals of practice that define the roles and responsibilities of personnel responsible for safety.

- Review position descriptions and other documentation that describe roles and responsibilities related to ensuring safety is maintained.

- The review should consider personnel in line management and staff positions and evaluate whether line managers are responsible for safety.

- Review the procedures established to ensure that managers and the work force is competent to safely perform work.

- Review the records of qualification and certification as applicable.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

**Interviews**

- Contractor managers who are responsible for the development and maintenance of the ISMS description.
- Contractor line managers who are, or will be responsible for administering the mechanisms of the ISMS.
- Interview chairman and key members of any ISMS coordinating committees, if established.
- Interview selected personnel at all levels of facility or activity management that are identified by the record review above.
- Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity.
- Interview a selected number of supervisors and workers (see definition) to determine their understanding of competency requirements and their commitment to performing work safely.

**Observations**

- Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with and responsible for decisions affecting safety, and that managers and workers are competent to perform their duties. Activities, such as work planning meetings, weekly planning meetings, plans of the day, event critiques, safety training, and safety meetings are typical events that may provide good examples of the safety training and decision-making process.

**Record Review**

- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 3.24, "PFP Stabilization and Deactivation Project ISMS Program Description," January 5, 2000
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 3.1, "General Safety Rules," Rev. 7, TBD
  - Section 6.3, "Person-In-Charge (PIC)," Rev. 2, July 1, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Controls System Process," January 5, 2000
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*
  - Section 1.0, "General Training Administration," Rev. 9, October 4, 1999
  - Section 6.0, "Facility Management Training Program," Rev. 2, October 4, 1999
  - Section 7.0, "Surveillance Training Program," Rev. 9, October 4, 1999

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

- HNF-3617, Integrated Project Management Plan for PFP Stabilization and Deactivation Project, Rev. 0, April 28, 1999
- HNF-MP-011, *PHMC Sitewide Training and Qualification*, Rev. 1, April 6, 1999
- HNF-PRO-074, *Safety Responsibilities*, Rev. 1, July 1, 1997
- HNF-PRO-075, *Safety Communications*, Rev. 2, December 31, 1997
- HNF-PRO-079, *Job Hazard Analysis*, Rev. 4, September 1, 1999
- HNF-PRO-169, *Employee Training*, Rev. 0, February 16, 1998
- HNF-PRO-4616, *Supervision of Field Work Activities*, Rev. 2, July 2, 1999
- PFP Person-In-Charge Training Course Organization
- FHI Training Course Material for Supervising Field Work Activities (Course Number 004240)
- PFP Personnel Job Descriptions
- PFP Personnel Training Matrices
- PFP Project Training Implementation Matrix.
- PFP Work Activity Crosswalk.

**Interviews Conducted**

- Field Work Supervisor, PFP Stabilization
- Field Work Supervisor, Solutions Handling Team, PFP Stabilization
- Field Work Supervisor, Thermal Stabilization Team, PFP Stabilization
- Instrument Specialist, Thermal Stabilization Team, PFP Stabilization
- Manager, Acquisition & Contracts
- Manager, PFP Infrastructure Services
- Manager, PFP Stabilization
- Nuclear Process Operators, PFP Project
- PFP Project Director, PFP Project
- Radiological Control Technician, PFP Project
- Senior Project Managers, PFP Project
- Senior Scientist, PFP Project
- Training Specialists & Team Lead, PFP Project.

**Observations**

- Automated Job Hazard Analysis (AJHA), Changing Filters in Filter Room 314, January 17, 2000
- Pre-Job Briefing, Replacement and Trouble Shooting DP Gauge HA 21I, (Work Package Number 99-1622), January 18, 2000.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.*

FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Section 3.24, "PFP Stabilization and Deactivation Project ISMS Program Description," references numerous Fluor Hanford (FH) procedures as well as facility-specific FSP-PFP-5-8 sections (covering safety policy, Person-In-Charge, and general safety rules) as documents defining roles and responsibilities for safety at all levels within the PFP Project. Procedures in FSP-PFP-5-8 describe lines of authorities and specific responsibilities for safety within PFP.

At the FH level, HNF-PRO-074, *Safety Responsibilities*, Rev. 1, delineates both managers/supervisors and employees responsibilities for safety. Managers/supervisors are responsible for hazard evaluation, worksite inspection/assessment, safety meetings and committee functions, safety and health policy development, accident/near-miss investigation and corrective action planning, and pre-job briefing. These responsibility descriptions assure that management has the responsibility for implementing necessary controls for hazards identified to ensure work activities are planned, approved, and executed in a safe manner. This procedure also holds employees responsible for observing "Master Safety Rules." These rules ensure that employees are required to conduct work activities in a safe, proper, and efficient manner. Employees can exercise stop work authority to prevent or control hazards considered to be an immediate threat. HNF-PRO-075, "Safety Communications," Rev. 2, further emphasizes the safety responsibilities for both managers/supervisors and employees described in HNF-PRO-074 by requiring them to maintain safety awareness, and providing safety-related information to employees.

At the facility level, FSP-PFP-5-8, Section 1.1, "Safety Policy," clearly describes line management responsibility for safety at PFP. This procedure also reiterates HNF-PRO-074 by stating that any employee has authority to stop work on any specific activity when it is believed to prevent an imminent hazard. Further, it requires that a pre-job safety briefing be conducted for specific jobs (e.g., one that requires the use of a work plan) at PFP. FSP-PFP-5-8, Section 3.1, "General Safety Rules," Rev. 6, further provides the general safety rules for PFP to minimize or eliminate recognized hazards that could cause physical harm to personnel or release to environment or damage to property.

At the activity level, FSP-PFP-5-8, Section 6.3, "Person-In-Charge (PIC)," defines the PIC as the owner/champion of the work activity from initial preparation through to work completion. As such, the PIC is responsible for performing pre-work walkdowns of assigned tasks to ensure adequacy and workability of the task/work package, and to identify applicable safety hazards. The PIC is also responsible for coordinating the personnel required for the safe performance of the work activity with the emphasis on controlling the hazards identified. HNF-PRO-4616, *Supervision of Field Work Activities*, defines the Field Work Supervisor (FWS) as being responsible for hazard identification and recognition, mitigation, and controls. The FWS is also

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

responsible for safe and productive conduct of specifically identified work. HNF-PRO-074, *Job Hazard Analysis*, Rev. 4, and FSP-PFP-5-8, Section 13.4, "Work Management Process Description and Job Control System Process," delineate PFP personnel roles and responsibilities for work packages to properly identify potential hazards and environmental impacts associated with various aspects of PFP operations and conduct work activities in accordance with appropriate requirements and controls. Numerous PFP Administration procedures additionally contain specific responsibilities for PFP operations, engineering, safety, and maintenance organizations in addressing both industrial and radiological hazards including, but are not limited to, criticality safety, confined space, fire protection systems, flammable gases, carcinogen, chemicals, deactivation/reactivation of equipment, temporary system alteration and restoration, and rodent/bird biological hazard.

Although mechanisms are in place that define clear roles and responsibilities for safety at various management levels within the PFP Project, they are found in multiple procedures. An initiative is underway, and management is committed, to bring it to completion for developing and implementing a mechanism (e.g., project charter) that identifies the management positions at PFP and listing the key functional responsibilities for those positions. A PFP Work Activity Crosswalk resulting from the redesign is already available as a springboard to effectively support this initiative. **(MG.2-2)**

Interviews with the line managers confirmed they have a clear understanding of their responsibilities for ensuring safety in the preparation and execution of assigned work activities. The PFP Project Director and his direct report line managers emphasized the importance of worker safety and individual accountability. Interviews with the line managers also confirmed that they considered safety seriously and demonstrated strong commitment to implementation of the ISMS. Line managers indicated that, via the Voluntary Protection Program and Enhanced Work Planning, the PFP Project has been implementing the ISMS. The PFP redesign initiative facilitated implementation of the ISM at PFP. Line managers felt that implementation of ISMS has brought all personnel at PFP to use and practice common and structured safety terminology and processes. They are receiving dividends from the ISMS implementation specifically in the area of team approach to hazard identification and associated administrative/engineering controls, thereby ensuring safe execution of work activities and minimization of injuries. Attendance at an AJHA for changing filters in filter room 314 revealed that it lacked in rigor and intensity with regards to interactions among the work activity team members in the discussion of hazard identification and control. All pertinent functional areas related to this job were represented at the meeting. A pre-job briefing for replacing and trouble-shooting DP gauge HA 21 I was extremely well run by a FWS with PIC qualification. Interactions with the FWS and workers were very active and addressed all the pertinent areas of hazards and associated controls including emergency actions and stop work actions in the event of encountering changes in conditions. These observations were provided to other members of the DOE ISMS Verification Team (e.g., Hazards and Subject Matter Experts) that observed and attended additional AJHA and pre-job briefings to observe the rigor and intensity of PFP's performance in these areas.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

Some job descriptions of various levels of line management were reviewed for their responsibility and accountability for the safe conduct of the facility operations. Senior management is responsible and accountable for plant operations and technical support essential for the safe conduct of the facility operations and associated operating processes. Line managers reporting to senior management have personal accountability for safe performance of each employee in their respective organizations by ensuring that working safely is a condition of employment, establishing safety goals and objectives for the group, and measuring the group's progress towards attaining these goals. They are responsible for complying with relevant safety standards, policies, directives, and plant procedures associated with their responsible areas and ensuring that all work activities are performed in a safe, secure, and environmentally acceptable manner.

**Criterion 2:** *Facility or activity procedures specify that line management is responsible for safety. Contractor procedures identify line management as responsible for ensuring that the implementation of hazard controls is adequate to ensure that work is planned and approved and conducted safely. Procedures require that line managers are responsible for the verification of adequate implementation of controls to mitigate hazards prior to authorizing work to commence.*

For the purpose of this review and based upon an interview with a Senior Scientist, the Project Execution organization reporting directly to the PFP Project Director is generally and clearly understood as line management at PFP. There are currently four line managers within the Project Execution organization including PFP Stabilization, PFP Vaults, PFP Surveillance, and Infrastructure Services. These line managers supervise team leaders that are exempt personnel, functioning as first-line managers. These team leaders are qualified and trained for FWSs with and without PIC qualification depending upon the nature of work activities for which they are responsible. Terms such as PIC, Job Sponsor, FWS, and other similar terms are being used by the PFP Project to identify personnel who actually perform the duties of field work supervision.

The PFP Project ISMS Program Description states that lines of authority and specific responsibilities within PFP are established in FSP-PFP-5-8 sections covering safety policy, PICs, and general safety rules. During the review of Criterion 1, some of the procedures described in Criterion 1 specifying roles and responsibilities for safety were reviewed. These procedures also clearly specify that line management is responsible for safety at both facility and activity levels.

At an institutional level, HNF-PRO-074 holds line management responsible for implementing necessary controls for hazards identified to make sure work activities are planned, approved, and executed in a safe manner. Although HNF-PRO-074 is not specifically called out in the PFP ISMS Program Description as a document holding the line management responsible for safety, it is listed as a reference document. At a facility level, HNF-3617, *Integrated Project Management Plan (IPMP)*, Rev. 0, holds the Senior Project Director responsible for managing the safe performance of surveillance and maintenance, stabilization, and deactivation/dismantlement work.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

At the activity level, PFP Project management is responsible for the safety of employees by implementing the requirements for assessing work-related hazards in accordance with HNF-PRO-079; HNF-PRO-4616; FSP-PFP-5-8, Section 6.3 and 13.4; and HNF-PRO-074.

**Criterion 3:** *Procedures and/or mechanisms are in place that ensure personnel who supervise work have competence commensurate with their responsibilities.*

At the institutional level, HNF-MP-011, *PHMC Sitewide Qualification and Training Plan*, establishes the process to ensure worker competence is commensurate with responsibilities. HNF-PRO-168, *Employee Training*, Rev. 0, holds all managers responsible for properly training their personnel to perform assigned tasks in a manner that minimizes risk to themselves. They are also responsible for ensuring that employees receive indoctrination and training according to the scope, complexity, and nature of their duties.

The PFP Project ISMS Program Description references FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Section 1.0, "General Training Administration," Rev. 9, which provides specific training requirements. At a facility level, the procedure defines and describes the application, selection, and certification requirements for personnel appointed to the PFP Project. The procedure states that the PFP Project Director is responsible for ensuring PFP personnel are adequately trained to perform their assigned work and that their training is maintained current. The PFP line managers (i.e., team leaders) are responsible for ensuring their assigned personnel satisfy appropriate qualification and certification requirements using a graded systematic approach. These line managers are also responsible for periodically reviewing qualification and certification programs to ensure they are up-to-date with facility configuration, safety analysis reports, operational safety requirements, procedures, regulation, and applicable industry operating experience. The PFP Training Manager is responsible for assisting line management in the development and maintenance of facility training programs to ensure that personnel are qualified to safely and efficiently execute their assigned work. FSP-PFP-5-8, Section 3.24, describes how the PFP Project implements the ISMS Guiding Principle 3, Competence Commensurate with Responsibilities. Interviews with senior/line management supported line management ownership of the requirements in this procedure. Interviews with the PFP Training Team also clearly confirmed their active involvement and support to the line management in administering the training program at PFP.

Training requirements in HNF-MP-011 are consistently and effectively crosswalked to FSP-PFP-1121. FSP-PFP-1121; however, makes no reference to HNF-MP-011. No description is found in FSP-PFP-5-8, Section 3.24, regarding a process (e.g., mechanism) by which the PFP Project is using to train, qualify, and certify its personnel as a means to implement the ISMS Guiding Principle 3. **(MG.2-3)**

At the activity level, for specific job evaluations, HNF-PRO-079 assures that hazards are identified, controls are developed, and the employees are informed of the hazards and work controls. FSP-PFP-1121, Section 11.0, "Person-In-Charge, Training Program," Rev. 4 establishes the requirements of the PFP PIC initial qualification and continuing training

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

programs. According to their job descriptions, PICs must meet minimum entry level education and experience requirements. They are provided with initial training, facility-specific training, and continuing training. The procedure requires the use of the PIC Checklist (A-6000-964). Completion of the checklist requires obtaining signatures from numerous key line/functional managers and the PFP Training Manager. Review of PFP PIC training course organizations indicated that they cover broad aspects of safety topics to ensure PICs are trained and obtain familiarity with the field job knowledge essential to safe work completion.

A line of inquiry as to the qualifications, certification, and training of a recently appointed Team Lead was pursued with the PFP Stabilization Manager and the PFP Training Team Leader. For this newly appointed Team Leader, Team Leader qualification was required for assignment to a management position directly supervising the actions of nuclear operators.

The Stabilization Manager followed the guidelines in Project Hanford Management Contract Sitewide Training and Qualification and General Training Administration to appropriately determine sitewide and PFP facility specific training needs. Based upon the candidate's education and experience and the specific job assignments, the Manager and Training Department jointly worked together to analyze the functional and job requirements for the position and prepared a PFP Qualification Card/On-the-Job Training (OJT) Checklist specific to the PFP Stabilization Team Leader Position. In addition to meeting entry-level requirements/prerequisites, the PFP Stabilization Team Leader Qualification Card contains the following elements: initial training, fundamentals training, PFP plan specific training (Course Number 20056A was used in lieu of 200560 as described in FSP-PFP-1121, Section 7.0, "Surveillance Training Program"), and OJT. As the responsible manager, the Stabilization Manager worked with the training department to establish the training objectives and performance measures for the qualification items. The Training Department prepared the questions with the assistance from appropriate subject matter experts. The manager and subject matter experts reviewed all training material and approved all test questions in the test bank.

When the candidates completed all requirements on the qualification card, the Stabilization Manager evaluated the candidate' readiness for qualification using a set of lines of inquiries developed from the qualification card. The candidates then took a final written examination and performed an operational evaluation. The operational evaluation was to perform the candidates' job performance measures in the field. The candidate then conducted an interview with the Project Director and obtained sign-off on the qualification card. The Training Department finally set up a final oral board consisting of the Project Director, a Level 3 Manager from other than the candidates' organizations, Safety Manager, Criticality Safety Representative, and Training Manager (DOE was also invited to attend). After successful completion of the final oral board, the Stabilization Manager qualified candidates as certified Team Leaders.

The line managers and team leaders at PFP are reviewing their employees training matrix (TMX) at least weekly to ensure employees are qualified and to identify any changes that need to be made to the TMX. They are also reviewing a monthly report showing the 90-day look ahead for

training to further ascertain their employees training requirements are maintained current. This was considered a Noteworthy Practice. **(MG.2-1)**

An interview with the PFP Training Team Leader confirmed the Stabilization Manager descriptions of the training process. The Training Manager affirmed that line management is responsible for identifying training needs, setting training objectives, and approving the test bank.

**Criterion 4:** *Procedures and/or mechanisms are in place that ensure personnel performing work are competent to safely perform their work assignments.*

The PFP Project ISMS Program Description does not specifically describe personnel to be trained and qualified to perform the work to which they are assigned. As described in Criterion 3, HNF-PRO-168 holds managers responsible for ensuring that employees receive indoctrination and training according to the scope, complexity, and nature of their duties. FSP-PFP-1121 requires PFP personnel to participate in required training classes and identify any additional training needed to help them properly perform their assignments. FSP-PFP-1121 requires all employees be trained in the following areas as required by their job duties: Facility Orientation, Hanford General Employee Training, Radiological Worker I or II, Building Emergency Plans, Security Orientation Briefing, Criticality Safety for Fissile Materials Handlers, Criticality Safety for Managers and Engineers, or Criticality Safety for Support Personnel. FSP-PFP-1121 also contains requirements for developing the Training Implementation Matrix, which defines and describes the application of selection, qualification, certification, and other applicable training requirements for personnel appointed to the PFP Project. The responsible manager is responsible to work with the Training Department to ensure an appropriate training program is developed for each employee. For specific job evaluations, HNF-PRO-079 assures that hazards are identified, controls are developed, and the employees are informed of the hazards and work controls.

The PFP Training Team Lead provided an overview of the training process for new hires to the PFP Project. The process starts with the position description, which determines the entry-level education and experience requirements. The responsible managers and the Training Department then complete the functional and job analysis and determine the basic training and qualification requirements for positions for which they will be held accountable.

**Conclusion**

Procedures and/or mechanisms are in place at PFP that define clear roles and responsibility for safety. These procedures/mechanisms include, but are not limited to, the following: PFP IPMP (HNF-3617), PFP ISMS Program Description (FSP-PFP-5-8, Section 3.24), and PFP administration procedures and job descriptions. The PFP Project ISMS Program Description states lines of authority and specific responsibilities within the PFP Project are established in FSP-PFP-5-8 sections covering safety policy, PICs, and general safety rules. Review of these procedures clearly demonstrated that line management is responsible for the verification of

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.2**<br>DATE: 1/26/00 |
|---|---|

adequate implementation of controls to mitigate hazards prior to authorizing work to commence. However, no implementing mechanism or procedure was found that identifies the management positions at PFP and a listing of key functional responsibilities for those positions.

There are also sufficient procedures and/or mechanisms, such as PFP administrative procedures and HNF procedures, that require functional and job analysis to identify the educational, experience and training requirements to safely perform work. These procedures ensure that both manager/supervisors and workers receive appropriate training for qualification and certification, thereby enabling them to be competent to safely perform their assigned work activities. However, no description is found in FSP-PFP-5-8, Section 3.24, regarding a process (e.g., mechanism) by which the PFP Project is utilizing to train, qualify, and certify its personnel as a means to implement the ISMS Guiding Principle 3.

This objective has been met.

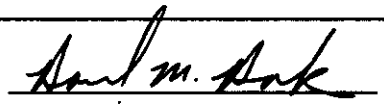
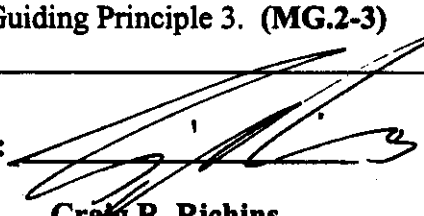
**Strengths:**

- The line managers and team leaders at PFP are reviewing their employee TMX at least weekly to ensure employees are qualified and to identify any changes that may need to be made to the TMX. Line managers and team leaders are also reviewing a monthly report showing the 90-day look ahead for training to further ascertain their employees training requirements are maintained current. This is considered a Noteworthy Practice. **(MG.2-1)**

**Concerns:**

- Although mechanisms are in place that define clear roles and responsibilities for safety at various management levels within the PFP Project, they are found in multiple procedures. Additionally, no implementing mechanism (e.g., project charter) or procedure exists that identifies the management positions at PFP and a listing of key functional responsibilities for those positions. **(MG.2-2)**

- Although it was found that training requirements of HNF-MP-011 are consistently and effectively crosswalked to FSP-PFP-1121. FSP-PFP-1121 makes no reference to HNF-MP-011. Additionally, no description is found in FSP-PFP-5-8, Section 3.24, regarding a process (e.g., mechanism) by which the PFP Project is using to train, qualify, and certify its personnel as a means to implement the ISMS Guiding Principle 3. **(MG.2-3)**

| | |
|---|---|
| Submitted:  <br>**Paul M. Pak**<br>***Team Member*** | **Approved:**  <br>**Craig R. Richins**<br>***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**MG.3** - An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE I/II-7)

## Criteria

1. Procedures and/or mechanisms are in place and used by personnel to collect feedback information, such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

2. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels, as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

3. Procedures and/or mechanisms are in place and used by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational, oversight, and assessment information into improvement processes and appropriate lessons learned.

4. Procedures and/or mechanisms are in place and used by managers to consider and resolve recommendations for improvement, including worker suggestions.

5. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained as required by rules, laws, and permits such as the *Price Anderson Amendment Act*; *National Environmental Policy Act of 1969*; *Resource Conservation and Recovery Act of 1976*; and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, etc.

6. Contractor procedures ensure that performance measures or indicators and performance objectives are developed in coordination with DOE as required. Contractor procedures require effective management and use of performance measures and objectives to ascertain the status of the ISMS.

## Approach

- Review the performance monitoring documentation for the feedback and continuous improvement process including such documents as occurrence reports, shift orders, deficiency tracking system, JCS and AJHA completed records, employee concerns, and self-assessment reports.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

- Review procedures for work to determine that adequate feedback and improvement mechanisms are in place.

- Interview personnel responsible for administering the feedback and continuous improvement process including those responsible for occurrence reporting, lessons-learned reporting, shift orders preparation, employee concerns, self-assessments, and oversight.

- Observe development and utilization of feedback and continuous improvement activities.

- Review the results and schedules of self and independent assessments.

- Review the performance measures or indicators and performance objectives. Ensure that a process has been established to measure the performance of the ISMS.

**Record Review**

- Review procedures to ensure that a process is established to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process.

- Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, shift orders, deficiency reports, post-job reviews, safety observer reports, employee concerns programs, and reports of self-assessments.

- Review procedures for work to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level.

- Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

- Review documents such as self-assessment schedules, self-assessments, and independent assessments. Verify that the issues management program promotes effectiveness and process improvement.

- Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the work is being planned and performed.

- Review documents to determine regulatory compliance with rules, laws, and permits such as the *Price Anderson Amendment Act*; *National Environmental Policy Act of 1969*; *Resource Conservation and Recovery Act of 1976*; and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, etc.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

**Interviews**

- Interview selected managers to determine the adequacy and effectiveness of the assessment activities.
- Interview contractor assessment managers to determine the adequacy and effectiveness of the contractor's oversight program, as well as other compliance or independent assessment programs that may be established.
- Interview personnel responsible for administering the feedback and continuous improvement progress.
- Interview personnel such as those responsible for occurrence reporting, lessons-learned preparation, shift orders preparation, worker concerns program, self-assessment, and oversight.
- Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities.
- Interview operators to determine adequacy and effectiveness of the feedback and continuous improvement process.

**Observations**

Observe development and utilization of feedback and continuous improvement activities. This should include such things as conducting post-job critiques including development of lessons-learned and determination of root causes, monitored evolutions, post-ALARA reviews, conducting a self-assessment or independent assessments, etc.

**Record Review**

- 15000-99-085, *Revision 5 of PFP List for Personnel Assigned to Perform Work Associated with Compliance Order (EA-1999-04),* Letter from F. R. Crawford, BWHC, to Distribution, August 31, 1999
- 15000-99-REH-012, *HNF-PRO-246, Management Assessment (Waiver 1),* Effective September 13, 1999, Letter from R. E. Heineman, to J. R. Kelly, FDH, October 28, 1999
- 15000-RDR-99-074, *Results of ISMS Survey*, Letter from R. D. Redekopp, FH, to F. R, Crawford, BWHC, January 7, 2000
- DOE Order 232.1A, *Occurrence Reporting and Processing of Operations Information*, July 21, 1997
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.4, "Occurrence Reporting," Rev. 9, October 4, 1999
  - Section 1.14, "Managing Lessons Learned," Rev. 2, October 4, 1999

  - Section 1.51, "Housekeeping Responsibilities," Rev. 3, December 21, 1999
  - Section 2.27, "Senior Supervisory Watch Program," Rev. 8, October 4, 1999
  - Section 2.36, "PFP Management Assessment Program," Rev. 5, Change 1, November 5, 1999
  - Section 2.42, "Corrective Action Management Program," Rev. 0, Change 0, November 15, 1999
  - Section 3.24, "PFP Stabilization and Deactivation Project ISMS Program Description," Rev. 1, Change 0, January 5, 2000
  - Section 5.3, "Drill Program," Rev. 12, Change 0, October 28, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, Change 0, January, 5, 2000
  - Section 14.3, "Radiological Work Planning and ALARA Program," Rev. 8, October 4, 1999
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*
  - Section 12, "Occurrence Reporting Training Program," Rev. 1, October 4, 1999
  - Section 22, "Drill Training Program," Rev. 5, October 4, 1999
- HNF-MP-003, *Integrated Environmental and Health Management System Plan*, Rev. 2, September 1, 1999
- HNF-PRO-052, *Corrective Action Management*, Rev. 3, January 10, 2000
- HNF-PRO-067, *Managing Lessons Learned*, Rev. 1, November 24, 1998
- HNF-PRO-058, *Critique Process*, Rev. 2, July 20, 1999
- HNF-PRO-246, *Management Assessment*, Rev. 2, October 25, 1999
- HNF-PRO-410, *Resolving Employee Concerns*, Rev. 0, March 1, 1998
- HNF-PRO-60, *Reporting Occurrence and Processing Operations Information*, Rev. 2, September 1, 1999
- HNF-PRO-653, *Deficiency Tracking System*, Rev. 1, July 12, 1999
- HNF-PRO-2243, *Nuclear Safety Requirement Noncompliances*, Rev. 0, March 1, 1998
- HNF-PRO-4294, *Performance Indicator Process*, Rev. 1, December 1, 1999
- Heating, Ventilation, and Air Conditioning Team November 1999 Report, November 1999
- PFP Plant Objectives and Performance Indicators, December 1999
- PFP Zero Accident Council Meeting Minutes, December 15, 1999
- Senior Director's Memorandum 99-04, *Safety Log*, Rev. 1, September 28, 1999.

**Interviews Conducted**

- Building Emergency Director (BED) (2)
- Manager, Environmental, Safety, Health, and Quality (ESH&Q)
- Nuclear Chemical Operator (NCO) (7)
- Operations Engineer (OE)
- Operations Specialist
- Price Anderson Amendment Act (PAAA) Coordinator

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

- Quality Team Lead
- Senior Director, PFP Stabilization and Deactivation
- Senior Project Manager
- Senior Scientist
- Stationary Operations Engineer (SOE)
- Technical Services Team Lead.

**Observations**

- Critique of PRF ARA, January 14, 2000
- Deficiency Evaluation Group (DEG) meeting, January 17, 2000
- Automated Job Hazard Analysis (AJHA) for Filter Room 314, January 17, 2000
- Critique 291-Z Lock and Tag issue, January 18, 2000
- Plant Performance meeting, January 18, 2000
- Stabilization Shift Turnover, January 18, 2000
- Director's Brief, January 19, 2000.

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place and used by personnel to collect feedback information, such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.*

FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1, Section 1.14, "Managing Lessons Learned," implements HNF-PRO-067, *Managing Lessons Learned*. Section 1.14 describes PFP's process for drafting, approving, and distributing lessons-learned documents for events that occur at PFP and for reviewing and distributing lessons-learned documents for events that occur external to PFP. However, the procedure does not provide a clear expectation as to what events or activities feed the lessons learned process. Section 1.14, Paragraph 5.1 describes the process for drafting lessons learned for abnormal events, conditions, or concerns. The procedure does not address generating lessons learned from good work practices, post-job reviews, and mock-up training. HNF-PRO-067 does specify that good work practices should be highlighted when generating a lessons learned. **(MG.3-4)**

FSP-PFP-5-8, Volume 1, Section 1.4, "Occurrence Reporting," implements the requirements listed in DOE Order 232.1A, *Occurrence Reporting and Processing of Operations Information*, and HNF-PRO-060, *Reporting Occurrence and Processing Operations Information*. Paragraph 4.4(4) states, "For personnel leading critiques, conducting investigations, and performing root cause analysis, at least one individual involved in any of these processes is required to be trained." HNF-PRO-058, *Critique Process*, specifies the training requirement for critique leaders. FSP-PFP-1121, *PFP Training Administration*, Section 12, "Occurrence Reporting Training Program," establishes the requirements of the PFP occurrence reporting

training program. However, the training specified in FSP-PFP-1121 is inadequate for occurrence report investigators/writers since formal training in root cause analysis is not required. **(MG.3-5)**

PFP conducts critiques in accordance with HNF-PRO-058 to obtain feedback from personnel involved with abnormal events or good practices. Critique leaders are trained in accordance with the requirements of HNF-PRO-058, and a list of those critique leaders are identified in writing by PFP line management in B&W Hanford Company (BWHC) letter 15000-99-085, Rev. 5, as required by HNF-PRO-058. However, the BWHC letter has not been updated to include the most recently qualified critique leader at PFP. **(MG.3-6)**

FSP-PFP-5-8, Volume 1, Section 5.3, "Drill Program," establishes PFP's Drill Program that meets the requirements of DOE Order 151.1, *Comprehensive Emergency Management System;* DOE-RL/94-02, *Hanford Emergency Management Plan*; HNF-PRO-424, *Emergency Preparedness Program Policy*; and HNF-4035, *Emergency Preparedness Drill Program.* Following a drill, the Drill Coordinator holds a post-drill critique with drill participants to gain insight on the response to the simulated casualty from the perspective of the participants and to provide quick feedback to the participants from the perspective of the Drill Evaluators. Subsequent to the drill critique, the Drill Coordinator prepares a drill critique report. The drill critique report consists of sections describing Good Practices, Needs Improvement, Comments/Suggestions, Problem Areas, Drill Team Issues, and Corrective Actions. Corrective Actions are tracked in Deficiency Tracking System (DTS) database or PFP's internal tracking system. The critique report is routed to appropriate plant management for further dissemination to personnel, Emergency Response Organization members, PFP Technical Services, and FDH Emergency Preparedness when required. Drill team members are trained and qualified in accordance with FSP-PFP-1121, Section 22 "Drill Training Program."

**Criterion 2:** *Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels, as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.*

During work package preparation, FSP-PFP-5-8, Volume 2, Section 13.4, "Work Management Process Description and Job Control System (JCS) Process," requires an AJHA be used for all JCS work performed at PFP. The work package preparer is responsible for contacting Field Work Team members who will be involved in the performance of the field work and subject matter experts (SME) to perform and document a hazard review using the AJHA. At the completion of the work, the Field Work Team is required to review the work package for lessons learned and post-ALARA review findings. HNF-MP-003, *Integrated Environment Safety and Health Management System Plan,* paragraph 3.6.2, requires the post-job review section of the AJHA be completed by the work planning and execution team and address such issues as effectiveness and adequacy of the following:

- Hazard and environmental impact identification as part of the Job Hazard Analysis process

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

- Controls and barriers
- Work instructions and procedures
- Budget, technical resource allocation, coordination, and scheduling
- Combination of craft skills, work-site supervision, and documentation
- Other work management considerations.

FSP-PFP-5-8, Volume 2, Section 13.4, lacks the specific requirements as stated in HNF-MP-003 to ensure a thorough post-job review, which should include reviews of the accuracy and completeness of the AJHA. **(MG.3-7, see also OP.1-5, OP.2-4, and OP.2-5)** Additionally, FSP-PFP-5-8, Volume 2, Section 13.4, does not require that lessons learned generated during a post-job review be sent to the PFP Lessons Learned Point of Contact. **(MG.3-8, see also OP.1-5, and OP.2-4)**

**Criterion 3:** *Procedures and/or mechanisms are in place and used by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational, oversight, and assessment information into improvement processes and appropriate lessons learned.*

HNF-PRO-052, *Corrective Action Management,* establishes the requirements for identifying and analyzing conditions and resolving deficiencies adverse to quality, safety, health, operability, or the environment. It also establishes the requirements and responsibilities for Corrective Action Management associated with the evaluation of conditions and correction of identified deficiencies for the Fluor Project Hanford Corrective Action Management Program activities. Assessments, Occurrence Reports, Nonconformance Reports, and Radiological Problem Reports are evaluated to identify deficiencies. Identified deficiencies are entered and tracked in the DTS in accordance with HNF-PRO-653, *Deficiency Tracking System.* The PFP DEG determines and documents the Risk Rank Value, determines the root cause, documents the PAAA screening results, determines corrective actions, and determines whether a lessons learned evaluation should be performed.

FSP-PFP-5-8, Volume 1, Section 2.36, "PFP Management Assessment Program," implements HNF-PRO-246, *Management Assessment Program.* Management assessments focus on those areas where a potential for improvement exists or areas that have not been covered by an independent assessment. A fiscal year 2000 Management Assessment Plan and schedule for the Nuclear Material Stabilization Project, as required by HNF-PRO-246, has been prepared and is documented in BWHC letter 15000-99-REH-012. In accordance with this BWHC letter, all deficiencies noted from assessments will be processed, documented, and tracked using HNF-PRO-052. Each deficiency will be screened for PAAA compliance per HNF-PRO-2243, *Nuclear Safety Requirements Noncompliance,* and the risk value and root cause determined as required per HNF-PRO-052. Lessons learned will be processed in accordance with HNF-PRO-067.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

FSP-PFP-5-8, Volume 1, Section 2.27, "Senior Supervisory Watch (SSW) Program," provides a program to monitor and mentor operating performance to improve PFP operations by identifying and resolving operational problems, and providing a process for trending and tracking conditions. **(MG.3-1)** The SSW Program has been effective in involving senior management at the activity level and allows for immediate feedback to and from management and personnel in the field at the time of observation. However, FSP-PFP-5-8, Volume 1, Section 2.27 does not specify which management personnel are designated as the SSW, or as a minimum, the qualifications and experience that would be required to serve as SSW. **(MG.3-9)** Additionally, FSP-5-8, Volume 1, Section 2.27 requires the SSW to conduct an end-of-shift discussion with the BED based on observations recorded in the SSW narrative notebook, but does not require the SSW to discuss these observations with the manager of the work team performing the activity observed. **(MG.3-10)**

FSP-PFP-5-8, Volume 1, Section 1.51, "Housekeeping Responsibilities," establishes the standards and responsibilities for housekeeping within PFP. It is the Senior Director's expectation of a clean, orderly, healthy, and safe work environment. The Senior Director or designated alternate is required to inspect 1 zone each week, which equates to each of the 12 zones once a quarter. Comments and deficiencies from the Senior Director's inspection are required to be forwarded to the Senior Director with the corrective actions taken, JCS number, or tracking number within one week following the inspection. This is viewed as a strength and reflects senior management commitment to a safe work environment. **(MG.3-2)**

**Criterion 4:** *Procedures and/or mechanisms are in place and used by managers to consider and resolve recommendations for improvement, including worker suggestions.*

PFP Senior Director's Memorandum 99-04, *Safety Log*, Rev. 1, has implemented the use of four Safety Logbooks located at strategic locations in the facility to provide an easy to use supplemental, written method to bring safety concerns to the attention of PFP employees and management. **(MG.3-3)** The log is also a documented record for tracking resolution of concerns. The Safety Log forms ask for four entries from the initiator, a description of the problem, a suggested resolution, the name of the initiator, and the date. The form is required to be reviewed by the responsible area manager, and bi-weekly by the PFP Safety organization personnel. It is required that action and due dates be assigned to the responsible party. The logbook entries are required to be updated as actions are scheduled and completed to allow interested parties to track progress on each issue. Complex or long-term issues are required to be tracked through the JCS and when necessary, placed on the DTS to further assure they get the attention required to fix the problem. Verification of this process to capture long-term items could not be verified, and should be evaluated in Phase II.

HNF-PRO-410, *Resolving Employee Concerns*, implements the Employee Concerns Program at PFP. The Employee Concern Program provides a mechanism to assure appropriate attention and response to any concerns related to the following: safety; health; security; quality; environmental protection; business ethics; compliance with laws and regulations; fraud, abuse, or mismanagement; or physical working conditions. The employees are free to discuss any matter

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

of concern at any time with their supervisor, managers, or Employee Concerns Points-of-Contact without recrimination or reprisal.

**Criterion 5:** *Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained as required by rules, laws, and permits such as the Price Anderson Amendment Act; National Environmental Policy Act of 1969; Resource Conservation and Recovery Act of 1976; and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, etc.*

All deficiencies identified that have regulatory significance are required by procedure to be handled in accordance with HNF-PRO-052. HNF-PRO-2243 requires nuclear safety noncompliances be evaluated, prioritized, and tracked through closure in accordance with HNF-PRO-052. In addition to the actions required by HNF-PRO-052, the responsible Compliance Officer shall evaluate each deficiency for potential noncompliances with nuclear safety requirements in accordance with HNF-PRO-2243 and the guidance in DOE-HDBK-1089-95. The PAAA screening process is procedurally required to be a part of the DEG process.

Compliance with National Environmental Policy Act of 1969; Resource Conservation and Recovery Act of 1976; and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 programs is covered in the SME.4 Assessment Form.

**Criterion 6:** *Contractor procedures ensure that performance measures or indicators and performance objectives are developed in coordination with DOE as required. Contractor procedures require effective management and use of performance measures and objectives to ascertain the status of the ISMS.*

PFP's performance indicators compare favorably with those specified by the Deputy Secretary of Energy in a December 3, 1999 memorandum. The Deputy Secretary listed five interim indicators for effective ISM implementation:

- Total Recordable Case Rate
- Occupational Safety and Health Cost Index
- Worker Radiation Dose
- Reportable Occurrences of Releases to the Environment
- Hypothetical Radiation Dose to the Public.

PFP monitors the first three indicators listed above. The data for the fourth indicator is available through the PFP occurrence reporting system, but is not tracked separately. The fifth indicator has not been implemented at PFP. This data is tracked on a sitewide basis and is published annually by Pacific Northwest National Laboratory. PFP does not plan to have a separate performance indicator for this parameter.

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

Although PFP uses management assessments and performance measures, an institutionalized program for measuring ISMS effectiveness was not found to be in place. **(See MG.1a-4)**

**Conclusion**

PFP has established feedback mechanisms to gather, analyze, and close out issues. However, concerns were identified in areas where PFP procedures governing the post-job review process, training and qualification, and generation of lessons-learned are less than adequate. Concerns were also identified within SME.2, OP.1, and OP.2 Assessment Forms whereby procedures governing the feedback process do not provide acceptable process definition.

This objective has not been met.

**Strengths:**

- FSP-PFP-5-8, Volume 1, Section 2.27, provides a program to monitor and mentor operating performance in order to improve PFP operations by identifying and resolving operational problems, and providing a process for trending and tracking conditions. **(MG.3-1)**

- FSP-PFP-5-8, Volume 1, Section 1.51, establishes the standards and responsibilities for housekeeping within PFP. Senior management is involved with weekly inspections and this reflects positively on their commitment to a safe work environment. **(MG.3-2)**

- PFP Senior Director's Memorandum 99-04, *Safety Log*, Rev. 1, has implemented the use of four Safety Logbooks located at strategic locations in the facility to provide an easy to use supplemental, written method to bring safety concerns to the attention of PFP employees and management. **(MG.3-3)**

**Concerns:**

- FSP-PFP-5-8, Volume 1, Section 1.14, does not address generating lessons-learned from good work practices, post-job reviews, and mock-up training. **(MG.3-4)**

- The training specified in FSP-PFP-1121 is inadequate for occurrence report investigators/writers since formal training in root cause analysis is not required. **(MG.3-5)**

- BWHC letter 15000-99-085, Rev. 5, has not been updated to include the most recent qualified critique leader at PFP as required by HNF-PRO-058. **(MG.3-6)**

- FSP-PFP-5-8, Volume 2, Section 13.4 lacks the specific requirements as stated in HNF-MP-003 to ensure a thorough post-job review, which should include reviews of the accuracy and completeness of the AJHA. **(MG.3-7, see also OP.1-5, OP.2-4, and OP.2-5)**

| FUNCTIONAL AREA: **Management Oversight** | OBJECTIVE: **MG.3**<br>DATE: 1/26/00 |
|---|---|

- FSP-PFP-5-8, Volume 2, Section 13.4 does not require that lessons-learned generated during a post-job review be sent to the PFP Lessons Learned Point of Contact. **(MG.3-8, see also OP.1-5, and OP.2-4)**

- FSP-5-8, Volume 1, Section 2.27 does not specify which management personnel are designated as the SSW, or as a minimum, the qualifications and experience that would be required to serve as SSW. **(MG.3-9)**

- FSP-5-8, Volume 1, Section 2.27 requires the SSW to conduct an end-of-shift discussion with the BED based on observations recorded in the SSW narrative notebook, but does not require the SSW to discuss these observations with the manager of the work team performing the activity observed. **(MG.3-10)**

| | |
|---|---|
| Submitted: **Joseph J. Waring**<br>***Team Member*** | **Approved:** **Craig R. Richins**<br>***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**SME.4** - Within the Environmental Compliance and Chemical Management area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Environmental Compliance and Chemical Management area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Environmental Compliance and Chemical Management contain clear roles and responsibilities. Environmental Compliance and Chemical Management is effectively integrated with line support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that within the subject area, feedback and continuous improvement occurs.

6. Contractor procedures provide a method to ensure that controls are implemented during preparation for the initiation of work and start-up activities at each level. The procedures ensure that adequate controls are identified to mitigate the identified hazards and the controls are effectively implemented. Contractor procedures provide assurance that controls will remain in affect so long as the hazards are present.

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

## Approach

### Record Review

- Review the manuals of practice and selected records that define the procedures and interactions required for Environmental Compliance and Chemical Management at the facility or activity.

- Assess the adequacy of the documents to meet the criteria above and determine that Environmental Compliance and Chemical Management is effectively integrated into facility and activity-level procedures. In particular, note the methods of Environmental Compliance and Chemical Management and the documentation produced during the execution of the facility work. Be alert to worker involvement in the processes reviewed.

- Review any lessons learned that provide an opportunity to assess that lessons learned have been effectively used or implemented within the Environmental Compliance and Chemical Management area.

- Review personnel training records of workers in Environmental Compliance and Chemical Management to determine they meet competency standards.

- Review performance indicators used to gauge effectiveness of the environmental compliance system (e.g., how well is pollution prevention, chemical management, and waste minimization are implemented, and how well the system controls work to meet regulatory requirements).

- Review the Chemical Management Implementation Plan and determine if the above criteria are being satisfied as a result of implementing the plan.

### Interviews

- Interview personnel and responsible managers assigned to Environmental Compliance and Chemical Management.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview personnel assigned to Environmental Compliance and Chemical Management to assess their level of competence.

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

**Observations**

- Observe events such as the development of a procedure, development of controls in AJHA, or the approval process for an individual work item, which includes interactions with personnel of the subject area.

- Observe field conditions and work activities to validate that environmental compliance steps are executed and meet established requirements. Interview appropriate personnel to ensure they believe this is true.

- Observe field conditions and work activities to validate Chemical Management is executed and meet established requirements. Interview appropriate personnel to ensure they believe this is true.

**Record Review**

- 15000-99-105, *Chemical Management System --Plutonium Finishing Plant*, Interoffice Correspondence from F.R. Crawford, BWHC, to Distribution, November 22, 1999
- Chemical Management System Implementation Plan
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.13, "Chemical Discharge Control and hazardous material Spill Reporting," Rev. 5, October 4, 1999
  - Section 1.21, "Control of 'On Mask-Chemical' Posting and Removal," Rev. 5, October 4, 1999
  - Section 1.30, "Solid Waste Management," Rev. 8, December 21, 1998
  - Section 1.51, "Housekeeping Responsibilities," Rev. 3, December 21, 1999
  - Section 2.27, "Senior Supervisory Watch Program," Rev. 8, October 4, 1999
  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 3.11, "Control of Flammable Gases," Rev. 7, October 4, 1999
  - Section 3.12, "Carcinogen Control Program," Rev. 4, October 4, 1999
  - Section 3.13, "Written Hazard Communication Program," Rev. 8, October 4, 1999
  - Section 3.16, "Deactivation/Reaction of Equipment," Rev. 3, October 4, 1999
  - Section 3.24, "Plutonium Finishing Plant, Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 1999
  - Section 6.12, "Management of Materials and Purchased Services," Rev. 5, July 1, 1999
  - Section 7.1, "Hazardous Material Management Plan/EPCRA 312 and 313," Rev. 6, October 4, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
- HNF-PRO-2258, *Chemical Management*, Rev. 0, August 31, 1998

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

- ZAP-000-04, *Preparing One Time Use Procedures (Work Plans) at the Plutonium Finishing Plant (PFP)*, Rev. A-2, November 4, 1999
- ZAP-000-010, *PFP Chemical Hygiene Plan*, Rev. A, Mod 1, September 2, 1998.

**Interviews Conducted**

- Engineers (Solid Waste Operations)
- Engineers, Environmental (2)
- Lead, Environmental Team
- Manager, Environmental, Safety, Health, and Quality
- Manager, PFP Vaults
- Manager, Solid Waste Operations Team
- Operations Specialist (Solid Waste, Chemical Management)(2).

**Observations**

None.

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms for Environmental Compliance and Chemical Management require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.*

Several interviews described the use of the Automated Job Hazard Analysis (AJHA) in planning work activities at the facility. The Environmental Compliance and Chemical Management (EC/CM) is included in the AJHA and work planning for work packages. The facility is in the process of including technical procedures in the AJHA process; however, not all procedures have been reviewed. The hazard identification review of work plans by laboratory and Solid Waste Operations are required by procedure to have potential hazards identified; however, the procedure does not specify a method. ZAP-000-04, *Preparing One Time Use Procedures (Work Plans) at the Plutonium Finishing Plant (PFP)*, does not identify a method to be used for potential hazard identification. This lack of institutionalization of a hazards and analysis identification of controls is listed as a concern in Operations Work Planning Assessment Form (OP.1-2). Personnel from Solid Waste operations stated that their work plans are reviewed for hazards and controls. In the EC area, no evidence of a process or procedure could be found that ensured that a consistent systematic approach was used when performing environmental reviews for work packages and documents. **(SME.4-1)** During interviews with the Environmental Team Lead and staff, facility procedures for work planning and technical procedure development and approval were cited as requiring an environmental review to be conducted. However, once the documents enter the environmental review process, there is no formalized process to track or ensure that the reviews meet management expectations.

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

**Criterion 2:** *Procedures and/or mechanisms for Environmental Compliance and Chemical Management contain clear roles and responsibilities. Environmental Compliance and Chemical Management is effectively integrated with line support managers to ensure that line managers are responsible for safety.*

The EC/CM roles and responsibilities are listed in the Human Resources job description for each of the managers and staff. During the interview with the Manager of Environmental, Safety, Health and Quality, it was stated that roles and responsibilities are discussed as part of the annual work performance evaluations. As a demonstration of the commitment to safety, the performance evaluation includes a minimum of one safety goal for each manager and staff personnel. This area was identified as an area for improvement during the facility readiness review, and to aid in this area the Environmental Team is developing a charter and clarifying roles and responsibilities to match redesign of the organization.

**Criterion 3:** *Procedures and/or mechanisms for Environmental Compliance and Chemical Management require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.*

The CM program at PFP has been integrated into the facility procedures and work-planning process. The PFP CM Implementation Plan identified 32 gaps, and all but 2 have been closed out. The facility has been using the CM Implementation Plan verification checklists to ensure implementation and documentation of the closure of these requirements. The last two gaps deal with the development and approval of a single CM procedure/program and tracking of chemicals used in processes that may change chemical characteristics through mixing, long-term storage, and radiolysis.

PFP relies on Hanford Site procedures for performing many of the environmental reviews for environmental compliance. The AJHA is the primary tool to identify the requirements for this review. The work-planning process employs pre-jobs and work package development to ensure controls are in place before work begins. As part of the facility redesign, many of the responsibilities for environmental engineering have been reassigned to specific operations and maintenance teams related to the specific facility operations. The Environmental Team is now focused on identification of requirements and oversight of facility procedures and technical documents to integrate these requirements into the facility process and procedures. To assist in permit development and project support, the facility relies on the Hanford Site central environmental organization.

**Criterion 4:** *Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that personnel who are assigned to the subject area have a satisfactory level of competence.*

Qualifications for all PFP employees are in the Human Resource job descriptions and training matrix. The training matrix is verified at weekly staff meetings to ensure workers have the

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

necessary qualifications to perform the work, and are maintaining their qualifications. If a worker does not have the needed training or current qualifications, a memo is placed in their files and the worker is assigned to other duties until the training is completed or qualifications are met.

**Criterion 5:** *Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that within the subject area, feedback and continuous improvement occurs.*

The EC/CM process for feedback is integrated into the work package review process and technical procedure development and modification process. The Environmental Team is in the process of updating their Self-Assessment Program due to integration of the two new programs, Management Assessments and Project Assessments, and managing the loss of manning resources due to facility redesign. Improvements in the Management Self-Assessment Program has forced the EC/CM program to modify the environmental self-assessment process for conducting and documenting assessments for EC. The PFP redesign of the Environmental Team and Management Assessment Program has not been incorporated into the EC/CM Self-Assessment Program under Project Assessments. **(SME.4-2)** The Solid Waste procedures and CM procedures are integrated into the Senior Supervisory Watch Program. Routine inspections of the facility and storage locations are conducted in accordance with the technical procedures for solid waste and chemical storage.

**Criterion 6:** *Contractor procedures provide a method to ensure that controls are implemented during preparation for the initiation of work and start-up activities at each level. The procedures ensure that adequate controls are identified to mitigate the identified hazards and the controls are effectively implemented. Contractor procedures provide assurance that controls will remain in affect so long as the hazards are present.*

The Environmental Team assigns a point of contact from the Hanford Site central environmental organization and allows direct contact with the PFP Project. If questions arise during the process, or if problems occur, then the Environmental Team will get involved. Based on the concern with not having a formalized process for tracking documents and work package reviews, there is a potential for a project not to comply with facility-specific requirements. Interview with the Environmental Team Lead indicate that when the Project is ready to proceed an internal review of all environmental documents and concerns is performed by the facility Environmental Team. The facility uses Hanford Site procedures for construction and design for environmental reviews and screenings regarding permits, National Environmental Policy Act, and other site requirements.

## Conclusion

The EC/CM has institutionalized the requirements into permits, administrative and technical procedures, or in the CM Implementation Plan. The EC/CM identification of hazards and controls is integrated into the work planning process and AJHA. There are minor concerns

| FUNCTIONAL AREA: **Subject Matter Expert Environmental Compliance and Chemical Management** | OBJECTIVE: **SME.4**<br>DATE: 1/26/00 |
|---|---|

regarding solid waste and laboratory operations that use work plans to perform the tasks (see OP.1-2). The internal environmental review process for work packages and technical documents has not been formalized within the Environmental Team program. The process is integrated in the work planning procedures through the use of AJHA; however, there is no documented systematic approach to track or process the reviews to meet management expectations within the Environmental Team.

This objective has been met.

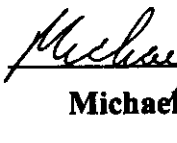
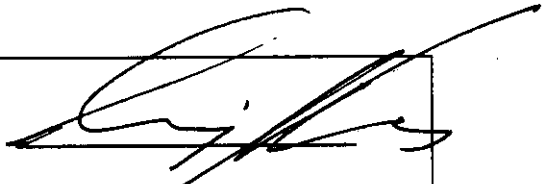
**Strengths:**

None.

**Concerns:**

- In the EC area, there is no formalized process or procedure that ensures a consistent systematic approach is used when performing environmental reviews for work packages and technical documents. **(SME.4-1)**

- The PFP redesign of the Environmental Team and Management Assessment Program has not been incorporated into the EC/CM Self-Assessment Program under Project Assessments. **(SME.4-2)**

| | |
|---|---|
| Submitted:  <br>**Michael J. Silvia**<br>***Team Member*** | **Approved:**  <br>**Craig B. Richins**<br>***Team Leader*** |

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**OP.1** – Work Planning. An integrated process has been established and is used to effectively plan work for the facility or activity. Within work planning clear roles and responsibilities have been established and there is a satisfactory level of competence (CE I/II-6)

## Criteria

1. Procedures and/or mechanisms are in place to ensure that work planning is integrated at the individual maintenance or activity level and fully analyzes hazards and develops appropriate controls.

2. Procedures and/or mechanisms for work planning contain clear roles and responsibilities.

3. Procedures and/or mechanisms for work planning require that personnel who are assigned to the subject area have a satisfactory level of competence.

4. Procedures and/or mechanisms are in place that ensure safety requirements are integrated into work planning.

5. Procedures and/or mechanisms are in place to incorporate hazards controls lessons learned from work execution into work planning.

6. Workers actively participate in the work planning process.

7. Procedures and/or mechanisms are in place that ensure adequate performance measures, feedback mechanisms, and indicators, including safety performance measures, are established for the work.

## Approach

### Record Review

- Review documents and/or mechanisms that govern the process for planning work with emphasis on the individual maintenance or activity level.

- Evaluate the adequacy of the division of responsibilities, worker involvement, and work planning process.

- Review documents and/or mechanisms that govern work planning to ensure that clear roles and responsibilities are identified.

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

- Review the mechanisms used to prepare and maintain operations and maintenance procedures for the PFP Project.

- Review the mechanisms used to prepare and maintain operations and maintenance procedures for the PFP Project. Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

- Review performance indicators used to gauge effectiveness of work planning.

**Interviews**

- Interview personnel responsible for planning the performance of the work. This should include personnel such as those responsible for preparing and maintaining documents such as the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations.

- Interview personnel responsible for development of maintenance or individual activity procedures and controls.

- Verify adequate worker involvement at each step of the process.

**Observations**

- Observe the actual work planning processes and activities supporting the work planning, i.e., resource availability, training and qualifications of resources, Employee Job Task Analysis, and EWPs. This should include such items as pre-job briefings, AJHA pre-job walk downs, work improvement team meetings, review of safety requirements, etc.

- Observe work hazard identification activities. This should include such things as validation of procedures, procedure tracking, compensatory measures determination, etc.

**Record Review**

- 1500-RDR-99-069, *Redesign and Procedure Compliance Letter*, 9/30/99
- 1500-RDR-99-074, *Results of Integrated Safety Management Systems Survey*, 1/3/00
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 1.2, "Joint Review Group," Rev. 5, October 4, 1999
  - Section 1.3, "Point of Contact Board," Rev. 4, October 4, 1999
  - Section 1.4, "Occurrence Reporting," Rev. 9, October 4, 1999
  - Section 1.5, "Non-Routine Release Response," Rev. 8, October 4, 1999

  - Section 1.14, "Managing Lessons Learned," Rev. 2, October 4, 1999
  - Section 1.34, "Alarm Management," Rev. 3, October 4, 1999
  - Section 1.36, "Process Flow Sheets," Rev. 2, October 4, 1999
  - Section 2.27, "Senior Supervisory Watch," Rev. 8, October 4, 1999
  - Section 2.36, "Management Assessment Program," Rev. 5, Change 1, November 5, 1999
  - Section 2.38, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 2.41, "New Employee Checklist," Rev.0, August 10, 1999
  - Section 2.42, "Corrective Action Management Program," Rev. 0, November 15, 1999
  - Section 3.1, "General Safety Rules," Rev. 7
  - Section 3.3, "Criticality Safety," Rev. 12, October 4, 1999
  - Section 3.6, "Deactivation and Reactivation of Equipment," Rev. 3, October 4, 1999
  - Section 3.24, "PFP Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
  - Section 6.1, "PFP Maintenance Scheduling," Rev. 2, January 28, 1999
  - Section 6.3, "Person in Charge (PIC)," Rev. 2, July 1, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.1, "Preventive Maintenance and Surveillance Recall System," Rev. 4, November 10, 1998
  - Section 13.3, "Operational Safety Requirement (OSR)," Rev. 5, July 2, 1999
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
  - Section 13.5, "Processing PFP Documents," Rev. 12
  - Section 13.5, "Processing PFP Documents," Rev. 14, Change 1, January 6, 2000
  - Section 13.6, "Technical Document Control System," Rev. 4, August 30, 1999
  - Section 13.7, "PFP Technical Procedure Use Policy," Rev. 2, August 30, 1999
- FSP-PFP-0821, *Conduct of Operations*
  - Chapter 2, "Shift Routines and Operating Practices," Rev. 8, July 13, 1999
  - Chapter 9, "Lockout and Tagout," Rev. 11, October 4, 1999
  - Chapter 12, "Operations Turnover," Rev. 6, October 4, 1999
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*
  - Chapter 7, "Surveillance Training Program," Rev. 9, October 4, 1999
  - Chapter 10, "Maintenance Training Program," Rev. 3, October 4, 1999
  - Chapter 11, "PIC Training Program," Rev. 5, October 4, 1999
- PFP Plant Objectives and Performance Indicators, November 1999
- ZAP-000-004, *Preparing One Time Use Procedures (Work Plans) at the PFP*, Rev. A-2, November 4, 1999.

**Interviews Conducted**

- Manager of Operations, Westinghouse System Management Solutions (WSMS)
- Manager of Stabilization
- Manager, Analytical Labs

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

- Manager, Near-Term Planning
- Manager, PFP Infrastructure Services
- Manager, PFP Stabilization
- Manager, PFP Vaults
- Manager, PPSL
- Manger, PFP Surveillance
- Project Director, PFP
- Senior Project Manager, Project Management.

**Observations**

- Plan of the Day, January 17, 2000
- Plan of the Day, January 19, 2000
- Plan of the Week, January 20, 2000
- Automated Job Hazard Analysis (AJHA) for FR-314, January 17, 2000
- Pre-job for Infrastructure Support Team Drum Movement, January 20, 2000.

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place to ensure that work planning is integrated at the individual maintenance or activity level and fully analyzes hazards and develops appropriate controls.*

The PFP work management process description (FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Vol. 2, Section 13.4, "Work Management Process Description and Job Control System Process") provides mechanisms to establish teams and utilize the AJHA tool to identify and evaluate hazards and appropriate controls. Section 13.4, "Purpose," specifically identifies that it does not apply to one-time operational evolutions controlled via work plan or process test plans. The procedure for development of work plans (ZAP-000-004, *Preparing One Time Use Procedures [Work Plans] at the PFP*) has no reference to the AJHA, although it does identify a requirement to describe potential hazards.

For other PFP technical documents (i.e., operating, radiological control, calibration, alarm response), the procedure for processing PFP documents (FSP-PFP-5-8, Vol. 2, Section 13.5, "Processing PFP Documents") requires performance of an AJHA by the work team for new or full revisions to most of the technical documents covered by Section 13.5. Verbal discussions with plant personnel indicate that the use of AJHAs for new and revised procedures is implemented for all technical documents except for administrative procedures and documents that do not provide specific performance steps for field work (i.e., FSP-PFP, CPS, ZAP, OSD). Section 13.5, however, omits a number of operational related technical documents (1-ZM, 2Z, ZSR, ZCR) in the table for documents which require an AJHA during revision. Section 13.5 does not provide the basis for this omission and is not consistent with the verbal understanding of

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

key PFP management personnel. Section 13.5 does not accurately describe the plant process for AJHA application for technical documents to ensure that all potential hazards are analyzed and controls identified. Furthermore, the current revision of Section 13.5 (Rev. 14) only contains two minor linkages to the AJHA process and does not provide any discussion of the timing of AJHA performance, roles and responsibilities for personnel performing the AJHA, nor integration between the AJHA and document development. A previous version of Section 13.5 (Rev. 12), Step 3.1 provides better institutionalization of the integration between the AJHA and procedure development. The facility operations point-of-contact has agreed that Section 13.5 is in error, and a revision to Section 13.5 is in progress. As currently documented, there is a concern regarding the institutionalization of hazards analysis and identification of controls (application of AJHA) for PFP technical documents and work plans. **(OP.1-2)**

The PFP work management process provides a table of requirements, which must be implemented based upon the risk and complexity of a particular job. The criteria upon which to make decisions regarding risk and complexity are addressed for radiological work, but initial questions directed at key plant personnel indicated that similar criteria were not in place to address other potential risks (i.e., chemical, criticality, industrial). Upon reflection, PFP personnel indicated that the risk/complexity tools embedded in the AJHA software are used to support risk/complexity decisions by field work teams. The verification team was unable to validate this practice in the field, but the criterion is available in the AJHA. Verification of this practice needs to be confirmed during Phase II verification.

An additional element of the work planning process is the scheduling of work activities and associated balance of priorities and safe sequencing of work. Since completion of the redesign, the process for maintenance scheduling (FSP-PFP-5-8, Section 6.1) is obsolete. Due to the fact that this procedure does not reflect current roles and responsibilities, current practices deviate from this procedure and not all work is captured by current scheduling activities. For example, personnel indicate that current practices are to only identify work, which requires resources outside of an individual work team or OSR related interfaces on the plan of the day. This is not consistent with Section 6.1 which states that the plan of the day should address field work activities performed by maintenance, operations, the laboratories, non-facility crafts, construction forces and radiological work. Current practices are not reflected in plant procedures for work scheduling and this can lead to differences in implementation regarding requirements for scheduling and integrating plant work. The scheduling process does not describe what work is scheduled and released (see BBC.2-2 and OP.2-1) and provide the basis and justification for those items which do not require formal schedule and/or release. **(OP.1-3)**

From a Phase II perspective, the single observation of a pre-job and work execution for drum movement indicated an adequate pre-job for a routine work activity and good use of a standing AJHA to identify the associated hazards and appropriate controls. The observations of two AJHA planning meetings produced the following comments:

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

- At one of the meetings (314 Filter Change Out), the need for using a combination filter (organic and high-efficiency particulate air [HEPA]) for their powered air purifying respirator (PAPR) was not recognized even though painting for contamination control was identified. The previous 313 Filter Change Out work package did address the filter issue, yet this information was not captured for the 314 Filter Change Out work package. It was evident during the meeting that personnel were not adequately familiar with the AJHA control screens, which are used to identify hazard controls. Furthermore, identification of additional SMEs (waste minimization and NEPA) did not appear to be captured by the planning committee.

- At the other AJHA meeting (remove sink/cabinet in Room 179), hot work requirements were not clearly understood and the appropriate SME was not contacted for resolution of the hot work issue.

**Criterion 2:** *Procedures and/or mechanisms for work planning contain clear roles and responsibilities.*

The three primary procedures that address work planning (FSP-PFP-5-8 Sections 13.4, 13.5 and ZAP-000-004) contain adequate roles and responsibilities for work planning, although based upon the recent implementation of the redesign, this is still a work in progress. A number of the supporting procedures (scheduling, work plans, shift routines and operating practices, OSR compliance, Maintenance Implementation Plan [MIP] and implementing documents) have not been revised to agree with the current organization. Furthermore, potential organization enhancements, which are being considered by the impending management team (WSMS) are also not reflected (as expected) in facility procedures, although they will impact personnel roles and responsibilities. Therefore, the complete set of procedures associated with work planning do not reflect current roles and responsibilities. **(OP.1-4)** An additional example of unclear roles and responsibilities is discussed regarding assignment of work package priority levels (see BBC.1-1). PFP is currently working on updates to the MIP; work plan procedure; and FSP-PFP-5-8, Sections 13.4 and Section 13.5 to support this corrective action.

**Criterion 3:** *Procedures and/or mechanisms for work planning require that personnel who are assigned to the subject area have a satisfactory level of competence.*

PFP work planning procedures (FSP-PFP-5-8, Section 13.4) utilize a field work team approach for all planned work. Training and qualification requirements are identified in the maintenance training program procedure (FSP-PFP-1121, Chapter 10). Furthermore, all planned work covered by Section 13.4 not performed in accordance with a pre-approved procedure or previous AJHA, requires performance of an AJHA to identify hazards and appropriate controls. Use of the field work team maximizes the skills mix and base of knowledge upon which to make work planning decisions, however it complicates the ability to measure overall competence of work planning personnel. This concern has been self-identified by the facility as MG item 4. Final resolution of MG item 4 is necessary to support Phase I implementation of ISMS. For the small

amount of contact and observations during Phase I, the field work teams continue to mature and the competence of work planning is enhanced by applying the team approach.

**Criterion 4:** *Procedures and/or mechanisms are in place that ensure safety requirements are integrated into work planning.*

Use of the AJHA and structure of the work teams provide the necessary mechanisms to ensure safety requirements are integrated into work planning. Both the work management process (FSP-PFP-5-8, Section 13.4) and PFP document process (FSP-PFP-5-8, Section 13.5) identify requirements for subject matter expert involvement in the identification of hazards and necessary safety requirements associated with the specific work planning activity. Furthermore, links are identified for performance of necessary hazards analysis and USQ evaluation against the PFP authorization basis. This combination of mechanisms ensure that safety requirements are integrated into work planning. Two self-identified facility improvement initiatives (OP item 3 and SME item 3) remain open in this area and should be fully resolved to enhance the integration of safety requirements into work planning.

**Criterion 5:** *Procedures and/or mechanisms are in place to incorporate hazards controls lessons learned from work execution into work planning.*

The work management process description (FSP-PFP-5-8, Section 13.4) contains requirements for feedback and lessons learned from work execution into work planning. Requirements associated with how this information is documented, to what level of detail it is documented, and how the information is retained so that it is available for future planning, has not been formally instituted except for radiological work. The recently completed ISMS survey of PFP personnel indicates that this area is a weakness and the facility has self-identified an improvement initiative (OP item 1) to develop performance measures for monitoring post-job work review. In addition to this activity, a comprehensive institutionalization of how work feedback information is documented, to what level of detail it is documented (and when it is not documented at all), and how information is retained so that it is available for future planning has not been completed. **(OP.1-5)**

**Criterion 6:** *Workers actively participate in the work planning process.*

The work management process (FSP-PFP-5-8, Section 13.4) clearly identifies that workers are actively engaged in work planning. The creation of field work teams throughout the organization demonstrates a commitment to maximize worker participation and implementation of the team approach to work planning and execution. From documentation and management interviews, it is clear that the work teams are a critical element of the work planning process. Continued maturity and formalization of tools for these work teams will lead to continued improvements in safe and efficient work execution. The concept of developing teams who have the necessary tools to plan and execute a significant portion of their assigned work without brokering additional resources is a strength, which should be nurtured to full maturity. The

teams are currently operating without a full team in some cases, so continued management attention in this area is warranted. Involvement of the workforce during development of the redesign and the focused attempt to design a system to empower the workforce is an exceptional accomplishment and the potential returns on this investment are significant and should not be overshadowed by the fact that plant procedures have lagged field and personnel implementation. **(OP.1-1)**

**Criterion 7:** *Procedures and/or mechanisms are in place that ensure adequate performance measures, feedback mechanisms, and indicators, including safety performance measures, are established for the work.*

PFP has instituted mechanisms that ensure adequate performance indicators (including safety measures) are established to support the PFP mission. The recently completed ISMS survey of PFP personnel indicates that this area is a weakness and the facility has self-identified an improvement initiative (OP item 1) to develop performance measures for monitoring post-job work review. Furthermore, the Plant Objectives and Performance Indicators are clearly utilized and continual improvement efforts are evident. Evidence is available to support that some of the field work teams and support organizations (i.e., engineering) are developing performance measures and feedback mechanisms (i.e., newsletters, technical performance measures) designed to directly support their scope or work at the activity level. These measures and mechanisms are not fully mature and continued growth should be fostered, but their presence and the active participation of the workforce demonstrate a commitment to continuous improvement.

**Conclusion**

Although a clear commitment to ISMS implementation in the area of work control is evident, a number of key items remain to be institutionalized to reflect current practices. The field work team concept is excellent, however, the tools available to the teams (procedures, AJHA applicability, scheduling, release of work) are not mature. Furthermore, all forms of work (including work plans and test plans) are not currently within the PFP ISM System for hazards analysis, authorization of work, and providing feedback.

This objective has not been met.

**Strengths:**

Formation of the field work teams has maximized worker participation in work planning and safe execution of assigned work. **(OP.1-1)**

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Operations Work Planning** | OBJECTIVE: **OP.1**<br>DATE: 1/26/00 |
|---|---|

**Concerns:**

- Applicability of the AJHA for hazards analysis is not institutionalized for all forms of PFP work documents. **(OP.1-2)**
- Work scheduling and release criteria is not formalized and does not reflect current work practices. **(OP.1-3)**
- Work planning and execution procedures do not reflect current roles and responsibilities. **(OP.1-4)**
- Work feedback mechanisms are not formalized to the point that they can be effective at supporting continuous improvement of work execution. **(OP.1-5)**

| | |
|---|---|
| **Submitted:** | **Approved:** |
| **Robert M. (Mat) Irwin** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**OP.2** – Operations Authorization/Work Execution. An integrated process has been established and is used to authorize and execute the identified work for the facility or activity. (CE I/II-6)

## Criteria

1. Procedures and/or mechanisms are in place that ensure there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

2. Procedures and/or mechanisms are in place that ensure there is a process used to gain authorization to conduct operations.

3. Procedures and/or mechanisms are in place that ensure that hazards are appropriately controlled and integrated into work performance.

4. Procedures and/or mechanisms are in place that ensure that workers have adequate competence for their duties.

5. Procedures and/or mechanisms ensure that feedback from work planning and execution and lessons learned are integrated into work processes.

## Approach

### Record Review

- Review documents and/or mechanisms that govern the process for authorizing, and conducting work with emphasis on the individual maintenance or activity level.

- Review documents and evaluate the adequacy of the division of responsibilities, worker involvement, and work authorization process.

- Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the work is being performed.

- Review the mechanisms used to prepare operations and maintenance procedures. Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to review and approve them.

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2** DATE: 1/26/00 |
|---|---|

- Review post-job critiques, AJHA and other records to determine if lessons learned and feedback can effectively occur.

- Review training requirements and records to ensure that maintenance and operations personnel are competent for work being performed.

**Interviews**

- Interview personnel responsible for authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining documents such as the POD, equipment status files, pre-job briefings, and the conduct of facility or activity operations.

- Interview personnel responsible for approval and execution of individual activity procedures and controls.

- Interview operations, maintenance, and safety personnel and verify adequate worker involvement at each step of the process.

- Interview personnel responsible and involved in the work feedback process.

**Observations**

- Observe the actual authorization and performance of work activities. This should include such items as pre-job briefings, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc.

- Observe work hazard identification activities. This should include such things as validation of procedures, procedure tracking, compensatory measures determination, etc.

- Observed post-job reviews and other methods used to provide feedback for continuous improvement.

**Record Review**

- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1
  - Section 1.14, "Managing Lessons Learned," Rev. 2, Change 0, October 4, 1999
  - Section 1.2, "Joint Review Group," Rev. 5, Change 0, October 4, 1999
  - Section 1.44, "Preventive and Predictive Maintenance," Rev. 2, Change 0, June 20, 1997
  - Section 2.23, "Identification and Resolution of Unreviewed Safety Questions," Rev. 21, Change 0, October 4, 1999

- Section 3.24, "PFP Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
- Section 2.3, "Training Program Administration," Rev. 9, Change 0, December 9, 1998
- Section 6.1, "PFP Maintenance Scheduling," Rev. 2, January 28, 1999
- Section 6.3, "Person-In-Charge (PIC)," Rev. 2, Change 0, July 1, 1999

- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 2,
  - Section 13.1, "Preventive Maintenance and Surveillance Recall System," Rev. 4, Change 1, November 10, 1998
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, Change 0, January 5, 2000
  - Section 13.5, "Processing PFP Documents," Rev. 14, Change 1, January 6, 2000
  - Section 13.6, "Technical Document Control System," Rev. 4, Change 0, August 30, 1999
  - Section 14.3, "Radiological Planning and ALARA Program," Rev. 7, Change 2, April 29, 1999
- FSP-PFP-0821, *PFP Conduct of Operations*
  - Chapter 1, "Operations Organization and Administration," Rev. 4, June 18, 1999
  - Chapter 2, "Shift Routines and Operating Practices," Rev. 8, July 13, 1999
  - Chapter 3, "Control Area Activities," Rev. 4, June 29, 1999
  - Chapter 8, "Control of Equipment and System Status," Rev. 4, December 30, 1998
  - Chapter 9, "Lockouts and Tagouts," Rev. 11, October 4, 1999
  - Chapter 12, "Operations Turnover," Rev. 6, October 4, 1999
  - Chapter 15, "Timely Orders to Operators," Rev. 4, October 4, 1999
- FSP-PFP-0821-PUO, *Plutonium Operation Administration*
  - Chapter 11, "Logkeeping," Rev. 6, June 10, 1998
  - Chapter 13, "Operational Aspects of Facility Chemistry and Unique Processes," Rev. 1, September 30, 1996
  - Chapter 14, "Required Reading," Rev. 5, June 10, 1998
- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*
  - Chapter 1, "General Training Administration," Rev. 9, October 4, 1999
  - Chapter 7, "Surveillance Training Program," Rev. 9, October 4, 1999
  - Chapter 10, "Maintenance Training Program," Rev. 3, October 4, 1999
  - Chapter 11, "Person-In-Charge Training Program," Rev. 5, October 4, 1999
  - Chapter 21, "Stationary Operating Engineer Training and Qualification Program," Rev. 1, October 4, 1999
- HNF-PRO-4616, *Supervision of Field Work Activities*, Rev. 2, June 30, 1999
- HNF-PRO-079, *Job Hazards Analysis*, Rev. 4, September 1, 1999
- 1500-RDR-99-069, *Redesign and Procedure Compliance Letter*, September 30, 1999
- 1500-RDR-99-074, *Results of Integrated Safety Management Systems Survey*, January 3, 2000
- PFP Plant Objectives and Performance Indicators, November 1999
- ZAP-000-004, *Preparing One Time Use Procedures (Work Plans) At the PFP*, Revision A-2, November 4, 1999

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2**<br>DATE: 1/26/00 |
|---|---|

- ZAP-000-005, *Controlling Process Area Operational Modes in Accordance with OSR Administrative Control 5.18*, Rev. A, Change 5, October 4, 1999
- ZAP-000-006, *Control of Airborne Radioactivity Area (ARA) Posting*, Rev. C, Change 3, December 13, 1999
- ZSP-002, *Moving Fissile Material*, Rev. A, Change 7, October 4, 1999
- Work Package 2Z-99-00629/W, *Replace FR-313 Filters.*

**Interviews Conducted**

- Acting Manager, PFP Surveillance
- Manager of Stabilization, WSMS
- Manager, Analytical Laboratory
- Manager, Environment Safety Health and Quality (ESH&Q)
- Manager, Infrastructure Services
- Manager, Near Term Planning
- Manager, Operations Support Team
- Manager, PFP Stabilization
- Manager, PFP Surveillance
- Manager, PFP Vaults
- Manager, Plutonium Process Support Laboratories
- Mechanical Engineer, High-Efficiency Particulate Air (HEPA) Filters Team
- Senior Project Manager, Project Management
- Work Coordinator, WAVS Team.

**Observations**

- PFP Plan of the Day meeting, January 13, 2000
- Automated Job Hazards Analysis (AJHA) for FR-314, January 17, 2000
- PFP Plan of the Day meeting, January 17, 2000
- PFP Plan of the Week meeting, January 20, 2000
- Pre-job for drum movement, Infrastructure Support Team, January 20, 2000
- Automated Job Hazard Analysis (AJHA) for sink removal, Room 179, January 24, 2000.

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2** DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms are in place that ensure there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.*

Procedures and mechanisms are in place to ensure that the facility/activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of work. FSP-PFP-5-8, *Plutonium Finishing Plant Administration,* Section 13.4, "The Work Management Process Description and Job Control System Process," provides the direction and guidance for a formal approach to controlling work. The scope of FSP-PFP-5-8, Section 13.4 includes the performance of corrective and preventive maintenance, modifications, fabrication and related services. Section 13.4 requires that all work be performed using appropriate instructions commensurate with the tasks based on identifying and incorporating applicable ES&H requirements and controls. This procedure also addresses the Building Emergency Director (BED) involvement in the work release process. The BED is responsible for releasing work through Daily Release Sheets, verifying that the work is compatible with current plant conditions, and verifying completion of all pre-requisites. Based on interviews and discussions with PFP personnel and reviews of work package 2Z-99-00629/W status, it became evident that over 200 work packages are in a "released for active work" status on the Job Control System (JCS) without being worked on or on the Plan of the Week or Plan of the Day. This is contrary to FSP-PFP-5-8, Section 13.4 direction which states that if work cannot proceed or be retained on the schedule as an actively released (actively being worked) package, the package should be assessed for suspension. Documentation in the JCS and interviews with key supervision and staff indicate that work packages are not routinely suspended, but remain in a released status. **(OP.2-1)** FSP-PFP-5-8, Section 6.1, "PFP Maintenance Scheduling," does not address suspension of work packages and removal from the schedule, is out-of-date, and does not reflect PFP's organizational redesign. **(OP.2-2)**

FSP-PFP-5-8, Section 6.3, "Person-In-Charge" identifies the responsibilities and authority assigned to the PIC. This responsibility includes ensuring that the jobs can be performed safely, the work force is in an adequate state of readiness, hazards are identified and controlled, and that work performed in accordance with work packages has been authorized by the shift manager through the daily release sheet. While this procedure provides appropriate guidance, FSP-PFP-5-8, Section 6.3 has not been updated to reflect the new training and qualification requirements of HNF-PRO-4616, *Supervision of Field Work Activities.* From interviews and discussions with PFP personnel, it is expected that a person supervising field work (work packages) will be both Person-in-Charge (PIC) and Field Work Supervisor (FWS) qualified and that a person supervising field work (operations) will be at least FWS qualified. This expectation is not documented in PFP procedures. PFP procedures do not reflect that PFP has PIC, PIC and FWS, and FWS only qualified personnel with limitations on their work supervision authority. **(OP.2-3)**

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2**<br>DATE: 1/26/00 |
|---|---|

**Criterion 2:** *Procedures and/or mechanisms are in place that ensure there is a process used to gain authorization to conduct operations.*

Procedures and mechanisms are in place that ensure processes are used to gain authorization to conduct operations. FSP-PFP-5-8, Section 13.4 addresses the BED's involvement in the work release process for Planning Required and No Planning Required work packages. The BED is responsible for releasing work via Daily Release Sheets and changing the package status on the Job Control System (JCS), verifying that the work is compatible with current plant conditions, and verifying completion of all pre-requisites. Initial Phase II observations indicate that the Daily Release Sheet process does not always occur as identified in Section 13.4.

Two procedures that generically address authorization to conduct work, other than that requiring a Daily Release Sheet, is described in FSP-PFP-0821, *PFP Conduct of Operations,* Chapter 2, "Shift Routines and Operating Practices" and Chapter 8, "Control of Equipment and System Status." These procedures place the overall responsibility for maintaining the operational configuration within the safety envelope defined by the Authorization Basis with the BED.

Other facility procedures also address when authorization from the BED must be obtained. Two examples include ZSP-002, *Moving Fissile Material,* which provides detailed guidance for gaining authorization from the BED for moving more than 15 grams of fissile material or uncounted waste; and ZAP-000-005, *Controlling Process Area Operational Modes in Accordance with OSR Administrative Control 5.18,* which provides guidance for what types of operations can be done in Modes 1, 2, or 3 and when to communicate with the BED regarding changing plant modes. Other operating procedures address obtaining BED authorization for particular evolutions.

**Criterion 3:** *Procedures and/or mechanisms are in place that ensure that hazards are appropriately controlled and integrated into work performance.*

Procedures and mechanisms are in place that ensure hazards are controlled and integrated into work performance. FSP-PFP-5-8, Section 13.4 addresses the need to perform Automated Job Hazard Analysis (AJHA) for high-risk complex tasks, high-risk simple tasks, and low-risk complex tasks (Table 7). The procedure for preparing work plans (ZAP-000-004) that are prepared for one-time use does not adequately address conducting an AJHA for the work. **(See OP.1-2)**

FSP-PFP-5-8, Section 13.5, "Processing PFP Documents," contains guidance for conducting an AJHA for new or full revisions to most of the technical procedures covered under Section 13.5 (ZSE, ZO, ZRC, ZH, etc.). However, a number of operationally oriented technical procedures (1-ZM, 2Z, ZSR, ZCR) were omitted from Appendix G of 13.5 and therefore are not required to have an AJHA conducted for new procedures or revisions. **(See OP.1-2)**

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2**<br>DATE: 1/26/00 |
|---|---|

**Criterion 4:** *Procedures and/or mechanisms are in place that ensure that workers have adequate competence for their duties.*

Procedures and mechanisms are in place that ensure workers have adequate competence for their duties. FSP-PFP-1121, *PFP's Training Administration*, addresses training and qualification/certification requirements for personnel involved in work activities. This includes operators and their supervision/management; Infrastructure Services crafts, engineers, team leads, support staff, and management; PICs; PPSL staff, and Analytical Laboratory staff.

**Criterion 5:** *Procedures and/or mechanisms ensure that feedback from work planning and execution and lessons learned are integrated into work processes.*

FSP-PFP-5-8, Section 13.4 provides the guidance for obtaining post-job feedback from personnel to capture the lessons learned. The process described for No Planning Required work does not define how work feedback information is documented, the level of detail of the documentation, and how information is retained and made available for future work evolutions. **(OP.2-4; see also OP.1-5)** The feedback process for Planning Required Tasks, however, does not require a post-job review other than a post-ALARA review per FSP-PFP-5-8, Section 14.3, "Radiological Planning and ALARA Program." The trigger levels for conducting a post-ALARA review per 14.3 are relatively high and according to personnel interviewed, post-ALARA reviews happen infrequently. This does not meet the intent for feedback from work planning and work execution. **(OP.2-5)** However, work packages receive a post-work package review after all requirements of the package have been completed, including applicable requests, ECNs, and restoration of the equipment is complete. As identified in Section 13.4, this review is to ensure that the package is ready to be archived and to identify any lessons learned. While this process may be considered to procedurally provide the feedback mechanism, the process may occur a significant time after the work has been completed and appropriate lessons learned and/or feedback from the work planning and execution may not be identified due to the time delay. The mechanism for capturing, retaining, and disseminating the feedback is not identified.

**Conclusion**

A clear commitment to ISMS implementation for the objective of OP.2 is evident. The field work team organization at PFP assists in worker participation and involvement in work planning and execution. However, a number of procedures do not adequately address the recent organizational changes, PIC and FWS qualification/authority, and work release processes. Other procedures do not provide acceptable feedback process definition and adequately define when an AJHA is required for performance of work. Based on the number and significance of areas for improvement, the objective for these criteria has not been met.

**Strengths:**

None.

## PFP PROJECT ISMSV-I ASSESSMENT FORM

| FUNCTIONAL AREA: **Operations Authorization/Work Execution** | OBJECTIVE: **OP.2**<br>DATE: 1/26/00 |
|---|---|

**Concerns:**

- FSP-PFP-5-8, Section 13.4 is not being followed for control of released work packages that are not being actively worked. **(OP.2-1)**
- FSP-PFP-5-8, Section 6.1 is out-of-date and does not reflect PFP's organizational redesign or the current scheduling practices. **(OP.2-2)**
- The differences between PIC and FWS qualified personnel and their authority is either described in error or inadequately described in PFP procedures. **(OP.2-3)**
- PFP procedures do not adequately define methods to capture and disseminate post-job reviews and lessons learned for No Planning Required work packages. **(OP.2-4; see also OP.1-5)**
- PFP procedures do not require or provide for adequate feedback in the form of post-job reviews and feedback mechanisms for Planning Required work packages. **(OP.2-5)**

| | |
|---|---|
| **Submitted:** Robert Hastings<br>**Robert G. (Rob) Hastings**<br>***Team Member*** | **Approved:**<br>**Craig R. Richins**<br>***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Subject Matter Expert**<br>**Radiation Protection** | OBJECTIVE: **SME.2**<br>DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**SME.2** - Within the Radiation Protection area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Radiation Protection area, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Radiation Protection require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Radiation Protection contain clear roles and responsibilities. Radiation Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Radiation Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Radiation Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Radiation Protection require that within the subject area, feedback and continuous improvement occur.

## Approach

### Record Review

- Review the applicable HNF-PRO series and PFP procedures and selected records that define the procedures and interactions required for Radiation Protection at the facility or activity level.

- Assess the adequacy of the documents to meet the criteria above and determine that Radiation Protection is effectively integrated into facility and activity level procedures.

- Review selected lessons learned to assess that lessons learned have been effectively used within the Radiation Protection area.

| FUNCTIONAL AREA: **Subject Matter Expert Radiation Protection** | OBJECTIVE: **SME.2** DATE: 1/26/00 |
|---|---|

- Review training records of personnel in Radiation Protection area to determine if such personnel meet competency standards.

**Interviews**

- Interview personnel and responsible managers assigned to the Radiation Protection area to assess their level of competence.

- Interview line managers to assess the establishment of clear roles and responsibilities, the understanding of the support provided to line managers, and the responsibility of line managers for safety.

- Interview appropriate personnel to ensure they believe work is appropriately planned and executed.

**Observations**

- Observe events such as the development of a procedure, development of a hazards analysis (such as an RWP), or the approval process for an individual work item, which includes interactions with personnel in the subject area.

- Observe field conditions and work performed to validate that work as planned is executable and meets established requirements.

**Record Review**

- B&W Hanford Company, *Plutonium Finishing Plant Integrated Environment Safety and Health Management System Phase I/II Readiness Review Report,* September 9, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume I
  - Section 1.1, "Safety Policy," Rev. 9, October 4, 1999
  - Section 1.14, "Managing Lessons Learned," Rev. 2, October 4, 1999
  - Section 2.36, "PFP Management Assessment Program," Rev. 5, November 5, 1999
  - Section 2.39, "PFP Authorization Envelope," Rev. 2, October 7, 1999
  - Section 3.1, "General Safety Rules," Rev. 7
  - Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 2000
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume II
  - Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
  - Section 13.5, "Processing PFP Documents," Rev. 14, January 6, 2000
  - Section 14.1, "PFP Radiological Control Notes Program," Rev. 1, December 10, 1998
  - Section 14.3, "Radiological Work Planning and ALARA Program," Rev. 1, April 29, 1999

| FUNCTIONAL AREA: **Subject Matter Expert Radiation Protection** | OBJECTIVE: **SME.2** DATE: 1/26/00 |
|---|---|

- FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Section 14.0, "Radiological Control Training Programs," Rev. 3, October 4, 1999
- HNF-3617, *Integrated Project Management Plan for the Plutonium Finishing Plant Stabilization and Deactivation Project,* Rev. 0, May 3, 1999
- HNF-MP-003, *Integrated Environment Safety and Health Management System Plan,* Rev. 2, September 1, 1999
- HNF-PRO-067, *Managing Lessons Learned,* Rev. 1, November 24, 1998
- HNF-PRO-079, *Job Hazard Analysis,* Rev. 4, September 9, 1999
- HNF-PRO-329, *Radiological Training,* Rev. 0, September 8, 1997
- HNF-PRO-386, *Radiological Control Technician Qualification and Training,* Rev. 0, September 8, 1997
- HNF-PRO-423, *Radiological Work Permits,* Rev. 0, September 8, 1997
- HNF-PRO-686, *Radiological Hold Points,* Rev. 1, June 16, 1999
- HNF-PRO-1618, *ALARA Decision-Making Methods,* Rev. 0, August 17, 1997
- HNF-PRO-1619, *ALARA Organization and Responsibilities,* Rev. 0, September 1, 1998
- HNF-PRO-1620, *ALARA Program Scope,* Rev. 0, September 1, 1998
- HNF-PRO-1621, *ALARA Decision-Making Methods,* Rev. 0, August 17, 1998
- HNF-PRO-1623, *Radiological Work Planning Process,* Rev. 1, August 17, 1999
- HNF-PRO-1629, *ALARA Administrative Control Levels,* Rev. 0, February 28, 1998
- HNF-PRO-1630, *Radiological Performance and ALARA Goals,* Rev. 0, August 10, 1998
- HNF-PRO-1631, *ALARA Training,* Rev. 0, February 27, 1998
- HNF-PRO-1633, *ALARA Program Records,* Rev. 0, September 1, 1998.

**Interviews Conducted**

- Manager, PFP Environment Safety Health & Quality
- Manager, PFP Radiological Control Team (current)
- Manager, PFP Radiological Control Team (incoming - Westinghouse Safety Management Solutions)
- Lead, PFP Radiological Engineering Team
- Radiological Trainer.

**Observations**

- Automated Job Hazards Analysis (AJHA) for High Efficiency Particulate Filter Change-Out in FR 314, January 17, 2000
- Pre-Job Briefing for Aerosol Penetration Testing of High Efficiency Particulate Filters in FR 313, January 18, 2000.

| FUNCTIONAL AREA: **Subject Matter Expert Radiation Protection** | OBJECTIVE: **SME.2** DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms for Radiation Protection require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.*

The PFP procedures and processes described in FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Section 13.4, "Work Management Process Description and Job Control System Process," and Section 13.5, "Processing PFP Documents," in conjunction with FH procedures and processes, require adequate planning of individual work items to ensure radiological hazards are analyzed and radiological controls are identified. The AJHA process, which is used for work planning and development of technical work documents, incorporates the analysis of radiological hazards and the identification of appropriate radiological controls. Radiological work screening is required for all radiological work. FSP-PFP-5-8, Section 14.3, "Radiological Work Planning and ALARA Program," provides a graded approach for identifying appropriate radiological controls based on criteria for assessing the level of risk (low, medium, or high), associated with a particular work item.

**Criterion 2:** *Procedures and/or mechanisms for Radiation Protection contain clear roles and responsibilities. Radiation Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.*

PFP procedures provide clear roles and responsibilities for Radiation Protection. FSP-PFP-5-8, Section 13.4, which is used for work planning, and Section 13.5, which is used for development of technical work documents, task Radiation Protection Program personnel with the responsibility of analyzing radiological hazards and identifying appropriate radiological controls, while ensuring that responsibility for safety, including Radiation Protection, lies with line management. FSP-PFP-5-8, Section 14.3 requires the involvement of line management in enhanced ALARA work planning.

**Criterion 3:** *Procedures and/or mechanisms for Radiation Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.*

PFP procedures require that appropriate radiological controls are implemented, are effectively integrated, and readiness is confirmed prior to performing work. The development of integrated work teams, including dedicated Radiation Protection personnel, has greatly enhanced the integration and implementation of appropriate radiological controls. **(SME.2-1)** FSP-PFP-5-8, Section 13.4 and Section 13.5 require appropriate review and confirmation of readiness prior to performing work.

| FUNCTIONAL AREA: **Subject Matter Expert Radiation Protection** | OBJECTIVE: **SME.2** DATE: 1/26/00 |
|---|---|

**Criterion 4:** *Procedures and/or mechanisms for Radiation Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.*

PFP procedures, in conjunction with FH procedures, require that Radiation Protection personnel have a satisfactory level of competence. FSP-PFP-1121, *Plutonium Finishing Plant Training Administration*, Section14.0, "Radiological Control Training Programs," establishes both base and PFP-specific requirements and qualification standards for radiological control technicians. Processes have been established for identifying similar requirements and qualification standards for Radiation Protection support personnel, e.g., radiological engineers. However, these processes for Radiation Protection support personnel have not yet been institutionalized in formal procedures. **(SME.2-2)**

**Criterion 5:** *Procedures and/or mechanisms for Radiation Protection require that within the subject area, feedback and continuous improvement occur.*

PFP procedures, in conjunction with FH procedures, require feedback and continuous improvement for Radiation Protection activities. FSP-PFP-5-8, Section 1.14, "Managing Lessons Learned," FSP-PFP-5-8, Section 14.1, "PFP Radiological Control Notes Program," as well as PFP work-planning procedures discussed in criterion 1 above, provide for feedback and continuous improvement through such programs as Lessons Learned, Radiological Control Notes, Post-Job ALARA reviews, and Radiological Problem Reports. While these programs provide significant input for feedback and continuous improvement, PFP procedures do not provide sufficient requirements to ensure that such input is evaluated and applied during future work activities. **(SME.2-3)**

**Conclusion**

PFP procedures and processes, in conjunction with flow down of FH procedures and processes, have formally integrated radiation protection into the ISM at PFP. The planning of work includes an integrated analysis of radiological hazards and development and specification of necessary radiological controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement within Radiation Protection. Within the Radiation Protection area, line managers are responsible for safety, clear roles and responsibilities have been established, and satisfactory levels of competence have been established.

This objective has been met.

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Subject Matter Expert Radiation Protection** | OBJECTIVE: **SME.2**<br>DATE: 1/26/00 |
|---|---|

**Strengths:**

Based on numerous DOE and FH reviews, PFP has made significant improvements in the analysis, integration, and implementation of appropriate radiological controls during the past 2 years. The development of integrated work teams with dedicated Radiation Protection personnel, and the establishment of the AJHA as a work-planning tool, has greatly accentuated this improvement. **(SME.2-1)**

**Concerns:**

- PFP has a process for identifying training requirements and qualification standards for Radiation Protection support personnel, e.g., radiological engineers. While this process is currently being implemented, this process has not yet been formally institutionalized. **(SME.2-2)**

- While several programs for feedback and continuous improvement in Radiation Protection have been established at PFP, formal requirements for incorporating the results of these programs in the planning for future work activities have not been established. **(SME.2-3)**

| | |
|---|---|
| **Submitted:** Wayne M. Glines | **Approved:** |
| **Wayne M. Glines** | **Craig R. Richins** |
| ***Team Member*** | ***Team Leader*** |

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

## OBJECTIVE

**SME.3** - Within the Safeguards and Security area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work, and a process for identifying opportunities for feedback and continuous improvement. Within the Safeguards and Security area, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II 5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Safeguards and Security require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Safeguards and Security contain clear roles and responsibilities. Safeguards and Security is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Safeguards and Security require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Safeguards and Security require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Safeguards and Security require that within the subject area, feedback and continuous improvement occur.

## Approach

### Record Review

- Review and evaluate the planning documents and procedures that define the work within Safeguards and Security.

- Review and evaluate the procedures/mechanisms used to identify the work hazards. Ensure that procedures require that Safeguards and Security work is integrated within the PFP.

- Review and evaluate the procedures/mechanisms used to ensure controls are identified and implemented.

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

- Review and evaluate the procedures/mechanisms used to ensure that work is conducted in compliance with controls.

- Review lessons learned documents pertaining to Safeguards and Security to assess the effectiveness of the program.

- Review documents that delineate roles and responsibilities at the facility and the activity level as it relates to Safeguards and Security.

- Review the training plans, personnel training records, certifications, and educational background to determine if personnel meet competency.

**Interviews**

- Interview responsible managers assigned to the Safeguards and Security area to assess their understanding of ISMS and their commitment to its implementation.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview workers who have Safeguards and Security responsibility to determine their understanding of ISMS and their participation in the process.

**Observations**

- Observe events such as the development of a lesson plan, discussion of incorporation of safety controls in job planning in a security exercise (at PFP), development of a hazards analysis such as an AJHA, or the approval process for an individual work item, which includes interactions with personnel in the subject area.

- Observe Safeguards and Security operations to validate that work is planned according to procedures and meets established requirements.

**Record Review**

- 1999 Site Safeguards and Security Plan, December 8, 1999
- 2Z-98-013557/W Work Plan, *Automated Job Hazard Analysis, Radiological Work Permit, Replace CMUs and Label Canisters*, for January 19, 2000
- A-6002-027, *Hanford Job Safety Analysis (JSA) Checklist*, June 1998
- A-6002-027, *Hanford Job Hazards Analysis, SPO III Tactical Obstacle Course*, March 1, 1999
- A-6002-027, *Hanford Job Hazards Analysis, Semi-Annual Firearms Qualifications for SPO IIs and IIIs*, March 11, 1999

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

- DOE Order 5480.21, *Unreviewed Safety Questions*, December 24, 1991
- DOE Order 5632.7A, *Protection Force Program*, April 13, 1994
- DOE Order 5660.1B, *Management of Nuclear Materials*, May 26, 1994
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 1, Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description," Rev. 1, January 5, 1999
- FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Volume 2, Section 13.4, "Work Management Process Description and Job Control System Process," Rev. 19, January 5, 2000
- FY 2000 Safeguards and Security Annual Work Plan W.B.S. 6.3
- Hanford Patrol FY 2000 Training Plan
- HNF-4804, *Safety Procedure*, Rev. 0, July 9, 1999
- HNF-IP-0730-PO26, *Post Orders: Patrol Training Academy, Curriculum Development and Lesson Plans/Training Management Plan*, Rev. 4, June 7, 1999
- HNF-IP-1065-PO22, *Post Orders, Northern Area, Shift Lieutenant*, Rev. 5, December 14, 1998
- HNF-IP-1292, *Patrol Safety*, Rev. 1, December 21, 1998
- HNF-MP-003, *Integrated Environment Safety and Health Management System Plan*, Rev. 2, September 1, 1999
- HNF-PRO-502, *Material Control and Accountability Plan*, Rev. 0, September 30, 1997
- Subcontract No. 80232764-9-K025, Contract between Protection Technologies Hanford and Flour Daniel.

**Interviews Conducted**

- Building Emergency Director
- Cognizant Engineer, PFP Safeguards and Security
- Director, Protection Technology Hanford (PTH) Program Management
- ISMS Coordinator, PTH
- Manager, PFP Safeguards and Security Program Project
- Manager, PTH Environmental, Safety and Health
- Person-in-Charge, CMU Pre-Job Brief, January 19, 2000
- Safeguards Director, PTH
- Safety Officer, PTH
- Training Manager, PTH.

**Observations**

Pre-Job Briefing for CMU Replacement in Vault 4, January 19, 2000.

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

**Discussion of Results**

**Criterion 1:** *Procedures and/or mechanisms for Safeguards and Security require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.*

The Safeguards and Security function for PFP is provided by PTH under subcontract to Flour Hanford. This alignment complicated the ISMS Review Phase I for Safeguards and Security because of the bifurcated nature of the arrangement. Although most of the Safeguards and Security functions are fully integrated into PFP's ISMS, the patrol function is not. Additionally, PTH has not declared its readiness for an ISMS review.

The definition and planning for the Safeguards and Security work is well structured. The requirements are defined by DOE Orders, which are translated into mission, statements of work and annual work plans. The Safeguards and Security scope is contained in Subcontract No. 80232764-9-K025, which authorizes PTH to support FH and the projects in planning, managing, integrating, operating, and implementing a full range or designated portions thereof, of the Hanford Site's programs, projects, and other activities that relate to Safeguards and Security. The Annual Work Plan further defines the scope of work and lists three major areas of Safeguards and Security support at PFP: Technical Support, Safeguards, and Patrol.

Technical Support provides security systems engineering and maintenance support to ensure compliance with requirements for the protection of DOE security interests at PFP and retain a safe and cost-effective security alarm system. The identification of hazards for Technical Support fall within the safety analysis report for the facility, and the personnel assigned to Technical Support are required to meet all facility safety training requirements in order to work in the facility. Individual tasks are defined by procedures and the PFP's Job Control System (JCS) process. The hazards at the task level are defined by the JCS process and the Automated Job Hazards Analysis (AJHA). The controls are enforced by the Person-in-Charge (PIC) program and ACES. The PIC is the person responsible for the individual job and provides control of the job. The ACES program is a database that ensures persons entering a radiological area have the required training. Within Technical Support, the work is well defined, the hazards are identified, and the work is performed within controls.

Safeguards controls and accounts for nuclear materials stored at the PFP. Their function is primarily one of oversight. The identification of hazards for Safeguards falls within the safety analysis report for the facility, and Safeguards personnel are required to meet all facility safety training requirements in order to work in the facility. Safeguards personnel do not perform hands-on work in the PFP and therefore do not participate in the JCS or AJHA. When observing work within the PFP, Safeguards personnel are required to follow the directions of the PIC. Safeguards work is well defined and their participation in hazards analysis and control is adequate.

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

Patrol provides the security police officers (SPO) assigned to the PFP. Their work is well defined and detailed in the Site Safeguards and Security Plan, Patrol policy, and post orders. The identification of facility hazards for Patrol fall within the safety analysis report for the facility and Patrol personnel are required to meet all facility safety training requirements in order to work within the facility. Patrol has a well defined command structure and lieutenants are responsible for enforcing procedures. The hazards for the SPOs, which are unique to their work as SPOs at PFP, have been analyzed through the Patrol Training Academy. All SPOs are required to complete the Basic SPO Training Course, complete the required annual refresher training, and re-qualify with their duty firearms semi-annually. This comprehensive training program includes required job hazards analysis, which includes the hazards faced on post at the PFP. PTH's formal process for job hazards analysis is documented in the Annual Training Plan and Patrol Training Academy post orders. The work is well defined, hazards have been identified, and controls are in place.

**Criterion 2:** *Procedures and/or mechanisms for Safeguards and Security contain clear roles and responsibilities. Safeguards and Security is effectively integrated with line-support managers to ensure that line managers are responsible for safety.*

Procedures and mechanisms contain clear roles and responsibility. Within Technical Support and Safeguards, the PIC is responsible for safety as defined in the job control system (FSP-PFP-5-8,Vol. 2, *PFP Administrative Procedure*, Section 13.4, "Work Management Process Description and Job Control System Process.") Within Patrol, there are clear and unambiguous lines of responsibility establishing that line management is responsible for safety. This is detailed is HNF-4804, *Safety Procedure* and in post orders. All personnel are empowered with stop work authority.

The interface between Patrol and PFP is accomplished in a variety of ways. Post orders for the PFP Central Alarm Station require daily phone contact with the Building Emergency Director to ascertain the current status of the facility. This practice provides for the discussions of safety issues as well as security. There is almost daily, routine business phone contact between the Manager, PFP Safeguards and Security Program Project and Patrol management. There appear to be a number of ongoing routine business contacts between Safeguards and Security personnel and PFP personnel. These formal and informal lines of communication ensure a regular exchange of information.

**Criterion 3:** *Procedures and/or mechanisms for Safeguards and Security require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.*

Technical Support and Safeguards work within the JCS process (FSP-PFP-5-8, Volume 2, Section 13.4.) Procedures and the pre-job brief ensure that controls are implemented, integrated, and readiness is confirmed prior to performing work. Patrol is a 24-hour, 7-day a week job. Controls and readiness are confirmed by ongoing supervision by Patrol supervision

| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

(HNF-IP-1065-PO22, *Post Orders, Northern Area, Shift Lieutenant*) and oversight by DOE (DOE Order 5632.7A, *Protection Force Program*).

**Criterion 4:** *Procedures and/or mechanisms for Safeguards and Security require that personnel who are assigned to the subject area have a satisfactory level of competence.*

PTH ensures a satisfactory level of competence. Within Technical Support and Safeguards, PTH uses hiring qualifications based on the work to be performed. Each position has a position description and a training requirement which is tracked by PTH. Within Patrol, the SPOs must meet the requirements of DOE Order 5632.7A and complete the training specified in the Annual Training Plan. A review of the Annual Training Plan shows an adequate level of training to maintain SPO competence.

**Criterion 5:** *Procedures and/or mechanisms for Safeguards and Security require that within the subject area, feedback and continuous improvement occur.*

Within Safeguards and Technical Support, the feedback process is integrated with the PFP feedback process (FSP-PFP-5-8, Volume 1, Section 3.24, "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description). PFP uses a variety of mechanisms, including the following: lessons learned, the Occurrence Reporting System, management assessments, and assessments by DOE. Patrol has no formal procedure to describe the feedback process, but rather relies on a series of assessments including the following: self-assessments, DOE assessments, lessons learned, management assessments, and various safety councils.

**Conclusion**

The Technical Support and Safeguards aspect have been met by full integration into the ISMS of PFP, and Patrol has institutionalized key functions to support ISMS implementation.

This objective has been met.

**PFP PROJECT ISMSV-I ASSESSMENT FORM**

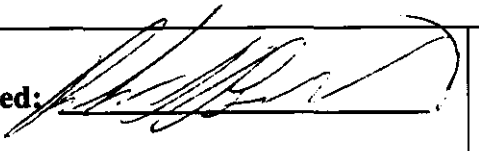
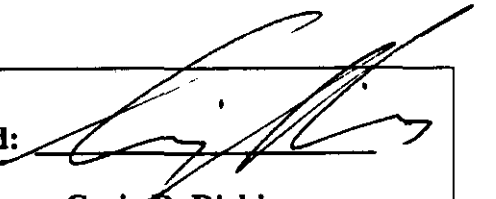
| FUNCTIONAL AREA: **Subject Matter Expert Safeguards and Security** | OBJECTIVE: **SME.3** DATE: 1/26/00 |
|---|---|

**Strengths:**

None.

**Concerns:**

None.

| | |
|---|---|
| **Submitted:**  **Richard G. Bartlett** *Team Member* | **Approved:**  **Craig R. Richins** *Team Leader* |

DOE/RL-99-86, Rev. 0
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE

# Plutonium Finishing Plant

# Integrated Safety Management System Phase I/II Verification

# Review Plan

Richland, Washington
January 10 - February 4, 2000

**Craig R. Richins**
**Integrated Safety Management System**
**Verification Team Leader**

## TABLE OF CONTENTS

1.0 INTRODUCTION/BACKGROUND ..... 1

2.0 PURPOSE ..... 2

3.0 SCOPE ..... 2

4.0 PREREQUISITES ..... 4

5.0 OVERALL APPROACH ..... 4
5.1 SEQUENCE OF ACTIVITIES ..... 5

6.0 PREPARATIONS ..... 6
6.1 PHASE I/II TEAM PREPARATIONS ..... 6
6.2 PLUTONIUM FINISHING PLANT PROJECT PREPARATIONS ..... 6

7.0 PROCESS FOR INTEGRATED SAFETY MANAGEMENT SYSTEM REVIEW ..... 7

8.0 ADMINISTRATION ..... 8
8.1 MEETINGS AND PRESENTATIONS ..... 8
8.2 DOCUMENTATION OF THE INTEGRATED SAFETY MANAGEMENT PHASE I/II VERIFICATION ..... 9
8.3 TEAM COMPOSITION AND ORGANIZATION ..... 10

9.0 FINAL REPORT FORMAT ..... 10

10.0 SCHEDULE ..... 12

11.0 REFERENCES ..... 14

## APPENDICES

A TEAM LEADER LETTER OF APPOINTMENT ..... A-i

B TEAM ASSIGNMENTS AND BIOGRAPHIES ..... B-i

C ISMS PHASE I/II CRITERIA AND REVIEW APPROACH DOCUMENTS ..... C-i

## ACRONYMS

| | |
|---|---|
| BBC | Business, Budgets, and Contracts (subteam) |
| CRAD | Criteria and Review Approach Document |
| DEAR | Department of Energy Acquisition Regulations |
| DNFSB | Defense Nuclear Facilities Safety Board |
| DOE | U. S. Department of Energy |
| ES&H | Environment, Safety, and Health |
| FEB | Facility Evaluation Board |
| FH | Fluor Hanford |
| HAZ | Hazard Identification and Standard Selection (subteam) |
| ISM | Integrated Safety Management |
| ISMS | Integrated Safety Management System |
| ISMSV | Integrated Safety Management Systems Verification |
| MG | Management Oversight (subteam) |
| OP | Operations (subteam) |
| PFP | Plutonium Finishing Plant |
| PHMC | Project Hanford Management Contract |
| RL | DOE, Richland Operations Office |
| SME | Subject Matter Expert |

## 1.0 INTRODUCTION/BACKGROUND

The U. S. Department of Energy (DOE) policy (DOE P 450.4) requires that safety be integrated into all aspects of the management and operation of its facilities. In simple terms, the DOE will "Do work safely." The purpose of this Integrated Safety Management System (ISMS) Phase I/II Verification Review Plan is to determine whether ISMS programs and processes are sufficiently institutionalized within the Plutonium Finishing Plant (PFP) to accomplish the goal of "Do work safely." The goal of an institutionalized ISMS is to integrate Environment, Safety, and Health (ES&H) requirements in the work planning and execution processes to ensure the protection of the worker, public, environment, and federal property while accomplishing mission goals in an effective and efficient manner. The ISMS is comprised of 1) described functions, components, processes, and interfaces (system map or blueprint); and 2) personnel who perform assigned roles and responsibilities to manage and control the ISMS. Therefore, this verification review will evaluate the "paper," "people," and "process" aspects of the ISMS to ensure the system is implemented and will be effective within the PFP.

The PFP is a nuclear facility at the Hanford Site under the scope of the Project Hanford Management Contract (PHMC) managed by Fluor Hanford (FH). The PFP mission includes stabilization of plutonium-bearing materials, interim storage and/or shipment of special nuclear materials, and preparation for stabilization and deactivation. The current mission and support activities of the PFP include the following:

- Receiving, storing, and shipping plutonium material, including certain glovebox-transfer operations
- Stabilization of reactive plutonium-bearing material
- Stabilization of plutonium-bearing solution
- Providing laboratory and engineering support
- Handling waste
- Surveillance of active and inactive facilities
- Operation of facility support systems (e.g., heating, ventilation, air conditioning; radiation monitoring; steam; electricity, etc.)
- Safeguard the material inventory.

The *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan* (HNF-MP-003, Rev. 2 [FH 1999] represents the safety management system documentation required by DOE Acquisition Regulations (DEAR) clause 970.5204-2 for the PHMC. HNF-MP-003, Rev. 0 was originally approved by the DOE, Richland Operations Office (RL) based on a review against the existing contractual requirements (derived from an

earlier draft of the 970.5204-2 DEAR clause) for that document. The PHMC was recently modified to incorporate the 970.5204-2 DEAR clause, and HNF-MP-003 (FH 1999) was revised accordingly. During October 1999, RL conducted an ISMS Phase I verification of the FH System Description.

An ISMS Description document is required to address documentation and implementation of the FH ISMS plan at the PFP facility and activity level. In September 1998, PFP staff completed a facility level "gap analysis" and a plan for the implementation of HNF-MP-003 (FH 1999). Subsequently, they developed the program description (e.g., ISMS Program Description) that augments HNF-MP-003 with facility-specific policies and procedures. In the August to September 1999 timeframe, the facility conducted a separate internal readiness review for ISMS and based on this review, declared readiness for a Phase I/II ISMS verification review.

## 2.0 PURPOSE

The purpose of this verification review is to provide the following:

- Assess the institutionalization of ISMS processes (Phase I/II) at the PFP facility managed and operated by FH.
- Verify FH's implementation status of its ISMS processes (Phase II).
- Ascertain whether, within the PFP facility operations, the work planning and execution processes are in place and functioning to effectively protect the health and safety of the workers, public, environment, and federal property at the current facility life cycle stage.

This verification will ascertain whether the PFP ISMS supports the *Hanford Strategic Plan* (DOE-RL 1996) to safely clean up and manage legacy plutonium materials and waste; to deploy science and technology while incorporating the ISMS central theme to "Do work safely"; and to protect human health and the environment.

The guidance and direction provided in this review plan has been adapted from DOE P 450.4, DOE G 450.4, and the *Integrated Safety Management Systems (ISMS) Verification Team Leader's Handbook* (DOE 1999).

## 3.0 SCOPE

The scope of this verification review is associated with the PFP Project and operations conducted by FH and its lower-tiered contractors and subcontractors. Other than verifying processes that provide for the flow down of requirements, this review does not verify the implementation of ISM within the RL organization, but does include interfaces between DOE and FH at the facility level. RL is currently restructuring many of its business processes and aligning personnel within these "new" business processes. Accordingly, the scope of the review will be limited to FH's

ISMS and will not include a review of RL. RL's implementation of ISMS will be assessed in summer 2000.

The PFP verification will also not address the ISMS status of site partners or service providers within the FH system. Where these separate entities interface or provide significant support to PFP, assessment will be made of the PFP management process governing external interfaces and of the external entities' process for providing the appropriate services and resources.

As discussed in the Verification Team Leader letter of appointment (Appendix A), the results of external reviews of the PFP since January 1998 were considered in the development of this review plan to avoid unnecessary duplication of effort.

The objectives of this ISMS Phase I/II verification are to provide the following:

- Verify that the PFP facility and activity-level system descriptions and associated plans, manuals of practice, and procedures are consistent with the objectives, guiding principles, and core functions of ISM and HNF-MP-003 (FH 1999).

- Verify that the PFP facility and activity-level system descriptions and associated plans, manuals of practice, and procedures are adequately implemented at the facility. The review will include the activity level and will provide an evaluation of the training and knowledge of management and staff with respect to the core functions and guiding principles of ISM.

- Explore the impact of the recent ongoing changes in upper management personnel and the related new contractual relationship with Westinghouse Safety Management Solutions.

- Develop lessons-learned from this verification effort to improve the effectiveness of future ISMS reviews at the Hanford Site.

- As possible, use members of the FH Facility Evaluation Board (FEB) to allow FH to develop a capability to evaluate implementation of ISMS at other PHMC facilities. The FEB performs an independent assessment function for FH.

This review is intended to be an evaluation of the institutionalization of facility and activity-level ISM processes at the PFP. The review will therefore include evaluation of the training and knowledge of management and staff with respect to the ISMS principles, functions, mechanisms, and responsibilities within the framework of PFP's governing procedures and policies.

## 4.0 PREREQUISITES

Overall acceptance by RL to proceed with the PFP ISMS Phase I/II verification is based on the following:

- Substantial demonstration of compliance with the requirements of the PHMC DEAR clause H.5.E (DEAR 970.5202-2).

- Corrective actions with known deficiencies will not require or result in changes to the ISMS Program Description and related policies, plans, procedures, and products to the extent that significant reexamination of a sizeable portion of the ISMS Program Description would be required.

## 5.0 OVERALL APPROACH

The ISMS Phase I/II Verification Team will evaluate the degree of institutionalization of the ISMS Program Description, including the following: system descriptions, supporting procedures, manuals of practice and processes, and implementation plans against the guiding principles and core functions defined in DOE P 450.4. Based on this assessment, the Verification Team will draw conclusions and make recommendations to the Approval Authorities as to whether implementation of the ISMS Program Description will achieve the overall objective of ISM, which is defined as follows:

> The Department and contractors must systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of safety management into all facets of work planning and execution. In other words, the overall management of safety functions and activities becomes an integral part of mission accomplishment.

The Verification Team will review the following areas:

- Business, Budgets, and Contracts
- Management Oversight
- Hazards Identification and Standard Selection
- Operations (Work Planning, Operations Authorization, and Work Execution)
- Subject Matter Expert areas:

  SME.1 - Industrial Hygiene and Safety/Fire Protection
  SME.2 - Radiation Protection
  SME.3 - Safeguards and Security
  SME.4 - Environmental Compliance/Chemical Management.

The primary focus of this review will be the integration of hazard identification and work controls at the facility and activity level. The PFP ISMS Phase I/II Verification will be

conducted using subteams as described in Section 7.0. Verification Team members and biographies are provided in Appendix B. The Verification Team will conduct the review using the Criteria Review and Approach Documents (CRAD) provided in Appendix C.

## 5.1 SEQUENCE OF ACTIVITIES

The first step in the ISMS Phase I/II verification process is to provide sufficient training and interaction among the Verification Team members to ensure an adequate understanding of the DOE ISMS Policy expectations, the ISMS Program Description as presented by FH and the PFP Project, and the plan and strategy for the review. The Verification Team will be trained on the DEAR clause 970.5204-2, *Integration of Environment, Safety, and Health into Work Planning and Execution*, and 970.5204-78, *Laws, Regulations, and DOE Directives.* In addition, the Verification Team will also complete preparation of the CRADs, which will guide the review. The indoctrination period of approximately 4 days, which includes Verification Team orientation and training, site-specific training, and CRAD finalization will be conducted at the Hanford Site 2 weeks prior to the start of the ISMS Phase I/II review. The Verification Team will also receive ISMS presentations and briefings by FH and PFP Project personnel during orientation and training.

Evaluation of the criteria will result from the FH and PFP staff presentations coupled with the results of the verification activities (e.g., document reviews, interviews, and work activity observations) conducted during the previous week. The CRADs will guide the evaluation of the adequacy of the implementation of the ISMS Program Description. Documentation of verification activities and conclusions will use the following approach:

- Verification Team members will record their evaluation on individual Assessment Forms (i.e., Form 1's). Detailed instructions for completing the Assessment Form will be provided to the Verification Team prior to and during the review.

- An Assessment Form will be prepared for each objective in the CRADs and will document the basis for the conclusions reached concerning the objective and criteria.

- Each Assessment Form will conclude with a set of alphanumeric issues or observations that will be rolled up in the Opportunities for Improvement section in the Executive Summary of the final report (DOE/RL-99-86, Volume 1).

- Issues identified during the review of an individual CRAD that warrant the attention of the RL Manager or senior FH Project management will be clearly identified within the Assessment Form. In addition, good work practices and strengths of the ISMS will be identified as Noteworthy Practices.

The final report, which will be issued at the end of the fourth week, will describe the results of the verification review. The report will provide a status of implementation of the ISMS Program Description to the RL, FH, and PFP Managers and will delineate areas (if any) in which the ISMS does not conform to the previous guidance as well as identify Noteworthy Practices that were observed. The final report will also provide the conclusions reached by the Verification

Team as to the objectives identified in Section 3.0 of this review plan. The format and contents of the final report are described in Section 9.0.

## 6.0 PREPARATIONS

Preparations for the PFP ISMS Phase I/II verification review include two main efforts. The Verification Team will first finalize this review plan, which ultimately guides the conduct of the review. The team will then assist FH and PFP Project personnel in understanding the verification review process so that these personnel can effectively present their ISMS Program Description to the Verification Team.

### 6.1 PHASE I/II TEAM PREPARATIONS

Efforts to prepare the Verification Team to conduct the PFP ISMS Phase I/II verification review will include training led by the Team Leader on the relevant DEAR clauses as discussed in Section 5.1. This will include a discussion on the strategy and methodology for the review, and the strategy and logic by which the initial CRADs and subject areas were developed. The training will also include tailoring methods for the verification review to increase confidence that the review results will reflect the implementation of ISMS at PFP. Verification Team members will be provided with relevant documents (e.g., ISMS Program Description, PHMC ISMS Plan [HNF-MP-003]) to be read before the review is conducted. Finally, the Verification Team will receive presentations and briefings to ensure an understanding of the FH ISMS Program Description and the mechanisms used in the execution of that system.

### 6.2 PLUTONIUM FINISHING PLANT PROJECT PREPARATION

The responsible PFP managers will present the applicable procedures and processes used in the execution of ISMS to the Verification Team. The time allotted to the presentation will be limited to 4 hours, and will cover the current PFP mission, integrated program management plan, including flow down to ISMS core functions and guiding principles, and ISMS Program success stories. Therefore, these individual managers must have an understanding of both the Verification Team and RL expectations for the ISMS, and the commitments and processes that are provided in the FH ISMS. The briefings will consist of FH and PFP managers making presentations to the Verification Team to describe how the processes and mechanisms used to "Do work safely" fulfill the expectations of the ISMS. These briefings should include real examples of work or operations that were or are about to be conducted so that the Verification Team can fully understand those processes and mechanisms. These presentations should also describe the integration of safety management between PFP lower-tiered contractors and subcontractors and RL. At the conclusion of the presentations, the subteams will meet separately in breakout sessions with their points of contact. The breakout sessions will be used to develop specific documentation reading lists, identify personnel for interviews, and work activities for observations.

## 7.0 PROCESS FOR INTEGRATED SAFETY MANAGEMENT SYSTEM REVIEW

As described in Section 5.0, the verification review will be conducted using the CRADs (provided in Appendix C). The CRADs are identified by five functional areas that correspond to the Verification Team subteams as follows:

- Business, Budgets, and Contracts (BBC)
- Management Oversight (MG)
- Hazards Identification and Standard Selection (HAZ)
- Operations (OP) (Work Planning, Operations Authorization, and Work Execution)
- Subject Matter Expert (SME) areas:

  SME.1 Industrial Hygiene and Safety/Fire Protection
  SME.2 Radiation Protection
  SME.3 Safeguards and Security
  SME.4 Environmental Compliance/Chemical Management.

The BBC functional area subteam will address the following:

- PFP processes for ISMS relating to effective planning, translation of mission into work, and setting expectations
- Ability to identify and prioritize specific mission-discrete tasks.

The combination of the BBC subteam and the MG subteam should be considered in the review preparation and planning as these functional areas are closely related.

The HAZ functional area subteam will address the following:

- PFP processes for ISMS relating to hazard analysis
- Processes related to the identification of safety standards and requirements
- Tailoring of controls to the work being performed
- Review the processes, procedures, and manuals of practice (in cooperation with the OP Team) for operations and maintenance work

- Review line management responsibilities and feedback as they relate to hazard identification and standard selection.

- Evaluate the Industrial Hygiene and Safety/Fire Protection SME.1 CRAD.

The MG functional area subteam will address the following:

- Definition and prioritization of work

- Contractor roles and responsibilities (specifically line management responsibilities) are documented and included within the five core functions

- Review the feedback and improvement functions, including the contractor's Quality Assurance Program, procurement of safety class, and quality control.

- Evaluate the Environmental Compliance/Chemical Management SME.4 CRAD.

The OP functional area subteam will address the following:

- Verify that the core functions of ISM are met for work control in a manner that is consistent with the ISM guiding principles, including lockout/tagout procedures

- Evaluate the Radiological Protection, and the Safeguards and Security SME CRADs, SME.2 and SME.3, respectively.

- Review the processes, procedures, and manuals of practice (in conjunction with the HAZ subteam) for operations and maintenance work

An important part of the evaluation of the ISMS Program Description against the individual CRAD will be the presentations by FH and DOE Managers responsible for implementation of the ISMS. From these presentations, the Verification Team members will gain information that will assist them in making the determination that the ISMS meets the criteria as specified in the CRADs.

# 8.0 ADMINISTRATION

## 8.1 MEETINGS AND PRESENTATIONS

Phase I of the verification review will include presentations by FH and PFP management to the Verification Team. The purpose of these presentations will be to provide an opportunity for the Verification Team to become familiar with the ISMS, including the supporting programs and processes. The presentations will provide an opportunity for the managers to describe the mechanisms and procedures in which the elements of ISM described in the various programs are integrated vertically and horizontally. These presentations should demonstrate an ISMS that

fulfills the expectations of DOE P 450.4, 450.5, 450.6, and the DEAR requirements. The Verification Team will use the information provided during the presentations as a part of the verification that the criteria and the objectives in the individual CRADs are met. Additional interviews, record reviews, observations, and other activities will clarify and validate the information in the briefings.

The verification review will be an open process with the goal of maximizing the opportunity to achieve a full understanding of the institutionalization of ISMS. To achieve the level of openness and coordination that is desired, the Verification Team will have daily afternoon meetings to discuss observations and issues. PFP Project personnel will be invited, in limited numbers, to attend these team meetings as observers. The Team Leader and Advisor will meet as necessary with senior PFP, FH, and DOE management to ensure they are fully informed of the progress and issues during the verification review.

Following the ISMS Phase I/II verification review, the Team Leader will conduct a briefing with senior PFP, FH, and DOE managers. The briefing will include the results of the review, the basis for the improvement recommendations that will be made to the Approval Authority, and Noteworthy Practices observed during the review.

## 8.2 DOCUMENTATION OF THE INTEGRATED SAFETY MANAGEMENT PHASE I/II VERIFICATION

The PFP ISMS Phase I/II verification process will be guided by the criteria in the CRADs (Appendix C). The documentation will be structured to demonstrate that each element of the CRAD was evaluated and that the objectives were met or what aspects of the objectives were found to be deficient. The purpose of the documentation is to provide information concerning details of the review to individuals who did not witness the review.

To maintain the verification schedule and ensure that the report is complete prior to dissolution of the team, each Verification Team member must document his/her work as it is conducted. Therefore, daily inputs to the Assessment Forms will be required. Each subteam leader will be provided with a preliminary Assessment Form containing the objective and criteria for each CRAD. Noteworthy or questionable work practices identified by the team members will be documented within the Assessment Form. If the final report to the Approval Authority recommends corrective actions for the PFP Project or FH, those actions should be supported by detailed information on the Assessment Forms. The Verification Team members are responsible for ensuring that the Assessment Forms do not contain classified or Unclassified Controlled Nuclear Information.

Lessons learned from this PFP ISMS Phase I/II verification review are particularly important for future reviews at the Hanford Site and nationwide across the DOE complex. Verification Team members will draft lessons-learned inputs and provide those inputs to the Team Leader. These inputs will eventually be included in the final report (Volume 1).

## 8.3 TEAM COMPOSITION AND ORGANIZATION

The ISMS Phase I/II Verification Team will be organized into four subteams (as shown in the Appendix B organization chart) using an integrated set of CRADs. Subteam leaders are responsible for ensuring that all CRADs assigned to them are fully evaluated and that the appropriate documentation is prepared. A biography for each Verification Team member is provided in Appendix B and will be retained with the records of the verification report.

The Verification Team will use FH FEB personnel to support the PFP ISMS Phase I/II review. The FEB previously participated in other ISMS verifications as observers to gain ISMS verification experience such that they could support future Hanford Site verifications. The FEB will participate in the PFP ISMS Phase I/II review as Verification Team members in a capacity that does not conflict with their normal functions under the PHMC. The FH ISMS guiding principle 9 emphasizes the importance of effective internal and external communication on ES&H matters. Therefore, RL has invited the Hanford Advisory Board and the Defense Nuclear Facility Safety Board to provide observers for this ISMS Phase I/II verification review.

# 9.0 FINAL REPORT FORMAT

At the completion of the review, the Verification Team will prepare a final verification report (Volume 1). The report will include a status of implementation of the FH ISMS Program Description, as well as the PFP ISMS Program Descriptions and any areas where implementation does not conform to DOE P 450.4, 450.5, and/or 450.6, the ISMS DEAR clauses, and the Authorization Agreement requirements. The report will also address all of the objectives identified in Section 3.0 and include any corrective recommended actions that the Verification Team considers necessary or desirable to ensure work is performed safely.

The final verification report will consist of the following sections that fully describe the review, provide corrective action recommendations, and information necessary to support the recommendations. The Team Leader will ensure that the final report is appropriately controlled and reviewed for classified information or Unclassified Controlled Nuclear Information prior to issuance.

**A. VOLUME I**

1. **Title Page** - States the site location and the dates of the verification review.

2. **Signature Page** - Contains the signatures of the Verification Team members approving the final version of the report.

3. **Table of Contents** - Identifies all sections of the report, tables, figures, and appendices.

4. **Executive Summary** - Provides an overview of the results of the verification review, including a summary of the corrective action recommendations that result from the review. The executive summary will identify Opportunities for Improvement (issues) as well as Noteworthy Practices (strengths).

5. **Introduction**- Provides the overall objectives of the evaluation, the review process and methodologies used in the review, and the team composition.

6. **Purpose** – Provides the purpose of the verification review.

7. **Background** – Provides a general discussion of the facility and the state of maturity of the safety management programs.

8. **Scope** - Provides the scope of the verification review.

9. **Overall Approach** - Restates (with any necessary modifications) the approach followed during the verification review and delineated in the review plan.

10. **Assessment of Documentation of the PFP ISMS** - Provides a summary discussion of the overall results of the evaluation. The section will include a summary for each functional area and issues prepared by the functional area subteam. The section will also provide details of the review, which are necessary to support the report on the status of implementation to the Approval Authority. This section will also provide support for any recommendations or observations associated with the DOE. The report will also discuss the observations and conclusions of the team regarding the strengths and weaknesses of the ISMS and its implementation. Finally, any deviations from this review plan will be discussed in the report.

11. **Conclusions and Recommendation** - Addresses the status of implementation of the PFP Project ISMS at the Hanford Site. It will further provide information about the adequacy of supporting program and process documents and the planned ISMS improvement plans.

12. **Lessons Learned - Discusses lessons learned associated with the ISMS Phase I/II** verification process as well as with the development and implementation of an ISMS.

**B. VOLUME II** - Contains the Assessment Forms (CRADs) and review plan.

## 10.0 SCHEDULE

For planning purposes, the projected schedule for the PFP Project ISMS Phase I/II Verification Review is as follows:

**Orientation**

| Date | Topic |
|---|---|
| January 10, 2000 | • Introduction/team logistics<br>• ISMS training/executive course<br>• 2750 East Building orientation<br>• Required reading<br>• Form 1 training<br>• Administrative activities |
| January 11, 2000 | • ISMS presentations<br>• Org/teaming approaches<br>• Subteam breakout meetings with Project POCs |
| January 12-13, 2000 | • Subteam meetings with Project POCs<br>• Review Detailed Review Approach Forms<br>• Review and finalize review plan<br>• Make final changes to CRAD approaches<br>• Finalize, approve, and issue review plan |
| January 14, 2000 | • PFP facility training (at PFP)<br>• Review Detailed Review Approach forms<br>• Debrief on Criticality Safety Review |

HGET = Hanford General Employee Training

**Verification**

| Date | Topic |
|---|---|
| January 17, 2000 | • Documentation review<br>• Conduct interviews<br>• Observe work activities |
| January 18, 2000 | • Documentation review<br>• Conduct interviews<br>• Observe operations<br>• Verification Team meetings (p.m.) |
| January 19, 2000 | • Phase I status determination<br>• Begin Phase II verification<br>• Provide completed BBC CRADs to POC and Technical Editor |
| January 20 – January 31, 2000 | • Complete individual team member work as required<br>• Conduct interviews<br>• Observe work operations<br>• Prepare skeleton draft of final report (Technical Editor)<br>• Verification Team meetings (p.m.)<br>• Finalize Form 1's |
| February 1 – 4, 2000 | • Finalize functional area summaries<br>• Sign Form 1's<br>• Finalize Executive Summary/final report<br>• Finalize presentation<br>• Sign final report (all team members)<br>• Briefing with Manager, RL |

## 11.0 REFERENCES

48 CFR 970.5204-78, "Laws, Regulations, and DOE Directives," Title 48, Code of Federal Regulations, (DEAR) Section 970.5204-78, as amended, U.S. Department of Energy, Washington, D.C.

48 CFR 970.5204-2, "Integration of Environment, Safety, and Health Into Work Planning and Execution," Title 48, Code of Federal Regulations, (DEAR) Section 970.5204-2, as amended, U.S. Department of Energy, Washington, D.C.

DOE, 1999, *Integrated Safety Management Systems (ISMS) Verification DOE Team Leader's Handbook,* DOE-HDBK-3027-99, U. S. Department of Energy, Washington, D.C.

DOE G 450.4-1A, *Integrated Safety Management System Guide*, DOE G 450.4-1A, Volume 1, "Guidance," and Volume 2, "Appendixes," U. S. Department of Energy, Washington, D.C.

DOE P 450.4, *Safety Management System Policy*, U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.5, *Line Environment, Safety, and Health Oversight,* U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.6, *Secretarial Policy Statement Environment, Safety and Health Purpose and Scope*, U. S. Department of Energy, Washington, D.C., as amended.

DOE-RL, 1996, *Hanford Strategic Plan*, DOE/RL-96-92, U. S. Department of Energy, Richland Operations Office, Richland, Washington.

FH, 1999, *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan*, HNF-MP-003, Rev. 2, Fluor Daniel Hanford, Richland, Washington.

# APPENDIX A

## TEAM LEADER LETTER OF APPOINTMENT

**United States Government** **Department of Energy**

# memorandum

**Richland Operations Office**

DATE: JAN 14 2000

REPLY TO ATTN OF: AMS:DSS/00-AMS-015

SUBJECT: APPOINTMENT AS TEAM LEADER FOR INTEGRATED ENVIRONMENT, SAFETY, AND HEALTH MANAGEMENT SYSTEM PHASE I/II (ISMS-I/II) VERIFICATION AT THE HANFORD PLUTONIUM FINISHING PLANT (PFP)

TO: Craig R. Richins, STP

Due to unforeseen circumstances, Richard J. Schassburger is not able to serve as the Team Leader for the ISMS verification described in my letter dated October 27,1999, to Mr. Schassburger. In accordance with the U.S. Department of Energy (DOE) Functions, Responsibilities, and Authorities Manual, DOE M 411.1-1A, Section 9.2.2.6, "Approval of Safety Management System Documentation," you are selected to be the Team Leader for ISMS-I/II Verification at Hanford's PFP, as discussed in the attachment. As a result of recent restructuring of the Project Hanford Management Contract and reorganization by Fluor Hanford, Inc., an assessment of ISMS implementation at the Waste Encapsulation and Storage Facility will be conducted during the upcoming Waste Management Project ISMS verification rather than during the PFP ISMS verification as was originally envisioned.

Thank you for your willingness to assist in the conduct of this ISMS verification review. If you have any questions regarding this matter, please contact me, or you may contact Doug Shoop, Senior Technical Advisor, at (509) 376-0108, or Pete Knollmeyer, Assistant Manager for Nuclear Materials and Facility Stabilization, at (509) 376-7435.

Keith A. Klein
Manager

Attachment

cc w/attach:

C. L. Huntoon, EM-1
D. M. Michaels, EH-1
J. M. Owendoff, EM-2
T. A. Wyka, EH-9
F. R. Crawford, FHI
R. D. Hanson, FHI
G. A. Harvey, FHI
R. D. Redekopp, FHI

**Plutonium Finishing Plant (PFP) Integrated Environment, Safety, and Health Management System (ISMS) Phase I and Phase II Verification**

## 1.0 Description of Activity

This review will verify the status of ISMS implementation at the PFP.

## 2.0 Background and History

The PFP is a nuclear facility under the scope of the Project Hanford Management Contract (PHMC) managed by Fluor Hanford, Inc. (previously referred to as Fluor Daniel Hanford Inc. [FDH]). The PFP mission includes stabilization of plutonium-bearing materials, interim storage and/or shipment of all special nuclear material, and preparation for deactivation and decommissioning.

The *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan,* HNF-MP-003, Rev. 2 (FDH ISMS Plan), represents the safety management system documentation required by DOE Acquisition Regulations (DEAR) clause 970.5204-2 for the PHMC. The initial version of the FDH ISMS Plan (HNF-MP-003, Rev. 0) was originally approved by DOE Richland Operations Office (RL) based on a review against the existing contractual requirements (derived from an earlier draft of the 970.5204-2 DEAR clause) for that document. The PHMC was recently modified to incorporate the 970.5204-2 DEAR clause, and FDH ISMS Plan was revised accordingly. The revised FDH ISMS Plan was reviewed by the FDH ISMS Phase I Verification Team during October 1999 (cf. Paragraph 4.2.3 below). Additionally, FDH requires an ISMS description document to address documentation and implementation of the FDH ISMS Plan at the project/service provider level.

In September 1998, PFP completed a facility level "gap analysis" and a plan for the implementation of HNF-MP-003. Subsequently, PFP developed Program Description documents that augment HNF-MP-003 with facility specific policies and procedures. In the August-September 1999 timeframe, PFP conducted an internal readiness review for ISMS and made formal presentations to a Senior Management Review Board (SMRB) that included RL line management representatives as observers. On September 30, 1999, based on this review and recommendations of the SMRB, FDH declared readiness of PFP for a Phase I / Phase II ISMS Verification.

## 3.0 ISMS Phase I / Phase II Verification

You are appointed as the Team Leader for the combined Phase I / Phase II ISMS Verification (ISMSV-I/II) for PFP.

## 4.0 Scope and Special Considerations for the ISMSV-I/II

The purpose of this combined review is to perform the following:

### 4.1 Scope

4.1.1 Verify that PFP facility-specific ISMS descriptions and associated plans, manuals of practice, and procedures used to implement safety management are adequate.

4.1.2 Verify that the PFP facility-specific ISMS descriptions and associated plans, manuals of practice, and procedures are adequately implemented at the upper levels of management via detailed discussions with key management personnel who are assigned, or will be assigned safety management responsibilities.

4.1.3 Verify that the ISMS descriptions are adequately implemented at the facility and activity levels.

4.1.4 Determine the extent to which the review team concurs that gaps as identified by the contractor are complete and accurate, or whether additional deficiencies exist, and whether the contractor identified corrective actions are appropriate and adequate.

4.1.5 Determine whether any of the gaps identified by the review team require closure as a prerequisite to completing ISMSV-I/II. In making this determination, the team should consider which remaining gaps represent deficiencies and which represent improvements. The team should make recommendations deemed appropriate with respect to any follow-up review actions and to confirm closure of deficiencies post the ISMSV-I/II.

4.1.6 Identify, as appropriate, any strengths in ISMS implementation at the PFP, which deserve to be highlighted so good practices are reinforced and applied at other facilities/projects.

4.1.7 A secondary objective of the ISMSV-I/II is to develop lessons learned from this verification effort to improve the effectiveness of future combined Phase I/II ISMS verifications.

### 4.2 Special Considerations

4.2.1 Many aspects of PFP operations have been the subject of previous assessments, such as operational readiness reviews, appraisals by the FDH's Facility Evaluation Board (FEB), and most recently, reviews in response to an EH-10 Compliance Order Notification.

4.2.2 PFP is operated in accordance with an approved Authorization Agreement, Standards and Requirements Documents (S/RIDs) and authorization basis documents. The authorization basis documents extensively describe and evaluate facility safety, consistent with a graded approach and guidance applicable to facilities existing prior to issuance of the nuclear safety Orders DOE 5480.22 and DOE 5480.23. Periodic revisions are made to the authorization basis documents to support planned modifications and/or to initiate different deactivation/stabilization processes.

4.2.3 A separate ISMSV-I examining the management and business processes of FDH under the PHMC was undertaken in October 1999. The results of that verification are available to the review team for PFP ISMSV-I/II. In particular, the review team should recognize that any gaps, deficiencies, or opportunities for improvement identified in ISMSV-I for FDH potentially could have implications for ISMS implementation at PFP, as well as other PHMC facilities/projects. In these circumstances, corrective actions at the facility level in response to FDH ISMSV-I review are expected to be identified, but not necessarily completed by the time of this review.

The scope of this verification should be generally focused on an evaluation of adequacy of ISMS implementation at the facility and activity level.

4.2.4 In late November 1999, FDH and RL conducted an ISMS review at PFP which involved a series of panel-to-panel interviews with representatives at different levels of the contractor organization. The results of this review are available to the ISMSV-I/II review team, and should be treated as discussed above in Paragraph 4.2.3.

4.2.5 The PFP ISMSV-I/II review should utilize members of the FDH Facility Evaluation Board (FEB) to allow FDH to develop a capability to evaluate implementation of ISMS at other PHMC facilities. The FEB performs an independent assessment function for FDH. The FEB has participated in other ISMS Phase I/ Phase II assessments, as active team members or as observers, in order to gain ISMS verification experience to support future PHMC verifications. Selected FEB members will participate on the PFP ISMSV-I/II as sub-team leads or team members in a capacity that will not conflict with their normal functions under the PHMC.

4.2.6 RL presently is undergoing major realignment and reorganization. Consequently, the functions, responsibilities, and authorities of

most RL organizations, managers, and staff have changed significantly, and are not expected to be fully formalized by the time of this ISMS-I/II review. The scope of the ISMSV-I/II should be limited to the contractor and subcontractors. The ISMS implementation within RL will be evaluated later (before September 2000), following an internal RL FRAM ISMS Readiness Assessment.

## 5.0 Stakeholder Observation of ISMSV-I/II

The RL has invited the Hanford Advisory Board (HAB) to observe ISMSV I/II. Mr. Joseph Richards of the Confederated Tribes of the Umatilla Indian Reservation will be representing the HAB. Mr. Richards is the ISMS Issues Manager for the Health, Safety, and Waste Management Committee of the HAB.

## 6.0 Phase I / II ISMS Verification Letter of Appointment

You should prepare an ISMSV-I/II review plan, select and train the team, and confirm the team's readiness to conduct the verification. RL has a good cadre of staff experienced in ISMS, and will be available to provide onsite support in this effort.

## 7.0 Desired Deliverables from the Review

The ISMSV-I/II Team should document the review with a report written in accordance with the guidance given Appendix 7 to the "Integrated Safety Management System Verification Team Leader's Handbook," DOE-HDBK-3027-99, dated June 1999. The report should address all of the objectives identified above, and include any recommended actions, which the ISMSV-I/II Team considers necessary or desirable to ensure work is done safely.

## 8.0 Information for the Cognizant Secretarial Officer

A copy of this Memorandum of Appointment is forwarded to the responsible CSO, C. L. Huntoon, EM-1, DOE Headquarters for information. Please provide her copies of both the Review Plan and the final report for the PFP ISMSV-I/II.

## 9.0 ISMSV-I/II Point-of-Contact (POC)

The POC for the PFP ISMSV-I/II is Dr. Shivaji S. (Shiv) Seth. He can be reached at (509) 376-8129, or by electronic mail, shivaji_s_seth@rl.gov.

# APPENDIX B

# TEAM MEMBERS AND BIOGRAPHIES

## TEAM ASSIGNMENTS

**Team Leader:** Craig R. Richins

**Line Management Liaison and ISMS Core Team Member:** Shivaji S. Seth

**Core Team Support:** George C. Strickland

**Core Team Support:** Carter K. Kirk

**Technical Editor/Writer**: Hope E. Matthews

**Report Coordinator**: Margaret M. Droddy

**Business, Budgets, and Contracts**

- Subteam Lead: Patty G. Ensign
- BBC.1: Dave E. Stromberg
- BBC.2: John B. Hall
- BBC.3: Kimberly L. Williams

**Hazards**

- Subteam Lead: Steven L. Bertness
- HAZ.1: Richard P. Grill
- HAZ.2: Henry (Hank) P. Himpler
- HAZ.3: Rudy S. Ollero
- SME. 1: Nelda J. (Joyce) Beck

**Management**

- Subteam Lead: Carrie Swafford-Chube
- MG.1: Mark R. Steelman
- MG.2: Paul M. Pak
- MG.3: Joseph J. Waring
- SME.4: Michael J. Silvia

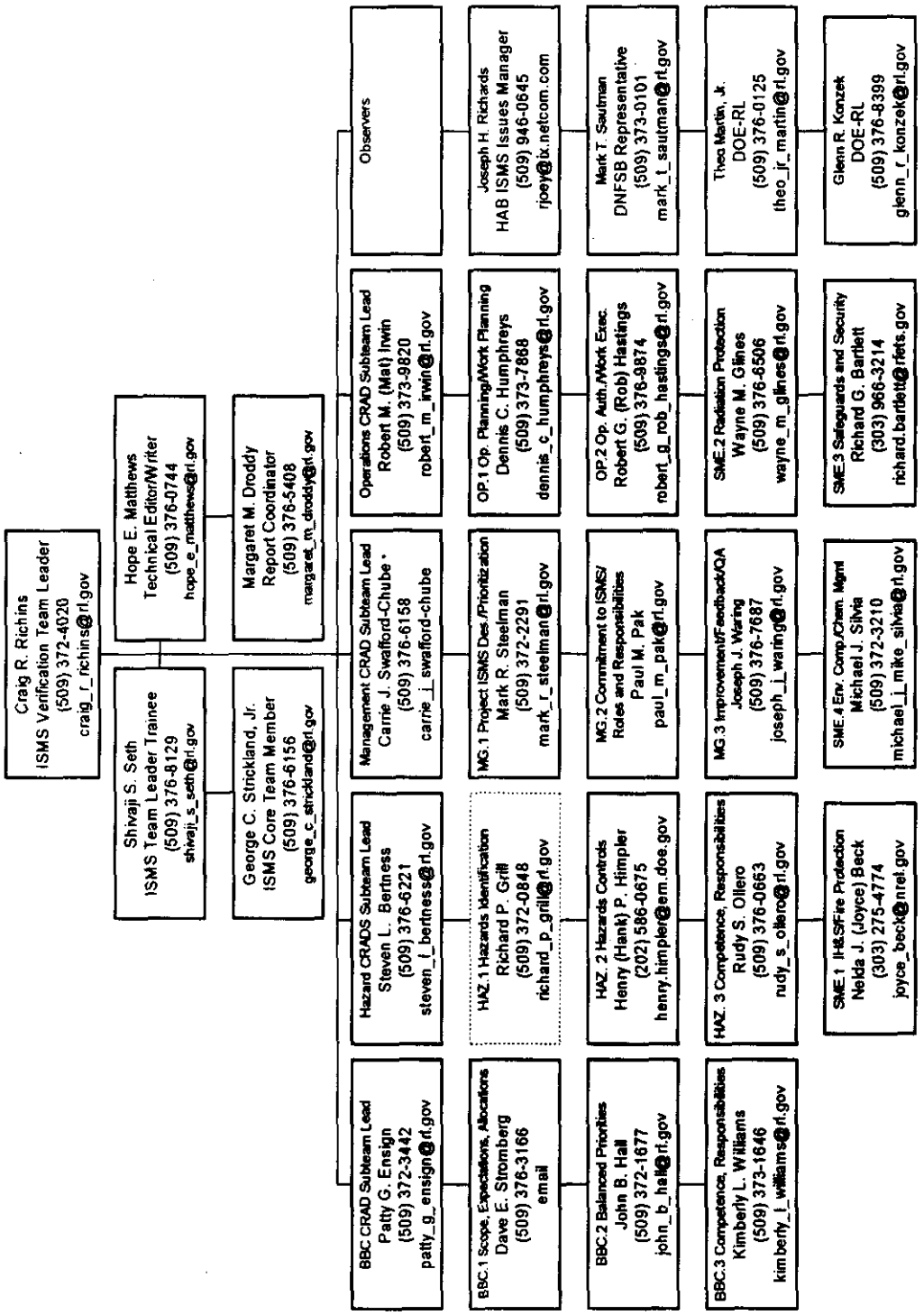
**Operations**

- Subteam Lead: Robert M. (Mat) Irwin
- OP.1: Dennis C. Humphreys
- OP.2: Robert G. (Rob) Hastings
- SME.2: Wayne M. Glines
- SME.3: Richard G. Bartlett

**Observers**

- DOE, Richland Operations Office: Theo Martin, Jr.; and Glenn Konzek
- Hanford Advisory Board ISMS Issues Manager: Joseph H. Richards
- Defense Nuclear Facility Safety Board Representatives: Mark. T. Sautman, Tim Hunt, and Dave Boyd.

# ISMS Phase I/II Verification Team for the Plutonium Finishing Plant



**Craig R. Richins**

Mr. Richins is a qualified ISMSV Team Leader and has over 12 years experience in the field of nuclear safety, operations and programs within the DOE. His experience includes strategic planning, formulation and implementation of ISM at the Pacific National Laboratory. Mr. Richins led the National Renewable Energy Laboratory ISM Verification and has participated in four other efforts nationally. Mr. Richins holds a B.S. in Chemical Engineering from Brigham Young University. Mr. Richins has over 8 years experience as a Facility Representative at both Richland and Savannah River and as such, has had extensive training and experience in all aspects of safety and operations within the DOE nuclear complex. His assignments have included a wide variety of nuclear chemical processing, fuel fabrication, isotopic production and nuclear laboratory facilities as well as the Fast Flux Test Facility. Mr. Richins has also functioned as the program manager for a variety of DOE projects and programs for over 12 years. He has led various Operational Readiness Reviews, as well as numerous audits and assessments. Mr. Richins currently functions as a team lead within the Office of Science and Technology at RL. His assignments with that office have included both oversight of the ES&H and facility operations of the Pacific Northwest National Laboratory and management of Site Technology services. Mr. Richins has also led development of the national laboratory's ES&H and Operational Performance Measures and Indicators process.

**Richard G. Bartlett**

Since January 1994, Mr. Bartlett has been the Protective Force Program Manager for the Rocky Flats Field Office (RFFO). His primary duty is to provide program management of the implementation and evaluation of the Protective Force Program at the Rocky Flats Environmental Technology Site (RFETS). Additionally, he conducts oversight and evaluation of the integrating contractor and subcontractors regarding protective force operations. In this position, he has conducted numerous assessments regarding protective force compliance, performance, and safety. He has participated as the Protection Program Operations lead in the annual Safeguards and Security Survey, as well as the annual Site Safeguards and Security Plan Verification. In January 1998, he was a member of the RFETS ISM Verification Team and in February 1999, he was a member of the ISM Verification Team for Wackenhut Services, Incorporated-Savannah River Site.

Prior to January 1994, Mr. Bartlett worked for 2 years in Internal Security at RFFO where he conducted security interviews with individuals whose conduct raised a question regarding their eligibility for a security clearance. He prepared written summaries of the issues addressed and made recommendations as to case disposition. From August 1974 to January 1992, he worked as an investigator for the U. S. Office of Personnel Management conducting background and suitability investigations. He is a 1974 graduate of the University of Massachusetts with a Bachelor of Arts degree in History. He served 2 years in the U. S. Marine Corps.

**Nelda J. (Joyce) Beck**

Ms. Beck acquired a Bachelor of Science degree in Liberal Arts in 1997 from the University of the State of New York. She also has an Associate of Arts degree in Psychology from El Paso Community College. Ms. Beck spent 18 years with the U. S. Army, Department of Defense; 10 years in safety and occupational health; and 7 years with the DOE Golden Field Office as a Safety and Occupational Health Manager.

From 1982 to 1986, Ms. Beck was employed as a Safety and Occupational Health Specialist at White Sands Missile Range, New Mexico. Her education and experience was in safety program elements, which included safety management, conducting safety and occupational health assessments, motor vehicle safety, missile/rocket safety, ammunition/explosive safety, radiation safety, industrial hygiene, fire protection, laser safety, industrial safety, child care safety, food safety, occupational medicine, accident investigation, aviation safety, and construction safety.

From 1986 to 1989, she served as the Safety and Occupational Health Manager at the 54th Area Support Group in Rheinberg, Germany. Her expertise included the safety program elements listed above, including war safety.

From 1989 to 1991, she served as the Safety and Occupational Health Manager at Rocky Mountain Arsenal, Commerce City, Colorado. Her expertise included the safety program elements listed above, plus laboratory safety, hazardous waste operations, and decommissioning and demolition.

Since 1991, she has worked as the Safety and Occupational Health Manager at the DOE Golden Field Office in Golden, Colorado. Her expertise includes safety program elements, plus M&O oversight, wellness program, Federal Employee's Compensation Act program, and quality assurance.

**Steven L. Bertness**

Mr. Bertness is an occupational safety and health specialist for the Assistant Manager of Environmental Restoration at the Hanford Site with special emphasis on nuclear safety for environmental restoration projects. He participated as a team member in the Fluor Hanford ISMS Phase I verification review and as a subteam lead for the Spent Nuclear Fuels Project Phase I/II verification review. He also served as Fed oversight of the Facility Evaluation Board, Phase I/II validation of DynCorp.

Mr. Bertness earned a Bachelor of Science degree in Safety Engineering from Indiana University of Pennsylvania, whose Safety Science Department holds an accreditation from the American Society of Safety Engineers, in 1989. Mr. Bertness has served in his current position for the past 3 years. Previously, he was a safety and health manager at DOE Headquarters for the Deputy Assistant Secretary for Environmental Restoration, with primary areas of involvement being nuclear safety, Integrated Safety Management, HAZWOPER, Occupational Safety and Health Administration (OSHA) compliance, the OSHA Voluntary Protection Program, safety and health training and safety and health program development. Before accepting a position with DOE, Mr. Bertness was an Industrial Hygiene compliance office for the Virginia Department of Labor, Occupational Safety and Health Administration, with inspection responsibilities in the Northern Virginia District. Previously, Mr. Bertness served as an industrial hygiene consultant for APEX Environmental in Rockville, Maryland.

**Margaret M. Droddy**

Mrs. Droddy is an Associate with EnergX and is currently on contract as a Technical Editor and Specialist for the Facility Evaluation Board, Fluor Hanford. Mrs. Droddy has 18 years administrative and executive expertise. Her experience includes technical editing, preparation and coordination of multi-million dollar grants, and providing technical assistance with facility-specific performance reports. Mrs. Droddy supported the Fluor Hanford Critical Self-Assessment Team providing technical editing, report preparation, and graphics support. She provided technical support and report preparation and coordination of the EA-1999-04 Effectiveness Review ordered by the DOE Office of Enforcement and Investigation (EH-10) conducted by the Facility Evaluation Board. Most recently, Mrs. Droddy has provided technical support and report preparation and coordination in multiple DOE Integrated Safety Management System reviews (the River Protection Program, the Fluor Hanford Phase I, the Spent Nuclear Fuel Project Phase I/II) and an FEB Integrated Safety Management System validation (DynCorp Tri-Cities Services, Inc.) at the Hanford Site.

**Patty G. Ensign**

Ms. Ensign earned her Bachelor of Science degree in Business, majoring in Accounting. She has 10 years experience in the professional and technical fields of accounting, budget formulation, planning and execution, and project controls working for the DOE. This experience includes the following:

- Four years of accounting experience supporting the monthly and annual submittals of the financial statements to DOE HQ.

- Two years of budgeting experience supporting the annual budget submittals. This includes evaluating the effectiveness of planning and budgeting processes and assisting in the overall formulation, justification, defense, and execution of various budget activities.

- Four years as a program analyst on both the Spent Nuclear Fuel Project and the Waste Management Program.

- Coordinated and supported budget and planning activities among divisions, and validated cost estimates and budget requirements.

- Provided direct support in the analysis of Fluor Hanford budgeting and planning efforts through the reviews of their Annual Work Plans and Multi-Year Work Plans.

- Performed baseline management to ensure project controls are in place, and reviewed Baseline Change Requests involving life cycle workscopes to ensure changes were justified and adequate.

- Worked with technical staff in the development, execution and the validation of completion phases of the Performance Incentives and fee structure. She has routinely interpreted RL guidance and policies to ensure compliance.

- Participated as a Business, Budgets and Contracts team member in the Fluor Hanford ISMS Phase I verification and the Spent Nuclear Fuels Project Phase I/II verification.

Ms. Ensign has been recently reassigned to the Analysis and Evaluation Division.

**Wayne M. Glines**

Mr. Glines is currently the Senior Radiological Controls Technical Advisor to the RL, Office of Site Services. Mr. Glines serves as the principal technical expert and advisor for interpretation, implementation, and evaluation of radiological site services including internal and external dosimetry programs, and radiological instrumentation. Mr. Glines also acts as a principal technical advisor for the development and implementation of procedures and protocols for the lease or release of previously contaminated materials, equipment, and facilities at the Hanford Site.

From January 1996 to December 1996, Mr. Glines worked as a Science Supervisor at the Bechtel Nevada, DOE Nevada Test Site (NTS). In that assignment, he managed the Environmental Surveillance Program for the NTS including the design, implementation, data analysis and assessment, and reporting of data for several comprehensive monitoring networks. Mr. Glines also was the lead for 10 *Code of Federal Regulations* 834 implementation for NTS user organizations.

From June 1993 to December 1995, he worked as a Principal Health Physicist at the Reynolds Electrical & Engineering Co., Inc., NTS. In that assignment, Mr. Glines managed the Environmental Information Center which was responsible for issuing required environmental reports, e.g., Annual Site Environmental Report. Mr. Glines also served on several working groups associated with environmental monitoring, dosimetry usage, and waste management at the NTS.

From March 1979 to May 1993, he worked as a Health Physicist at the Puget Sound Naval Shipyard (PSNS). In that assignment, Mr. Glines held positions in the Radiation Health Division covering areas such as external and internal dosimetry, NRC-licensed activities, environmental monitoring, regulatory compliance, emergency response, and radiation litigation. From 1986 through 1993, Mr. Glines held dual positions as the Head, Environmental Monitoring Branch, and Senior Health Physics Advisor. In these positions Mr. Glines was responsible for managing the Environmental Monitoring and Radioassay Programs, and providing technical advice to senior PSNS and Department of Navy management on radiological protection issues.

**Richard P. Grill**

Mr. Grill has been involved in various aspects of the analysis of nuclear facility safety for over 39 years.

He began his nuclear career at the Lawrence Berkeley Laboratory as a radiation monitor and eventually headed the Department responsible for nuclear and conventional safety of experimental programs for accelerators, nuclear physics, nuclear chemistry, and weapons. Later, he served on the staff of the Atomic Energy Commission where he was Chief of the Branch, within the Division of Reactor Licensing, responsible for reviewing and approving Safety Analysis Reports as well as developing regulatory guidance for commercial nuclear power plants.

Still later, Mr. Grill worked in the private sector in Europe and the Middle-East developing siting criteria for nuclear power plants.

He also served on a number of tours as a "Visiting Expert" with the International Atomic Energy Agency (I.A.E.A.) in Vienna, Egypt, Mexico and Korea.

After returning to the U.S., Mr. Grill served as a Senior Policy Analyst for the Nuclear Regulatory Commission, Office of Research, directing research projects and developing regulations for nuclear waste management.

Later, he joined the staff of the DOE, where he served as Compliance Program Manager for the Savannah River Site for EH, and participated in and led the safety portion of a number of Tiger Team inspections. He then assisted the Office of Nuclear Energy in writing the earlier versions of the Nuclear Safety Rules, and later transferred to EM-30 where he acted as the Chief, of the Safety and Health section, Division of Regulatory Compliance.

Mr. Grill retired from Federal service in late 1993 and periodically consulted for DOE until January of 1997 when he accepted the post of Senior Technical Advisor for Nuclear Safety for the Assistant Manager for Environmental Restoration. Recently, reorganization of RL has Mr. Grill reporting to the Assistant Manager for Engineering Standards.

**John B. Hall**

Mr. Hall's career span of 30 years includes 10 years in medical microbiology and medical technology, and 20 years in health physics, technology development, and environmental management. His experience in radiation biology and health physics began in 1979 with 4 years of research in the measurement of radon and its affects for Montana State Department of Health and Environmental Science. He then spent 2 years at Mound Research Laboratory developing measurement and calibration procedures for the Department of Energy under the Uranium Mill Tailings and Formerly Utilized Facilities Programs. Mr. Hall went to the Environmental Protection Agency in 1985 to apply his experience of radon measurement to the Clean Air Act implementation and development of environmental standards. He transferred to the Department of Energy as a health physicist to support environmental compliance for the nuclear weapons testing program. This position was focused on the compliance of federal facilities to the environmental regulations, especially CERCLA and RCRA. His next assignment placed him in charge of technology development for Nevada Operations Office under the Environmental Restoration Program (EM-50). He moved to the DOE, Richland Operations Office in 1993 to work in ecological monitoring and environmental management, eventually transitioning into environmental compliance in Environmental Assurance, Permits and Policy Division. His current position is physical scientist with oversight of the near-facilities monitoring program and administration of Environmental Compliance Program with the Office of Site Services. He served as the RL ISMS Development Team member representing the Office of Site Services.

**Robert G. (Rob) Hastings**

Mr. Hastings earned his Bachelors of Science degree in Chemical Engineering from the University of Washington in June 1988. His focused studies were nuclear and environmental engineering. He also completed the Washington State Engineer in Training examination in June 1998.

Since 1994, Mr. Hastings has worked as the RL Facility Representative at the Fast Flux Test Facility (FFTF). He completed initial Facility Representative qualification in October 1995 and requalified at FFTF in June 1999. He is responsible for the direct oversight of operations, maintenance, radiological and nuclear safety, and environmental, safety and health-related activities at FFTF and associated facilities.

From January 1996 to April 1996, Mr. Hastings had a temporary assignment as the Hanford Site Utilities Facility Representative. He cross-qualified as a Utilities Facility Representative in May 1996. From November 1997 to January 1998, he had a temporary assignment as a Plutonium Finishing Plant Facility Representative. From June 1998 to July 1998, he had a temporary assignment as the 327 Building Facility Representative.

Mr. Hastings worked in the FFTF Operations Branch from June 1988 to November 1994. His various responsibilities included Nuclear Energy programs and projects. Those responsibilities ranged from environmental compliance for NE facilities; plutonium-238 production capabilities; program management for the design, procurement, fabrication and testing of the Radioisotope Thermoelectric Generator (RTG) Transportation System; and program and project management for a $50-million project to assemble and test RTGs in FMEF. He also has conducted numerous surveillances and assessments, participated in several Readiness Assessments, and reviewed a numerous of safety basis documents. From November 1991 to February 1992, he had a temporary assignment at DOE-Headquarters/NE-53. He supported Headquarters on plutonium-238 production assessments and RTG fabrication and transportation issues.

**Henry (Hank) P. Himpler, Jr.**

Mr. Himpler is the newly designated Environmental Management member of the Safety Management Implementation Team and a designated Verification Team Leader. He is also a certified Quality Assurance Lead Auditor who has led (or participated in) several audits, assessments, and Operational Readiness Reviews since 1985. Although he did not join DOE until 1991 as a manager in the Nuclear Energy self-assessment program, he has supported DOE since 1978 in a number of technical support capacities while employed by the ARINC Research Corporation and the SCIENTECH Corporation.

Mr. Himpler joined Environmental Management in 1994 as a Quality Assurance Manager in the Office of Waste Management and subsequently became Safety and Health Team Leader from 1996 until the current EM reorganization. He is now assigned to the Office of Safety, Health and Security (EM-5) as a Safety Specialist.

Mr. Himpler began his professional career in 1955 after U.S. Navy Korean War service. He worked for over 20 years as an equipment designer, test engineer, and Engineering and Maintenance Manager for Westinghouse Electric, General Electric, and Raytheon Companies in radar, sonar, and telecommunications specialties. He subsequently became a consultant for the Navy Tomahawk Cruise Missile and Sonobuoy programs and the Electric Power Research Institute (EPRI) in Reliability and Cost Effectiveness technical support. He became dedicated to DOE and Energy R&D programs beginning in 1978.

Mr. Himpler holds undergraduate degrees in Electrical Engineering and Industrial Technology from Johns Hopkins University and Roger Williams University, respectively.

Mr. Himpler's prior Hanford Site experience includes the following:

- N-Reactor Tech. Safety Appraisal (TSA) Team - June 1986
- PFP TSA Team - October 1987
- SP-100 Audit (Westinghouse Hanford Company HEDL) - June 1988
- Hanford Tank Farm TSA Team - April 1989
- PFP TSA Follow Up Team - June 1989
- Hanford Tiger Team - Sitewide (ESH subteam) - June 1990
- RL Transportation (part of WIPP Operational Readiness Review) - June 1991
- Fast Flux Test Facility Quality Assurance Inspection - August 1991
- Fast Flux Test Facility and RL Quality Assurance Assessment - June 1992.
- ORR Team Leader FEMP UNH, 1995
- ORR Team Leader FEMP TOP, 1996
- Certified ISMS Instructor, 1998
- WVDP (Ph I&II) Institutional Sub-Team Leader, 1998
- FEMP (Ph I&II), Institutional Sub-Team Leader 1999
- Certified ISMS Team Leader, 1999
- MEMP (Ph. I) Senior Technical Advisor, 1999
- FEMP (Ph I repeat) Senior Technical Advisor, 1999.

**Dennis C. Humphreys**

Mr. Humphreys is a graduate of the Navy's Nuclear Power Training Program. In 1995, he successfully passed the Washington State Engineer in Training examination. Mr. Humphreys, through New York Regents College, received credit for his Navy technical and engineering education towards a Bachelor of Science degree in Engineering. He has successfully passed several college level courses in Hazardous Waste/Material Management, Nuclear Chemistry (masters level), and Engineering Technology Management (masters level). At both the Navy and the Navy Yard level, ISMS principles had been practiced for some time.

Mr. Humphreys has over 29 years (8 years with the Nuclear Navy, 17 years with the Nuclear Shipyard, and 4+ years at the Hanford Site) experience in the repair, maintenance, operation, testing, startup, restart, and decommissioning of navy nuclear power plants and related nuclear facilities. Mr. Humphreys was a certified Nuclear Shift Test Engineer at a Nuclear Navy Yard. He also spent 4 years as a Nuclear Chief Test Engineer.

Mr. Humphreys has been with the DOE for approximately 4.5 years. Mr. Humphreys has been a member of several full and partial Conduct of Ops and Maintenance Assessments at the Hanford Site, including the team leader for the Maintenance Team for the Characterization Project Assessment. Mr. Humphreys has completed EM-25 Operations Assessment Training. He has participated as a team member on several ORRs and RAs. Mr. Humphreys also participated as a team member in a current Contractor/DOE AJHA implementation assessment. Mr. Humphreys was a Maintenance and Work Control Subject Matter Expert for the Spent Nuclear Fuel ISMS Phase I/II verification.

Mr. Humphreys is also a qualified Facility Maintenance Manager and as such, has participated in assessments of various contractors Maintenance Programs. This includes being the lead auditor for the maintenance portion of a CPO conduct of operations assessment. He is also a member of the Enhanced Work Planning Site Core Team. Mr. Humphreys reviews both the Maintenance Implementation Plans and Conduct of Operations Matrices. He is a Subject Matter Expert on Hoisting and Rigging, Maintenance, and Conduct of Operations. Earlier at the Hanford Site, Mr. Humphreys was also responsible for the Configuration Management Program.

Mr. Humphreys has also completed the DOE Accident Investigator Training Program.

Mr. Humphreys is also a qualified Facility Maintenance Manager and in that function, is involved in all aspects of maintenance management including MIP reviews, EWP Site Wide Core Team, AJHA implementation assessment, ISMS implementation, etc. Mr. Humphreys participated in two ISMS work shops at the Hanford Site from planning through execution.

In the area of ORRs and RAs, Mr. Humphreys has taken the lead and revised the existing ORR/RA RLID to improve the process, incorporate the new DOE Order 425.1A, incorporate past lessons learned, and input from a QIP ORR/RA Team. The draft revision is pending the recent reorganization.

**Robert M. (Mat) Irwin**

Mr. Irwin is a nuclear engineer responsible for Hanford Site configuration management for the Assistant Manager for Standards. Mr. Irwin earned a Bachelor of Science degree in Nuclear Engineering from Arizona State University in 1989 and has over 10 years of experience in the nuclear field. He spent his first 5 years as a nuclear test engineer at Mare Island Naval Shipyard. In that capacity, he qualified as a nuclear test engineer for two naval nuclear propulsion plants. As a test engineer, he was responsible for reactor plant conditions and testing during refueling, and overhaul and maintenance activities performed by the shipyard. He spent the next 4 years as a Hanford Site contractor cognizant engineer and engineering manager for Solid Waste Management (SWM). As the engineering manager for three RCRA SWM facilities, Mr. Irwin was responsible for development and implementation of facility safety analysis reports, Unreviewed Safety Questions, permits, engineering drawings and documents, configuration control of plant modifications, the criticality safety program, and all other technical aspects of facility operation. Mr. Irwin has held his current position as the RL Configuration Manager for the last year and half. His primary responsibilities include the configuration management program, policy, and assessment support to the program offices. Mr. Irwin has participated in two previous ISMS verifications and ISMS workshop. He was assigned as a Subject Matter Expert for the Tank Waste Remediation System Phase I verification in 1998 and as the Operations Subteam Lead for the Spent Nuclear Fuel Project Phase I/II verification in 1999.

**Hope E. Matthews**

Mrs. Matthews is currently employed with Critique, Inc. as a Technical Writer/Editor with the Office of External Affairs, DOE, Richland Operations Office. Mrs. Matthews has nearly 10 years of experience as a Technical Writer/Editor at the Hanford Site.

Her current responsibilities include providing technical writing/editing support and coordinating all aspects of document preparation for the RL ISMS Project Team. In 1999, Mrs. Matthews served as the Senior Technical Editor/Writer in the Fluor Hanford ISMS Phase I verification and the Spent Nuclear Fuels Project ISMS Phase I/II verification. In that capacity, she coordinated all aspects of editing, word processing, report preparation, and publication.

Mrs. Matthews earned her Bachelor of Arts degree in English in 1991 from Seattle University in Washington State. Her technical expertise includes SGML and HTML programming languages and numerous software applications.

From 1994-1999, she worked at Bechtel Hanford, Inc. as a Senior Technical Writer/Editor. She served on the Hanford Technical Council as Bechtel's site representative and participated in monthly meetings/technical discussions with other Hanford Site contractors. She was the Project Lead for preparing and transmitting SGML-encoded metadata records to the Office of Scientific and Technical Information in Oakridge, Tennessee. Mrs. Matthews also served on the Bechtel Internet Task Team and helped establish guidelines/policies for company web sites. She also helped design/write/and maintain company web sites.

From 1991 to 1994, Mrs. Matthews worked at Westinghouse Hanford Company as an Engineering Writer. In that assignment, she was responsible for providing editorial support to the Safety and Analysis Division. She was also involved in beta testing of software for the environmental division. Mrs. Matthews also prepared a summary of publication standards for use by authors and subcontractors. She trained the H&R Technical Associates publication group in Hanford Site-specific publication standards. She worked as a summer intern in 1990 for Westinghouse Hanford Company.

**Rodolfo S. (Rudy) Ollero**

Mr. Ollero attended Ateneo de Zamboanga College in Zamboanga City, Philippines and earned his Bachelor of Science degree. He also attended Mapua Institute of Technology in Manila, Philippines and in 1978, earned his Bachelor of Science degree in Chemical Engineering. Mr. Ollero has also completed graduate studies at California State University in Northridge, California.

Since January 1987, Mr. Ollero has worked as a Program Engineer at the DOE, Richland Operations Office. As a Program Engineer, he monitored and provided oversight of the contractor operational activities at UO3 Plant and T-Plant, then later at PUREX and PFP. Mr. Ollero has also conducted numerous surveillances and audits at these facilities and participated in several Operational Readiness Reviews (ORR) and readiness assessments (RA) at UO3, PUREX, and PFP. He was also involved in the ORRs to prepare for the PUREX Final Stabilization Run and the UO3 Final Stabilization Run. Mr. Ollero was also involved in the RAs for the Glovebox HC-21C, Sludge Stabilization, Cementation Line, and Project B-631 at PFP. He was also involved in the RL 24-hour coverage of the PUREX Stabilization Run and was an RL Site Representative in the UO3 Final Stabilization Run. Both stabilization runs were successfully completed. Mr. Ollero also successfully completed the Qualification Card for the RL UO3 Site Representative. At present, Mr. Ollero is assigned as the PFP Program Engineer and provides oversight of the PFP Plutonium Residues Project, PFP Environmental Programs, and PFP ISMS implementation.

From April 1978 to March 1983, Mr. Ollero was employed as a Chemical Engineer at the Filipinas Synthetic Fiber Corporation, Santa Rosa in Laguna, Philippines. He started in the production process of polyester fiber manufacturing as an engineer trainee. Then, gradually, he was given more responsibility in the production process and became responsible for the safe operation of the polymerization, spinning, and drawing processes of polyester fiber production. Later on, he transferred to the Technical Services Department of the company to provide technical support to customers.

Mr. Ollero is a registered Professional Engineer (Chemical Engineering) and he has completed Hanford Site Rad Worker II training. He currently holds a DOE "Q" level security clearance and is allowed unescorted access to PFP.

**Paul M. Pak**

Mr. Pak has over 13 years of nuclear experience. He is a Team Lead within the Assistant Manager for Environmental Restoration and Waste Management at DOE, Richland Operations Office. In this capacity, he is responsible for providing leadership and management for the Surveillance/Maintenance Project as well as the Hanford Decontamination and Decommissioning Project. He is also responsible for providing management control of assigned projects to assure compliance with environmental, occupational/radiological safety and health, and quality assurance requirements. He also served as a Team Lead for N Reactor Deactivation Project and successfully placed the facility and associated complex in a condition that enhanced long-term worker safety, environmental protection, and reduced the costs of surveillance and maintenance. Mr. Pak has experience in project management including the technical, administrative, and business aspect (e.g., project planning and control, budgeting, scheduling, cost-estimating, and financial management). For the past four years, he was a Contracting Officer Representative for the Richland Environmental Restoration and Decontamination & Decommissioning Project. He has extensive knowledge of and experience in work planning and execution as well as the VPP.

He has participated in and performed numerous operational assessments and safety documentation varying in complexity.

Mr. Pak holds a B.S. in Metallurgical Engineering and a M.S. in Metallurgical Engineering, both from University of Washington in Seattle, Washington.

**Joseph H. Richards**

Mr. Richards is in his twelfth year with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Department of Natural Resources. Mr. Richards' responsibilities are to assist the CTUIR in the protection of natural resources impacted by Federal Facilities located within the tribe's ceded area (Hanford Nuclear Site, Umatilla Army Chemical Weapons Depot, Boardman Bombing Range). Currently, his primary activities are performed at the Hanford Site. Mr. Richards focuses on environmental compliance activities and the Integrated Safety Management System (ISMS).

Mr. Richards' academic preparation includes an M.S. in Business Information Systems from Utah State University and specialized auditing, auditing research, and accounting information systems courses via the Master of Accountancy Program at Washington State University. Mr. Richards also received a Distinguished Associate Diploma in Environment, Safety & Health from the Government Institutes. Mr. Richards' prior professional experience includes senior level accounting positions in private industry and the instruction of accounting (cost accounting, accounting information systems, fund accounting), auditing, and economic courses at the 4 year collegiate level.

Mr. Richards is a Certified Professional Environmental Auditor, a Certified Environmental Inspector, and a Certified Environmental Specialist. Mr. Richards has also completed training as a Lead Auditor for ISO 14001.

Mr. Richards participates as a member of DOE HQ's Environmental Management System (EMS) Topical Committee (Technical Standards Program). As the ISMS Issues Manager for the Health, Safety & Waste Management Committee, Hanford Advisory Board, Mr. Richards participates in a variety of RL and contractor ISMS activities, including participation as a member of RL's ISMS Development Team. Mr. Richards also participates, by invitation of the National Co-Chair, in the National Steering Committee of the Enhanced Work Planning (EWP) organization, and is an active participant in DOE's ISM Lessons Learned Workshops.

Mr. Richards is currently active in several professional organizations including the Environmental Auditing Roundtable, the Institute of Internal Auditors, the Environmental Assessment Association, the Air & Waste Management Association, Sigma Xi (Scientific Research Society), and the Board of Environmental Auditor Certifications.

Mr. Richards is also the owner/operator of "Mother Earth Consulting."

**Shivaji S. Seth**

Dr. Seth is a Senior Technical Advisor for Nuclear Safety at the DOE, Richland Operations Office. His primary responsibility is safety review and oversight of operations at several nuclear facilities under deactivation and decommissioning at the Hanford Site. Additionally, he has sitewide responsibilities in specific areas related to nuclear criticality safety, chemical safety, and the implementation of the ISMS. During the past 2 years, he also served as RL's Senior Liaison to the Defense Nuclear Facilities Safety Board (DNFSB). Dr. Seth has led the RL guidance and coordination effort to implement ISMS at the nuclear facilities in transition. He was also a subteam leader for DOE's ISMS verification at the radioactive waste storage tank (Tank Farms) nuclear facilities, and has been an active member of RL's core team for implementing ISMS throughout the Hanford Site.

From 1985 to 1996, Dr. Seth was at the MITRE Corporation, where he was responsible for guiding and managing numerous projects in support of the DNFSB, the U.S. Nuclear Regulatory Commission (USNRC), and the U.S. Army's program for demilitarization of chemical weapons. For the DNFSB, Dr. Seth conducted assessments of DOE requirements and implementation of safety standards at various defense nuclear facilities, and contributed to the development of an integrated safety management systems approach and standards review guides in various safety functional areas. For the USNRC, he analyzed safety issues and assisted development of regulatory requirements and guidance, such as for renewal of nuclear power plant operating licenses and use of safety-critical software in nuclear power plants. For the Army, he contributed to several safety and risk assessments of chemical weapon disposal facilities and operations. Currently, he is a member of a national expert panel to review probabilistic safety (risk) assessments for two chemical demilitarization facilities, which are mandated by the National Research Council.

From 1983 to 1985, Dr. Seth served as Senior Fellow to the USNRC's Advisory Committee on Reactor Safeguards (ACRS). He provided consultations and recommendations to the ACRS on a wide range of safety and regulatory issues associated with the design and operation of nuclear power plants. At the General Atomic Company as staff engineer from 1978 to 1983, Dr. Seth's work included nuclear design, fuel cycle optimization, and safety and risk analyses. Prior to that, from 1970 to 1978, Dr. Seth was responsible for the planning and analysis of critical experiments in support of physics and safety investigations of fast and thermal reactor cores at the Swiss Federal Institute for Reactor Research. There he was also licensed to supervise operations at the reactor and associated nuclear fuel handling facility. As a graduate research assistant at the MIT Reactor, from 1965 to 1970, Dr. Seth performed experimental and theoretical studies of nuclear reactor cores.

Dr. Seth holds a Masters and Doctors degrees in Nuclear Engineering from the Massachusetts Institute of Technology, and has authored over 75 technical publications.

**Michael J. Silvia**

Mr. Silvia is an Executive Consultant for EnergX and is currently on contract to Fluor Hanford as an Assessor for the Facility Evaluation Board (FEB). Mr. Silvia is qualified as a FEB Team Lead and Environmental Program Assessor. Mr. Silvia has been with the Facility Evaluation Board for the last 2 1/2 years and qualified as a Team Lead for the Waste Encapsulation and Storage Facility assessment in April 1999. Mr. Silvia served on the Office of River Protection (ORP) ISMS Phase II Verification of the River Protection Project (RPP), Spent Nuclear Fuel Project ISMS Phase I/II Verification, and DynCorp ISMS Phase I/II Validation. Mr. Silvia was a Subject Matter Expert assessor for the area of Work Planning as it related to Environmental/Chemical Management for the ORP verification, and as a Subject Matter Expert for Environmental Compliance/Chemical Management for the Spent Nuclear Fuel Project verification and DynCorp validation. Mr. Silvia holds a Masters of Management, Information Systems degree from West Coast University, California, and a B.S. in Environmental Technology of Engineering degree from Norwich University, Vermont. Mr. Silvia has over 13 years of professional experience with environmental assessments, air quality management, regulatory permitting and analysis, policy and procedure development, information systems, and data evaluation.

Mr. Silvia worked a Senior Scientist for Duke Engineering Services at the Hanford Site as an Assessor for the FEB. In 1999, Mr. Silvia was part of a team contracted to develop regulatory analysis and waste incidental to reprocessing reports to support the Idaho National Engineering and Environmental Laboratories (INEEL) Tank Farm Closure. Mr. Silvia was the Regulatory/Administrative Support Manager for International Technology (IT) Corporation's offices in Richland and Tacoma, Washington. Mr. Silvia was part of an IT team responsible for developing the Environmental Sites Database Procedures for the Hanford Environmental Restoration Contract. Mr. Silvia served as lead on the initial DOE Hanford Site Title V permitting effort and was integral in the development of the air emission inventory and database management system for the entire Hanford Site air emission program. Mr. Silvia served in the U.S. Air Force and was responsible for managing over 100 air operating permits, overseeing air quality source testing plans including field sampling and analysis, and test. Mr. Silvia supervised the staff responsible for regulatory inspections, and negotiating operating permits, source test plans, and Notice of Construction permits.

**Mark R. Steelman**

Mr. Steelman is presently the Deputy Manager for the Fluor Hanford Facility Evaluation Board. Mr. Steelman holds a Bachelor of Science degree in aeronautical engineering, a Bachelor of Arts degree in Economics from the University of Washington, has completed an MBA from LaSalle University, and has a Ph.D. from American College.

Mr. Steelman has more than 25 years of commercial nuclear plant experience in Engineering/Configuration Management, Operations and Maintenance Advisor, Reactor Operator Training/Training Advisor, Root Cause Analysis, Licensing/Nuclear Safety, and Consultant to Nuclear Regulatory Commission. His DOE experience consists of Regulatory Integration Manager at the Rocky Flats Environmental Technology Site, and consultant in areas of Authorization Basis, Engineering, and Integrated Safety Management.

His assessment/Operational Readiness Review (ORR)/inspection qualifications include the participation in several safety system functional inspections and ORRs at commercial nuclear facilities and participation in the ISMS reviews at Rocky Flats. He has also participated in multiple DOE ISMS reviews (the River Protection Program, the Project Hanford Management Contract Phase I, the Spent Nuclear Fuel Project Phase I/II) and an FEB ISMS validation (DynCorp Tri-Cities Services, Inc.) at the Hanford Site. He was a member of the SRT for the restart and ORR of Buildings 559 and 707 at Rocky Flats and participated in the management self-assessment of Building 779 Glove Box Removal. Mr. Steelman served as a consultant and led the PNNL self-assessment of Building 325 Processing Laboratory Unreviewed Safety Question process. He participated in facility evolutions of the Plutonium Finishing Plant, Spent Nuclear Fuel Project, Fast Flux Test Facility, and single-shell tanks in the functional areas of Engineering/Nuclear Safety. He also participated in the contractor ORR for the Light Duty Utility Arm and contractor ORR for the Project W-320 Tank 241-C106 Sluicing for Fluor Hanford.

**George C. Strickland**

Mr. Strickland is currently employed as a Senior Nuclear Engineer by Professional Analysis, Incorporated working under contract to RL. He holds a Bachelor of Science degree from Washington State University in General Biological Studies specializing in National Environmental Policy Act (NEPA) documentation. Mr. Strickland has more than 30 years professional and managerial experience in the nuclear field encompassing the broad areas of health physics, NEPA documentation, emergency preparedness, design review, independent safety oversight, and safety analysis. In his current position, he is providing assistance to RL in the areas of ISMS and Safety Basis.

Mr. Strickland began his career at the Hanford Site in 1963 in health physics at the then operating plutonium production reactors. In 1967, he transferred to the research and engineering arena in the 300 Area where he developed health physics procedures for handling such unique materials as $^{210}Po$, $^{237}Np$, $^{244}Cm$, and $^{249}Bk$. He moved over to the Fast Flux Test Facility project in 1970 where he assumed functional responsibility for the health physics program at the Plutonium Fuels Laboratory and the Post Irradiation Testing Laboratory.

In 1974, Mr. Strickland was granted an education leave of absence to complete his post-secondary education and he returned in 1976 to assume responsibility for health physics program audits and appraisals, and for preparation of NEPA documentation.

Following the nuclear accident at Three Mile Island in 1979, Mr. Strickland was employed as a consultant to assist commercial nuclear power plants in the preparation of emergency plans. He prepared the emergency plans for San Onofre Nuclear Generating Station Units 1, 2, and 3.

Mr. Strickland returned to the Hanford Site in late 1980 and was responsible for developing and implementing both the independent safety review program and the As Low as Reasonably Achievable program.

He subsequently established and managed the General Plant Projects Safety Analysis Group, participated in the PFP Plutonium Reclamation Facility Restart Operational Readiness Review, and assisted in preparation of responses to questions arising from the DOE-HQ Safety Evaluation Report on the draft PFP Safety Analysis Report.

**Dave Stromberg**

Dave Stromberg holds a Bachelor's degree in Business Administration from the University of Washington. He has since completed all mandatory contracting courses for receipt of the Government's Level III certification for the contract administration career field.

Mr. Stromberg's 4 years of DOE experience has been in the Procurement Division. Specific duties performed during this period include administration of support service contracts, contract closeouts, purchasing system reviews, performance incentive reviews, and subcontract consents. General knowledge used in the performance of duties includes thoroughly understanding the terms and conditions of multiple contracts, as well as the applicability of appropriate contract clauses.

Prior to his assignment to RL, Mr. Stromberg performed a wide range of duties for the Department of Defense (DOD) on major weapon systems. His 22 years of experience with the DOD included extensive involvement in the following areas: performance measurement systems surveillance and compliance reviews, at-completion cost estimates, the writing and enforcement of special contract clauses, company-wide should-cost reviews, price/cost analysis, and various accounting and financial reviews/analyses.

**Carrie Swafford-Chube**

Ms. Swafford-Chube is employed by the DOE, Richland Operations Office as an Independent Oversight Specialist for the Analysis and Evaluation Division. She oversees contractor independent and self-assessment programs. Ms. Swafford-Chube received a Bachelor of Science degree in Civil Engineering from Southern University Baton Rouge, Louisiana in 1992 and is currently taking graduate courses at Washington State University Tri-Cities. She began her career at the Hanford Site in 1994 as a Project Engineer in the Tank Waste Remediation Systems. Prior to working at the Hanford Site, Ms. Swafford-Chube was employed by the Illinois Department of Transportation as a Civil Engineer where she worked in both design and construction.

Ms. Swafford-Chube is a member of the RL ISM Development Team. She has participated in one offsite review at the DOE Princeton Plasma Physics Laboratory in Princeton, New Jersey, and three DOE-RL Phase I/II ISMS verifications. She has conducted assessments looking at the management assessment programs of the prime and subcontractors. She has also participated in three audits and numerous assessments. Ms. Swafford-Chube completed the Office of Civilian Radioactive Waste Management Quality Assurance Requirements and Description Lead Auditor Training (DOE/RW-0333P, Revision 7) and the Carlsbad Area Office Auditor and Lead Auditor Training.

**Joseph J. Waring**

Mr. Waring earned his Bachelor of Science degree in Mechanical Engineering from Rensselaer Polytechnic Institute in 1982. He has 17 years experience in the nuclear and environmental fields.

Since 1998, Mr. Waring has worked as a DOE-RL Facility Representative at the Plutonium Finishing Plant (PFP). He completed his Facility Representative qualifications at PFP in 1999. He is responsible for the direct oversight of operations, maintenance, radiological and nuclear safety, and environmental, safety and health related activities at PFP. In 1999, he was part of the DOE Oversight Team during startup of Muffle Furnace operation and Prototype Vertical Denitration Calciner operation to ensure operations were performed in a safe and deliberate manner.

From 1994 to 1998, Mr. Waring worked in the DOE-RL Waste Programs Division (WPD) as a Program Engineer. He had the following duties: RL Program Manager for Mixed Waste Treatment and Storage; Program Manager for macroencapsulation of debris mixed waste, a joint EM-30/EM-50 technology demonstration project; RL lead for the Federal Facility Compliance Act, Commercial Options Analysis Team, Disposal Workgroup, EM-30 Waste Integration, and Site Technology Coordination Group/Mixed Waste Subgroup; and WPD lead for the Baseline Environmental Management Report and Waste Management Programmatic Environmental Impact Statement.

From 1982 to 1994, Mr. Waring worked at the Charleston Naval Shipyard, Charleston S.C. In 1994, he worked in the Environmental Closure Division where he was responsible for organizing and planning all aspects of work associated with the environmental remediation of sites on the naval shipyard identified through the closure planning process. From 1986-1993, he worked in the Nuclear Submarine Field Engineering Division and was the Waterfront Project Engineer for several naval nuclear powered submarine refueling and non-refueling overhauls and refits. He managed the waterfront engineering team and functioned as the primary point of contact for propulsion plant and auxiliary support systems field engineering service throughout the overhaul and during key events of undocking, cold operations, hot operations, steaming, criticality, and sea trials.

**Kimberly L. Williams**

Ms. Williams graduated from the University of Arkansas with a Bachelor of Science degree in Chemistry in 1994 and began working for the U.S. Department of Energy, Richland Operations Office in May 1995. Ms. Williams was assigned to the 300 Area/Special Nuclear Materials Team from May 1995 to May 1996, primarily on cleanup activities in the 300 Area and IAEA-related activities at PFP. From May 1996 to November 1999, Ms. Williams was the Project Manager for B Plant Organics removal and the WESF. Her main responsibilities entailed managing the removal and disposition of organic waste streams out of B Plant, in preparation for B Plant's 1998 deactivation. After B Plant's deactivation, Ms. Williams became the primary RL point of contact for all WESF activities. She had oversight responsibilities for WESF project management and operations, including WESF's preparation to declare ISMS readiness, which occurred in September 1999.

Currently, Ms. Williams is assigned to the Office of the Assistant Manager for Nuclear Materials and Facilities Stabilization Transition Division. She has completed the Technical Qualifications Program in Chemical Processing. Ms. Williams has formerly served on a site-wide VPP Assessment Team and an Environmental Assessment Team, looking at 324/327 and B Plant/WESF.

# APPENDIX C

# INTEGRATED SAFETY MANAGEMENT SYSTEM PHASE I/II CRITERIA AND REVIEW APPROACH DOCUMENTS

# 1.0 PHASE I AND II ISMS CORE EXPECTATIONS

The *Integrated Safety Management Systems (ISMS) Verification DOE Team Leader's Handbook* (DOE 1999) recommends nine core expectations for conducting a Phase I verification review and eight core expectations for conducting a Phase II review. Because the scope of the PFP ISMSV I/II does not include a verification review of RL, the requisite core expectations are not included. This results in eight core expectations for a Phase I Verification Review and six core expectations for the Phase II review. For combined reviews, the DOE Team Leader's Handbook (DOE 1999) recommends combining the core expectations into a single set. Several core expectations are directly related as shown in Table C-1.

**Table C-1. Phase I and Phase II Core Expectations. (2 Sheets)**

| Phase I Core Expectations | Phase II Core Expectations | Combined Phase I/II Core Expectations (Renumbered in This Document) |
|---|---|---|
| CE I-1 The ISMS documentation is consistent with DOE P 450.4, the DEAR, and the guidance provided to the contractor by the AA. | | CE I/II-1 The ISMS documentation is consistent with DOE P 450.4, the DEAR, and the guidance provided to the contractor by the AA. |
| CE I-2 DOE and the contractor effectively translate mission into work, set expectations, provide for integration, and prioritize and allocate resources. | CE II-1 An integrated process has been established and is used to identify and prioritize specific mission-discrete tasks, mission process operations, modifications, and work items. | CE I/II-2 An integrated process has been established and is used to translate mission into work, set expectations, and to identify and prioritize specific mission-discrete tasks, mission process operations, modifications, and work items. |
| CE I-3 An ISMS should include methods for identifying, analyzing, and categorizing hazards. | CE II-2 The full spectrum of hazards associated with the scope of work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with those personnel assigned to analyze the processes. | CE I/II-3 The full spectrum of hazards associated with the scope of work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards work closely with those personnel assigned to analyze the processes. |
| CE I-4 The ISMS should include methods for establishing and maintaining an agreed-upon set of safety standards before work is performed. | | CE I/II-4 The ISMS should include methods for establishing and maintaining an agreed-upon set of safety standards before work is performed. |

## Table C-1. Phase I and Phase II Core Expectations. (2 Sheets)

| Phase I Core Expectations | Phase II Core Expectations | Combined Phase I/II Core Expectations (Renumbered in This Document) |
|---|---|---|
| CE I-5 Contractor policies, procedures, and documents are established and are adequate for the work or process to be performed safely. | CE II-3 An integrated process has been established and is used to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensures adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms provide integration, which merge together at the workplace. | CE I/II-5 A process has been established and is used to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensures adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms (contractor policies, procedures, and documents) are adequate and merge together at the workplace. |
| | CE II-4 An integrated process has been established and is used to effectively plan, authorize, and execute the identified work for the facility or activity. Both workers and management demonstrate a commitment to ISMS. These mechanisms demonstrate effective integration. | CE I/II-6 A process has been established and is used to effectively plan, authorize, and execute the identified work for the facility or activity. Both workers and management demonstrate a commitment to ISMS. |
| CE I-6 The ISMS should be continuously improved through an assessment and feedback process, which should be established at each level of work and at every stage in the work process. | CE II-5 A process has been established and is used that ensures mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. | CE I/II-7 A process has been established that ensures mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. |
| CE I-7 The ISMS should establish that at every level of control, line management must be responsible for safety. Clear and unambiguous roles and responsibilities should be defined and maintained at all levels within the organization. | CE II-6 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. | CE I/II-8 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. |
| CE I-8 The ISMS should ensure that personnel are competent commensurate with their responsibility for safety. | CE II-6 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. | |

The PFP is scheduled for an ISMS Phase I/II Review in the second quarter of fiscal year (FY) 2000. A Phase I /II Internal Readiness Review for PFP was completed in the last quarter of FY1999 and readiness for Phase I/II Verification was declared for the facility.

Table C-2 shows the relationship among the combined Phase I/II core expectations in this review plan, the five core functions, and the seven guiding principles in DOE G 450.4 1-A.

**Table C-2. Core Expectations Versus Core Functions and Guiding Principles. (2 Sheets)**

| Phase I / II Core Expectations | Core Function (CF) or Guiding Principle (GP) | Related (CRAD) |
|---|---|---|
| **CE I/II-1** The ISMS documentation is consistent with DOE P 450.4, the DEAR, and guidance provided to the contractor by the AA. | **CF 1** Define Scope of Work<br>**CF 2** Analyze Hazards<br>**CF 3** Develop and Implement Controls<br>**CF 4** Perform Work<br>**CF 5** Feedback and Improvement<br>**GP 1** Line Management Responsibility<br>**GP 2** Clear Roles and Responsibilities<br>**GP 3** Competence per Responsibilities<br>**GP 4** Balanced Priorities<br>**GP 5** Identification of Safety Standards<br>**GP 6** Tailor Hazard Controls to Work<br>**GP 7** Operations Authorization | **BBC.1**<br>**MG.1a**<br>**MG.1b** |
| **CE I/II-2** A process has been established and is used to translate mission into work, set expectations, and to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. | **CF 1** Define Scope of Work<br>**GP 4** Balanced Priorities<br>**GP 5** Identification of Safety Standards | **BBC.1**<br>**MG.1b** |
| **CE I/II-3** The full spectrum of hazards associated with the scope of work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards work closely with those personnel assigned to analyze the processes. | **CF 1** Define Scope of Work<br>**CF 2** Analyze Hazards<br>**CF 5** Feedback and Improvement<br>**GP 2** Clear Roles and Responsibilities<br>**GP 3** Competence per Responsibilities<br>**GP 5** Identification of Safety Standards | **HAZ.1**<br>**SME** |
| **CE I/II-4** The ISMS should include methods for establishing an agreed-upon set of safety standards before work is performed. | **CF 1** Define Scope of Work<br>**CF 2** Analyze Hazards<br>**CF 3** Develop and Implement Controls<br>**GP 5** Identification of Safety Standards | **HAZ.2** |
| **CE I/II-5** A process has been established and is used to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensures adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms (contractor policies, procedures, and documents) are adequate and merge together at the workplace. | **CF 3** Develop and Implement Controls<br>**CF 5** Feedback and Improvement<br>**GP 6** Tailor Hazard Controls to Work | **HAZ.2**<br>**SME** |

## Table C-2. Core Expectations Versus Core Functions and Guiding Principles. (2 Sheets)

| Phase I / II Core Expectations | Core Function (CF) or Guiding Principle (GP) | Related (CRAD) |
|---|---|---|
| **CE I/II-6** A process has been established and is used to effectively plan, authorize, and execute the identified work for the facility or activity. Both workers and management demonstrate a commitment to ISMS. | **CF 1** Define Scope of Work<br>**CF 2** Analyze Hazards<br>**CF 3** Develop and Implement Controls<br>**CF 4** Perform Work<br>**GP 1** Line Management Responsibility<br>**GP 2** Clear Roles and Responsibilities<br>**GP 3** Competence per Responsibilities<br>**GP 4** Balanced Priorities<br>**GP 7** Operations Authorization | **BBC.1**<br>**BBC.2**<br>**OP.1**<br>**OP.2**<br>**SME** |
| **CE I/II-7** A process has been established that ensures mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. | **CF 4** Perform Work<br>**CF 5** Feedback and Improvement | **MG.3**<br>**SME** |
| **CE I/II-8** Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. | **GP 1** Line Management Responsibility<br>**GP 2** Clear Roles and Responsibilities<br>**GP 3** Competence per Responsibilities | **BBC.2**<br>**BBC.3**<br>**HAZ.1**<br>**HAZ.3**<br>**MG.2**<br>**MG.3**<br>**SME** |

C = criterion or criteria
CE = core expectation
CF = core function
CRAD = Criteria and Review Approach Document
DEAR = Department of Energy Acquisition Regulation
DOE = U. S. Department of Energy
GP = guiding principle
ISMS = Integrated ES&H Management System
SME = subject matter experts

## 2.0 CRITERIA AND REVIEW APPROACH DOCUMENTS FOR THE PHASE I/II ISMS VERIFICATION

The following CRADs provide the approach for conducting the combined Phase I/II ISMS verification of the implementation of ISMS at PFP. These CRADs have been developed to provide the Verification Team the review criteria for evaluation of the five core functions of ISMS as implemented at the facility- and activity-level. These CRADs support the expectations and attributes of ISMS described in the DOE Team Leader's Handbook (DOE 1999).

Each CRAD objective includes a reference to the specific combined ISMS Core Expectation (CE) it addresses. Table C-3 below provides a cross-reference of the combined Phase I/II Core Expectations to the specific CRAD.

**Table C-3. Management Objective and Core Expectation Cross References.**

| Review Plan CRAD | Phase I/II Core Expectation |
|---|---|
| BBC.1 | CE I/II – 1, CE I/II-2, CE I/II-6, CE I/II-7, CE I/II-8 |
| BBC.2 | CE I/II-2, CE I/II-6, CE I/II-8 |
| BBC.3 | CE I/II-8 |
| HAZ.1 | CE I/II-3, I/II-8 |
| HAZ.2 | CE I/II-4, CE I/II-5 |
| HAZ.3 | CE I/II-8 |
| MG.1a | CE I/II-2 |
| MG.1b | CE I/II-2, |
| MG.2 | CE I/II-8 |
| MG.3 | CE I/II-7, CE I/II-8 |
| OP.1 | CE I/II-6, |
| OP.2 | CE I/II-6 |
| SME.1 through SME.4 | CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8 |

## OBJECTIVE

**BBC.1**- Contractor procedures ensure that missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated. (CE I/II-1, CE I/II-2, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Contractor procedures translate mission expectations from DOE into tasks that permit the identification of resource requirements, relative prioritization, and performance measures that are consistent with DOE requirements. (DEAR 970.5204-2, DOE P 450.5)

2. Contractor procedures provide for DOE approval of proposed tasks and prioritization. Work-planning procedures provide for feedback and continuous improvement.

3. Contractor procedures provide for change control of approved tasks, prioritization, and identification of resources.

4. Contractor procedures provide for flow down of DEAR 970.5204-2, *Integration of Environment, Safety and Health into Work Planning and Execution* requirements into subcontracts involving complex or hazardous work.

**NOTES**:

- Verification of these criteria includes an actual review of lower-tier subcontractor mechanisms and methods for meeting ISMS contract requirements. The reviewer should ensure alignment of their ISMS plans or equivalent to facility ISMS plans.

- "Contractor procedures" refers to all procedures used at PFP, including both the Project Hanford Management System and the FDH policy and procedure system.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing requirements for translation of missions into tasks and activities.

- Review representative samples of completed records.

- Review internal approval of proposed tasks and prioritization.

- Review the DOE implementing procedures.

- Determine if there is adequate guidance for DOE involvement in developing clear definitions of the scope of work.

- Determine the following: 1) if the mechanisms for translation of the missions and policies from higher authority are appropriate, 2) if a mechanism for assigning priorities has been established, and 3) if performance objectives are reviewed and approved.

- Review mission prioritization procedures to determine if tailoring of resources is appropriate.

- Review Hanford Site manuals of practice that describe the budget and planning process, and documents that identify mission requirements, approval authorities for contractor plans, and address the assignment of budget priorities.

- Review Hanford Site procedures for formally documenting change control.

- Review procedures that define how safety requirements are included in subcontracts as well as the flow down of the DEAR clauses into subcontracts for hazardous work.

- Review future year planning and current year authorized work.

- Select several current-year authorizations and track change control.

- Select several project-specific subcontracts and review for incorporation of the ISMS DEAR clauses.

**Interviews**

- Interview project contractor personnel responsible for management of the budget process.

- Interview line managers responsible for DOE-Headquarters-directed mission accomplishment.

- Interview the ES&H manager to determine how the process for integration of safety into mission tasks is accomplished.

- Interview managers at selected project levels to determine their understanding and implementation of the defined process for translation of mission into work authorization.

- Interview selected ES&H professionals and line managers to determine how safety is incorporated into the budget plans and task authorization.

- Interview project contractor procurement personnel regarding subcontract flow down requirements.

- Interview selected personnel responsible for translating missions into tasks and activities.

- Personnel interviewed should include those responsible for identifying and prioritizing tasks and activities, setting expectations, and allocating resources.

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the project contractor.

## OBJECTIVE

**BBC.2** - Contractor budgeting and resource assignment procedures include a process to ensure the application of balanced priorities. Resources are allocated to address safety, programmatic, and operational considerations. Protecting the public, workers, and environment is a priority whenever activities are planned and performed. (CE I/II-2, CE I/II-6, CE I/II-8)

## Criteria

1. The prioritization and allocation process clearly addresses both ES&H and programmatic needs. The process involves line management input and approval of the results.

2. Priorities include commitments and agreements to DOE as well as to stakeholders.

3. Contractor procedures allow for adequate analysis of hazards associated with the work being planned.

4. Contractor procedures for allocating resources include provisions for implementation of hazard controls for tasks being funded.

5. Resource allocations reflect the tailored hazard controls.

6. The incentive and performance fee structure promotes balanced priorities.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing requirements for application of balanced priorities (safety, programmatic, operational considerations) in the establishment of missions, tasks, and activities.

- Review representative samples of completed records.

- Review Hanford Site documents, manuals of practice, and procedures that describe the budget and planning process and those documents that address the assignment of budget priority. Also review the procedures for their development.

- Review DOE procedures used for identification of mission requirements, balancing of resource allocations, and approval of contractor plans in the work authorization documents.

- Verify that the budget process allows adequate resources for standards selection, hazard controls, and work authorization processes to support work planning and scope definition.

- Select several mission tasks from the DOE requirements and the outyear planning documents to determine if the contractor adequately address the assignment of resources with balanced priorities.

- Select several current year authorizations and review selected funded tasks at the individual task level to verify balanced priorities.

- Review applicable performance incentives to ensure application of balanced priorities.

- Review previous self-assessments.

**Interviews**

- Interview contractor personnel responsible for managing the budget process to determine their understanding of the priority for assigning resources.

- Interview line managers responsible for DOE mission accomplishment.

- Interview the ES&H manager to determine the process used for integration of safety into mission tasks. Interview selected managers at each level of the Fluor Daniel Hanford Company organization to determine their understanding of the allocation of resources with appropriate priority.

- Interview selected personnel responsible for developing and prioritizing missions, tasks, and activities.

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the contractor.

## OBJECTIVE

**BBC.3** - The contractor procedures and practices ensure that personnel who define the scope of work and allocate resources have competence that is commensurate with their assigned responsibilities. (CE I/II-8)

## Criteria

1. Contractor procedures ensure that the personnel, including line management who define, prioritize, and approve the scope of work and allocate resources, have competence that is commensurate with their assigned responsibilities.

2. Personnel who actually participate in the definition of the scope of work and allocate resources demonstrate competence to prioritize and approve work with tailored hazard controls.

## Approach

### Record Review

- Review pertinent controlling documents and procedures containing qualification, training and experience requirements for personnel responsible for defining, prioritizing, and approving scope of work and for allocation of resources.

- Review selected completed personnel training records.

- Review organizational documentation to determine the personnel positions with responsibility associated with this objective.

- Review the position description for those positions.

- Review the personnel records that identify the individual qualifications that meet the elements of the position descriptions.

- Review any training or qualification material, including Hanford Site manuals that support gaining or verifying competence to fill the positions.

### Interviews

Interview selected individuals and managers whose responsibilities include defining the scope of work and allocation of resources to determine their competence in prioritizing and approving work with tailored hazard controls.

**Observations**

If possible, observe actual budgetary discussions (including meetings involving the development of the outyear planning documents) within and between DOE and the contractor.

## OBJECTIVE

**HAZ.1** - The full spectrum of hazards associated with the scope of work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. (CE I/II-3, CE I/II-8)

### Criteria

1. Procedures and/or mechanisms are in place and used by personnel to ensure that the full spectrum of hazards associated with the work throughout the facility have been identified, analyzed and categorized, and they reflect accepted rigor and methodology. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensures personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. These mechanisms ensure direction and approval from line management and integration of the requirements.

2. Procedures and/or mechanisms are in place and used by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

### Approach

- Review pertinent Hanford Site procedures that govern the identification of hazards throughout the facility and those that describe the roles and responsibilities of personnel assigned to identify and analyze hazards.

- Review representative samples of completed records.

- Interview selected personnel responsible for identification and analysis of hazards. Personnel interviews should be of sufficient depth to verify the competence of those personnel to execute their responsibilities.

**Record Review**

- The contractor's procedures for identifying, analyzing, and categorizing hazards at both the site and at the facility level.

- Determine that these procedures are adequate to address the hazards associated with the work and operations.

- Review the documents that govern the conduct, review, and approval of facility or activity hazard analysis and documentation such as Process Hazards Analysis (PHA), Preliminary Hazards Review (PHR), Preliminary Safety Analysis Report (PSAR), job hazards analysis

(JHA), and Work Control Permits (WCP).

- The approved or proposed hazard analysis documentation for selected facilities and activities to verify consistency and compliance with contractor procedures and mechanisms, as well as compliance with DOE review and approval mechanisms.

- Contractor procedures for identification and designation of standards that become contract requirements and assess their adequacy.

- Verify that these records conform to the hazard analysis requirements.

- Coordinate the review of work-related documents such as AJHAs, and JCSs with the OP and SME functional area reviewers.

- The procedures established to ensure that the appropriate requirements are included in the contract as specified in List A or List B.

- Contractor organization documentation to identify personnel including all levels of management to whom this objective applies.

- The position descriptions for those personnel to determine the required competencies.

- Corporate/site training manuals and qualification and competency procedures.

- Selected training and qualification records for those personnel identified above to determine how the required competency has been gained, retained, and validated.

- Verify that these records conform to the hazard analysis requirements. (Coordinate the review of work-related documents, such as JHAs, and WCPs with the OP and SME functional area reviewers.)

- A sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include AAs, SARs, TSRs, HASPs, RWPs, operating procedures, etc.

**Interviews**

- Corporate/site personnel responsible for identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements.

- Selected contractor individuals to verify their understanding of the required competencies and the degree to which they meet them.

- Personnel responsible for the identification and analysis of work hazards. For example, in nuclear facilities this should include personnel responsible for USQ determination, lock and tag preparation, procedure technical reviews, etc.

**Observations**

- Contractor activities involving the preparation, review, approval and/or maintenance of the selected set of standards and requirements.

- If possible, observe the actual preparation and field implementation of the analysis of hazards. This should include an Unreviewed Safety Question Determination, preparation of a JHA, SAR/TSR/OSR, and other Authorization Basis documents as available.

- Observe effective integration of ISMS with Enhanced Work Planning (EWP), the Environmental Management Systems (EMS), and the Voluntary Protection Program (VPP) at the activity level.

## OBJECTIVE

**HAZ.2** - An integrated process has been established and is used to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls ensures adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE I/II-4, CE I/II-5)

### Criteria

1. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce and to effectively and accurately implement all aspects of the Authorization Basis.

2. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and used by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

3. Standards and requirements are appropriately tailored to the hazards.

4. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements (AA).

### Approach

- Review pertinent Hanford Site procedures that 1) govern the approval and establishment of facility authorization basis and 2) subsequently maintain and implement identified controls.

- Review a representative sample of approved current authorization basis documents.

- Interview selected personnel responsible for development, review, approval, implementation and configuration control of authorization basis documents. Personnel interviews should be of sufficient depth to verify that all aspects of the authorization bases are effectively and accurately implemented.

### Record Review

- The approved or proposed hazard analysis documentation for selected facilities and activities to verify consistency and compliance with contractor procedures and mechanisms, as well as compliance with DOE review and approval mechanisms.

- Contractor procedures for identification and designation of standards that are incorporated into facility Authorization Basis documentation and assess their adequacy.

- The approach to tailoring the selection of standards and requirements to the identified hazards and maintenance of an appropriate set of standards over time.

- The processes established to develop, approve, and maintain authorization protocols and AAs as applicable.

- The documents that govern the conduct, review, and approval of facility or activity hazard analysis and documentation such as PHAs, PHRs, PSARs, JHAs, and WCPs.

- Procedures and mechanisms to ensure accurate and effective implementation of Authorization Basis documentation. Sample actual implementing documentation. (Coordinate the review of work-related documents such as RWPs and operating procedures with the OP and SME functional area reviewers.)

**Interviews**

- Contractor site/corporate personnel responsible for the selection and approval of standards.

- Determine the understanding and compliance with the procedures for identification, tailoring, review, submittal, approval, and maintenance of the set of standards.

- Personnel responsible for the identification and analysis of work hazards. For example, in nuclear facilities this should include personnel responsible for USQ determination, lock and tag preparation, procedure technical reviews, etc.

- Personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR preparations and implementation, ALARA review requirements, PHA activities, etc.

**Observations**

- Contractor activities that are scheduled to develop, approve, or maintain authorization protocols and Authorization Agreements, as applicable.

- If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination, preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc.

- Observe the actual processes development, review, approval, and implementation of SAR/TSR, AA, and other Authorization Basis documents as available.

## OBJECTIVE

**HAZ.3** - Contractor procedures ensure that contractor personnel responsible for analyzing the hazards and developing, reviewing, or implementing the controls, have competence that is commensurate with their responsibilities. Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. (CE I/II-8)

## Criteria

1. Contractor procedures have clearly defined roles and responsibilities for personnel assigned to oversee, review, approve the analysis of hazards, and establish controls associated with facilities and activities.

2. Contractor procedures require that personnel responsible for analyzing hazards and identification of adequate controls have competence that is commensurate with their responsibilities.

## Approach

- Review pertinent contractor procedures that define roles and responsibilities and identify personnel assigned responsibility for overseeing and/or reviewing activities, or those responsible for implementing hazards mitigation and control functions.

- Review position descriptions for those personnel to determine the required competencies.

- Review site and facility training manuals and qualification and competency procedures.

- Review selected training and qualification records for those personnel identified above to determine how the required competency has been gained, retained, and validated.

### Record Review

- Review procedures that establish and define roles and responsibilities to identify those personnel responsible for oversight and/or reviewing activities and those responsible for implementing hazards mitigation and control functions.

- Review appropriate position descriptions to verify both inclusion and adequacy of core competencies.

- Review site and facility training manuals, lesson plans, and related documentation.

- Select and review samples of personnel training and qualification records.

**Interviews**

- Contractor personnel responsible for the oversight, review, or implementation of controls.
- Contractor personnel who are assigned to oversee, review, and approve the analysis of hazards, and establish controls associated with facilities and activities.
- Facility training organization managers and trainers.

**Observations**

There are no recommended observations for this CRAD.

## OBJECTIVE

**MG.1a** - The ISMS Description is consistent and responsive to DOE Policies 450.4, 450.5, and 450.6; the DEAR; and the direction to the contractor from the Approval Authority. The contractor policies and procedures ensure that the ISMS Description is maintained, implemented, and that implementation mechanisms result in integrated safety management. (CE I/II-1)

**NOTE:** This MG.1a objective should be addressed at the program/project level. Demonstrate alignment/linkage of the PFP ISMS program description, e.g., system description, with the *Project Hanford Management Contract Integrated Environment, Safety Management System Plan* (FDH 1999, Appendix B). This objective should focus on the PFP "Plutonium Finishing Plant Stabilization and Deactivation Project Integrated Safety Management System Program Description" to determine their adequacy as a roadmap for implementation of ISMS at PFP.

## Criteria

1. The ISMS Description is consistent and responsive to DOE Policies 450.4, 450.5, and 450.6; the DEAR; and the direction to the contractor from the Approval Authority.

2. The contractor has mechanisms in place to direct, monitor, and verify the integrated implementation of the ISMS as described in the ISMS Program System Description.

3. The contractor has assigned responsibilities and established mechanisms to ensure that the ISMS Program System Description is maintained current and that annual update information is prepared and submitted.

4. The contractor has established a process that establishes, documents, and implements safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance. The ISMS describes how system effectiveness will be measured.

## Approach

- Review pertinent policies and procedures to assure that there are mechanisms in place to direct, monitor, and verify implementation of ISMS at all levels of facility and activity organizational functions.

- Review procedures covering the maintenance, annual updating, performance measurement, and submittal of the ISMS information.

- Interview selected personnel responsible for implementation and operation of the ISMS program.

**Record Review**

- Review the ISMS Program System Descriptions and the directions concerning the guidance on the preparation, content, review and approval of the ISMS and PFP.

- Review Hanford Site and PFP procedures for the implementation review, and maintenance of the ISMS Program System Descriptions and associated items, including provisions for the annual reviews and updates and transmittal to DOE.

- Review charters and "output documentation" from any ISMS coordinating committees.

- Review contractor assessment activities that determine the adequacy of implementation of ISMS.

- Review implementation planning efforts and any "gap analysis" reports, which may have been developed.

- Review the process established to measure the effectiveness of the ISMS to ensure that the methods support the establishment, documentation, and implementation of safety performance objectives that support DOE program and budget execution guidance.

**Interviews**

- Interview contractor managers who are responsible for the development and maintenance of the ISMS Description.

- Interview contractor line managers who are, or will be, responsible for administering the mechanisms of the ISMS.

- Interview chairpersons and key members of any ISMS coordinating committees, if established.

- Interview managers, supervisors, and workers to determine if they are aware of and understand the various performance measures/indicators. What do the measures mean to them? Do they feel the measures are valuable for ensuring continuous improvement?

**Observations**

None required.

## OBJECTIVE

**MG.1b** - An integrated process has been established and is used to identify and prioritize specific mission-discrete tasks, mission process operations, modifications and work items. (CE I/II-2)

### Criteria

1. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and used by personnel.

2. Procedures and/or mechanisms are in place and used by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items. Personnel assigned to the roles are competent to execute these responsibilities.

3. Procedures and/or mechanisms are in place and utilized by personnel that ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work, etc.) can be accomplished within the standards and requirements identified for the facility.

### Approach

- Review Hanford Site and PFP long-range planning documents that identify and prioritize mission-related tasks and processes.

- Review procedures used to establish roles and responsibilities for personnel who identify and/or prioritize work-related items.

- Interview selected personnel responsible for identification and prioritization of mission-related tasks.

### Record Review

- Review the facility or activity long-range planning documentation. This should include such items as the following: summary schedules, plans of the week, long-range maintenance schedules, modification schedule, etc.

- Review the procedures and mechanisms that line managers use to identify and prioritize mission-related tasks and processes, modifications, and work items.

- Review organizational documentation to determine the personnel positions with responsibility associated with this objective.

- Review the position descriptions for those positions.

- Review the personnel records that identify the individual qualifications that meet the elements of the position descriptions.

- Review any training or qualification material including in training and qualification manuals that support gaining or verifying competence to fill the positions.

- Review the procedures and/or mechanisms that are used by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements.

**Interviews**

- Interview management personnel responsible for the identification and prioritization of work. This should include personnel, such as those responsible for long-range planning documentation, schedule preparation, etc.

- Interview selected personnel at all levels of facility or activity management to verify that usable procedures are in place for all activities.

**Observations**

- Observe work definition and planning activities such as plan of the week meetings, long-range scheduling meetings, etc.

- Observe effective integration of ISMS with Enhanced Work Planning (EWP), the Environmental Management Systems (EMS), and the Voluntary Protection Program (VPP) at the Activity Level.

## OBJECTIVE

**MG.2** - Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE I/II-8)

## Criteria

1. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

2. Facility or activity procedures specify that line management is responsible for safety. Contractor procedures identify line management as responsible for ensuring that the implementation of hazard controls is adequate to ensure that work is planned and approved and conducted safely. Procedures require that line managers are responsible for the verification of adequate implementation of controls to mitigate hazards prior to authorizing work to commence.

3. Procedures and/or mechanisms are in place that ensure personnel who supervise work have competence commensurate with their responsibilities.

4. Procedures and/or mechanisms are in place that ensure personnel performing work are competent to safely perform their work assignments.

## Approach

### Record Review

- Review facility or activity manuals of practice that define the roles and responsibilities of personnel responsible for safety.

- Review position descriptions and other documentation that describe roles and responsibilities related to ensuring safety is maintained.

- The review should consider personnel in line management and staff positions and evaluate whether line managers are responsible for safety.

- Review the procedures established to ensure that managers and the work force is competent to safely perform work.

- Review the records of qualification and certification as applicable.

**Interviews**

- Contractor managers who are responsible for the development and maintenance of the ISMS description.
- Contractor line managers who are, or will be responsible for administering the mechanisms of the ISMS.
- Interview chairman and key members of any ISMS coordinating committees, if established.
- Interview selected personnel at all levels of facility or activity management that are identified by the record review above.
- Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity.
- Interview a selected number of supervisors and workers (see definition) to determine their understanding of competency requirements and their commitment to performing work safely.

**Observations**

Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with and responsible for decisions affecting safety, and that managers and workers are competent to perform their duties. Activities, such as work planning meetings, weekly planning meetings, plans of the day, event critiques, safety training, and safety meetings are typical events that may provide good examples of the safety training and decision-making process.

## OBJECTIVE

**MG.3** - An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE I/II-7)

## Criteria

1. Procedures and/or mechanisms are in place and used by personnel to collect feedback information, such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

2. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels, as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

3. Procedures and/or mechanisms are in place and used by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational, oversight, and assessment information into improvement processes and appropriate lessons learned.

4. Procedures and/or mechanisms are in place and used by managers to consider and resolve recommendations for improvement, including worker suggestions.

5. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained as required by rules, laws, and permits such as the *Price Anderson Amendment Act*; *National Environmental Policy Act of 1969*; *Resource Conservation and Recovery Act of 1976*; and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, etc.

6. Contractor procedures ensure that performance measures or indicators and performance objectives are developed in coordination with DOE as required. Contractor procedures require effective management and use of performance measures and objectives to ascertain the status of the ISMS.

## Approach

- Review the performance monitoring documentation for the feedback and continuous improvement process including such documents as occurrence reports, shift orders, deficiency tracking system, JCS and AJHA completed records, employee concerns, and self-assessment reports.

- Review procedures for work to determine that adequate feedback and improvement mechanisms are in place.

- Interview personnel responsible for administering the feedback and continuous improvement process including those responsible for occurrence reporting, lessons-learned reporting, shift orders preparation, employee concerns, self-assessments, and oversight.

- Observe development and utilization of feedback and continuous improvement activities.

- Review the results and schedules of self and independent assessments.

- Review the performance measures or indicators and performance objectives. Ensure that a process has been established to measure the performance of the ISMS.

**Record Review**

- Review procedures to ensure that a process is established to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process.

- Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, shift orders, deficiency reports, post-job reviews, safety observer reports, employee concerns programs, and reports of self-assessments.

- Review procedures for work to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level.

- Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

- Review documents such as self-assessment schedules, self-assessments, and independent assessments. Verify that the issues management program promotes effectiveness and process improvement.

- Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the work is being planned and performed.

- Review documents to determine regulatory compliance with rules, laws, and permits such as the *Price Anderson Amendment Act*; *National Environmental Policy Act of 1969*; *Resource Conservation and Recovery Act of 1976*; and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, etc.

**Interviews**

- Interview selected managers to determine the adequacy and effectiveness of the assessment activities.

- Interview contractor assessment managers to determine the adequacy and effectiveness of the contractor's oversight program, as well as other compliance or independent assessment programs that may be established.

- Interview personnel responsible for administering the feedback and continuous improvement progress.

- Interview personnel such as those responsible for occurrence reporting, lessons-learned preparation, shift orders preparation, worker concerns program, self-assessment, and oversight.

- Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities.

- Interview operators to determine adequacy and effectiveness of the feedback and continuous improvement process.

**Observations**

Observe development and utilization of feedback and continuous improvement activities. This should include such things as conducting post-job critiques including development of lessons-learned and determination of root causes, monitored evolutions, post-ALARA reviews, conducting a self-assessment or independent assessments, etc.

## OBJECTIVE

**OP.1** – Work Planning. An integrated process has been established and is used to effectively plan work for the facility or activity. Within work planning clear roles and responsibilities have been established and there is a satisfactory level of competence (CE I/II-6)

## Criteria

1. Procedures and/or mechanisms are in place to ensure that work planning is integrated at the individual maintenance or activity level and fully analyzes hazards and develops appropriate controls.

2. Procedures and/or mechanisms for work planning contain clear roles and responsibilities.

3. Procedures and/or mechanisms for work planning require that personnel who are assigned to the subject area have a satisfactory level of competence.

4. Procedures and/or mechanisms are in place that ensure safety requirements are integrated into work planning.

5. Procedures and/or mechanisms are in place to incorporate hazards controls lessons learned from work execution into work planning.

6. Workers actively participate in the work planning process.

7. Procedures and/or mechanisms are in place that ensure adequate performance measures, feedback mechanisms, and indicators, including safety performance measures, are established for the work.

## Approach

### Record Review

- Review documents and/or mechanisms that govern the process for planning work with emphasis on the individual maintenance or activity level.

- Evaluate the adequacy of the division of responsibilities, worker involvement, and work planning process.

- Review documents and/or mechanisms that govern work planning to ensure that clear roles and responsibilities are identified.

- Review the mechanisms used to prepare and maintain operations and maintenance procedures for the PFP Project.

- Review the mechanisms used to prepare and maintain operations and maintenance procedures for the PFP Project. Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

- Review performance indicators used to gauge effectiveness of work planning.

**Interviews**

- Interview personnel responsible for planning the performance of the work. This should include personnel such as those responsible for preparing and maintaining documents such as the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations.

- Interview personnel responsible for development of maintenance or individual activity procedures and controls.

- Verify adequate worker involvement at each step of the process.

**Observations**

- Observe the actual work planning processes and activities supporting the work planning, i.e., resource availability, training and qualifications of resources, Employee Job Task Analysis, and EWPs. This should include such items as pre-job briefings, AJHA pre-job walk downs, work improvement team meetings, review of safety requirements, etc.

- Observe work hazard identification activities. This should include such things as validation of procedures, procedure tracking, compensatory measures determination, etc.

## OBJECTIVE

**OP.2** – Operations Authorization/Work Execution. An integrated process has been established and is used to authorize and execute the identified work for the facility or activity. (CE I/II-6)

## Criteria

1. Procedures and/or mechanisms are in place that ensure there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

2. Procedures and/or mechanisms are in place that ensure there is a process used to gain authorization to conduct operations.

3. Procedures and/or mechanisms are in place that ensure that hazards are appropriately controlled and integrated into work performance.

4. Procedures and/or mechanisms are in place that ensure that workers have adequate competence for their duties.

5. Procedures and/or mechanisms ensure that feedback from work planning and execution and lessons learned are integrated into work processes.

## Approach

### Record Review

- Review documents and/or mechanisms that govern the process for authorizing, and conducting work with emphasis on the individual maintenance or activity level.

- Review documents and evaluate the adequacy of the division of responsibilities, worker involvement, and work authorization process.

- Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the work is being performed.

- Review the mechanisms used to prepare operations and maintenance procedures. Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to review and approve them.

- Review post-job critiques, AJHA and other records to determine if lessons learned and feedback can effectively occur.

- Review training requirements and records to ensure that maintenance and operations personnel are competent for work being performed.

**Interviews**

- Interview personnel responsible for authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining documents such as the POD, equipment status files, pre-job briefings, and the conduct of facility or activity operations.

- Interview personnel responsible for approval and execution of individual activity procedures and controls.

- Interview operations, maintenance, and safety personnel and verify adequate worker involvement at each step of the process.

- Interview personnel responsible and involved in the work feedback process.

**Observations**

- Observe the actual authorization and performance of work activities. This should include such items as pre-job briefings, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc.

- Observe work hazard identification activities. This should include such things as validation of procedures, procedure tracking, compensatory measures determination, etc.

- Observed post-job reviews and other methods used to provide feedback for continuous improvement.

## SUBJECT MATTER EXPERT INTERACTIONS

The SME CRADs should be adapted as required and used by SMEs to assess whether the core functions and guiding principles of ISMS are met for the control of work within the specified discipline. Specific SME discipline CRADs that are used for this verification are listed below. SME CRADs often cover information areas developed in other CRADs and sharing information developed by the subject area teams will often improve the efficiency and effectiveness verification process.

- **SME.1** Industrial Hygiene and Safety/Fire Protection
- **SME.2** Radiation Protection
- **SME.3** Safeguards and Security
- **SME.4** Environmental Compliance and Chemical Management.

## OBJECTIVE

**SME.1** - Within the Industrial Hygiene and Safety and Fire Protection areas, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Industrial Hygiene and Safety and Fire Protection areas, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

### Criteria

1. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection areas contain clear roles and responsibilities. Industrial Hygiene and Safety and Fire Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Industrial Hygiene and Safety and Fire Protection require that within the subject area, feedback and continuous improvement occur.

### Approach

- Review the applicable HNF-PRO series and PFP procedures and selected records that define the activities and interactions for these activities.

- Assess the adequacy of the documents to meet the criteria and determine that the individual subject areas are effectively integrated into the facility or activity procedures.

- Review any lessons learned that provide an opportunity to assess that lessons learned have been effectively used within the subject areas.

- Review personnel training records in the subject area to determine that they meet competency.

- Interview personnel and responsible managers in the subject areas assigned. Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview personnel assigned to the subject areas to assess the level of competence.

- Observe events such as the development of procedures, development of hazards analyses (e.g., RWP or JHA) or the approval process for individual work items, which includes interactions with personnel of the subject areas.

**Record Review**

- Review the manuals of practice and selected records that define the procedures and interactions required for Industrial Hygiene and Safety and Fire Protection at the facility or activity.

- Assess the adequacy of the documents to meet the criteria above and determine that the Industrial Hygiene and Safety and Fire Protection are effectively integrated into facility and activity-level procedures.

- Review selected lessons learned to assess that lessons learned have been effectively used within the Industrial Hygiene and Safety and Fire Protection areas.

- Review training records of personnel in the Industrial Hygiene and Safety and Fire Protection areas to determine if they meet competency standards.

**Interviews**

- Interview personnel and responsible managers assigned to the Industrial Hygiene and Safety areas to assess their level of competence.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

**Observations**

- Observe events such as the development of a procedure, development of a hazards analysis such as an AJHA, or the approval process for an individual work item, which includes interactions with personnel in the subject area.

- Observe field conditions and work performed to validate that work as planned is executable and meets established requirements. Interview appropriate personnel to ensure they believe this is true.

## OBJECTIVE

**SME.2** - Within the Radiation Protection area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Radiation Protection area, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Radiation Protection require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Radiation Protection contain clear roles and responsibilities. Radiation Protection is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Radiation Protection require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Radiation Protection require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Radiation Protection require that within the subject area, feedback and continuous improvement occur.

## Approach

### Record Review

- Review the applicable HNF-PRO series and PFP procedures and selected records that define the procedures and interactions required for Radiation Protection at the facility or activity level.

- Assess the adequacy of the documents to meet the criteria above and determine that Radiation Protection is effectively integrated into facility and activity level procedures.

- Review selected lessons learned to assess that lessons learned have been effectively used within the Radiation Protection area.

- Review training records of personnel in Radiation Protection area to determine if such personnel meet competency standards.

**Interviews**

- Interview personnel and responsible managers assigned to the Radiation Protection area to assess their level of competence.

- Interview line managers to assess the establishment of clear roles and responsibilities, the understanding of the support provided to line managers, and the responsibility of line managers for safety.

- Interview appropriate personnel to ensure they believe work is appropriately planned and executed.

**Observations**

- Observe events such as the development of a procedure, development of a hazards analysis (such as an RWP), or the approval process for an individual work item, which includes interactions with personnel in the subject area.

- Observe field conditions and work performed to validate that work as planned is executable and meets established requirements.

## OBJECTIVE

**SME.3 -** Within the Safeguards and Security area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work, and a process for identifying opportunities for feedback and continuous improvement. Within the Safeguards and Security area, line managers are responsible for safety, clear roles and responsibilities have been established, and there is a satisfactory level of competence. (CE I/II-3, CE I/II 5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Safeguards and Security require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Safeguards and Security contain clear roles and responsibilities. Safeguards and Security is effectively integrated with line-support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Safeguards and Security require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Safeguards and Security require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Safeguards and Security require that within the subject area, feedback and continuous improvement occur.

## Approach

### Record Review

- Review and evaluate the planning documents and procedures that define the work within Safeguards and Security.

- Review and evaluate the procedures/mechanisms used to identify the work hazards. Ensure that procedures require that Safeguards and Security work is integrated within the PFP.

- Review and evaluate the procedures/mechanisms used to ensure controls are identified and implemented.

- Review and evaluate the procedures/mechanisms used to ensure that work is conducted in compliance with controls.

- Review lessons learned documents pertaining to Safeguards and Security to assess the effectiveness of the program.

- Review documents that delineate roles and responsibilities at the facility and the activity level as it relates to Safeguards and Security.

- Review the training plans, personnel training records, certifications, and educational background to determine if personnel meet competency.

**Interviews**

- Interview responsible managers assigned to the Safeguards and Security area to assess their understanding of ISMS and their commitment to its implementation.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview workers who have Safeguards and Security responsibility to determine their understanding of ISMS and their participation in the process.

**Observations**

- Observe events such as the development of a lesson plan, discussion of incorporation of safety controls in job planning in a security exercise (at PFP), development of a hazards analysis such as an AJHA, or the approval process for an individual work item, which includes interactions with personnel in the subject area.

- Observe Safeguards and Security operations to validate that work is planned according to procedures and meets established requirements.

## OBJECTIVE

**SME.4** - Within the Environmental Compliance and Chemical Management area, the planning of work includes an integrated analysis of hazards and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the Environmental Compliance and Chemical Management area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE I/II-3, CE I/II-5, CE I/II-6, CE I/II-7, CE I/II-8)

## Criteria

1. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for Environmental Compliance and Chemical Management contain clear roles and responsibilities. Environmental Compliance and Chemical Management is effectively integrated with line support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work.

4. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that personnel who are assigned to the subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for Environmental Compliance and Chemical Management require that within the subject area, feedback and continuous improvement occurs.

6. Contractor procedures provide a method to ensure that controls are implemented during preparation for the initiation of work and start-up activities at each level. The procedures ensure that adequate controls are identified to mitigate the identified hazards and the controls are effectively implemented. Contractor procedures provide assurance that controls will remain in affect so long as the hazards are present.

## Approach

### Record Review

- Review the manuals of practice and selected records that define the procedures and interactions required for Environmental Compliance and Chemical Management at the facility or activity.

- Assess the adequacy of the documents to meet the criteria above and determine that Environmental Compliance and Chemical Management is effectively integrated into facility and activity-level procedures. In particular, note the methods of Environmental Compliance and Chemical Management and the documentation produced during the execution of the facility work. Be alert to worker involvement in the processes reviewed.

- Review any lessons learned that provide an opportunity to assess that lessons learned have been effectively used or implemented within the Environmental Compliance and Chemical Management area.

- Review personnel training records of workers in Environmental Compliance and Chemical Management to determine they meet competency standards.

- Review performance indicators used to gauge effectiveness of the environmental compliance system (e.g., how well is pollution prevention, chemical management, and waste minimization are implemented, and how well the system controls work to meet regulatory requirements).

- Review the Chemical Management Implementation Plan and determine if the above criteria are being satisfied as a result of implementing the plan.

**Interviews**

- Interview personnel and responsible managers assigned to Environmental Compliance and Chemical Management.

- Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the support provided to line managers.

- Interview personnel assigned to Environmental Compliance and Chemical Management to assess their level of competence.

**Observations**

- Observe events such as the development of a procedure, development of controls in AJHA, or the approval process for an individual work item, which includes interactions with personnel of the subject area.

- Observe field conditions and work activities to validate that environmental compliance steps are executed and meet established requirements. Interview appropriate personnel to ensure they believe this is true.

- Observe field conditions and work activities to validate Chemical Management is executed and meet established requirements. Interview appropriate personnel to ensure they believe this is true.

## 3.0 GUIDANCE TO SUPPORT IDENTIFICATION OF AN "ISMS CONCERN"

This guidance should be used to support a logical process for screening potential ISMS issues that rise to the level of a documented concern. The Team Leader will provide assistance in this process, and will make the final determination of documented ISMS Concerns.

1. Does this issue involve a safety system?

2. Does this issue involve processes, functions, or components identified in ISMS procedures?

3. Does this issue involve potential adverse environmental impact exceeding regulatory or site-specific release limits?

4. Does this issue impact nonsafety processes, functions, or components that could adversely impact safety related processes, functions, or components?

5. Is this issue noncompliant with an ISMS-approved document?

6. Does this issue indicate a lack of adequate procedures or administrative systems?

7. Does this issue indicate operational or administrative noncompliance with ISMS procedures or policy?

8. Has this issue occurred with a frequency that indicates past corrective actions have been lacking or ineffective?

9. Does this issue require operator training not specified in existing facility training requirements?

10. Does this issue involve a previously unknown risk to worker or public safety and health or a previously unknown threat of environmental release?

## 4.0 REFERENCES

*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 U.S.C. 9601, et seq.

48 CFR 970.5204-2, "Integration of Environment, Safety, and Health Into Work Planning and Execution," Title 48, *Code of Federal Regulations*, (DEAR) Section 970.5204-2, as amended, U.S. Department of Energy, Washington, D.C.

DOE G 450.4-1A, *Integrated Safety Management System Guide,* Volume 1, "Guidance," and Volume 2, "Appendixes," U.S. Department of Energy, Washington, D.C., as amended.

DOE P 450.4, *Safety Management System Policy*, U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.5, *Line Environment, Safety, and Health Oversight,* U. S. Department of Energy, Washington, D.C., as amended.

DOE P 450.6, *Secretarial Policy Statement Environment, Safety and Health Purpose and Scope*, U. S. Department of Energy, Washington, D.C., as amended.

DOE, 1999, *Integrated Safety Management Systems (ISMS) Verification DOE Team Leader's Handbook,* DOE-HDBK-3027-99, U.S. Department of Energy, Washington, D.C.

FDH, 1999, *Project Hanford Management Contract Integrated Environment, Safety, and Health Management System Plan,* HNF-MP-003, Rev. 2, Fluor Daniel Hanford, Richland, Washington.

*National Environmental Policy Act of 1969*, 42 U.S.C. 4321 et seq.

*Resource Conservation and Recovery Act of 1976*, 42 U.S.C. 6901, et seq., as amended.