PROJECT MANGEMENT PLAN EXAMPLES

Safety Integration - Integrated Safety Management Examples

Example 10

8.2 PFP INTEGRATED SAFETY STRATEGY

The following discussion identifies the process that will be used by the PFP Stabilization and Deactivation Project to ensure that the safety of the worker, public, and the environment are adequately addressed during the project. The primary activities involved in the process include the following:

- Implementation of the Integrated Safety Management System (ISMS),
- Identification, control, or mitigation of worker safety-related issues for stabilization and deactivation/dismantlement activities,
- Facility/chemical vulnerability assessment and management,
- Use of the DOE-approved authorization basis and the Unreviewed Safety Question (USQ) process to determine if the PFP Project activities are within the defined safety envelope and, if not, obtain the appropriate authorization, and
- Provide the required safety documentation for the post-transition S&M Phase.

8.2.1 Implementation of Integrated Safety Management System

The implementation of the ISMS at Hanford is outlined in the FDH management plan, *Integrated Environmental, Safety and Health Management System Plan* (FDH 1997). The FDH ISMS Plan establishes a single, defined safety and environmental management system that integrates environmental, safety, and health requirements into the work planning processes to effectively protect the workers, the public, and the environment. The FDH ISMS Plan

- Supports DOE's *Hanford Strategic Plan* (RL 1996a),
- Addresses PHMC requirements for a safety and environmental management system that satisfies DNFSB Recommendation 95-2 (DNFSB 1995),
- Addresses implementation of an environmental management system consistent with the principals of the International Organization for Standardization, Standard 14001 (ISO 1996),
- Supports the *Radiological Control Improvement Plan* (Trent 1997), and
- Incorporates the best practices from many other policies, standards, and initiatives.

The FDH ISMS Plan is used by facilities as the source document to identify gaps between current practices and those practices that are necessary to fully implement the FDH ISMS. A gap analysis was completed for PFP in September 1998, and confirmed that there were no major safety issues. It did, however, identify those areas where improvement is needed to fully implement the FDH ISMS. PFP is addressing the areas identified for improvement in the gap analysis and will continue toward full implementation of the ISMS in accordance with the FDH ISMS Plan.

Facility personnel have and will continue to receive information regarding ISMS, including the seven core functions of the ISMS wheel, results of the gap analysis, and the implementation plan for ISMS at PFP. This information will be provided via employee councils such as the Zero Accident Council, all-employee meetings, electronic messages, and articles in the PFP newsletter.

8.2.2 Worker Safety

A key element of safety during the PFP Stabilization and Deactivation Project is to provide adequate evaluation of the planned activities to determine the potential impacts to the workers, the public, and the environment. To accomplish this objective, the safety basis for the project must be established, and a graded hazards screening and assessment process implemented in conjunction with the USQ process. The core of this process, as related to worker safety, is hazards screening/assessment and the use of the computer-based AJHA.

The field work teams, using the computer-based AJHA tool, will screen each work activity. This screening serves two functions. The first is to help the team in the identification of potential hazards associated with the planned work activity and tie them to the associated programs and controls to prevent or mitigate the hazards. The second function is to identify those activities that warrant a more detailed review by a technical or functional area specialist (i.e., Environmental, Safety, Radiological Control, QA, and Engineering). Any activity identified as requiring additional analysis will include review and approval of the work documentation by the applicable safety professionals and other items mandated by procedures.

8.2.3 Chemical Management

The PFP Stabilization and Deactivation Project is currently implementing the requirements of HNF-PRO-2258, *Chemical Management*. In a recent gap analysis, PFP identified several deficiencies between the new *Chemical Management* procedure and the existing chemical management program. Corrective actions have been identified by PFP management to revise the existing program to meet the current site requirements. These actions have been integrated into existing baseline planning for implementation and are tracked through the Hanford Site Deficiency Tracking System.

Chemical vulnerability was also assessed for the PFP Complex in August 1997 as a result of the Plutonium Reclamation Facility event, and reported in a detailed hazard assessment *Plutonium Finishing Plant Chemical Hazard Assessment* (BWHC 1997a). The assessment identified ten areas of potential immediate concern. From this assessment, a chemical hazard mitigation schedule was developed, and the final remaining actions are being implemented as resources allow. In addition to the chemical vulnerability assessment, a recent facility vulnerability assessment was completed that identified additional areas that required mitigation. These corrective actions will be integrated into the chemical hazard mitigation schedule.

8.2.4 Safety Basis Documentation

The safety authorization basis for the PFP Stabilization and Deactivation Project is defined as those aspects of facility design and operational requirements relied upon by DOE to authorize operation. The safety authorization basis is described in documents such as the facility Safety Analysis Report (SAR) and other safety analyses, hazard classification documents, the Technical Safety Requirements (TSR), DOE-issued safety evaluation reports, and facility-specific commitments made in order to comply with DOE Orders or policies.

The safety authorization basis for the PFP project is maintained current and fully defined in FSP-PFP-5-8, *Plutonium Finishing Plant Administration*, Section 2.23, Revision 9, *Identification and Resolution of Unreviewed Safety Questions*. The two primary documents that are updated regularly and used to maintain the PFP safety authorization basis are as follows:

- WHC-SD-CP-SAR-021, Revision 0-J, *PFP Final Safety Analysis Report* (WHC 1995), including supplemental Engineering Change Notices, and
- WHC-SD-CP-OSR-010, Revision 0-H, *PFP Operational Safety Requirements* (BWHC 1997b).

Consistent with the requirements of DOE Order 5480.21, *Unreviewed Safety Question* , the safety authorization basis includes the information used in development and approval of these documents such as references and related documents. These documents will be used in the implementation of the USQ process as required by the referenced order.

8.2.5 Key Safety Considerations

The PFP Stabilization and Deactivation Project activities pose safety hazards that must be assessed and resolved before respective stabilization or transition work can be initiated. Many of those hazards have been identified and mitigation strategies have been developed. Other identified hazards do not yet have the safety basis completely developed to allow the stabilization and/or transition activities to be initiated. As detailed planning for the various stabilization and transition sub-project plans develops, safety hazards will be identified and appropriate controls developed in order to complete the activities safely. For example, safety hazards that have been identified and are in the process of resolution include the following:

- Potential container reaction due to the presence of plutonium hydride and nitride during metal stabilization,
- Potential pressurization of gloveboxes due to the presence of organic in the feed stream of the solution stabilization process, and
- Potential pressurization of gloveboxes due to off-gas from styrene decomposition during the pyrolysis process for polycubes.

These items above reflect hazards that must be appropriately mitigated during the PFP Stabilization and Deactivation Project. Many of the hazards identified throughout the PFP project will be mitigated through process and system design. However, although the hazards may be mitigated with engineered features, the PFP safety basis must also reflect the hazards, and provide controls for reducing the risk associated with the hazard. In some cases, Justification for Continued Operations will be developed, as is the case for the metal stabilization hazard mentioned above. In other cases, as for the other hazards identified above, Safety Analysis Report Addenda will be required or other forms of authorization agreements such as a Health and Safety Plan. Whatever the case, these hazards and others like them will be evaluated and included in the PFP safety basis.

8.2.6 Post-Transition Safety Documentation

As one of the conditions for transfer of the PFP Complex to the Hanford Surplus Facilities Program, the safety documentation will be updated to reflect the current facility conditions and controls necessary to prevent or mitigate accident scenarios. The required safety documentation for post dismantlement has not yet been determined.

Example 11

6.02.01 Integrated Safety Management System (ISMS)

The execution of the deactivation plan will incorporate the core functions of integrated safety management. These functions will be addressed as follows:

Defining the Scope of Work

The scope of deactivation work is defined in a broad sense by the approved deactivation plan. The scope of specific end point activities and work performance guidance is defined by the combination of end point tasks and the description of work to be performed as outlined in Section 6.03.

Analyzing the Hazards

Preliminary characterization walkdowns were performed during the development of the transition report. These walkdowns identified facility hazards and conditions which will be addressed in the deactivation phase. Additional facility walkdowns have been performed and will continue as a part of end point activity work planning. Prior to the performance of end point activities which involve physical facility work, pre-job briefings will be conducted with the cognizant stakeholders based upon the tasks being performed.

Developing and Implementing Hazard Controls

Hazard controls will be developed/implemented by the following:

(1) Compliance with WSRC procedures applicable to the specific end point tasks being performed.

(2) Work packages which will incorporate safety, engineering, and quality controls as determined by approved engineering scopes of work, work package reviews, and pre-job briefings. Job Hazards Analysis (IHA) or supplementary management oversight controls will be incorporated into work plans as these periodic checks are performed.

Performing Work within the Controls

Performing work safely in accordance with approved WSRC procedures and work instructions is imperative to all current and future site missions, including the deactivation of the 400-D excess facilities. WSRC procedure 1-01 states the policy as follows:

The Westinghouse Savannah River Company (WSRC) operates within a framework aligned with the principles and functions of a DOE Integrated Safety Management System (hereafter referred to as the ISMS). The objective of the ISMS is to integrate safety systematically into management and work practices at all levels of the company (including subcontracted work) so that millions are accomplished while protecting the public, the worker, and the environment. Stated more simply, the objective of the ISMS is to "Do Work Safely." The ISMS is the overall management system for WSRC. Other related ESH&QA programs such as Enhanced Work Planning, Environmental Management Systems (ISO 14001) and the Voluntary Protection Program, are consistent with and fit within the broad scope of WSRCs ISMS.

Readiness to perform the work within the established controls will be assessed during regularly scheduled deactivation team meetings, Plan of the Day (POD) meetings, and pre-job briefings.

Provide Feedback and Continuous Improvement

Feedback mechanisms such as work performance monitoring, deactivation team meetings, multidiscipline walkdowns, and post-job briefings will be utilized and are considered critical to the success of the project.

The self assessment program may also be employed to monitor progress against commitments and to identify improvement areas. Key lessons learned will be identified and documented in the deactivation project final report.

Example 12

11.0 INTEGRATED SAFETY MANAGEMENT STRATEGY

11.1 IMPLEMENTATION OF ISM PROGRAM

The 9206 Complex is implementing the ISM process under the Y- 12 ISM program implementation guidelines to support deactivation project activities and other 9206 operations. The 9206 ISM process is comprised of three management levels; institution/site level; facility level; and task level. The three levels function together as an integrated system. This implementation will formalize a process already being utilized at the 9206 Complex.

Work associated with nuclear safety functions will be planned, authorized, and performed following approved technical standards, instructions, procedures, and other control documentation commensurate with the complexity, experience, and risk posed by the task. Y10-202, *Integrated Safety Management Program* provides guidance, procedures, and checklists for evaluating, planning, and conducting nuclear safety related work.

In FY-1998 an OSB charter for 9206 was approved, membership appointed, and initial working sessions held. The chartered membership includes 9206 management, technical and operations staff; a facilitator; and representatives from the ES&H disciplines. Others are added as needed. The OSB role is to ensure that the guiding principles for integrated safety management are implemented in 9206 Complex activities. The OSB provides integrated reviews, technical support, assessments, and advisement to the operations manager. The board holds regular and "upon-need" meetings, which are documented with attendance, notes, and action items. The board continues to mature and will play a key role in deactivation.

Several key elements of the Y-12 ISMS program are already in effect for 9206 operations, such as plan-of-the-day, daily crew briefs, pre-job briefs, hazard identification, work planning, review of lessons learned, worker involvement, walkdowns of areas on a daily basis by the 9206 shift managers and other Conduct of Operations program elements as appropriate. Self-assessment programs continually evaluate safety practices and provide feedback for improvement. It is expected that these functions will continue during deactivation implementation. As a part of ISM implementation, these elements will be evaluated for adherence to the Y-12 ISMS program requirements.

11.2 INTEGRATED SAFETY MANAGEMENT STRATEGY

The following discussion identifies the process to be used by the 9206 Complex Phase Out / Deactivation Project to ensure that the safety of the workers, the public, and the environment are adequately addressed before and during deactivation activities. The key activities outlined in this section follow the guiding principles and core functions contained in DOE-STD-1 120-98. Key activities involved in ensuring a strong safety strategy include:

Defining Scope of Work (Work Planning and Hazard Identification)

- This plan describes at the program level the work that will be performed and the methods that will be used to accomplish it. Subprojects are defined and will be scoped in detail as work is prioritized and funded.

- The project mission, goals and objectives, including definition of a "9206 Facility End-State," are established.
- "End Points Criteria" are defined which integrates applicable health, safety, environmental, NMC&A, and security requirements.
- The 9206 Complex areas/spaces/systems are identified, walked down and evaluated to determine the deactivation activities necessary to meet the end-state criteria and goals.
- A multi-disciplinary team is formed to plan deactivation. The ES&H disciplines are a part of the integrated hazard identification and analysis.
- Safety Basis Documentation is upgraded. A PHA, FHA, BIO and OSR are developed for the 9206 Complex to identify existing and potential hazards and appropriate controls. Scope is expanded to include current conditions and expected deactivation activities.
- The workers, technical support staff, retirees, and those with process knowledge are involved in all phases of deactivation (i.e., hazards analysis, deactivation walkdowns, and work planning).
- Work packages are prepared with input form the workers involved in the deactivation task.

Analyze Hazards (Integrated Hazard Analysis)

- Facility hazards are analyzed during development of the PHA, FHA, BIO and OSR for the 9206 Complex to identify existing and potential hazards and appropriate controls. Scope is expanded to include current conditions and expected deactivation activities.
- A multi-disciplinary team performs the facility hazard analysis. A combination of walkdowns, CIP photographs, operations and retiree interviews, historical files and documents, engineering records, and existing safety basis documents are utilized.
- Task-specific hazards will be analyzed, where applicable, using YI 0-0 1 *2, Hazard Identification Planning for Maintenance and New Work Tasks,* based upon the graded approach.

Develop and Implement Controls (Hazard Controls and ES&H Documentation)

- An upgraded OSR is developed with the BIO to identify appropriate controls for existing and potential hazards.
- The FHA identifies controls needed for fire protection during deactivation, including implementation of a Combustible Management Control Program.
- Deactivation tasks, new work activities, and work plans will be prepared according to Y10-012, *Hazard Identification Planning for Maintenance and New Work Tasks.*
- Y10-190 will be used where appropriate. For other deactivation subprojects grading criteria will be developed and concurred upon by DOE.
- A revised authorization agreement will be developed and submitted to DOE.

Perform Work Within Controls (Work Performance)

- The DOE approved authorization basis and USQ process will be utilized to determine if deactivation activities are within the defined safety envelope and, if not, to obtain the appropriate authorization.
- A facility-level readiness review will be scoped, planned, and executed.
- Readiness grading criteria are being developed, for concurrence by DOE YSO and win be used to evaluate readiness to perform deactivation subprojects. The strategy for development of the DRAFT, "Deactivation Activity Start-up Evaluation," (Appendix E) and "Pilot Screening" test results are documented in Section 8.
- Tasks will be screened to identify the appropriate administrative controls and approval authority needed to perform the work.
- The 9206 OSB and the deactivation team will evaluate the ISM procedures for applicability to deactivation activities, develop and recommend a working set of criteria, and develop work plans according to the approved criteria.
- Task hazard analyses will be conducted throughout the life of the project as the deactivation tasks are planned and scheduled.

- Movement of hazardous materials within the facility prior to shipment, as well as from the facility will be evaluated via OSB.
- Criteria will be developed to determine when, and if, it is appropriate to retire a safety control.

Feedback and Continuous Improvement (Feedback and Evaluation)

- Formalizing and implementing the ISM program for 9206 activities will provide a key mechanism for continuous feedback, e.g. via OSB. The 9206 Complex routinely involves health, safety, environmental NCS, and other functional disciplines 'in the day-to-day planning and execution of activities. This established practice will continue for deactivation work planning and execution.
- Updates for the BIO, OSR, and FHA will be conducted jointly. Hazard reduction progress and changes that affect the safety basis will be incorporated.
- A multi-disciplinary team will remain in place for deactivation implementation.
- Lessons learned are incorporated into work planning and execution. Other DOE sites which have undergone deactivation while utilizing task based job performance criteria win provide valuable lessons learned for the 9206 Complex.
- End points criteria adherence and documented end points closure provide feedback to ES&H disciplines.
- Interface with the Y-12 Facility Transition Team.
- The required safety documentation will be provided for the S&M period.

11.3 WORKER SAFETY AND EVALUATION OF ACTIVITIES

The controls necessary for the protection of the 9206 facility deactivation workers are being developed using a multi-disciplinary team as a part of the safety basis upgrade, deactivation subproject and task planning, and work implementation. Controls are expected to include, at a minimum, a combination of hazard elimination, engineering controls, administrative controls, PPE, monitoring, qualification and training.

The existing authorization basis that will support the 9206 Phase Out/Deactivation Project is described in Section 9.0 of this plan. It is currently being updated to reflect the changing 9206 activities and mission. Anticipated deactivation tasks are being factored into the PHA and BIO development.

A multi-tier, comprehensive USQ evaluation process has been in effect for Y-12 Plant Nuclear Operations and EUO since 1992. This program has matured since the 1994 Y-12 Plant stand down of operations and will support the 9206 deactivation and risk reduction activities, e.g. SNM removal. The process includes an evaluation of work activities and associated potential administrative/physical changes that trigger subsequent USQ screenings and USQD evaluations and approvals.

11.4 DEACTIVATION AND POST DEACTIVATION SAFETY DOCUMENTATION

Annual update of the authorization basis will be prepared based upon the USQ process and deactivation progress. It is anticipated that deactivation will proceed in stages, dependent upon available funding; the transition of the 9206 chemical recovery operations to 9212; and Building 9212 readiness to process the 9206 HEU material streams, both stored and generated. The current authorization basis upgrade, including anticipated deactivation tasks and the annual updates, win address deactivation status and progress. It will also minimize efforts for future USQDS.

As deactivation is completed and end points are closed, the safety envelope documentation win be updated to reflect the final facility conditions necessary to prevent or mitigate accident scenarios. This documentation will be developed for the current DOE orders, standards, and other guidance and requirements. It will rely heavily upon the current facility and site safety documentation and will be specific to the 9206 Complex end state activities and conditions.