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DNFSB STAFF BOARD

The Secretary of Energy
Washington, DC 20585

May 10, 2002

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Washington, D.C. 20004-2901

Dear Mr. Chairman:

Enclosed is the Department's revised Implementation Plan concerning the Defense Nuclear Facilities Safety Board's Recommendation 2001-1, High-Level Waste Management at the Savannah River Site.

The revised plan provides several new commitments relative to the implementation of the salt processing program as specified in my September 14, 2001, letter and Commitment 2.6 of the current plan.

Mr. Paul Golan, Director, Site Operations, Office of Environmental Management, remains the responsible manager for the Department's Implementation Plan and may be reached at (202) 586-7710.

Sincerely,

Spencer Abraham

Enclosure

DOE's PLAN OF ACTION TO RE-ASSESS SAVANNAH RIVER SITE'S HIGH LEVEL WASTE MANAGEMENT STRATEGY

DNFSB RECOMMENDATION 2001-1 IMPLEMENTATION PLAN REVISION 2

April 2002

Executive Summary

Revision 2 of this Implementation Plan (IP) has been generated as specified in Commitment 2.6 to provide additional commitments related to the implementation of a revised salt processing program. Six new commitments and the associated background discussion have been added to the end of the sub-recommendation 2 section.

On March 23, 2001, the Defense Nuclear Facilities Safety Board issued Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site.* The recommendation addresses the need for the Department to ensure that the margin of safety and amount of tank space in the Savannah River Site (SRS) High Level Waste (HLW) system is sufficiently maintained to enable timely stabilization of nuclear materials at SRS.

The Department accepted this recommendation and found that the Board's recommendation appropriately highlights the need to vigorously address the significant management challenges that the SRS HLW program faces in accomplishing the strategic mission of waste stabilization in light of the failure of the In-Tank Precipitation process, tank leaks, and other equipment problems in the HLW system. These events have forced major changes in the overall HLW system plans and additional actions are warranted to identify ways to regain operational flexibility, increase system margins to deal with potential future system upsets, and proceed with an alternative salt disposition process. The Department agreed with the Board that addressing these issues will ensure continued safe storage of wastes, as well as continued stabilization of both high level waste and nuclear materials at SRS.

This plan outlines the actions the Department and its contractors will take to ensure continued safe storage of HLW while maintaining operational flexibility and progress in the stabilization of material currently held in HLW storage tanks. Actions include pumping down liquid levels to below the lowest leak sites in two tanks, implementing an alternative salt disposition process, re-evaluating waste treatment and storage options, and conducting an independent assessment of the contractor incentives. The Department has been aggressively pursuing resolution of the issues highlighted in Recommendation 2001-1 and many of these actions are already complete or are presently ongoing.

The plan identifies the responsible manager and provides a due date for completion for each commitment. The responsible manager will ensure the activity is satisfactorily completed, including seeking necessary funding, and formally closed. Mr. Paul Golan, Director, Site Operations Office of Environmental Management, is the overall Responsible Manager and Mr. Greg Rudy, Manager, Savannah River Operations Office, is the point of contact for site specific activities.

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1. Background:

On March 23, 2001, the Defense Nuclear Facilities Safety Board issued Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site.* The recommendation addresses the need for the Department to ensure that the margin of safety and amount of tank space in the SRS HLW system is sufficiently maintained to enable timely stabilization of nuclear materials at SRS. The Department accepted the recommendation as addressed in the implementation plan provided to the Board on May 18, 2001. On May 24, 2001, the Board responded in a letter in which it found the original implementation plan was not responsive to all elements of the recommendation and provided a suggested course of action for consideration by the Department during the formulation of a revised implementation plan. The Department evaluated the concerns described in the Board's May 24, 2001, letter and revision 1 to the original plan incorporated and addressed the Board's expected actions. Revision 2 of this IP has been generated as specified in Commitment 2.6 to provide additional commitments related to the implementation of a revised salt processing program. Six new commitments and the associated background discussion have been added to the end of the sub-recommendation 2 section. A general update to completed commitments has also been included.

2. Underlying Causes

The underlying causes of the problems highlighted in Recommendation 2001-1 were the failure of the In-Tank Precipitation process, tank leaks, and other equipment problems within the HLW system. These events have forced major changes in the overall HLW system plans and added a level of complexity to the already challenging mission objectives. The actions identified in this Plan are intended to provide increased short-and long-term operational flexibility to meet mission objectives and deal with future system upsets that may occur.

3. Summary of Completed and Near-Term Actions

See specific subrecommendations under Section 4.

4. Recommendation Issue Resolution

The Board's subrecommendations and the specific actions the Department intends to take to address each subrecommendation are discussed below.

Subrecommendation 1. Initiate actions to remove transferable HLW liquid from Tank 6 to a level below all known leak sites.

Background: After a January 2001 transfer of low activity waste water into an older style (Type I) tank (Tank 6) that had been essentially empty since 1973, alarms were received in the control room indicating liquid in the annulus area (collection space between the tank wall and the concrete vault that encases the tank). Visual inspections confirmed liquid in the annulus and sampling identified the material as radioactive waste (versus rainwater intrusion). Detailed inspections using a remote crawler and video camera identified 6 leak sites.

Resolution: The Department accepted this subrecommendation. The Department recognizes that situations compromising the integrity of the primary containment are undesirable. An initial transfer of 40,000 gallons of liquid from Tank 6 into Tank 8 was completed on March 27, 2001. The direction to lower Tank 6 further was given to the site contractor on May 1, 2001, and the contractor completed lowering the level in Tank 6 to below the lowest known leak site on May 30, 2001.

Subsequent to Recommendation 2001-1 issuance, leak sites were also identified in another old style tank (Tank 5) after the addition of low activity waste water. The inspection program identified the leak sites before any alarms were received and the waste level was lowered below the lowest known leak site on July 30, 2001, by pumping the material to Tank 46. Tank 8 is also an old style tank that received low activity waste water in the past year. Because of the leaks in Tanks 5 and 6, the Department initiated an inspection of Tank 8 using the remote crawler with a video camera. This inspection shows no indication of tank leakage. However, given the nature of the leak sites in Tank 5, no additional transfers into Type I storage tanks are planned except for those special and infrequent additions required for waste removal activities.

SRS has had a Waste Tank Structural Integrity Program for many years. The Waste Tank Structural Integrity Program includes an In-Service Tank Inspection Program that has been based primarily on remote camera visual inspections. One limitation with the visual inspection program has been the percentage of the tank walls that could be inspected due to physical access restrictions. Based on the new crawler inspection capabilities developed as part of the response to the tank leaks and the new ultrasonic inspection program recently implemented, SRS intends to revise and re-issue the Waste Tank In-Service Inspection Program to include these new tools and the lessons learned from the two recent tank leak investigations. The In-Service Inspection Program will include enhanced visual and ultrasonic inspections of both single walled and double walled waste tanks. The acceptance criteria outlined in the program are based on guidance from the DOE Tank Structural Integrity Panel published in 1997 and referenced in DOE Order 435.1, *Radioactive Waste Management.* The primary changes are in the area of the new ultrasonic inspection program. The changes will identify the tanks to be inspected and the bases for selection, identifying the magnitude of the inspections (e.g. percentage of horizontal/vertical welds inspected, percentage of overall tank types to be inspected and by what technique), and establishing of the frequency of the inspections (e.g. Tank X every Y years after initial inspection). The program has been revised and provided to the board.

The Department implementation milestones for subrecommendation 1 are:

Commitment 1.1	Pump Tank 6 to below the lowest known leak site.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Waste physically lowered in Tank 6 to below the lowest leak site
Due Date:	May 31, 2001
Status:	Complete

Commitment 1.2	Pump Tank 5 to below the lowest known leak site.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Waste physically lowered in Tank 5 to below the lowest leak site
Due Date:	July 30, 2001
Status:	Complete

Commitment 1.3	Revise HLW tank inspection program
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Revised Inspection Program Plan (document)
Due Date:	April 2002
Status:	Complete

Subrecommendation 2. Reassess the schedule and priority for selecting a technology for a salt processing capability, and vigorously accelerate the schedule leading to operation of a salt processing facility.

Background: At the point of Defense Waste Processing Facility (DWPF) startup, the HLW system plan consisted of two waste pretreatment processes – sludge preparation via the extended sludge processing (ESP) and salt preparation via In-Tank Precipitation (ITP). Due to initial startup issues with the ITP process (see Board Recommendation 96-1), DWPF began radioactive operations processing sludge only. In 1998, due to concerns the ITP process could not be cost-effectively implemented to meet safety and production objectives, the contractor recommended and the Department agreed to suspend ITP startup to perform an extensive evaluation of alternative processing options.

Resolution: The Department accepted this subrecommendation. The selection of a salt processing technology is a critical priority of the Department. The Department began work evaluating alternatives to the ITP process in 1998, and since March 2000 the Department has been working toward selecting a technology in accordance with the Action Plan defining the Savannah River Site Salt Processing Project Roles and Responsibilities. Under this Plan, a joint Headquarters/ Savannah River Site Technical Working Group (TWG) was established to lead the effort for technology selection. Key activities included the development of selection criteria and the conduct of extensive research and development testing to address high technical risks for each of the technologies under consideration. The Environmental Management HLW Tank Focus Area supported the TWG by providing technical direction and management of this R&D effort. The Salt Processing Alternatives Supplemental Environmental Impact Statement (SEIS) was issued in July 2001 and presents the Department's preferred technology selection along with the basis for the selection. The Department issued the Record of Decision for this SEIS in October 2001. A Request for Proposal (RFP) was issued in November 2001 for program implementation. The acquisition strategy is to seek up to two Engineering, Procurement, and Construction (EPC) contractors to perform conceptual design of a facility capable of future production utilization. One EPC will then be selected to perform final design and construction of the facility. Selection of the two contractors is expected in early 2002.

Ongoing evaluations of potential salt processing strategies and the maturity of concepts in September 2001 did not readily facilitate the identification of specific project actions the Department would complete by specific dates beyond those already discussed. Because the Department could not provide milestones and dates based on reliable information at that time, the Department proposed to provide additional details and commitment dates relative to this subrecommendation in April 2002, rather than provide commitments and dates that have a high likelihood of changing in the near future. The April 2002 date allowed ongoing studies to be completed or near completion (including system planning impacts) and supports selection of an EPC based on an approved acquisition strategy.

Revision 12 of the HLW System Plan showed that an FY 2010 date for startup of a salt processing facility could be supported. However, the Department is committed to conduct a sensitivity analysis surrounding this date. This sensitivity analysis has been completed and is incorporated into Revision 13 of the HLW System Plan, (which was issued in April 2002). Revision 13 identifies the potential benefits derived from an early facility start-up as well as the

impact of other initiatives such as alternate methods for low-source-term salt disposition. The analysis also looked at the impacts of delayed salt disposition activities. The results of this analysis were factored into the new commitments for the HLW Salt Project.

The Department implementation milestones for subrecommendation 2 are:

Commitment 2.1:	Identify a Preferred Technology
Lead Responsibility:	Chief of Staff, Office of Environmental Management
Deliverable:	Draft SEIS published with preferred technology identified
Due Date:	June 2001
Status:	Complete
Commitment 2.2:	Issue Record of Decision on Salt Processing Alternatives
Lead Responsibility:	Chief of Staff, Office of Environmental Management
Deliverable:	SEIS ROD published
Due Date:	October 2001
Status:	Complete
Commitment 2.3:	Brief the Board on the preferred salt processing technology and schedule
Lead Responsibility:	Chief of Staff, Office of Environmental Management
Deliverable:	Briefing
Due Date:	June 2001
Status:	Complete
Commitment 2.4:	Issue Request for Proposals for up to two Engineering, Procurement, and Construction contractor(s)
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Publish RFP
Due Date:	November 2001
Status:	Complete
Commitment 2.5:	Issue report on HLW Tank Farm schedule sensitivity analysis
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Report
Due Date:	April 2002
Status:	Complete
Commitment 2.6:	Develop and submit commitments related to implementation of the revised salt processing program
Lead Responsibility:	Chief of Staff, Office of Environmental Management
Deliverable:	Revised 2001-1 Implementation Plan
Due Date:	April 2002
Status:	Completed by this revision as follows:

Background and Discussion

DOE's salt waste disposition strategy has evolved considerably over the past year. Originally, the Department expected to design, construct, and operate a 1% pilot plant based on the caustic side solvent extraction (CSSX) process in the 2004-2006 timeframe followed by a full scale Salt Waste Processing Facility (SWPF) in the 2010 timeframe. The Department now believes that a more timely and cost effective approach for salt disposition is to pursue disposal of some salt

waste directly to the Saltstone Facility. This will be accomplished initially by targeting saltcake that is low in activity level (commonly referred to as low curie salt). The Department is also developing an actinide removal capability that may provide additional salt for disposal in Saltstone by the removal of actinides that would otherwise prevent the waste from meeting waste acceptance criteria. The success or failure of these two initiatives is directly coupled with the operation of the SWPF to ensure regulatory commitments are met. Therefore, the SWPF strategy has been modified to utilize an engineering, procurement, and construction (EPC) contractor to design, construct, and operate a small scale facility (nominally 15%) that can be expanded in the future. This facility will come on line in the 2008-2009 timeframe with additional capacity decisions finalized after determining the effectiveness of the low curie salt initiative.

As noted above, SRS is actively pursuing two avenues to process low curie salt directly to the Saltstone Facility. Low curie salt processing will involve dissolution of saltcake that is low in both actinides and Cs-137. This low curie salt waste will be transferred to Tank 50 for sampling to ensure compliance with the Saltstone waste acceptance criteria (WAC), then finally transferred to the Saltstone Facility for immobilization in grout and disposal. Current plans call for Tank 41 salt to be processed beginning in 2003 followed by Tanks 31, 38, and 29.

An actinide removal process is also being actively pursued at SRS to treat the additional salt cake in the high level waste system that has relatively low Cs-137 content but may have an actinide content that is higher than allowed by the Saltstone WAC. SRS is developing a capability to remove actinides from low curie salt prior to transfer to Tank 50 and then on to Saltstone. The first step in acquiring this capability is to return the Late Wash Facility (512-S) to operability. Returning 512-S to operability also provides SRS with flexibility in that it may be used to disposition Tank 48 material or to address the DWPF recycle stream. Following the refurbishment of 512-S, additional modifications can be made to allow the system to remove actinides and filter the resulting stream into a product stream that goes to DWPF and a decontaminated salt stream that goes to Tank 50 and eventually the Saltstone Facility. Success in the actinide removal process will provide additional salt cake for disposal in Saltstone beginning in 2005.

Current plans call for construction to begin on the SWPF in 2005 followed by the start of cold operations in 2008 and hot production operations beginning in 2009. The success of the low curie salt initiatives coupled with the final operational throughput of the SWPF will directly impact the decision on future salt waste processing capacity. In mid-2003, the Department will re-evaluate the success of its salt processing program and propose any mitigating actions to ensure that regulatory commitments are met. At that time, the Department will have information on the first six to nine months of low curie salt processing, the EPC contractors will be nearing the completion of their conceptual design, and the actinide removal process will be nearing demonstration.

The commitments below were selected to demonstrate clear, meaningful progress in implementing an overall salt waste disposition strategy. In addition, these commitments give the Department the opportunity to re-evaluate its progress and select an alternative path or to accelerate future salt processing capability if indicated well in advance of the date when it will be needed. Two commitments relate directly to the SWPF, two are associated with the low curie salt processing efforts, and two relate to evaluating the overall success of the program.

Commitment 2.7:	Award EPC contracts as a demonstration of progress towards acquisition of salt waste processing capability.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Award Engineering, Procurement, and Construction contract(s) for a salt waste processing facility.
Due Date:	June, 2002
Commitment 2.8:	Complete conceptual design of a salt waste processing facility.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Conceptual Design Report for the Salt Waste Processing Facility
Due Date:	January, 2004
Commitment 2.9:	Demonstrate the viability of the disposition of low curie salt directly to the Saltstone Facility.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	The first batch of dissolved low curie salt cake will be transferred from Tank 50 to the Saltstone Facility
Due Date:	December, 2002
Commitment 2.10:	Demonstrate the viability of the actinide removal process.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Initiate hot operations of the actinide removal process.
Due Date:	June, 2004
Commitment 2.11:	Prepare a report that evaluates the success of low curie salt processing and projects future processing activities for low curie saltcake.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Report
Due Date:	August, 2003
Commitment 2.12:	Prepare a programmatic risk assessment with mitigation strategies for the salt processing program.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Report
Due Date:	August, 2003

Note: Deliverables 2.11 and 2.12 may be combined into a single report.

Subrecommendation 3. Develop and implement an integrated plan for HLW tank space management that emphasizes continued safe operation of the Tank Farms throughout its life cycle. This plan should include enough margin to accommodate contingencies and reduce overall programmatic risk. The plan should also restore operating margin to the Tank Farms by including action to: [see sections a - e below]

Background: The Tank Farm space management strategy is based on a set of key assumptions involving canister production rates, influent stream volumes, Tank Farm evaporator performance, and space gain initiative implementation. Tank space management is a subset of the overall integrated HLW System Plan and as such is a life-cycle look at the space available to accommodate contingencies and support site missions. The HLW System Plan is updated annually and considers the latest data available as well as the current conditions, challenges and potential impacts to Tank Farm operations.

Due to the decision to suspend salt processing operations at ITP, process and equipment problems with the site evaporators, and leaks in two older style tanks, space limitation in the HLW tank farms has created an operational challenge that, if not properly managed, could adversely impact the ability of the site to meet mission objectives.

Resolution: The Department accepted this subrecommendation. Revision 12 to the HLW System Plan issued in May 2001 and revision 13 issued in April 2002, provide enhanced coverage of areas not previously highlighted, including management of Type I, II, and Type IV tanks. The Department recognizes that aggressive action is required to address HLW system challenges, and the results and conclusions of ongoing and planned studies addressing the following components will be incorporated into the next revision of the HLW System Plan.

a. reduce or eliminate the DWPF recycle stream

DWPF is the largest single contributor of waste to the tank farms. Several actions have already been taken to reduce the more than 2 million gallons of DWPF recycle waste sent to the Tank Farms annually. A major reduction effort was implemented in January 2000 to isolate the steam atomized scrubber system from the melter off-gas system. This resulted in an annual 700,000-gallon reduction in recycle being sent to the Tank Farm. Implementation of proposals associated with the frit transfer system and reductions in sample line flushes also resulted in additional water generation reductions. It is anticipated that the annual recycle being sent to the Tank Farm will be reduced from approximately 2,200,000 gallons for a 250 can-per-year production rate to approximately 1,400,000 gallons or less. Additional DWPF recycle reduction proposals (such as the installation of a DWPF acid evaporator and the feasibility of sending some recycle directly to the Saltstone or effluent treatment facility) are being evaluated. A decision relative to the need for an acid side evaporator will be made in FY02 based on technical feasibility reviews, evaporator recovery efforts, resolution of silica issues, and demonstrated evaporator performance.

b. recover former ITP tanks for Tank Farm operations

A schedule has been implemented to return Tank 49 (previously an ITP salt processing tank) to waste concentrate storage service. A briefing for the Board on August 2, 2000 provided the Department's plans relative to Tank 49. Tank 49 contained approximately 200,000 gallons of benzene-bearing solution from ITP demonstration runs that had to be removed prior to its return to waste storage service. The decomposition of benzene-producing phenylborate compounds was performed in two phases. The first phase was completed in March 2001 when the material in Tank 49 was heated to 40 degrees Celsius. The second phase involved the introduction of copper catalyst to Tank 49. The first copper addition occurred in March 2001 and subsequent additions were completed by July 2001. The material in Tank 49 was transferred to Tank 50 by the end of FY2001. Modifications required to tie Tank 49 into the H-Tank Farm transfer system were completed and Tank 49 was returned to service on October 11, 2001.

Tank 50, currently being used as a receipt tank for Effluent Treatment Facility (ETF) bottoms, will be available for use in March 2003. The associated construction/project work has been initiated to support this effort. A Baseline Change Package authorizing the start of this work was approved April 23, 2001.

Additionally, Tank 48, which contains approximately 250,000 gallons of precipitate from the original startup of the ITP process, will be evaluated for possible return to the HLW system. This evaluation will focus on the technical options for dispositioning the material, discuss the confidence level of success based on technical and regulatory risks and identify any research and development work that must be accomplished. Lessons learned from returning Tank 49 to service will be incorporated into the future Tank 48 plans.

c. assess the desirability of adding an additional HLW evaporator to support Tank Farm operations

The Space Management review identified in commitment 3.1 re-assessed a new evaporator option as a longer-term enhancement to the HLW program. In general, the current issues impacting tank space management are not associated with evaporator capacity, but are process and equipment related problems, which would also impact a new evaporator that utilizes existing tank farm support systems. These existing system problems are specifically addressed in paragraph (e) below.

The three evaporator systems currently available have sufficient capacity to handle the expected demands of the HLW system once the process and equipment issues associated with the 2H and 3H Evaporator systems are overcome. Revision 12 and 13 of the system plan show that to meet the current plan the 2H evaporator must achieve 40 percent availability, 3H must achieve 40 percent, and 2F must achieve 35 percent after ongoing issues are resolved. These studies also show that the three evaporator systems operating at expected capacity will provide margin to accommodate future system upsets and allow the option to shut down the 2F Evaporator system at some point in the future. As an

example of expected operations, 2H had 60 percent availability for the 1997 through 1999 period and 2F evaporator has achieved 57 percent availability in FY01. If the expected operational performance is achieved, the 2F Evaporator system could potentially be used to facilitate increased operational flexibility (salt disposition) or early waste removal from old style tanks instead.

d. assess the feasibility of constructing new HLW tanks

The Space Management review identified in commitment 3.1 re-assessed the option of new storage tanks, including smaller tanks as part of or separate from the Tank Farms.

e. resolve waste compatibility and equipment degradation problems to allow unconstrained operation of the three existing evaporators

Improvements made to the 2F Evaporator system during FY 2000 have made that system more reliable, and current performance is better than expected. This system is operational and a new vessel is currently on hand should it be necessary to replace the existing vessel. The current planning case does include a vessel replacement in the utilization projections.

The 2H Evaporator experienced erratic lift rates and was shut down in January 2000 when attempts to correct the lift rate were unsuccessful. Sample results from solids previously found in the evaporator pot revealed that the material consisted of sodium aluminosilicate and sodium diuranate. Initial analysis indicated that these solids form in the presence of high silica and high aluminum feed. The Savannah River Technology Center (SRTC) continues to analyze methods of preventing the sodium aluminosilicate formation in the evaporator pot. Analytical work and testing verification is expected to continue through FY2002. Work is also underway to develop a 2H Evaporator flowsheet, based on SRTC experimentation, which will support continuous 2H operation after restart. This flowsheet will incorporate the results of SRTC experimentation with respect to potential means to prevent or mitigate sodium aluminosilicate formation. It will reflect the design and operating constraints of the HLW evaporator system, along with any needed process and equipment changes, in order to eliminate the need to periodically inspect and clean potential solids buildup. The flowsheet will be extended to the 3H and 2F Evaporator Systems. Until this work is completed, appropriate controls have been put in place to limit the amount of silica content in the feed to the 3H and 2F Evaporators. Operations to clean the 2H Evaporator and remove the solids are complete and the 2H Evaporator was returned to operation in the Fall of 2001.

The 3H Evaporator system is operating in a limited mode due to cooling coil problems in Tank 30 (the 3H Evaporator drop tank). A project to convert Tank 37 to drop tank service, by installing a drop line from the evaporator to the tank, has been initiated and the Baseline Change Proposal (BCP) authorizing funding was approved on April 23, 2001. In addition to hardware modifications, some degree of salt removal from Tank 37 will be required for efficient system operations. The schedule to have the 3H system functioning at full capacity is late 2002.

Revisions 12 and 13 of the HLW System Plan account for these difficulties and show that, even with the low utilization rates discussed in section 3.c, the overall HLW system can meet mission objectives. These low utilization rates are intended to demonstrate some continuing level of flexibility to deal with unforeseen upsets, and expected utilization rates provide even greater flexibility in dealing with future problems.

A comprehensive re-assessment of Tank Farm Space management options to identify specific options that can be taken to restore operational flexibility with respect to available storage capacity was completed. A second study, a system vulnerabilities assessment, was also completed to identify system vulnerabilities that can significantly impact the HLW System Plan and the HLW mission objectives. Potential mitigative strategies/actions that could be pursued were also evaluated. These studies were comprehensive in nature and covered a wide range of options. Revision 13 of the HLW System Plan incorporated the results of these studies and identified the options being pursued further (i.e. either a decision has already been made to implement and/or will be evaluated further with a specific decision date defined).

The Department implementation milestones for this subrecommendation are:

Commitment 3.1:	Assess Tank Farm Space Management options and system vulnerabilities.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	(1) Tank Farm Space Management Options Assessment Report, and (2) System Vulnerability Assessment Report
Due Date:	January 2002
Status:	Complete
Commitment 3.2:	Issue revised HLW System Plan incorporating actions from Commitment 3.1
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	HLW System Plan, Revision 13
Due Date:	May 2002
Status:	Complete
Commitment 3.3:	Tank 49 Available for HLW service.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Tank 49 ready for HLW service
Due Date:	October 2001
Status:	Complete
Commitment 3.4:	Tank 50 Available for HLW service.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Tank 50 ready for either HLW or Salt Processing service
Due Date:	March 2003
Commitment 3.5:	Assess the technical feasibility of dispositioning the current Tank 48 material and returning Tank 48 to HLW service.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Report
Due Date:	September 2002
Commitment 3.6:	Return 2H evaporator to operations.
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Operational 2H evaporator
Due Date:	November 2001
Status:	Complete
Commitment 3.7:	Complete Tank 37 modifications required for normal 3H evaporator operations
Lead Responsibility:	Manager, Savannah River Operations Office
Deliverable:	Tank 37 available as the drop tank for 3H evaporator
Due Date:	December 2002

Subrecommednation 4. Reassess contractor incentives to ensure that near-term production at DWPF is not overemphasized at the expense of safety margin in the Tank Farms

Background: Under the current contractual arrangements, the SRS contractor is paid based on Performance Based Incentives (PBIs). In the calendar year 2000 contract development effort, the Department endeavored to develop a PBI package that balanced the overall HLW mission needs (safety, production, cost effectiveness) over the 6-year contract period without being overly prescriptive or a hindrance (real or perceived) to effective operations. The primary PBIs developed relate to waste volume reduction (evaporator overheads and useable tank space), tank closure, Authorization Basis development, and waste stabilization (canisters produced). Recognizing that changes may be needed, the contract is designed to adjust and add PBIs over the course of the six-year period based on issues and events to ensure safety, cost-effectiveness, and the expeditious cleanup of the HLW legacy.

Resolution: The Department accepted this subrecommendation. The Department conducted an independent assessment of the current HLW PBIs using personnel chartered from the DOE-HLW Steering Committee (i.e. independent of the DOE-SR HLW management). The scope of the review focused on HLW PBIs to determine if they provide adequate balance and flexibility to meet mission objectives in a safe and efficient manner. The review team was led by a senior Department manager from another DOE HLW site, and the team was comprised of other HLW experts from within the Department. The Department will factor the team's recommendations into the PBI package as part of the normal ongoing review of PBIs. As an example of this continually ongoing evaluation, the Department established a new PBI to disposition low-source-term salt waste using the existing Saltstone Facility. This incentive has the potential to significantly improve the longer-term tank space availability options and shorten the salt processing operational completion date.

The Department implementation milestones for subrecommendation 4 are:

Commitment 4.1:	The Department will conduct an Independent Assessment of the HLW Performance Based Incentives
Lead Responsibility:	Chief of Staff, Office of Environmental Management
Deliverable:	Team Assessment Report
Due Date:	January 2002
Status:	Complete

5. Management and Organization

The Director, Site Operations Office of Environmental Management is the Responsible Manager for this Implementation Plan. He has responsibility to perform all associated planning, response, and implementation activities, consistent with guidance provided in *Interface with the Defense Nuclear Facilities Safety Board* (DOE M 140.1-1B). The Manager for the Savannah River Operations Office, will be the point of contact for the site-specific actions for this recommendation.

To ensure that the various Departmental implementing elements and the Board remain informed of the status of Plan implementation, the Department's policy is to provide periodic progress reports until implementation plan commitments are completed. For this Plan, the Responsible Manager and/or designee will provide quarterly reports (either in oral briefings or written format) to the Board and/or its staff.

This Plan requires sufficient flexibility to accommodate changes in commitments, actions, or completion dates that may be necessary due to additional information, improvements, or changes in baseline assumptions. The Department's policy is to (1) provide prior, written notification to the Board on the status of any Plan commitment that will not be completed by the planned milestone date, (2) have the Secretary approve all revisions to the scope and schedule of Plan commitments, and (3) clearly identify and describe the revisions and basis for the revisions. Fundamental changes to the Plan's strategy, scope, or schedule will be provided to the Board through formal revision and re-issuance of the Plan. Other changes to the scope or schedule of planned commitments will be formally submitted in appropriate correspondence approved by the Secretary, along with the basis for the changes and appropriate corrective actions.