

**Department of Energy**

Washington, DC 20585

September 2, 1998

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DNF SAFETY BOARD

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, N.W., Suite 700.  
Washington, D.C. 20004

Dear Mr. Chairman:

The Department's quarterly progress report on implementation of Recommendation 94-3 is enclosed. This recommendation addresses safety improvements for Rocky Flats Building 371, which stores the site's plutonium pending shipment for disposition. The Department's plan for integrated actions is described in the 94-3 Integrated Program Plan, Revision 1. It is a dual path plan that proceeds with building upgrades, while planning to ship the plutonium off site. Progress was made on both paths.

Interim storage upgrades for Building 371 have been completed. The Basis for Interim Operation is implemented in this facility, and most upgrades associated with this improved authorization basis are completed. Your letter of August 13, 1998, was received after this report was prepared, so your request that we report independent verification of work packages will be addressed in the next quarterly report.

The Record of Decision for the Plutonium Storage and Disposition Environmental Impact Statement was modified on August 6, 1998. The modification enables proceeding with plans to store most of the Rocky Flats metal and oxides in the Savannah River K Area. Actual shipment of materials may not proceed until the immobilization site is selected by a Record of Decision projected for February 1999. The design and excavation for the Savannah River Actinide Packaging and Storage Facility are completed and about one metric ton of Rocky Flats material will be stored there.

Sincerely,

A handwritten signature in cursive script that reads "James M. Owendoff".

James M. Owendoff  
Acting Assistant Secretary for  
Environmental Management

Enclosure

cc: Mark Whitaker, S-3.1



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Attachment 1  
98-RF-03990  
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**U. S. DEPARTMENT OF ENERGY**

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
RECOMMENDATION 94-3**

**SEVENTH QUARTERLY REPORT**

Reviewed for Classification By

*M. J. [Signature]*

Date: 8/13/98 (U/NU)

August 1998

## EXECUTIVE SUMMARY

This periodic report provides an update on progress with implementation of the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-3. Recommendation 94-3 involves seismic and safety upgrades to the Rocky Flats plutonium storage facility. The Department of Energy submitted a revised Integrated Program Plan (IPP, designated "Revision 1, April 28, 1998") which made commitments for actions and decisions. Progress on those actions and results of decisions are reported in this seventh quarterly report.

The Department formally submitted the revised IPP in a letter from James Owendoff, Acting Assistant Secretary for Environmental Management, to John Conway, DNFSB Chairman, dated June 4, 1998. The revision to the IPP responds to the Board's request of October 15, 1997, reaffirming the Department's commitment to ensure that Building 371 is prepared for storage of Special Nuclear Material beyond 2002 should that prove necessary. The revised IPP also describes the Department's preferred alternative plan to secure timely off-site shipment of that material, obviating an extended onsite storage mission. The IPP revision includes a commitment to initiate engineering on the additional upgrades that would be needed to prepare Building 371 for such a mission; the initial engineering activity, a "validation study" to confirm specific required upgrades and resolve their scope, is nearing completion.

Significant progress has been made in establishing operations in an upgraded Building 371 in accordance with the new Basis for Interim Operations (BIO), including:

- The third phase of the BIO Implementation Plan (BIO-IP) was completed and implemented on July 20, 1998, including a delay from the original schedule to address training concerns identified during the implementation management assessment.
- Given the delay in Phase 3 implementation, the Site contractor requested a delay to mid-September in the scheduled August 1 milestone (IPP milestone 3-3) for the FSAR to be cancelled and the BIO to become the authorization basis of record for the facility. The Department's Rocky Flats Field Office (DOE, RFFO), however, chose to maintain the August 1 schedule with open items addressed by a Justification for Continued Operations (JCO).
- Tasks for the final implementation phase were accordingly minimized to support the earliest possible implementation without significant risk of Technical Safety Requirements (TSR) violations or unsafe conditions. A comprehensive JCO was prepared and approved and an implementation validation review was conducted. Both efforts reflected close cooperation of Site contractors and DOE, RFFO.
- Implementation of the BIO as the authorization basis of record for the facility took place on August 1, per the IPP commitment, without any suspension of risk reduction operations.
- The management assessment identified areas of concern for initial implementation that were addressed with focussed staffing, training, and increased surveillance frequency measures that will extend for the initial 30-60 days of operation under the BIO.

- Of the two remaining priority upgrades, the plenum deluge system seismic modifications were completed in May and the HVAC Supply HEPA filter installation is being completed the first week of August. Five of the 21 BIO-driven upgrades were completed as were eight of the nine sub-projects to improve life safety in the facility.
- Completion of the remaining upgrades supporting implementation, the corresponding BIO changes, and their implementation to close the JCO are being managed to a schedule ending on December 4, 1998.

Overall, the facility is judged to have realized a substantial fraction of the intended safety benefit from the authorization basis update. Completion of the remaining upgrades and experience with operation under the BIO are expected to ensure continuing improvement throughout 1998.

The Site is continuing to evaluate alternatives to accelerate successful completion of integrated Pu consolidation and management scheduled for 2002. Room 3713 has been selected for installation of the packaging portion of the prototype plutonium stabilization and packaging system (PuSPS) in Building 371. The first phase, "strip-out" design to prepare the room and utilities for installation will be complete in early September. Repackaging of materials for "pipe-and-go" is being initiated for selected residue types. Numerous decisions regarding residue programs remain pending, dependent upon either the ongoing environmental review of the Residue Environmental Impact Statement (EIS) or variances requested from Safeguards Termination Limits for shipments to the Waste Isolation Pilot Plant (WIPP). The decision schedule within 1998 is not yet firm. These activities are more fully reported as addressing DNFSB Recommendation 94-1.

Progress was made across the DOE complex in preparing for timely off-Site shipment of RFETS SNM, including:

- NEPA evaluation of the K-area option at the Savannah River Site (SRS) continues as do pre-decisional studies to assess storage of RFETS SNM in K-area as an alternative to the Actinide Processing and Storage Facility (APSF). The K-area alternative appears advantageous for the overall DOE complex. The K-area plan anticipates CD-3 approval and construction start in September 1998.
- Off-Site shipping from Rocky Flats, including pit shipments to Pantex, resumed early in this quarter with compliance issues affecting packaging procedures and preparation of accompanying documents addressed.
- The initial shipment of plutonium-bearing materials to SRS in an SST is targeted for completion this Fiscal Year. Packaging of sand, slag and crucible residues for possible shipment is continuing, but actual shipment is dependent upon issuance of the residue EIS Record of Decision. The Final Draft EIS for residues, pre-requisite to a Record of Decision, is nearly ready to be issued.
- Design of the APSF has been completed, meeting the August 1998 schedule milestone.

Overall, the Department believes progress is being made to support timely off-site shipment of RFETS SNM.

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## 1.0 PROGRAM ORGANIZATION

This section corresponds to section one of the IPP. It addresses key changes to the organization identified in that section. While there were no structural changes to the organization presented in Revision 1 of the IPP during this quarter, action was taken to strengthen organizational coordination and focus additional resources on BIO implementation activities that were falling behind schedule. Joe Majestic, who had managed final BIO completion, assumed matrixed responsibility for scheduling and final implementation coordination, and Steve Additon, who had closely supported BIO development, contributed directly to BIO upgrade efforts supporting implementation.

## 2.0 COMPLETION OF DNFSB 94-3 SUB-RECOMMENDATIONS

The corresponding section of the IPP commits to: further updating of the facility Safety Analysis Report should the interim storage mission revert to Building 371 (Sub-Recommendation 2); supplemental actions addressing those risk-dominant accident scenarios which exceed the public Evaluation Guideline of 5 rem (Sub-Recommendation 6); and validation of interim storage upgrades to complete final definition of required upgrades (Sub-Recommendation 8).

Supplemental actions to address risk-dominant accident scenarios are in progress for inclusion in the annual update to the BIO. To reduce dock fire risks, a BIO change requiring that drums with more than 200 g of Pu be continuously attended when staged (rather than the prior 1200 g threshold) was prepared, submitted, and approved. This change reduces the risk-dominant scenario frequency to *extremely unlikely*, thereby reducing the Risk Class from I to II. Further investigation of a possible change to fast-acting sprinkler heads is in progress. A second BIO change to reduce the risk of hydrogen explosion occurring in a drum staged on the dock is being prepared, adding an Administrative Control for sampling-based functional testing of the installed drum vents. Seismic walkdowns were performed to identify areas where the potential releases within the facility might practically be reduced (e.g., by preventing drum failure caused by impact from unqualified, ceiling-mounted equipment) and the identified capable sources are being evaluated for practical mitigation.

The validation activity is addressed in Section 6 of this report.

## 3.0 BUILDING 371

The corresponding section of the IPP focuses on "Goal 1: Establish safe operation of Building 371 in conformance with an updated Authorization Basis (AB)." The following Goal 1 Objectives are specifically addressed: "Provide an updated Building 371 AB, complete definition and implementation of necessary upgrades in Building 371, and establish building operations in conformance with the updated AB."

### **3.1 Accomplishments and Status Summary**

#### **3.1.1 Building 371 Authorization Basis (AB)**

The Rocky Flats Environmental Technology Site (Site) successfully completed milestone 3-3, "Establish and document operation of Building 371 in conformance with an updated Authorization Basis by August 1, 1998."

Implementation efforts were significant in this quarter. The Phase 3 management assessment began in early May. The Phase 3 scope initiated TSR implementation and included the generic Administrative Controls (ACs) and Limiting Conditions for Operation (LCOs), six of the eleven specific ACs, one specific LCO, and ten additional SERs. The assessment initially determined that: the facility had made substantial progress toward implementation; the AC Program Manual was a key implementation tool; the success of this phase was critical to complete BIO implementation; explicit provisions were needed to ensure consistency of the BIO, SERs and implementing documents; and mid-level facility managers (including Shift Managers and AC Program Managers) needed additional preparation. The assessment was suspended while further training and other corrections were implemented. The assessment was completed during June and documented in July. Phase 3 was successfully implemented on July 20.

Given the delay in Phase 3 implementation, the Site contractors requested a delay to mid-September in the scheduled August 1 milestone (IPP milestone 3-3) for the FSAR to be cancelled and the BIO to become the authorization basis of record for the facility. The Department's Rocky Flats Field Office (DOE, RFFO), however, chose to maintain the August 1 schedule with open items addressed by a Justification for Continued Operations (JCO).

Tasks for the final implementation phase were accordingly minimized to support the earliest possible implementation without significant risk of Technical Safety Requirements (TSR) violations or unsafe conditions. A comprehensive JCO was prepared and approved by RFFO in a period of about ten days. The JCO addressed seven issues that were either TSR non-compliant or unanalyzed conditions. Included in the JCO scope were eight of the incomplete BIO-driven upgrade in Table 3-1. The approved JCO identified specific risk significant non-compliant conditions that could be effectively addressed with compensatory measures; six compensatory measures were invoked pending resolution of the corresponding conditions.

Kaiser-Hill conducted an implementation validation review in parallel with DOE, RFFO oversight. The review identified areas of concern for the first weeks of final implementation including Shift Manager level of knowledge, and breadth of awareness of the requirements of ACs 5.2, Inventory Management, and 5.4, Combustible Control. These concerns were addressed by the facility with focussed staffing, training, and increased surveillance frequency measures that will extend for the initial 30-60 days of operation under the BIO. With these provisions in place the BIO was implemented on August 1, and no suspension of risk reduction activities was required.

In parallel with originally planned implementation activities, changes to the BIO were prepared, approved and incorporated to address processing of high level liquids in the

Caustic Waste Treatment System, use of the Segmented Gamma Scanner, stacking of certain residue drums, possible hydrogen in pipes during tap and drain, use of the pipe component for residue packaging, pit leak testing prior to shipment, residue repackaging, room conversion, and plenum deluge system upgrades. Corresponding TSR changes were prepared, approved and incorporated addressing hydrogen and chemical mixing control during tap and drain, a new LCO for failure mode limiting features, miscellaneous fire suppression LCO changes (ceiling tile removal, role of CAS alarm, deluge test frequency), provision for performing certain required testing without removing LCO-required equipment from service, and adding a new condition for inoperable exhaust ventilation cross-connect valves. Changes to the BIO and TSRs are in process to support JCO closure, including: deletion of requirements for supply isolation valves and backdraft dampers; addition of supply HEPA filters; incorporation of the HVAC supply fan interlock into the new LCO for design features to limit failure modes of required systems; changes to the accident analysis and AC 5.4 to accommodate historical combustibles whose removal from contaminated areas is being delayed; change to primary reliance on administrative control for ensuring roll-up door closure to mitigate accidents in Room 3189; and various revisions to fire barrier requirement drawings.

Actions required to support JCO closure have been identified and scheduled to support their completion no later than December 4, 1998.

Overall, the facility is judged to have realized a substantial fraction of the intended safety benefit from the authorization basis update. Completion of the remaining upgrades and experience with operation under the BIO are expected to ensure continuing improvement throughout 1998.

### 3.1.2 Building 371 Safety Upgrades

Progress was made in completing the Building 371 priority safety upgrades specified in Table 3-1 of the IPP. The remaining two upgrades were or are being completed so that all fifteen are now in place. The completed upgrades include:

**Plenum Deluge System Modifications** – construction of the plenum deluge system modification was completed in May. With completion, a thirty-minute water supply, seismically qualified to withstand the Evaluation Basis Earthquake (EBE), is assured for the Building 371 HVAC exhaust filter plenum automatic deluge systems. Thus, the exhaust filtration systems now have substantial protection against damage by fire during a large seismic event. The BIO requires this seismic capacity for defense in depth, since analyzed fires with mitigation do not challenge the HEPA filters.

**HVAC Isolation Valves** – Construction of the new supply HEPA filter bank that will obviate prior reliance on the isolation valves and inoperable backdraft dampers is being completed the first week in August. Structural modifications were complete and filter placement began August 5. DOP testing began on August 7. Once the DOP tests are successfully performed, the installed hardware will provide the intended passive safety function.



DNFSB Staff members in their Site visit on June 30, selected the plenum deluge upgrade package for evaluation. The Staff issued written questions regarding the adequacy of the system operability tests performed to confirm successful project completion. Responses are being prepared.

The BIO-required upgrades and their current schedule are presented in Table 3-1. Work is in progress on each active upgrade to support scheduled completion. In each instance, completion includes any necessary adjustments to affected procedures. The BIO-driven upgrades are being managed to a schedule coordinated with the JCO closure schedule, since the BIO-IP was closed when the 8/1 milestone was met.

Six of the BIO-driven upgrades have been completed and the life safety upgrades are nearly complete (8 of 9 sub-tasks are complete) as of the end of July:

1. Chemical storage tanks have been drained of excess hazardous inventory;
2. The attic beam was repaired to correct that discovered structural vulnerability;
3. Interlocks were installed for the Room 3189/3187 and Room 3187/Dock 18T roll-up doors that will provide defense in depth protection against inadvertent opening of both doors that would defeat credited mitigation of accidents in the Room 3189 storage area;
4. The additional SQUG walkdowns to support BIO implementation were completed, concluding that the seismic capacity of the HVAC exhaust emergency dump valves was adequate for the EBE and that surrounding equipment would not fail in a manner that would jeopardize the closure safety function of these valves;
5. The hazard posed by inactive scrubbers in the HVAC exhaust system was determined to be low (i.e., ignition of combustible pall rings is not likely to occur) – given the reduced concern, a decision on removal was transferred to the interim storage upgrades validation activity; and
6. Flammable liquid storage cabinets were seismically restrained.

Five remaining upgrades are to be complete by September and only one, redundant HVAC controllers (given a lower priority since it is motivated by a potential equipment availability concern and not safety), extends beyond JCO closure.

### **3.2 Deliverables**

**IPP Milestone 3-2** Report completion of priority safety upgrades specified in Table 3-1 [IPP] by the end of 1997. **11 of 15 COMPLETED ON SCHEDULE**; remaining four will be completed by July 1998.

Three of the four upgrades were completed as of May 1998. Construction has been completed on the final upgrade. Acceptance testing is in progress, expected to complete by August 17, 1998.

IPP Milestone 3-3 Establish and document operation of Building 371 in conformance with an updated Authorization Basis by August 1, 1998.

This milestone was completed on schedule.

IPP Milestone 3-4 Issue schedule (implementation plan) for further Building 371 upgrades identified during the initial AB development by November 1996. **COMPLETED AUGUST 1997**; upgrade completion no later than October 1998 being managed to a schedule coordinated with the BIO-IP.

This milestone will be met for 17 of the 21 upgrades. Of the four scheduled later, the Redundant Zone 3 HVAC Controllers were given a lower priority since they do not affect safety. Two have been impacted by IAEA coordination that forced a November schedule (SNM Storage Rack Repairs and Upgrade Vault Fire Penetrations where Practical). The fourth, Inspect/Repair SC-3 Fire Barriers, involves one area where design and construction are estimated to require more time. During upcoming contract placement for this effort, options for schedule improvement will be sought.

### **3.3 Schedule of Activities**

#### **3.3.1 Building 371 Authorization Basis**

The BIO implementation JCO is being managed to closure by December 4, 1998. Planned progress in the next quarter (through September) includes:

- Completion of five priority upgrades
- Submit five BIO change packages needed to resolve JCO issues
- Notify DOE if the December 4 date is in jeopardy once firm contracts are in place for required upgrades

#### **3.3.2 Building 371 Safety Upgrades**

Table 3-1 provides the schedule for additional upgrades to be completed in FY-98 and FY-99. Six are scheduled for completion by the end of September.

**Table 3-1: BIO-Driven Upgrades and Schedule**

	UPGRADE ITEM	SCOPE	COMPLETION SCHEDULE
1	Install Emergency Lights	Provide seismically qualified egress emergency lighting (SC-3 function in Administrative Control [AC] 5.9)	SEP 98
2	Evaluate/Reinforce HVAC Ducting	Ensure ducts credited for tertiary confinement have adequate pressure capacity for tornado atmospheric pressure transient or abnormal ventilation lineups	OCT 98
3	Ensure Lightning Protection	Ensure that security systems to prevent helicopter intrusion do not compromise lightning protection for Building 371	OCT 98
4	Inspect/Repair SC-3 Fire Barriers	Apply lessons learned from Room 3206 evaluation as necessary to ensure one-hour capability of fire barriers that are SC-3 in AC 5.9	NOV 98
5	SNM Storage Rack Repairs	Ensure adequate seismic capacity for storage racks used in vault-type material storage rooms (SC-1/2 SNM Storage Racks in AC 5.9)	NOV 98
6	HVAC Interlock Modifications	Ensure safe failure mode (credited as Passive Design Feature in BIO) in EBE for the supply fan trip function and upgrade interlock to trip return fans as well as supply	SEP 98
7	Extend Roof Drains	Improve runoff during extreme weather conditions	Canceled <sup>1</sup>
8	N2 Failure Prevention Mods	Ensure nitrogen shutoff credited as Passive Design Feature in BIO to prevent Central Storage Vault pressurization after earthquake	OCT 98
9	Counterfeit Bolt Inspection	Review usage of counterfeit bolts and replace any whose capacity will not meet BIO requirements for SC-1/2 systems (94-3 low cost issue)	SEP 98
10	Redundant Zone 3 HVAC Controllers	Provide redundant $\Delta P$ controllers in Zone 3/Zone 4 areas for reliable implementation of LCO 3.1, item 6	JAN 99
11	Drain Chemical Storage Tanks	Reduce inventories of KOH and HNO <sub>3</sub> in outdoor storage tanks to meet requirements of AC 5.2.2, items e and f	Complete
12	Upgrade Vault Penetrations for Fire where Practical	Upgrade central storage vault boundaries to SC-1/2 (2-hour) fire barrier requirements where practical (BIO-IP will otherwise ensure that appropriate combustible control limits are established per AC 5.4.2, item 4c)	NOV 98

<sup>1</sup> Existing foundation drains suffice to assure safety; the drain extensions were intended as a good practice to decrease water penetration near the foundation, but the proposed cost was judged to be too high for the low marginal benefit.

	UPGRADE ITEM	SCOPE	COMPLETION SCHEDULE
13	Repair Attic Beam	Compensate for omitted negative reinforcement at the junction of beams B55 and B56	Complete
14	Install Attic Leak Detection	Provide capability to detect and alarm if significant attic flooding occurs	AUG 98
15	Miscellaneous BIO Upgrades	a) Install Dock 18T Roll-up Door Interlock b) Verify Seismic Capacity of SC-1/2 HVAC ΔP Sensor Lines c) Provide Lab Propane Tank Seismic Supports d) Complete Any Additional SQUG Walkdowns e) Determine HVAC Scrubber Disposition f) Provide Seismic Restraint for Flammable Liquid Cabinets	Complete AUG 98 Canceled <sup>1</sup> Complete <sup>2</sup> Complete Complete
16	Life safety Code Upgrades	Correct Deficiencies in B371 (Material Access Area) per Updated Facility Fire Hazards Analysis	OCT 98 (8 of 9 Complete)

1 Building 371 has determined that propane will not be used in the laboratory so restraints will not be required.

2 SQUG walkdowns supporting BIO implementation are complete; additional walkdowns may be performed early in FY-99 to identify additional cost-effective measures to reduce the EBE public dose below 5 rem (see Section 2 of this report).

## **4.0 INTEGRATED Pu CONSOLIDATION AND MANAGEMENT**

The corresponding section of the IPP states that, "The insights gained from the Recommendation 94-3 studies in Phases I and II needed to be integrated with the actions committed to the Board under Recommendation 94-1 to an integrated Site plan for safe plutonium and uranium management and storage. These insights included the contribution to overall Site risk from residues, the improved safety of Building 371 with Priority upgrades and a new BIO, and the commitment to provide an assured facility (on- or off-site) for interim storage of Site SNM. Systems engineering principles were applied to develop and select a strategic approach for residue storage and shipment that incorporates timely consideration of contingencies, such as possible delays in Waste Isolation Pilot Plant (WIPP) opening. The approach that was selected is being implemented through the Site's 94-1 Program. The 94-1 Program is also reducing the risk of SNM storage by stabilizing and repackaging the material; the DOE-STD-3013 compliant packages and the POCs [pipe overpack containers] afford defense-in-depth for current storage and enable the longer term storage plans to be realized."

### ***4.1 Accomplishments and Status Summary***

The Site is actively investigating options with varying reliance on support from other sites in the DOE complex to accelerate 94-1 commitments in a manner that would support Rocky Flats Site closure by 2006. Some of these options are noted as contingencies in the revised IPP. Any that are chosen for implementation will be incorporated in future revisions to the Site Integrated Stabilization and Management Plan (SISMP).

In February, Kaiser-Hill evaluated the impact of delayed delivery of the prototype PuSPS to the Site and recommended that it not be installed in Building 707 as originally planned. The least cost Site option was to prepare material for off-Site shipment without packaging in DOE-STD-3013 containers, while packaging in Building 371 was the next most favorable option. The Department decided to install at least the packaging system from the prototype in Building 371 as there were too many uncertainties that could not readily be resolved affecting the complex-wide acceptability of not packaging the material to the DOE-STD-3013 standard at RFETS.

Kaiser-Hill is developing a detailed plan to implement this decision. In Building 371, Room 3713 has been selected for installation of the packaging portion of the prototype plutonium stabilization and packaging system (PuSPS). The first phase, "strip-out" design to prepare the room and utilities for installation will be complete in early September.

### ***4.2 Deliverables***

All current activities related to this task are governed by the SISMP and 94-1. There are no near-term milestones for the 94-3 program

## 5.0 INTEGRATION OF SITE PLANS WITH DOE COMPLEX PLANS

The corresponding section of the revised IPP addresses the Department's baseline plan to prepare for and complete the shipment of the Site's uranium and plutonium metal and oxide beginning no later than 2002. The baseline plan is a commitment that will be executed as planned unless sufficient impediments to off-site shipment emerge to cause the Department to abandon this strategy (the Department would then rely on Building 371 for interim storage as discussed in the following section). The Department's baseline plan is not yet formally complete but includes the draft plan, *Accelerated Cleanup: Focus on 2006*, the Surplus Plutonium Disposition EIS (draft scheduled April 1998) and other completed documents. The mechanism for integration and coordination of these evolving and existing plans is within the scope of this section.

### 5.1 Accomplishments and Status Summary

Progress was made across the DOE complex in preparing for timely off-Site shipment of RFETS SNM, including:

- NEPA evaluation of the K-area option at the Savannah River Site (SRS) continues as do pre-decisional studies to assess storage of RFETS SNM in K-area as an alternative to the Actinide Processing and Storage Facility (APSF). The K-area alternative appears advantageous for the overall DOE complex. The K-area plan anticipates CD-3 approval and construction start in September 1998.
- Off-Site shipping from Rocky Flats, including pit shipments to Pantex, resumed early in this quarter with compliance issues affecting packaging procedures and preparation of accompanying documents addressed.
- The initial shipment of plutonium-bearing materials to SRS in an SST is targeted for completion this Fiscal Year. Packaging of sand, slag and crucible residues for possible shipment is continuing, but actual shipment is dependent upon issuance of the residue EIS Record of Decision. The Final Draft EIS for residues, pre-requisite to a Record of Decision, is nearly ready to be issued.
- Design of the APSF has been completed, meeting the August 1998 schedule milestone.

Overall, the Department believes progress is being made to support timely off-Site shipment of RFETS SNM.

### 5.2 Deliverables

IPP Milestone 5-1 Issue ROD selecting the plutonium immobilization site by February 1999.

The Surplus Plutonium Disposition Site EIS is on schedule to support issuance of a Record of Decision by February 1999.

IPP Milestone 5-2 Prepare APSF, or alternate facility, at SRS for Rocky Flats SNM.

- a. Complete APSF design by August 1998.

APSF design has been completed, meeting this milestone.

IPP Milestone 5-3 Prepare for and transport SNM off-site.

a. Complete off-site shipment of pits to Pantex by FY99.

Pit shipments resumed early in this quarter which will support shipment completion well before the end of FY-99

b. Ship plutonium-bearing materials (sand, slag and crucible) from Rocky Flats to SRS in SSTs in June 1998.

No shipment was made in June and a firm alternative schedule can not be established until the residue EIS Record of Decision is issued. Packaging of sand, slag and crucible residues for possible shipment to SRS is now underway at RFETS. The residue EIS is considering pipe-and-go as an alternative to shipment of sand, slag and crucible residues to SRS for Pu recovery in F Canyon. Until the Record of Decision is issued, no shipment to SRS can be made. Nevertheless, completing a shipment of plutonium bearing materials in an SST is an objective and alternatives are being considered in the event the SS&C materials are not authorized for shipment.

c. Procure approved shipping containers (9975s) for metal and oxide shipment.

Two-hundred 9975's have been ordered by SRS for transport of sand, slag and crucible and fluoride residues from RFETS. In FY-99, an additional 1700-2000 are to be ordered to support accelerated shipment of RFETS oxides to SRS for storage in K-area, if that alternative is selected.

**5.3 Schedule of Activities**

Kaiser-Hill is developing a plan for installation of the packaging portion of the prototype PuSPS in Building 371. The plan will include separate ovens for oxide stabilization to complement the packaging system. The plan will include a schedule for preparation of non-pit plutonium for off-site shipment. The system will be installed in Room 3713 Detailed design for the initial phase of installation covering strip-out and preparation of utilities is scheduled for completion in early September.

## **6.0 INTERIM STORAGE MISSION CONTINGENCY – BUILDING 371**

This section corresponds with Section 6 of the revised IPP and addresses the following mission need for the Building 371 contingency option: "provide safe and secure interim storage of the Site's non-pit plutonium metal and oxide inventory, including any oxide generated due to residue and solution stabilization activities, if off-site shipment is not realized in a timely manner. The interim storage mission is to begin in 2002 and continue until the inventory is finally shipped off-site (no later than 2015)." Chapter 6 focuses on plans to validate and define specific scopes for upgrades in FY-98 to prepare Building 371 for the interim storage mission, to design validated upgrades in FY-99, and to implement them in the facility no later than 2002.

### **6.1 Accomplishments and Status Summary**

Engineering efforts continued to identify upgrades that would be chosen to prepare Building 371 for storage of the Site's non-pit Pu metal and oxide from 2002 to 2015 (i.e., interim storage) and focussed on execution of the March validation plan. Three teams addressed those upgrades affecting confinement, fire protection and other issues. Regular meetings of the Technical Advisory Team served as a focal point for discussion of developing conclusions, questions regarding boundary conditions from the initial draft report, and interfaces between teams. Each team identified those needs that warranted a project and the most effective conceptual approach to meet the need. Project identification was completed in June and tentative conclusions were summarized for facility management, RFFO, and DNFSB Staff members visiting the Site at the end of June. A draft report has been prepared as planned and is being reviewed to support the scheduled final report in August.

### **6.2 Deliverables**

**Milestone 6-1** Complete validation assessments for the Interim Storage upgrades (those that are not "Priority" in Appendix C), including a schedule for design engineering to be performed in FY99, documented, and reported by August 1998. Provide the plan for the validation effort to the Board by March 1998.

The plan was completed and issued in March of 1998 as committed. The validation effort is underway and on-schedule for completion in August of 1998.

**Milestone 6-5** Assess the following "Go/No Go" criteria for assured success of off-site shipment in Section 5 and report when they are satisfied:

1. APSF construction is funded and underway with sufficient storage capacity committed to RFETS material or alternate acceptable storage off-site is authorized, funded, committed for storing RFETS material, and construction is underway.
2. The ROD for a plutonium disposition site is issued and identifies SRS as a disposition site or the MD PEIS ROD is amended to delete this condition as a requirement for receipt of RFETS material and any alternative NEPA requirements are fulfilled.
3. The PuSPS at Rocky Flats is operational and authorized to begin material stabilization and packaging or the Department has established firm plans for packaging to be performed off-site.



4. A shipment of plutonium-bearing materials from RFETS to SRS in SSTs has been successfully completed; specific plans are in place to provide for future shipments.
5. Adequate assurance is provided that off-site pit shipments are on schedule for completion by the end of FY99.

When the Go/No Go criteria are satisfied, all remaining work (including design, construction, or other implementation) on the validated upgrades and the SAR to establish the Building 371 interim storage option may be discontinued by the Department. The Department will formally notify the Board before the upgrades are discontinued.

Section 5.0 of this report addresses the status of complex-wide activities supporting fulfillment of these criteria. Efforts are currently judged to be on track to support a favorable judgment in the first quarter of calendar 1999.

### **6.3 Schedule of Activities**

Intermediate milestones for the validation activity are provided in the March plan. Key future dates include:

- Final report issued August 1998