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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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December 8, 1997

The Honorable Federico Peña
Secretary of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-1000

Dear Secretary Peña:

The Defense Nuclear Facilities Safety Board (Board) has become increasingly concerned about the rate of progress on complex-wide integration of actions responding to Recommendation 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facility Complex*. Furthermore, the Board has noted that while the delays in activities have been communicated in Department of Energy (DOE) briefings to the Board and its staff, as well as in quarterly 94-1 status reports, formal communication of new proposed dates and a plan of action to meet those dates have not been forthcoming from DOE in a timely manner. DOE needs to submit all needed Implementation Plan changes for all sites in a timely manner, and through the same channels as those originally used in transmitting the Implementation Plan. Most recently, the Board has received formal notification of changes proposed by the Rocky Flats Environmental Technology Site (RFETS) and the Oak Ridge Reservation (Oak Ridge). Comments on these submittals are included in Enclosure 1.

Some sites are doing a credible job of addressing risk reduction under Recommendation 94-1. However, many essential decisions remain to be developed, particularly those that cross boundaries of responsibility between sites and Assistant Secretaries. The burden of integrating such complex-wide decisions has apparently been transferred to the sites. The sites have been attempting to provide the impetus for those near-term decisions that have been made. Some of the major cross-complex problems that need to be addressed are as follows: decisions adopted at some sites that assume expansion of the capacity of the Actinide Packaging and Storage Facility (APSF) that is being designed to accommodate plutonium shipped to the Savannah River Site (SRS) from other sites (needed expansion is not at present included in the design); the logistics of processing residues from the Rocky Flats facilities in SRS canyons; allocation of resources to Oak Ridge (Y-12) for receipt and storage of U-235 and to Pantex for receipt and storage of plutonium; staging and storage capability at Los Alamos National Laboratory for material from Rocky Flats; and availability of transportation containers and trucks for all such transfers of material.

DOE-Headquarters (DOE-HQ) is not providing adequate direction for the integration of complex-wide stabilization and disposition initiatives, largely because at the operating level of Headquarters there is no organization with the required cross-cutting authority and resources. Lack of integration contributes to propagation of delays in meeting 94-1 milestones and unacceptable postponement of stabilization of hazardous materials, along with significantly greater budget requirements. DOE-HQ will need to find a means to integrate the activities of DOE-Environmental Management (EM), DOE-Material Disposition (MD), DOE-Security Affairs (NN), and DOE-Defense Programs (DP) if schedules are to become responsive to commitments under Recommendation 94-1, if disposition pathways are to be identified, and if funding is to be properly allocated. Examples of issues requiring integration are discussed in Enclosure 2.

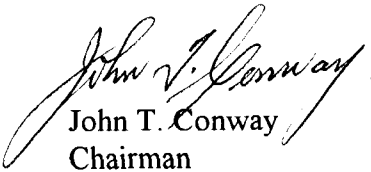
The board recognizes that technological solutions for unique problems posed by some of these materials addressed by Recommendation 94-1 can prove to be more difficult and time-consuming than initially estimated and more time for their treatment may be able to be justified. However, the Board believes that most of the delays that have occurred and others likely to be experienced are consequences of the stabilization program being performed by parts and not as a well orchestrated whole. Headquarters attempts at integration of all such interdependent activities appear to be constrained to coordination of site efforts and the solicitation of cooperation by decision makers. The program requires more than a coordinator. What is required is a leadership, empowered to plan and decide upon optimum solutions considering the 94-1 program as a whole, and given both the resources and responsibility for the execution of the program needed to achieve the risk reduction sought.

The Board believes it is vital and timely for DOE to restructure the leadership of this very important risk-reduction program. The Board suggests that in revising the Implementation Plan, one feasible course of action would be for DOE to designate a specific Secretarial Officer (presumably EM) as the lead officer with primary responsibility for the program as a whole, and a Technical Project Manager to lead and direct the detailed effort DOE commits to undertake. The Board would expect the lead Secretarial Officer, with support of the Technical Project Manager, to work with the other departmental Secretarial Officers, Office Directors, field managers and contractors on cross-cutting issues, and to develop a complex-wide, integrated, and optimized program plan, appropriately resource loaded. The Board expects that such a plan would include a final disposition path forward for all materials requiring stabilization and safe storage, a listing of activities needed to accomplish program objectives, milestones for completing such activities and for resolution of issues that might prevent or delay such completion, and the resources required. Once such a plan is developed and DOE commitment made with respect to schedule and funding, the Board would expect the Technical Project Manager to lead and manage the integrated effort, including cost, schedule and tasked activities.

The Board is prepared to work with the Department to restructure the implementation plan for 94-1 along lines suggested above. In doing so we believe it necessary to build on the lessons learned from trying to work under the pledged participatory program of the past four years to devise a plan that promises more timely completion of this important program.

If you have comments or questions, please feel free to call me.

Sincerely,



John T. Conway
Chairman

c: The Honorable Alvin L. Alm
Mr. Mark B. Whitaker, Jr.

Enclosure 1
Comments on Proposed Implementation Plan Changes
for the Rocky Flats Environmental Technology Site and the Oak Ridge Reservation

The Board has reviewed the changes to the Implementation Plan for Recommendation 94-1 proposed by DOE in its letter of September 30, 1997, for work at RFETS. DOE proposes several changes to the Implementation Plan, including:

- Delaying the processing of high-level solutions by 4 months and carrying out the processing in B371.
- Delaying the completion of stabilization of high-hazard pyrochemical salts by 15 months.
- Delaying the stabilization of higher-hazard combustibles by 5 months.
- Delaying the stabilization of graphite fines and incinerator ash by 4 months.

The Board accepts the first of the above proposed changes for processing of high-level solutions. The use of B371 for processing B771 solutions will allow a greater volume to be processed per batch as compared with oxalate precipitation. In addition, recent actions to raise the limits on feed concentration have the potential to increase the amount of plutonium stabilized per batch. The Board is pleased with both of these actions since they have the potential to accelerate risk reduction at RFETS.

However, the Board is disappointed that DOE is requesting another series of milestone delays for the solid residues barely a year after the previous milestone revisions, especially since several alternatives being pursued by RFETS may make approval of an extension unnecessary.

Unnecessary extensions delay deactivation of buildings and fail to reduce the cumulative risk to workers and the public from dispersible and unstable residues. The Board encourages DOE to examine the following alternatives that may be able to minimize delays in stabilization and accelerate site risk reduction:

- Eliminate additional or developmental processes beyond those needed for stabilization. Doing so would avoid extensive demonstration and testing required for some of the plutonium separation and vitrification technologies. If additional processing is required for final disposition, the use of mature technologies (e.g., dissolution and cementation) would minimize further delays.
- Use off-site processing capabilities in addition to or in lieu of on-site processing, which would allow the processing to be completed sooner.

- Package residues directly in a residue pipe overpack container (POC) when characterization data indicate that the residues pose only moderate and low risk, as defined in the 94-1 Implementation Plan. The POC offers the added benefit of reducing the possibility of a release during a fire or seismic event.

The Board has also reviewed proposed changes to the 94-1 Implementation Plan for Oak Ridge proposed by DOE in its letter of October 29, 1997. The specific changes proposed include:

- Delaying completion of uranium deposit removal from the auxiliary charcoal bed at the Molten Salt Reactor Experiment (MSRE) by 1 year.
- Delaying completion of fuel/flush salt removal from MSRE by 1 year.

The Board understands that the delays in completion of uranium deposit removal and fuel salt removal at MSRE are the result of safety issues that have arisen since the original Implementation Plan was written. Oak Ridge seems to be taking a sound approach to addressing the criticality and chemistry issues associated with the hazards present. The risks appear to be understood, and work is proceeding. Thus, the Board considers these proposed changes to the Implementation Plan appropriate.

Enclosure 2
Comments on Department of Energy-Headquarters
Integration of Recommendation 94-1

The following issues, among many others, indicate the need for a strong DOE-HQ project manager with responsibilities, accountability, and authority across multiple offices to ensure that risk is reduced at all sites with maximum utilization of DOE resources:

- SRS stabilization of highly enriched uranium (HEU) solutions destined for commercial use cannot proceed without agreements between DOE-MD and the Tennessee Valley Authority for plans to blend down and fabricate commercial fuel.
- Residues cannot be transported from RFETS to SRS for processing without completion of a Record of Decision.
- Schedules and methods for processing of residues will be affected by safeguard termination limits and denials of variances could result in further delays.
- Shipments from RFETS to SRS to support the Phased Canyon Strategy require certification/procurement of new containers (DOT 9975), as well as prioritizing of the materials to be shipped in the existing containers (6M).
- Shipments of RFETS metal and oxide to SRS and other sites for processing and/or disposition may be slowed by a shortage of safe secure trailers.
- Recent decisions to send Hanford material to SRS (APSF) will require expanding the capacity of APSF from 5,000 to 10,000 positions. Authorization by November 1997 is required to support the existing APSF design.
- Early shipments of RFETS material to other sites are being considered. The SRS L and K Reactors and the SRS Plutonium Storage Facility are candidate facilities for interim storage. The potential also exists to send 3 metric tons of metal to Hanford for interim storage in an International Atomic Energy Agency area before sending it to SRS.
- Shipment of HEU hemishells from RFETS to Oak Ridge to facilitate deinventory cannot proceed without adequate funding for Oak Ridge.
- Many plans or actions to meet milestones for Recommendation 94-1 require that the Waste Isolation Pilot Plant be opened and ready to accept waste shipments in FY98.