DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 694-7000

July 17, 2000

Ms. Karen Patterson
Chairperson
Savannah River Site
Citizens Advisory Board
1103 Conger Drive
Aiken, South Carolina 29803

Dear Ms. Patterson:

In your letter of March 29, 2000, you requested that the Defense Nuclear Facilities Safety Board (DNFSB) update your Board by July 25, 2000, regarding the acceptance or rejection of the Department of Energy's implementation plan regarding DNFSB Recommendation 2000-1.

Enclosed please find a copy of DNFSB's July 14, 2000, response to Secretary Richardson accepting portions of his implementation plan and rejecting portions of his response to the Recommendation which was hand-delivered this past Friday to the Department of Energy.

Thank you for your supporting words in your March 29, 2000 letter.

Sincerely,

John T. Conway
Chairman

Enclosure: as stated

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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July 14, 2000

The Honorable Bill Richardson
Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Richardson:

The Defense Nuclear Facilities Safety Board (Board) has reviewed the Department of Energy's (DOE) Implementation Plan of May 31, 2000, for the Board's Recommendation 2000-1, *Prioritization for Stabilizing Nuclear Materials*, and Recommendation 94-1, *Improved Schedule for Remediation*. The Board is encouraged by DOE's renewed commitment to stabilizing legacy materials that represent substantive safety risks in their present form and storage state. As the implementation plan indicates, much of the material covered by Recommendation 94-1 has been stabilized, and the majority of the remaining materials will be stabilized within the next few years.

The Board finds the revised plan to be an improvement in some respects and quite indeterminate and lacking in others. The Board finds acceptable the plan for stabilization activities at the Hanford Site, the Rocky Flats Environmental Technology Site, Lawrence Livermore National Laboratory (LLNL), and Oak Ridge National Laboratory; however, the plan is lacking with regard to the Los Alamos National Laboratory (LANL), as well as certain material types at the Savannah River Site (SRS). Additionally, plans for stabilizing highly enriched uranium (HEU) solutions at SRS rely on an agreement with the Tennessee Valley Authority that continues to be delayed, and there is no valid contingency plan for stabilizing the HEU solutions. The Board's views on specific components of the plan that merit more definitive development follow:

Savannah River Site

The stabilization and packaging project in Building 235-F at SRS, proposed in the implementation plan as an alternative to the Actinide Packaging and Storage Facility (APSF), does not achieve the objective of the Board's recommendations, that is, expedited stabilization of plutonium.

DOE has striven to provide at SRS a capability to (1) consolidate storage and stabilize materials starting in 2001, and (2) integrate interim safe storage with staging needs in support of the Fissile Materials Disposition (MD) project. Indecision on how to proceed and lack of integration have caused irrecoverable delays in the stabilization and repackaging of plutonium at SRS. The proposed stabilization and packaging project does not expedite stabilization, does not consolidate storage, and does not integrate with MD programs. The implementation plan states that the DOE Integrated Nuclear Materials Management Plan explains the issues that led

DOE to pursue modifications to Building 235-F in lieu of APSF or an equivalent facility, but that plan in turn references a draft Plutonium Storage Study which is not even available for review as the basis for its conclusions. For these reasons, the Board does not find this portion of the implementation plan to be responsive to the recommendations.

To compensate for the failure to achieve timely stabilization and packaging of the SRS plutonium, it will be necessary to enhance the existing packaging of the material in the interim. DOE needs to develop a plan for quickly ensuring that plutonium metals and oxides at SRS are packaged in compliance with the DOE Interim Safe Storage Criteria (ISSC), thus providing an adequate level of safety while the 235-F project is being pursued. For existing metal items in a single-barrier bagless transfer system can, it would be advantageous to pursue early compliance with DOE-STD-3013 by establishing an outer can welder. The plan should aim to achieve compliance with the ISSC by the end of 2002.

Subrecommendation 8 of Recommendation 94-1 addressed the need to maintain, in a usable state, facilities that may be needed to accomplish necessary stabilization of materials. Use of the SRS canyons as defined in the implementation plan does not account for the full range of materials that may require canyon processing. The results of DOE's Processing Needs Assessment need to be reevaluated; each material not stabilized as part of the implementation plan needs to be identified and a definitive disposition path provided. Further, DOE needs to revisit Subrecommendation 8 of Recommendation 94-1, and determine which facilities at SRS and elsewhere in the complex ought to be maintained in an operable condition because of their potential role in future stabilization work.

Los Alamos National Laboratory

For stabilization of material at LANL, there is no written plan for the Board to accept or comment on. The implementation plan states that a plan for this material cannot be provided until an assessment is performed to baseline the LANL plutonium inventory, and a new risk-based prioritization methodology for stabilization of the material is developed. Furthermore, as described in the implementation plan, the strategy for developing a plan for this material does not appear to address several important considerations. First, such a plan needs to comprehensively address nuclear materials at LANL, not just excess materials generated before Recommendation 94-1 was issued. Second, the plan needs to retain important commitments from the previous revision of the implementation plan, including timely packaging of excess metal and oxide to DOE-STD-3013, timely packaging of programmatic materials to upgraded interim storage criteria, and elimination of all backlog residues more than 3 years old by a fixed date (and maintaining that state). Third, the plan needs to address the observations contained in the Board's letter of December 14, 1999. Finally, the proposed implementation plan does not acknowledge that the stabilization program at LANL is facing major delays, a problem acknowledged during the staff's reviews at LANL and in a recent briefing to the Board by DOE's Office of Defense Programs on complex-wide funding shortfalls.

Corrective actions within DOE are needed to ensure that in the future, similar problems will be recognized and reported early, and effective management actions will be taken to prevent such serious disruptions to stabilization efforts.

Departmental Funding

DOE advised the Board by letter dated March 13, 2000, that Subrecommendations 10 and 11 of Recommendation 2000-1 were not accepted. These subrecommendations dealt with the obligations of DOE to advise Congress when Board recommendations could not be accomplished due to funding limitations. In response to these subrecommendations, the Board was advised that factors other than funding have affected the pace of implementation of the stabilization program. Further, the Board was advised that budgetary shortfalls have not made implementation impracticable.

The Board does not accept this rationalization. It is clear that funding limitations have impacted stabilization activities as identified in the enclosure. In other cases, what DOE has done, in the Board's view, is to develop a plan that matches a budget, not a budget that matches a plan for expeditious treatment of all the hazardous legacy materials. A case in point is the americium/curium vitrification project at SRS. By the summer of 1999, the DOE Savannah River Operations Office (DOE-SR) realized that FY 2000 funding for the project would be significantly short. DOE-SR decided in the fall of 1999 to subcontract the design and construction of the vitrification system to a private contractor. That cost-plus-fixed-fee contract was let in April 2000, delaying the project by more than a year and effectively deferring much of the cost of the project to FY 2001 and beyond. This development of a plan that matches a budget is succinctly noted in a contractor plan[1] submitted to DOE stating that the current contractor strategy "was based on a DOE directed level funding profile and resulted in an execution strategy to outsource the design and fabrication of in-cell equipment."

DOE's rationale for not reporting to Congress implementation delays caused by funding shortfalls reveals that the DOE misunderstands the Atomic Energy Act reporting requirement Congress placed on DOE to ensure effective Congressional oversight of DOE's defense nuclear facilities. It also reveals that DOE misunderstands the Board concern pivotal to the remedial action contemplated by Recommendations 94-1 and 2000-1—time is of the essence. The gravamen of the Board's recommendations is that unstable fissionable materials and other radioactive materials require prompt conversion to more stable forms, to prevent deterioration leading to the inevitable spread of radioactive contamination. While in some instances "other factors" have slowed DOE's stabilization efforts, there is no doubt that budget considerations have caused significant delays and in some instances budget considerations have been the exclusive reason for the delay.

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[1]WSRC Strategy and Resource Loaded Plan for Implementation of DNFSB Recommendations 94-1 and 2000-1, Revision 1, dated March 29, 2000.

Under the Atomic Energy Act, 42 U.S.C.§ 2286d(f)(2), DOE is required to report to the President and Congress those instances where implementation of a Board recommendation, or a part thereof, is impracticable due to budget considerations. The Board believes that when time is of the essence, as in Board Recommendations 94-1 and 2000-1, DOE's inability to remediate in accord with the contemplated time boundaries because of "budget considerations" in effect constitutes the determination of impracticability contemplated under 42 U.S.C.§ 2286d(f)(2). The Congressionally-imposed reporting requirement cannot be reasonably deflected by DOE simply by not formally making the determination of impracticability due to budget considerations. When, as in the implementation of Recommendation 94-1, unacceptable delay in implementing a time-sensitive recommendation is occasioned by budgetary considerations, as has been admitted by DOE in the numerous delays encountered in implementing these recommendations, a determination of "impracticability due to budget considerations" can be made by operation of law.

Therefore, any delays in the schedule now accepted that are occasioned by "budget considerations" should be reported to Congress as required by the Atomic Energy Act of 1954, as amended. For example, if, as DOE sets forth in a Note on page 5-23 of the implementation plan, "An additional 6-month to 12-month delay could be required if the FY 2001 realignment of funds is not accomplished, requiring DOE to request a reprogramming," then the reporting requirement would be triggered. DOE should then report the delay to the President and Congress forthwith thereby avoiding confronting Congressional and Board oversight with a fait accompli.

Sincerely,

John T. Conway
Chairman

c: The Honorable Carolyn L. Huntoon
Brigadier General Thomas F. Gioconda
Mr. Mark B. Whitaker, Jr.

Enclosure

Enclosure

RECOMMENDATION 94-1 STABILIZATION IMPACTS DUE TO FUNDING CONSIDERATIONS

The following three references document funding shortfalls as the cause for delays and failures to meet commitments regarding Recommendation 94-1, *Improved Schedule for Remediation.*

Document 1: Letter—Letter from the Department of Energy (DOE) to John T. Conway, dated October 15, 1999. In this document, DOE responded to the list of questions raised at the public meeting on September 9, 1999, as well as questions raised by the Board prior to the public meeting.

Excerpts from Document 1:

- **IP Commitment Numbers 201 and 206.** Stabilize H-Canyon Pu-239 solution and stabilize Np-237 solution—A funding shortfall in FY 1999 delayed startup of HB-Line Phase II, and associated completion of these commitments by approximately six months.

- **IP Commitment Number 205.** Vitrify Am/Cm—In the IP revision this project was to be rebaselined, with a new cost and schedule planned to be approved in July/August 1999. The contractor provided DOE with a proposed new baseline for this project in June which showed completion of stabilization 27 months later than our commitment date of September 2002. That proposal did not meet DOE's expectations for cost or schedule, and was not accepted. In addition to delaying completion of stabilizing, the associated funding profile indicated a shortfall of approximately $9 million compared to the FY 2000 Congressional budget request, and another $9 million shortfall compared to the projected available FY 2001 funding.

- Out of the nine SRS milestones identified in the revision 1 IP, eight of the milestones will not be completed per the IP revision 1. Projected budgets do not support recovering the delays.

- Resource leveling of the schedules dictated that some activities be moved out to achieve a credible funding profile. . .

- The HB-Line Phase II schedule has recently been re-evaluated based on receiving adequate funding in FY 2000 and FY 2001. Based on recent budget information, the startup date for Phase II is 12/01.

- Neither the FY 1999 budget nor the FY 2000 Congressional budget request fully support all desired infrastructure upgrades or critical spare parts, and there is the potential for equipment failures resulting in outages while equipment is fixed or procured. However, requirements contained in Authorization Basis documents will be maintained.

- The length of delay in startup of disposition that could be tolerated is dependent on many factors, including the cost of modifying and operating 235-F, the cost of modifications and operation of Hanford vault space, and the operating costs of K-Area.

Document 2: Memorandum—*Status of the Savannah River Nuclear Materials Stabilization and Storage Program Versus Commitments in the 94-1 Implementation Plan, Revision 1,* dated October 13, 1999.

Excerpts from Document 2:

This document compares current program status to the expectations and commitments contained in the 94-1 Implementation Plan, Revision 1, issued December 28, 1998.

- IP 201 Convert H-Canyon Pu-239 to Oxide

  FY 99 funding and staffing shortfalls from original AOP expectations caused deferral of work scope associated with HB-Line Phase II Startup.

- IP 205 Vitrify F-Canyon Am/Cm Solutions

  Project strategy is currently being reevaluated in light of the $8 million shortfall in FY 00 funding for this project. Impact of this FY 00 funding shortfall on downstream project completion dates is TBD.

- IP 206 Convert Np-237 Solutions to Oxide

  The effect of the current projected completion date for IP 201 discussed above, has a corresponding propagated impact on completion of this commitment. Successful completion of this commitment also requires timely packaging and storage of the stabilized oxide.

- IP 208 Dissolve Mk-16/22 SNF

  FY 99 Funding and staffing shortfalls from original AOP expectations caused deferral of work scope associated with H-Canyon Phase 3 Restart. The diminished funding and staffing were insufficient to maintain the desired pace of restart preparation while dealing with the emergent scope associated with resumption of H-Canyon First Cycle operation.

Document 3: Memorandum—*Savannah River Support for Rocky Flats Environmental Technology Site,* dated December 3, 1999.

Excerpt from Document 3:

- Significant funding shortfalls in Fiscal Year 2000 (FY00) demand new RFETS support be funded external to SRS.