The Secretary of Energy
Washington, DC 20585

June 24, 2002

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

Dear Mr. Chairman:

This is in response to your March 21, 2002, letter and to provide the Department of Energy's (Department) future plans for the utilization of processing capabilities at the Savannah River Site (SRS).

I would like to thank the Defense Nuclear Facilities Safety Board for the work it has done in helping us better focus on Canyon issues at SRS. Over the past several years, the Department's stabilization and disposition program has evolved through changing mission needs, as well as change in strategy made possible by the opening and utilization of disposal sites. The Department is committed to having the capability to stabilize and disposition materials in our current inventory and future materials that will be added as cleanup efforts continue. We believe the best path forward is through utilization of existing facilities, such as the H-Canyon and HB-Line at the SRS, and by establishing new capabilities, such as the Mixed-Oxide Fuel Fabrication Facility and the Pit Disassembly and Conversion Facility.

The Department has spent several years evaluating mission need and has not identified materials specifically requiring the unique chemical separation capabilities of the F-Canyon facility at SRS (i.e., plutonium/uranium extraction (PUREX) process). I believe that with capital enhancements to the HB-Line plutonium and neptunium processing facility to permit the processing of plutonium residues and oxides containing chloride, silica, etc; use of H-Canyon for processing plutonium, enriched uranium, and neptunium; and in conjunction with the future National Nonproliferation facilities, we will meet the disposition needs for weapons-grade plutonium, spent nuclear fuel, and other nuclear materials throughout this decade. The Department is evaluating options for final disposition of non-weapons-grade plutonium, which is not suitable for direct disposal, and we also continue to evaluate disposition methodologies for spent nuclear fuel beyond this decade. However, in the interim, these materials will be stabilized near-term and stored in a safe configuration as committed to in our Recommendation 2000-1 implementation plans. Enclosed is a summary of the

materials to be processed at the SRS as well as plans for management to include disposition of other materials across the Department of Energy complex as discussed with your staff on May 2, 2002.

The Department has concluded that while many of these materials could be processed in the F-Canyon facilities, there is not a compelling technical, regulatory, or economic reason to do so, and there are other cost-effective options available. Continuing to operate both F- and H-Canyon facilities would significantly increase costs with only marginal impacts on stabilization or disposition schedules. These materials are being actively and safely managed across the complex. Surplus non-weapon plutonium is being stabilized and packaged for long-term storage. The Department is aggressively pursuing the disposition of surplus plutonium as well as developing alternative means for the management of spent nuclear fuels and other materials. Those presenting potential risk to worker and public safety and health and the environment will be processed or packaged to reduce or eliminate such risks. With these actions, a measured approach to materials disposition can be pursued simultaneous with our cleanup, national security, and other missions.

Since 1954, the F-Canyon facility has served its mission well supporting both the defense and environmental cleanup missions. With the suspension and deactivation of this facility, the Department can focus resources on meeting the needs for future disposition and accelerated cleanup activities. Previous near-term savings associated with F-Canyon PUREX suspension were estimated to be $10-20 million per year. This presumed that F-Canyon deactivation would be completed in 2012.

The Department identified in Revision 1 of the 2000-1 Implementation Plan stabilization and storage commitments requiring operation of the F-Canyon facility structure through at least 2008, specifically: (1) the americium and curium (Am-Cm) solution would be vitrified into small glass logs by December 2005; (2) the stabilization and packaging of the plutonium inventory within the facility structure would be completed by June 2008; and (3) the Rocky Flats metal recasting mission would be completed by March 2006. Since then, the SRS has accelerated the disposition of the Am-Cm solution to March 2003, accelerated DOE-STD-3013 stabilization and packaging of the plutonium to December 2005, and canceled the need for recasting the Rocky Flats metal.

SRS has proposed accelerating the de-inventory and deactivation of the F-Canyon facility by six years to 2006, enabling savings on the order of $50 million per year beginning in fiscal year 2005 and increasing to more than $100 million per year beginning in fiscal year 2007. In order to achieve these savings, SRS must initiate aggressive efforts to reduce F-Canyon operations beginning this year.

These resources will be redirected to high-risk reduction and stabilization and cleanup activities, including that of the H-Canyon uranium, plutonium, and spent nuclear fuel missions.

In conclusion, the National Nuclear Security Administration and the Office of Environmental Management have reviewed their future needs for facility capabilities and have concluded that the operation of the F-Canyon facility is not required for current or future stabilization, disposition, or Defense Programs needs. In light of this, the SRS is proceeding with the F-Canyon suspension plan recognizing that departmental authorization is required prior to de-energizing equipment in September of this year. The Department would like to conclude on this matter expeditiously and move forward, working with you and your staff, on our future disposition capabilities.

If you have any further questions or desire further discussion on this matter, please contact me or Ms. Jessie Hill Roberson, Assistant Secretary for Environmental Management, at (202) 586-7709.

Sincerely,

Spencer Abraham

Enclosure

Enclosure

DEPARTMENT OF ENERGY
MATERIALS MANAGEMENT

Materials for Savannah River Site (SRS) Processing

1. SRS spent nuclear fuel (SNF) and unirradiated fuel (irradiated and unirradiated Mark-16/22, miscellaneous fuels and targets). These materials are aluminum clad and predominantly highly enriched uranium (HEU). The Mark-16/22 fuels are being processed in the H-Canyon facility, with the other fuels to follow. The HEU from these fuels will be recovered, purified, and then blended to low enriched uranium for use by the Tennessee Valley Authority. Those fuels and targets without substantial quantities of uranium will be dissolved and transferred to the high-level waste (HLW) system for storage pending vitrification through the Defense Waste Processing Facility (DWPF).

2. H-Canyon plutonium (Pu) solutions and Pu scrap. These solutions and solutions generated from the dissolution of Pu scrap and residues in HB-Line will be purified and converted to oxide in HB-Line. The oxide being produced will be packaged for safe long-term storage in accordance with DOE-STD-3013 and managed with the remaining surplus plutonium until DOE has determined a disposition path. DOE is planning to transfer the remaining solutions that contain plutonium unsuitable for disposition through the mixed-oxide fuel program to the HLW system for eventual disposition through the DWPF.

3. Neptunium (Np) solutions and unirradiated Mark-53 targets. The Mark-53 targets will be dissolved and processed through H-Canyon to separate the recoverable Np. This will be combined with the existing Np solutions and converted to oxide in HB-Line. The Np oxide is planned to be transferred to the Oak Ridge National Laboratory for future use in the Pu-238 production program.

4. Mixed plutonium/enriched uranium scrap and residues. These materials will be dissolved in HB-Line. Plutonium that is recovered will be converted to oxide and packaged for safe long-term storage in accordance with DOE-STD-3013 and managed with the remaining surplus plutonium until DOE has determined a disposition path. Enriched uranium will be recovered and added to the HEU inventory to be blended to low enriched uranium for the TVA program.

5. Rocky Flats Pu-contaminated HEU and Pu/Enriched Uranium parts. These items will be dissolved in H-Canyon and the uranium recovered and added to the HEU inventory to be blended to low enriched uranium for the TVA program. If practical, any plutonium that is recovered will be converted to oxide in HB-Line and packaged for safe long-term storage in accordance with DOE-STD-3013 and managed with the remaining surplus plutonium until DOE has determined a disposition path.

6. Weapons-Grade Pu that currently does not meet the mixed-oxide (MOX) fuel program feed specifications. Approximately 2 metric tons (2000 kilograms) of weapons-grade Pu exists at Rocky Flats, Hanford, and the SRS that does not meet the specifications for the MOX fuel program. The Department is proposing to modify the HB-Line to add new capability at the SRS to process these materials. The plutonium oxide produced will be packaged for safe long-term storage in accordance with DOE-STD-3013 and managed with the remaining surplus plutonium until DOE has determined a disposition path.

Other Materials

1. Aluminum and non-aluminum clad SNF (containing approximately 7 metic tons of Pu). The Department is considering alternative disposition options including repackaging these fuels for transfer to the geologic repository.

2. Unirradiated (and slightly irradiated) fuel (containing approximately 1 metric ton of Pu). The Department intends to develop a new disposition capability to deal with these materials previously intended for the Plutonium Immobilization Plant and that are unsuitable for the MOX fuel program. This will deal with these fuels as well as additional Pu (identified below).

3. Non-weapons-grade Pu (impure metal and oxide containing approximately 3 metric tons of Pu). These will be prepared for long-term storage in accordance with DOE-STD-3013 and will be dispositioned through an alternate disposition capability to be developed.

4. Weapons-grade Pu residues (containing approximately 4 metric tons of Pu). The Department intends to continue preparing these materials for disposition to the Waste Isolation Pilot Plant.

5. Mark-18A targets. The Department plans to transfer these to the Oak Ridge National Laboratory for special isotope recovery.

6. Uranium-233. These materials are at the Oak Ridge National Laboratory and are being evaluated for special isotope recovery.

7. Foreign and Domestic Research Reactor SNF. The Department may process some quantity of these fuels through H-Canyon to provide sufficient storage space for future receipts. Any HEU recovered will be added to the TVA program. Ultimately, the Department plans to develop a capability to dispose of these fuels directly to the geologic repository.

8. Idaho National Engineering and Environmental Laboratory HEU Oxides. These will be blended to low enriched uranium for the TVA program, with the majority being transferred directly to a commercial fuel processor, and a smaller quantity processed through H-Canyon and HB-Line for purification.

9. Los Alamos National Laboratory (LANL) Pu residues and scrap. These materials will continue to be processed at the LANL. Plutonium that is recovered will be packaged for safe long-term storage in accordance with DOE-STD-3013 and will be managed at the LANL until selection of an alternative storage plan or disposition path(s).