

**Statement of Charles E. Anderson**  
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**Before the Subcommittee on Strategic Forces**  
**Committee on Armed Services**  
**U.S. House of Representatives**  
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Good afternoon, Chairman Everett and Members of the Subcommittee. My name is Charlie Anderson and I am the Principal Deputy Assistant Secretary for Environmental Management, as well as the Chairman of the Department of Energy's (DOE's) Nuclear Materials Disposition and Consolidation Coordination Committee (NMDCCC). I am pleased to be here today to address the Department's plans for disposing of its special nuclear materials. I will also provide an update to you on the Department's efforts to consolidate its surplus weapons-usable plutonium since my April 5, 2006, hearing. I want to thank you and the Subcommittee for your interest in this complex challenge as it is vital to the security of our country. Just to place into perspective how complex this issue is, as NMDCCC Chair, I have initiated an evaluation of all the various types of nuclear material that the Department has in inventory – thousands of tons of nuclear material – over half a million separately inventoried items. Of primary interest are the hundreds of tons of special nuclear material (SNM), requiring the highest level security.

The Department currently has approximately 50 metric tons (MT) of surplus plutonium-239 (both weapons-grade and non-weapons-grade). Attached you will find an illustration showing the locations and unclassified quantities of the Department's surplus weapons-usable plutonium. As noted, these surplus plutonium materials are stored at multiple Department locations: the Savannah River Site (SRS), the Hanford Site, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and the Pantex Plant. The majority of this plutonium is in surplus pits while most of the remainder is in the form of plutonium metal and oxides (i.e., non-pit forms) currently stored or planned to be stored in 3013 containers. DOE-STD-3013 is the Department's standard for long-term storage of plutonium, and each 3013 container has a maximum capacity of 4.4 kilograms of plutonium. However, few containers have the maximum amount of plutonium. In addition to its plutonium, the Department has approximately 26 MT of surplus highly enriched uranium requiring a disposition path. The disposition strategy I will outline here today also addresses this material.

The Department is developing an integrated approach to address the disposition of surplus fissile nuclear materials, including the surplus weapons-usable plutonium that is not suitable for the Mixed-Oxide (MOX) Fuel Fabrication Facility, as well as material which would have been dispositioned through the previously cancelled Plutonium Immobilization Project. This disposition approach will enable the Department to proceed with a decision relative to consolidating surplus plutonium-239 at one location.

The Department is currently considering, subject to review under the National Environmental Policy Act (NEPA), the following three capabilities for the processing and disposition of surplus plutonium and highly enriched uranium at SRS:

- the construction and operation of the MOX Fuel Fabrication Facility planned to be constructed at the Savannah River Site, including the Pit Disassembly and Conversion Facility (PDCF) and the Waste Solidification Building (WSB) to convert at least 34 MT of weapons plutonium into MOX fuel to be burned in commercial nuclear power generating reactors;
- the continued operation of the existing H-Canyon and HB-Line facilities at Savannah River Site (SRS) to recover highly enriched uranium that would be down blended, and to process very impure plutonium which does not meet the specifications for commercial-grade MOX fuel; and,
- the construction and operation of a new vitrification capability is proposed to be located at the K-Reactor facility that will immobilize surplus weapons-grade plutonium which does not meet the specifications for commercial-grade MOX fuel.

Ambassador Linton Brooks has already discussed the status of constructing and operating the MOX Fuel Fabrication Facility, the Pit Disassembly Conversion Facility, and the Waste Solidification Building to dispose of 34 MT of surplus weapons plutonium and the Department is pursuing these facilities. I will now describe the other two capabilities the Department is considering for processing other surplus material and preparing it for ultimate disposition. These are:

1. Construct and operate a plutonium vitrification capability to dispose of up to 13 MT of “non-MOX-able” plutonium; and
2. Operate the H-Canyon/HB-Line to dissolve 26 MT of uranium and plutonium-bearing materials which does not meet the specifications for commercial-grade MOX fuel, as well as process some spent nuclear fuel (aluminum-clad) containing uranium.

1. Proposed Plutonium Vitrification Project: The Department, following an analysis of the potential disposition alternatives for non-MOXable plutonium currently located at SRS, is considering pursuit of vitrification as the preferred technology to immobilize this material. The plutonium vitrification capability is proposed to be located in the basement of the former K-Reactor facility at SRS. The facility would provide the capability to vitrify up to 13 MT of plutonium materials that are not suitable for fabrication into MOX fuel due to isotopic or other impurities. The impure plutonium would be melted with glass frit and poured into small cans. The cans of vitrified plutonium would then be placed inside larger high-level waste canisters and subsequently shipped to the Defense Waste Processing Facility at SRS where they would be filled with glass containing high-level waste. The filled canisters would be stored at SRS for an interim period of time while awaiting shipment to the geological repository for final disposal upon qualification for waste acceptance. Additional analyses under NEPA would be required before the Department could finalize a decision on the disposition strategy.

2. H-Canyon/HB-Line Facilities: H-Canyon/HB-Line are large heavily shielded aqueous chemical separation facilities at SRS. The facilities have been operating almost continuously since they were constructed in the early 1950s. The facilities dissolve spent nuclear fuel containing highly enriched uranium, other enriched uranium materials, and plutonium-bearing materials, and chemically separate their constituents. The planned strategy would be to continue activities already underway to recover highly enriched uranium from aluminum-clad spent nuclear fuel and to down blend it to low-enriched uranium. In addition, H-Canyon/HB-Line could be used to process approximately 2 MT of impure plutonium, which would then be vitrified in the Defense Waste Processing Facility for eventual disposal in the geological repository. The H-Canyon facilities are scheduled to complete their current processing missions in 2007.

The Department is currently analyzing the costs for this three-pronged approach and various other disposition alternatives.

This past April, I informed you about the progress the Department has made on consolidation of its nuclear materials. I also briefed you on the activities of the NMDCCC, including the development of a strategic plan and individual implementation plans. The Committee concluded that the top priority facing it was to identify a path forward for plutonium-239 at the Hanford Site. Since then, the Committee has been developing an implementation plan for consolidation of plutonium-239. This implementation plan includes an evaluation of three alternatives (i.e., continued storage at a current sites, consolidation and storage at an interim site, and consolidation and storage at the disposition site), and the advantages and disadvantages of storage at different sites. The Department is currently evaluating the implementation plan for Pu-239, to assure the necessary NEPA and legal requirements are satisfied before making a consolidation decision. The NMDCCC continues to act in support of the integrated disposition strategy, with future consolidations decisions being informed by the appropriate disposition strategy.

To date, complex wide, we have identified four regulatory and legal challenges that affect the movement of materials: the National Environmental Protection Act, Public Law 107-107, Public Law 107-314, and the Aiken County Lawsuit.

Section 3155 of the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107-107) currently prohibits the Department from shipping surplus weapons-usable plutonium to SRS until preparation and submittal to Congress of a plan that identifies a disposition path for all plutonium that would have been disposed of at the Plutonium Immobilization Plant that was cancelled in 2002. Additionally, Public Law 107-314, as amended, includes a MOX production objective of 1 MT of mixed-oxide fuel by the end of 2012. Lastly, there is a pending lawsuit brought by Aiken County, SC, alleging the Department has failed to comply with reporting and other requirements of section 3182 of the National Defense Authorization Action for Fiscal Year 2003 (Public Law 107-314, as amended) for the MOX facility.

The next steps for the Department are to proceed with the MOX facility, and complete cost analyses and finalize the integrated disposition strategy for the materials aforementioned. For the remaining materials not included in the proposed strategy that I have just outlined, I have requested that each site office provide a listing of all materials and their anticipated disposition pathways. The NMDCCC will be validating these results by the end of FY 2007.

Mr. Chairman and Members of the Subcommittee, thank you for allowing me the opportunity to testify. This concludes my formal statement for the record.