Availability as amended remains unchanged.

ADDRESSES: Written comments on the draft PEIS should be mailed to the following address:

U.S. Department of Energy, Waste Management PEIS Comments, P.O. Box 3790, Gaithersburg, MD 20885–3790.

Requests for information about and copies of the draft PEIS should be directed to:

Center for Environmental Management Information, P.O. Box 23769,Washington, DC 20026–3769, 1–800–736–3282 or in Washington, D.C.: 202–863–5084.

For information on the DOE National Environmental Policy Act process, contact:

Carol M. Borgstrom, Director, Office of NEPA Policy and Assistance (EH–42),U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–4600 or leave message at 1–800–472–2756.

DATES: The comment period on the draft PEIS will continue through February 19, 1996. Comments postmarked after that date will be considered to the extent practicable.

SUPPLEMENTARY INFORMATION:

Background

On September 22, 1995, the Department issued a Notice of Availability (60 FR 49264) on the draft PEIS that included: a brief description of the contents of the document and alternatives analyzed; a list of reading rooms where the full document is available to the public; information on how to obtain additional copies of the document and submit public comments; and a schedule of public hearings. This Notice also announced a ninety-day public comment period extending from September 22, 1995 to December 21, 1995.

On October 25, 1995, the Department issued an amendment (60 FR 54670) to the Notice of Availability. This amendment revised the schedule of public hearings in order to increase accessibility to the hearings. The amendment listed new hearing times and locations in the states of Illinois, New Mexico, New York, Oregon and Washington.

The public comment period is being extended to February 19, 1996, in response to public requests for additional time to review the document and prepare comments. Except as otherwise specified above, all information contained in the September 22, 1995 Notice of Availability as amended remains unchanged.

Issued in Washington, DC, December 13, 1995.

David F. Hoel,

PEIS Document Manager, Office of Waste Management, Environmental Management.

[FR Doc. 95–30751 Filed 12–18–95; 8:45 am]

BILLING CODE 6450–01–P

Oak Ridge Operations Office; Determination of Noncompetitive Financial Assistance

AGENCY: Department of Energy.

ACTION: Notice.

SUMMARY: The U.S. Department of Energy (DOE). Oak Ridge Operations Office, pursuant to 10 CFR 600.7(b)(2), announces its intent to issue on a noncompetitive basis a renewal award to the United States Automotive Materials Partnership (USAMP) for a project entitled, ''Automotive Lightweight Materials Program''. USAMP is a consortium of Chrysler Corporation, Ford Motor Company, and General Motors Corporation. The period of performance for this project is four years with operating funds in the amount of $15,000,000 being allocated for this effort. These funds will be matched equally by USAMP under this cooperative agreement.

PROCUREMENT REQUEST NO.: 05–96OR22363.001.

PROJECT SCOPE: The USAMP mission is to continue to define and conduct pre-competitive, vehicle-related research and development (R&D) in materials and materials processing which will improve the competitiveness of the U.S. automotive industry. USAMP goals are to develop several families of automotive materials that will impact strategic needs of the industry. These needs include improved fuel economy through vehicle weight reduction, improved reliability and durability, reduced friction, noise and vibration, lower cost materials and manufacturing processes, flexibility of design and styling, and reduced emissions. The project participants, including Chrysler, Ford, General Motors, and their suppliers, are making available for this effort their internal automotive R&D facilities, as well as demonstration facilities in manufacturing operations and at suppliers. These capabilities are world class and cannot be matched and/or duplicated except at other automotive manufacturer R&D sites. The recipient's resources, capabilities, facilities, and situation in the private sector are unsurpassed. There exists no other similar company or consortium with the capabilities and supplier base with which to competitively bid this work. Therefore, in accordance with 10 CFR 600.7(b)(2)(i), it has been determined that the activity to be funded is necessary for the satisfactory completion of an activity that will enhance the public benefit derived and for which competition would have a significant adverse effect on completion of the activity. In addition, based upon the consortium partner's and their supplier's unique facilities, equipment, proprietary data, and technical expertise, the recipient has exclusive domestic capability to perform the activities successfully. Eligibility for renewal of this award is, therefore, restricted to USAMP.

FOR FURTHER INFORMATION CONTACT: Mark A. Million, Contract Specialist, U.S. Department of Energy, Oak Ridge Operations Office, Procurement and Contracts Division, AD–423, Oak Ridge, TN 37831–8758, (423) 576–7814.

Issued in Oak Ridge, Tennessee, on December 6, 1995.

Peter D. Dayton,

Director, Procurement and Contracts Division, Oak Ridge Operations Office.

[FR Doc. 95–30753 Filed 12–18–95; 8:45 am]

BILLING CODE 6450–01–M

Savannah River Operations Office; Interim Management of Nuclear Materials at Savannah River Site

AGENCY: Department of Energy.

ACTION: Record of decision and notice of preferred alternatives.

SUMMARY: The U.S. Department of Energy (DOE) prepared a final environmental impact statement (EIS), ''Interim Management of Nuclear Materials'', (DOE/EIS–0220, October 20, 1995) to assess the potential environmental impacts of actions necessary to manage nuclear materials at the Savannah River Site (SRS), Aiken, South Carolina, until decisions on their ultimate disposition are made and implemented. The actions evaluated in the EIS would stabilize SRS materials that represent environment, safety and health vulnerabilities in their current storage condition or which may represent a vulnerability within the next 10 years. These vulnerabilities are the result of the suspension of nuclear materials production and processing operations which accompanied the end of the Cold War. Although DOE has initiated programmatic and project specific environmental evaluations on the ultimate disposition of the nuclear materials in the DOE complex which are

now surplus to national defense requirements, the implementation of decisions regarding ultimate disposition will take several years. In the interim, DOE wants to eliminate vulnerabilities associated with certain current nuclear material storage configurations in order to protect the environment and the health and safety of workers and the public.

Several reviews conducted by DOE and the Defense Nuclear Facilities Safety Board (DNFSB) have identified environment, safety and health vulnerabilities associated with the continued storage of certain nuclear materials at the SRS in their current location and physical condition. The Final EIS evaluates alternatives for managing these materials. In making the decisions announced in this Record of Decision, DOE considered environmental and other factors, such as costs, security and nuclear nonproliferation, facility usage, technology availability, required new facilities, skilled labor availability, minimization of continuing custodial care for the materials, the need for maintenance or modifications to aging SRS facilities, and, to the greatest possible extent, stakeholder concerns and preferences.

DOE organized the nuclear materials at the SRS into one of three categories: stable, programmatic, and candidates for stabilization. The nuclear materials, the alternatives, and the potential environmental impacts of implementing the alternatives are all described in detail in the Final EIS. DOE is announcing its decisions with respect to most of these nuclear materials today. With respect to the neptunium-237 solutions and targets and the plutonium-239 solutions, DOE has determined that stabilization is necessary and has narrowed the alternatives under consideration regarding how to stabilize these materials. Upon completion of further analysis, DOE will issue a subsequent Record of Decision to further specify the final stabilization strategy for these materials. With respect to the Mark-16 and Mark-22 fuels, and other aluminum-clad targets, DOE has designated new preferred alternatives and will announce its decision on the management of these materials in an amended Record of Decision no sooner than 30 days from the availability of this notice.

RECORD OF DECISION: DOE has decided to initiate actions which will stabilize certain of the SRS materials that represent environment, safety and health vulnerabilities in their current storage condition or which may represent a vulnerability within the next 10 years. Based on the analysis in the Final EIS, and the other factors identified above, DOE has made the following decisions:

Stable Materials

DOE has decided that stable materials can be safely managed in their existing physical and chemical forms over the next several years. Programs and projects to consolidate storage of stable materials in order to reduce surveillance and maintenance costs will continue. These materials will remain stored at SRS until DOE makes decisions relative to their future use or disposition.

Programmatic Materials

DOE identified nuclear materials at SRS which may be required to support ongoing or planned programs after consultation with national laboratories and other appropriate federal agencies, such as the National Aeronautics and Space Administration (NASA). The bulk of the following programmatic nuclear materials at the SRS are contained in acidic solutions stored in tanks in the canyon facilities and would otherwise be considered Candidates for Stabilization.

Plutonium-242

DOE has decided to process plutonium-242 solutions stored in the H-Canyon facility to an oxide using the HB-Line facility. The plutonium-242 oxide will be packaged into containers and stored at the SRS until DOE makes programmatic decisions on its use or disposition.

Americium and Curium

DOE has decided to process solutions of americium and curium isotopes stored in the F-Canyon facility into a glass matrix within small stainless steel canisters, and to store the resulting canisters at the SRS until programmatic decisions on use or disposition are made by DOE. Vitrification equipment will be installed in an existing portion of the F-Canyon facility (previously called the Multi-Purpose Processing Facility). DOE has decided to continue the storage of metal reactor targets and slugs containing americium and curium isotopes in existing SRS basin facilities until DOE makes programmatic decisions on their use or disposition.

Neptunium-237

DOE will dissolve, chemically separate and process neptunium contained in the nine (9) obsolete reactor targets and will process existing solutions in the H-Canyon to either a glass matrix using the same vitrification equipment installed in F-Canyon or to an oxide using the HB-Line facility. The final form of the neptunium-237 depends on actions taken, if any, to consolidate certain activities in the F-Canyon as outlined in a recently issued DOE staff report entitled Facility Utilization Strategy for the Savannah River Site Chemical Separation Facilities (December 1995) . The study principally considers what effect the consolidation of two primary processing areas to one would have on the ability to stabilize nuclear materials at the SRS. Budgetary pressures and safety requirements as well as preserving capability for future missions necessitates a thorough examination of the options for these facilities. The report is available to the public (see below). At this time, DOE is narrowing the potential stabilization alternatives for the neptunium-237 from the four considered in the EIS to either the oxide or vitrified (F-Canyon) form. As noted above, DOE will issue a subsequent Record of Decision to specify which of these two alternatives will be used to stabilize these materials.

To vitrify the neptunium solutions in F-Canyon, DOE would develop or procure a container suitable for transporting the solutions from H-Canyon to F-Canyon and make minor modifications to each facility to support loading and unloading operations. DOE is currently evaluating the feasibility of using a container designed for transport of radioactive solutions which is licensed by the International Atomic Energy Agency (IAEA). In order to process the solutions to an oxide, DOE would start up a new portion of the HB-Line facility (Phase II) which has never been operated. Neptunium recovered from the targets will be processed along with the existing neptunium solutions into either a glass or an oxide. The glass canisters or containers of oxide would be stored inside the shielded canyon facilities or in a new Actinide Packaging and Storage Facility until DOE makes programmatic decisions on their future use or disposition.

Candidates for Stabilization

Materials that are candidates for stabilization are in forms (e.g., liquid) that present inherent management risks, are stored in facilities that were not designed for long-term storage, or both. Generally, these materials currently present, or can be expected to present over the interim period (approximately 10 years), environmental, worker or public safety and health concerns or vulnerabilities.

Highly Enriched Uranium (HEU) Solutions

DOE has decided to stabilize highly enriched uranium solutions stored in H-Area by blending them with depleted uranium at the SRS to produce solutions containing low enriched uranium (LEU). DOE will make minor modifications to the F-Canyon and H-Canyon facilities to enable loading and unloading of the uranium solutions into containers for transport between the facilities and install a spare dissolver in FA-Line. The LEU solutions will either be stored in existing tanks at SRS or converted to a low enriched uranium oxide using the FA-Line facility. The final form of the HEU solutions after they are blended down will be dependent upon the timing of DOE decisions related to the disposition of surplus HEU and upon facility utilization considerations related to cost and schedule.

Plutonium and Uranium Stored in Vaults

DOE has decided to stabilize plutonium and uranium materials stored in vaults by (1) heating or repackaging the material into better containers, and (2) dissolving some materials to chemically remove impurities or radioactive decay products, converting the resulting purified solutions to a metal, an oxide or a glass. DOE will determine the appropriate method to use upon inspection and analysis of the material in each package. DOE will use the H-Canyon, HB-Line, F-Canyon and FB-Line facilities to process the materials and remove impurities that contribute to the stability concerns. DOE will use the FB-Line facility to convert resulting plutonium-239 solutions to a metal, HB-Line to convert resulting plutonium-238 and plutonium-239 solutions to an oxide, and a modified portion of F-Canyon to convert plutonium-239 solutions to a glass matrix. The use of the modified portion of the F-Canyon will be subject to the successful vitrification of the solutions containing americium and curium isotopes (see above) and additional analytical laboratory work. DOE will use a glove box being installed in FB-Line to package the plutonium metal. DOE has decided to construct a new Actinide Packaging and Storage Facility in F-Area to enable heating and repackaging of plutonium metals and oxides to meet new storage criteria (DOE Criteria for Safe Storage of Plutonium Metals and Oxides (DOE-STD–3013–94)) and to provide space for consolidated storage of plutonium and special actinide materials at SRS. The storage standard imposes stringent requirements regarding the chemical stability of plutonium metals and oxides along with requirements for design and construction of packages used for storage of the material. The standard identifies such measures as residual moisture content allowed in the plutonium metal or oxide, materials to be avoided in contact with the plutonium or used in the packaging configuration, thermal loading limitations, and packaging seals, closures and containment features. DOE will incorporate requirements of the IAEA into the design and construction of the new Actinide Packaging and Storage Facility to provide the latitude for placing the nuclear materials under international safeguards in the future. DOE is also pursuing declassification of information related to the amount of plutonium that would be stored in the new facility.

Mark-31 Targets

DOE has decided to stabilize Mark-31 targets (short cylindrical metal slugs fabricated with depleted uranium and, if irradiated, containing plutonium) by dissolving them in the F-Canyon facility and chemically separating the plutonium and depleted uranium from fission products and other constituents. The resulting plutonium solutions will be converted to a metal using the FB-Line facility. Upon installation of a new glove box in FB-Line, the metal will be packaged in accordance with DOE's storage standard. DOE will use the depleted uranium recovered from the Mark-31 targets for blending with highly enriched uranium solutions in H-Area (see above).

Aluminum-clad Taiwan Research Reactor (TRR) Fuel and Experimental Breeder Reactor (EBR)-II Slugs

DOE has decided to stabilize 81 canisters of failed fuel from the Taiwan Research Reactor and one failed canister of de-clad metal slugs from the Experimental Breeder Reactor-II by dissolving the materials in F-Canyon and processing them in conjunction with the Mark-31 targets. The failed fuel and de-clad metal slugs contain natural or depleted uranium and plutonium, similar to the Mark-31 targets. The resulting solutions containing plutonium recovered from the fuel and slugs will be converted to a metal using the FB-Line facility. The plutonium metal will be packaged in accordance with DOE's storage standard. The depleted and natural uranium recovered from the fuel and slugs will be used for blending with the highly enriched uranium solutions stored in H-Area.

Plutonium-239 Solutions

DOE has decided to stabilize plutonium-239 solutions stored in the H-Canyon facility to either a glass using the vitrification equipment installed in a modified F-Canyon, an oxide using the HB-Line facility, or a metal using the FB-Line facility. At this time, DOE is narrowing the potential stabilization alternatives from the five considered in the EIS to either the vitrified (F-Canyon), metal, or oxide form. The final stabilization strategy would depend in part on actions taken, if any, to consolidate certain activities in the F-Canyon as described above for the neptunium-237 stabilization activities. As with the neptunium-237 materials, a subsequent Record of Decision will be issued to specify the final strategy for stabilizing the plutonium-239 solutions.

To vitrify the solutions in F-Canyon, DOE would move the solutions from H-Canyon to F-Canyon using the same container as described above for the transport of the neptunium solutions and also use the same facility modifications for loading and unloading the container. The use of the modified portion (the vitrification equipment) of the F-Canyon would be subject to the successful vitrification of the solutions containing americium and curium isotopes (see above) and additional analytical laboratory work. In order to process the existing solutions to an oxide in HB-Line, DOE would have to start up a new portion of the facility which has never been operated. To process the solutions to metal, DOE would move the solutions from H-Canyon to F-Canyon as described for the vitrification alternative and would use FB-Line to convert the solutions to metal.

Notice: Announcement of Preferred Stabilization Alternatives. DOE also is announcing today new preferred alternatives for managing the Mark-16 and Mark-22 fuels, and the ''other aluminum-clad targets.'' In the Final EIS, DOE identified continued storage (i.e., No Action) as the preferred alternative for managing the Mark-16 and Mark-22 fuels (aluminum-clad, highly enriched uranium fuel from SRS reactors) and the other aluminum-clad targets (irradiated in SRS reactors) pending further review of cost, schedules, and technical uncertainties associated with dry storage techniques for failed fuel. DOE has since completed its review of these issues and is now announcing the designation of processing and blending down to low enriched uranium as the preferred alternative for stabilizing the Mark-16 and Mark-22 fuels. DOE is also

announcing the designation of Processing and Storage for Vitrification in the Defense Waste Processing Facility as the preferred alternative for stabilizing the other aluminum-clad targets. DOE will issue a subsequent Record of Decision on the Mark-16 and Mark-22 fuels and the other aluminum-clad targets no sooner than thirty (30) days from the availability of this notice.

FOR FURTHER INFORMATION CONTACT: For further information on the interim management of nuclear materials at the SRS or to receive a copy of the Final EIS, the Facility Utilization Strategy Study, or this Record of Decision contact: Andrew R. Grainger, NEPA Compliance Officer, U.S. Department of Energy, Savannah River Operations Office, P.O. Box 5031, Aiken, South Carolina 29804–5031, (800) 242–8259, Internet: andrew.grainger@srs.gov.

For further information on the DOE National Environmental Policy Act (NEPA) process, contact: Carol M. Borgstrom, Director, Office of NEPA Policy and Assistance, EH–42, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–4600, or leave a message at (800) 472–2756.

SUPPLEMENTARY INFORMATION:

I. Background

The U.S. Atomic Energy Commission, a predecessor agency of the Department of Energy (DOE), established the Savannah River Site in the early 1950's. The SRS occupies approximately 800 square kilometers (300 square miles) adjacent to the Savannah River, mostly in Aiken and Barnwell Counties of South Carolina, about 40 kilometers (25 miles) southeast of Augusta, Georgia, and about 32 kilometers (20 miles) south of Aiken, South Carolina. The SRS mission for the past 40 years has been the production of special radioactive isotopes to support national programs. The primary mission was the production of strategic isotopes (plutonium-239 and tritium) used in the development and production of nuclear weapons for national defense. The Site produced other special isotopes (e.g., californium-252, plutonium-238, americium-241) to support research in nuclear medicine, space exploration, and commercial applications. To produce the isotopes, DOE fabricated selected materials into metal targets and irradiated them in the SRS nuclear reactors. After irradiation and cooling, the targets and reactor fuel were dissolved in acid and the special isotopes were chemically separated and converted to a solid form, either an oxide powder or a metal. The oxide or metal was fabricated into a usable form at the SRS or at other DOE sites. The final form of the material depended on the application (nuclear weapon component, encapsulated medical source, power source, etc.).

Due to the large scale chemical separation capabilities at the SRS, materials containing significant quantities of plutonium-239, uranium-235, and other special isotopes were shipped to the Site for processing and recovery. The materials were in a wide variety of physical shapes and forms, including (1) small encapsulated plutonium sources returned after use by national laboratories and domestic universities; (2) cans or drums of scrap metals and oxides from weapons manufacturing operations at other DOE sites; (3) irradiated metal fuel rods, tubes, plates, or assemblies from experimental DOE reactors, university research reactors, and foreign research reactors; and (4) cans, bottles, or drums containing residues or samples used in laboratory experiments at other DOE sites. All the materials were stored until they could be dissolved and processed in the chemical separations facilities (F-Canyon or H-Canyon). The small sources, scrap metals, oxides, residues, and samples were typically stored in cans, bottles, or drums in safeguarded concrete vaults. The irradiated fuel and targets were stored under water in metal racks or buckets. The offsite materials were typically processed in conjunction with the materials produced at the SRS.

In March 1992, DOE suspended chemical processing operations in the F- and H-Canyon facilities to address a safety concern regarding the capacity of the F- and H-Canyon ventilation systems to withstand an earthquake. That concern, involving the potential failure of the canyon exhaust stack liner in the event of a severe earthquake, was addressed through the preparation of appropriate response procedures, training, and response drills. However, in April 1992, before operation of the F- and H-Canyons could resume, the Secretary of Energy directed that the SRS phase out defense-related chemical separations activities in these facilities. World events in the late 1980's and early 1990's resulted in the end of the Cold War and a reduction in the demand for new material for nuclear weapons. As a result, DOE stopped operating the SRS reactors to produce strategic isotopes. After the Secretarial decision in April 1992, DOE did not process nuclear materials at the SRS chemical separations facilities to recover special isotopes, with the exception of scrap materials containing plutonium-238. DOE continued the processing of plutonium-238 for use as a thermal power source by the National Aeronautics and Space Administration (NASA) in exploratory space missions.

By September 1992, SRS had developed plans to phase out chemical reprocessing. The plans included actions for removing the material that remained in the canyons, spent fuel basins, and storage vaults as a result of the suspension of chemical separation activities in March 1992. In February 1993 the Site requested approval from DOE to restart F-Canyon after the completion of operational readiness reviews conducted as part of the response to the March 1992 safety concern. The SRS made this startup request in light of the Secretary's direction to accelerate the transition of F-Area reprocessing facilities to a standby condition and because all contemplated actions were typical of ongoing or previous facility operations.

During this same time period, DOE was developing new requirements for the performance of operational readiness reviews prior to the startup (or restart) of nuclear facilities. Under these requirements, facilities had to be able to demonstrate the capability to perform satisfactorily in relation to a broad range of topics associated with the safe operation of a nuclear facility. DOE promulgated these requirements in DOE Order 5480.31, ''Startup and Restart of Nuclear Facilities'', which it issued in September 1993. DOE decided that the SRS should apply these requirements to the F and H-Canyons and, in November 1993, determined that the Site should hold the proposed F-Canyon (and FB-Line) restart in abeyance until it had completed a restart review in accordance with the new Order. In part due to stakeholder concerns, DOE decided in January 1994 that absent an emergency condition, there should be no further material processed in the canyons (beyond processing of plutonium-238 for NASA) before completion of an environmental impact statement.

On March 17, 1994, DOE published a Notice of Intent (NOI) (59 FR 12588) to prepare an environmental impact statement on the interim management of nuclear materials at the SRS. The proposed DOE interim management actions are to stabilize those nuclear materials at the SRS that represent a health or safety concern for the public, workers, and the environment and to convert certain materials to a usable form to support DOE program needs. These interim actions are necessary while DOE makes and implements long-term decisions on the disposition of nuclear materials. DOE is addressing

long-term decisions in the Programmatic Environmental Impact Statement for Storage and Disposition of Weapons-Usable Fissile Materials, for which it issued an NOI on June 21, 1994 (59 FR 31985), and in the Disposition of Surplus Highly Enriched Uranium EIS (60 FR 17344, April 5, 1995) (for which the draft EIS was issued in October 1995 (60 FR 55021, October 27, 1995)).

The NOI for the Interim Management of Nuclear Materials EIS requested public comments and suggestions for DOE to consider in its determination of the scope of that EIS, and announced a public scoping period that ended on May 31, 1994. DOE held scoping meetings in Savannah, Georgia, North Augusta and Columbia, South Carolina, on May 12, 17, and 19, 1994, respectively.

In May 1994, the Manager of the Savannah River Operations Office recommended that the DOE Assistant Secretary for Defense Programs seek alternative methods pursuant to the emergency provisions of 10 CFR 1506.11 to comply with the National Environmental Policy Act (NEPA) to allow stabilization of plutonium solutions stored in F-Canyon and Mark-31 targets stored in the L-Reactor Disassembly Basin.

In June 1994, the DOE Office of Environment, Safety and Health performed an independent evaluation of the SRS request for alternative arrangements for compliance with NEPA. DOE evaluated the SRS request in light of the Office of Environment, Safety and Health's report and determined that the appropriate action would be to accelerate the evaluation of stabilization alternatives for the F-Canyon plutonium solutions by preparing a separate expedited environmental impact statement on this subject. In February 1995, following completion of the F-Canyon Plutonium Solutions EIS and issuance of that Record of Decision, DOE resumed F-Canyon operations to eliminate the risks involved in storing plutonium in solution form.

DOE issued a Draft EIS on the Interim Management of Nuclear Materials for public review and comment on March 17, 1995 (60 FR 14432). DOE has revised the Draft EIS in response to the comments received in letters and electronic messages from individuals, organizations, Federal and state agencies and comments received during public hearings held in Savannah, Georgia (April 11, 1995) and North Augusta, South Carolina (April 13, 1995). On October 20, 1995, EPA published a Notice of Availability of the Final EIS on the Interim Management of Nuclear Materials in the Federal Register (60 FR 54226), following distribution of approximately 400 copies to government officials and interested groups and individuals.

DOE prepared this Record of Decision in accordance with the regulations of the Council on Environmental Quality for implementing NEPA (40 CFR 1500–1508) and DOE's NEPA Implementing Procedures (10 CFR 1021). This Record of Decision is based on DOE's Final Environmental Impact Statement on the Interim Management of Nuclear Materials, Savannah River Site, Aiken, South Carolina (DOE/EIS–0220).

II. Studies of Vulnerabilities of Storage of Nuclear Materials at SRS

The cessation of processing activities resulted in a large inventory of nuclear materials being caught in various stages of the production cycle (fabrication, irradiation, reprocessing, and isotope recovery). These materials include irradiated and unirradiated reactor fuel, targets, and components; solutions containing dissolved nuclear materials and recovered isotopes in stainless-steel tanks; and product and scrap forms of metals or oxides in containers (cans, drums, etc.) typically used for temporary storage or shipment off the Site.

Between November 1993 and November 1994, DOE completed two nationwide reviews of how nuclear materials are stored at the SRS and other sites: Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environment, Safety and Health Vulnerabilities, and Plutonium Working Group Report on Environment, Safety and Health Vulnerabilities Associated with the Department's Plutonium Storage. The reviews identified vulnerabilities with the continued storage of several nuclear materials at SRS: corroded spent fuel and targets stored in water-filled basins; tanks with thousands of gallons of acidic solutions containing plutonium, neptunium, americium and curium isotopes stored in the canyon facilities; and packages containing plutonium-bearing materials stored in vaults. The reviews defined vulnerabilities as conditions or weaknesses that might lead to radiation exposure to the public, unnecessary or increased exposure to workers, or release of radioactive materials to the environment.

The Defense Nuclear Facilities Safety Board (DNFSB) is an independent organization established by Congress to provide oversight of DOE. In May 1994, the DNFSB transmitted Recommendation 94–1 to the Secretary of Energy. In its recommendation, the Board observed that the halt in production of nuclear weapons had frozen the manufacturing pipeline in a state, that for safety reasons, should not be allowed to persist unremediated. The Board concluded from observations and discussions with others that imminent hazards could arise within two to three years unless certain problems are corrected. The Board expressed special concern about specific liquids and solids containing fissile materials and other radioactive substances in spent fuel storage pools, reactor basins, reprocessing canyons, processing lines, and various buildings once used for processing and weapons manufacture. On August 3, 1995, the Chairman of the DNFSB transmitted a staff report to the Assistant Secretary for Environmental Management identifying concerns with leaking containers of corroded spent fuel stored in the Receiving Basin for Offsite Fuel at SRS. The staff report from the Board expressed concerns with DOE having previously identified all of the nuclear materials in the basin as ''stable'' in the Draft EIS issued for public comment.

III. Categories of Nuclear Materials at the Savannah River Site

DOE used information from the two nationwide reviews on spent fuel and plutonium storage, an SRS site-wide review, and input from the DNFSB to categorize the nuclear materials at SRS as either Stable or Candidates for Stabilization. Stable materials have physical and chemical forms that, combined with their storage configurations, do not currently pose environmental, safety, or health concerns and are not likely to pose a concern over the next 10 years. Candidates for Stabilization are materials that exhibit or could be expected to exhibit over the next 10 years, health, safety or environmental vulnerabilities because of their physical condition, chemical composition, or the manner in which they are stored.

DOE categorized materials containing plutonium-242, neptunium-237 and various isotopes of americium and curium as Programmatic after consultation with national laboratories and other appropriate federal agencies, such as NASA. The bulk of these Programmatic nuclear materials are contained in acidic solutions stored in tanks in the canyon facilities and would otherwise be considered Candidates for Stabilization. Programmatic materials contain special isotopes that could be needed to support DOE programs. In their current forms these materials are

not usable and may not be suitable for continued safe storage. DOE may use plutonium-242 in the nuclear weapons stockpile stewardship program. Americium-243 and curium-244 are considered national assets for potential support of research in nuclear medicine, nuclear chemistry, solid-state chemistry, and nuclear physics. The higher isotopes of curium (curium-244 through -248) are irreplaceable feedstocks for the production of californium-252, which is used as a neutron source for both military and industrial applications. DOE may use neptunium-237 in the future production of plutonium-238 to provide a power source for remote terrestrial and space applications. Future DOE decisions will determine if these Programmatic materials will actually be used. Table 1 lists the nuclear materials at SRS in each category.

IV. Alternatives Evaluated in the Final EIS

DOE evaluated the following alternatives for managing the nuclear materials: (a) Continued Storage (i.e., ''No Action'' within the context of NEPA), (b) Processing to Metal, (c) Processing to Oxide, (d) Blending Down to Low Enriched Uranium, (e) Processing and Storage for Vitrification, (f) Vitrification, and (g) Improving Storage. As shown in Table 2, DOE has evaluated the environmental impacts of managing the nuclear materials using one or more of these alternatives. The following is a brief description of each alternative.

A. Continuing Storage (No Action)

Under this alternative, DOE would continue to store materials in their current physical form. DOE would relocate, repackage, or re-can nuclear materials stored in vaults, tanks or basins to consolidate the material or to respond to an immediate safety problem. Periodic sampling, destructive and non-destructive examination, weighing, visual inspection and similar activities would continue in order to monitor the physical and chemical condition of the nuclear material. Chemicals would be added to existing solutions in order to maintain concentration and chemistry within established parameters. Repackaging would include removing materials from a damaged storage container and placing them in a new container or placing the damaged container in a larger container. Re-canning would primarily entail placing damaged or degraded fuel or targets in metal containers, sealing the containers, and keeping them in wet storage.

Many activities would be required by DOE irrespective of the management alternative used. For example, DOE would maintain facilities in good working condition and would continue to provide utilities (water, electricity, steam, compressed gas, etc.) and services (security, maintenance, fire protection, etc.) for each facility. Training activities would ensure that personnel maintain the skills necessary to operate the facilities and equipment. DOE would continue with ongoing projects to alleviate facility-related vulnerabilities associated with storage of the nuclear materials and projects to upgrade or replace aging equipment (ventilation fans, etc.).

As shown in Table 2, DOE designated Continuing Storage as the preferred alternative for managing all stable nuclear materials and metal targets containing isotopes of americium and curium. DOE also designated Continuing Storage as the preferred alternative for managing Mark-16 and Mark-22 fuels and other aluminum-clad targets until additional reviews on dry storage technologies, costs and schedules versus chemical processing techniques could be completed.

B. Processing to Metal

Under this alternative, DOE would convert plutonium nitrate solutions to plutonium metal using the FB-Line facility. After conversion, the metal would be packaged and stored in accordance with DOE's storage standard. A new glove box is being installed in FB-Line to provide the equipment necessary to meet the storage standard criteria for packaging of plutonium metal. The plutonium metal would be stored at SRS until programmatic decisions are made by DOE on long-term storage or disposition.

The plutonium would come from existing nitrate solutions in H-Canyon or would be generated as a result of dissolving and chemically processing plutonium-bearing material in the F-Canyon. Existing nitrate solutions in H-Canyon contain plutonium-239 and plutonium-242. Additional plutonium-239 solutions would be generated by dissolving and processing plutonium-bearing metals and oxides stored in SRS vaults, Mark-31 targets, canisters of failed Taiwan Research Reactor fuel, and a failed canister of de-clad Experimental Breeder Reactor-II metal slugs.

DOE would design or procure a container to transport the existing plutonium-239 and plutonium-242 solutions from H-Canyon to F-Canyon. Some degree of uncertainty exists on the ability to transfer these solutions from one canyon to the other. Minor modifications would be made to the canyon facilities to support loading and unloading of the solutions into the transport container.

As shown in Table 2, DOE designated Processing to Metal as the preferred alternative for stabilizing some of the plutonium and uranium vault materials, the Mark-31 targets, failed Taiwan Research Reactor fuel, and the failed canister of Experimental Breeder Reactor-II slugs.

C. Processing to Oxide

Under this alternative, DOE would convert plutonium to an oxide in HB-Line or FB-Line. The plutonium would come from existing nitrate solutions in H-Canyon or would be generated as a result of dissolving and chemically processing material in H-Canyon or F-Canyon. Existing nitrate solutions in H-Canyon contain plutonium-239 and plutonium-242 and would be converted to an oxide in HB-Line. Additional plutonium-239 nitrate solutions would be generated by dissolving and processing Mark-31 targets, canisters of failed Taiwan Research Reactor fuel, and a failed canister of de-clad slugs from the Experimental Breeder Reactor-II. FB-Line would require modification to convert the resulting plutonium-239 solutions to an oxide. Plutonium-239 solutions and a small quantity of plutonium-238 solution could also be generated by dissolving plutonium-bearing metals and oxides currently stored in SRS vaults. This material would be dissolved and processed in H-Canyon/HB-Line and converted to an oxide in HB-Line. After conversion, the plutonium oxide would be packaged and stored in accordance with the DOE Criteria for Safe Storage of Plutonium Metals and Oxides (DOE–STD–3013–94). Modifications would be made to the FB-Line facility to provide the equipment necessary to heat and package the oxide in accordance with the DOE storage standard or a new Actinide Packaging and Storage Facility would be constructed.

DOE would convert neptunium-237 solutions to an oxide in HB-Line. The neptunium would come from existing solutions in H-Canyon and from dissolving and processing the obsolete reactor targets containing neptunium in H-Canyon. Additionally, if one of the alternatives involving dissolution and chemical separation (Processing to Oxide or Blending Down to Low Enriched Uranium) were implemented for stabilization of irradiated SRS reactor fuels (Mark-16 and Mark-22), neptunium would be recovered. After

conversion of the neptunium solutions to an oxide, the oxide would be packaged and stored in the Actinide Packaging and Storage Facility.

DOE would convert the americium and curium solutions in F-Canyon to an oxide. DOE would modify an existing portion of F-Canyon to provide the necessary equipment. After conversion, the americium and curium oxide would be packaged and stored in an existing vault or the new Actinide Packaging and Storage Facility. DOE could also transport the obsolete targets and slugs containing americium and curium isotopes to F-Canyon, dissolve them and convert the resulting solutions in a similar manner.

DOE would convert highly enriched uranium solutions to highly enriched uranium oxide. To provide conversion capability, DOE would complete the partially constructed Uranium Solidification Facility (USF) in H-Canyon. DOE would also dissolve Mark-16 and Mark-22 fuels containing highly enriched uranium in H-Canyon and convert the resulting solutions to an oxide in the same manner. The highly enriched uranium oxide would be packaged and stored in a vault in USF until DOE makes long-term management and disposition decisions.

As shown in Table 2, DOE designated Processing to Oxide as the preferred alternative in the Final EIS for stabilizing plutonium-242 solutions, neptunium-237 solutions and targets, plutonium-239 solutions, and some of the plutonium and uranium vault materials.

D. Blending Down to Low Enriched Uranium

This alternative is only relevant to materials containing highly enriched uranium. Existing solutions of highly enriched uranium stored in H-Area would be blended with existing depleted uranium at SRS. DOE would modify the canyon facilities to support loading and unloading of tanks used for transport and install a spare oxide dissolver in FA-Line. The highly enriched and depleted uranium would be blended to produce a low enriched uranium solution.

Mark-16 and Mark-22 fuels containing highly enriched uranium would be transported to either H-Canyon or F-Canyon by rail casks, dissolved in nitric acid, and the highly enriched uranium separated from fission products and other materials. The highly enriched uranium solutions would be blended with natural or depleted uranium to produce low enriched uranium solutions. The low enriched uranium solutions would be converted to an oxide using FA-Line. The oxide would be stored in drums in existing facilities or in a new warehouse constructed at SRS.

Dependent upon the timing of future DOE decisions, the highly enriched uranium solutions and the uranium recovered from the dissolution of Mark-16 and Mark-22 fuels could also be dispositioned in conjunction with other highly enriched uranium (by commercial sale, etc.).

As shown in Table-2, DOE designated Blending Down to Low Enriched Uranium as the preferred alternative for stabilizing highly enriched uranium solutions.

E. Processing and Storage for Vitrification in the Defense Waste Processing Facility (DWPF)

DOE would perform research and development work to develop a method for chemically adjusting existing solutions in the canyons in order to transfer them to the high level waste tanks in F- or H-Area. The research and development work would be to ensure nuclear criticality safety due to the large amounts of plutonium-239 and uranium-235 contained in the existing solutions and to evaluate the effects on the systems and facilities used to store and treat the liquid high level waste. Upon completion of the studies, existing solutions containing plutonium-239, plutonium-242, highly enriched uranium, neptunium-237, and americium and curium isotopes would be chemically adjusted and transferred to the high level waste tanks via underground pipelines.

Plutonium-bearing vault materials would be dissolved in either a canyon or B-Line dependent upon the amount of material and the chemical composition. The degraded reactor components (fuel and targets) stored in water-filled basins would be transported by rail casks to F- or H-Canyon and dissolved in nitric acid. The resulting solutions from dissolution of the vault materials and reactor components would be chemically adjusted and transferred to the high level waste tanks along with existing canyon solutions. The solutions would be mixed with the existing volume of high level waste stored in the F- and H-Area tanks. The bulk of the radioactivity in the solutions would eventually be immobilized in borosilicate glass by the Defense Waste Processing Facility (DWPF). The glass would be contained within stainless steel canisters that would be stored in an adjacent facility to the DWPF awaiting geological disposal by DOE. The bulk of the liquid would be immobilized by the Saltstone facility into a grout containing very low levels of radioactivity. The grout would be poured into concrete vaults located at the Saltstone facility.

As shown in Table-2, Processing and Storage for Vitrification in DWPF was not designated by DOE as a preferred alternative for any of the materials.

F. Vitrification (in F-Canyon)

This alternative would involve modifying existing space in the F-Canyon, providing equipment to vitrify radioactive solutions using a process similar to that developed for the DWPF. The equipment would be much smaller in scale to that of the DWPF and the stainless-steel canisters of glass produced would contain much higher concentrations of actinides, including fissile isotopes. After completing the modifications, DOE would vitrify existing solutions of plutonium-242, plutonium-239, neptunium-237, and americium and curium isotopes. The solutions stored in H-Canyon would be transported to F-Canyon for vitrification upon development (or procurement) of a suitable shipping container and upon completion of modifications to the canyon facilities for loading and unloading.

Plutonium-bearing vault materials would be dissolved in either a canyon or a B-Line and vitrified in the same manner. Similarly, degraded reactor components (Mark-31 targets, canisters of failed TRR fuel and the failed canister of EBR-II slugs) would be transported by rail cask to F-Canyon, dissolved in nitric acid, and the plutonium vitrified. The depleted or natural uranium contained in the reactor components would be chemically separated and stored in tanks or used for blending with highly enriched uranium (see description of Blending Down to Low Enriched Uranium).

The obsolete reactor targets and slugs containing neptunium, americium and curium would be transported to F-Canyon, dissolved in nitric acid, and the programmatic isotopes chemically separated from fission products and other materials. The resulting neptunium, americium and curium solutions would be vitrified in conjunction with the existing solutions containing those same isotopes.

Neptunium separated from Mark-16 and Mark-22 fuels processing in F-Canyon for blending down to low enriched uranium would be vitrified in conjunction with the existing neptunium solutions.

As shown in Table-2, DOE designated Vitrification in F-Canyon as the preferred alternative for stabilizing americium and curium solutions and

some of the plutonium and uranium vault materials.

G. Improving Storage

This alternative would be applicable to plutonium-bearing materials stored in vaults and degraded reactor components stored in water-filled basins. Based on earlier DOE decisions to stabilize plutonium solutions stored in F-Canyon (see background), DOE is modifying the FB-Line facility by installing a glove box to enable handling and packaging of plutonium without the use of plastic and other organic materials (rubber, elastomeric seals, etc.). The existing plutonium metal stored in vaults would be repackaged in FB-Line to meet the DOE storage standard. DOE would provide the capability to heat, repackage, and store plutonium oxide by modifying an existing facility (FB-Line or Building-235) or by building a new Actinide Packaging and Storage Facility in F-Area. The plutonium-bearing vault materials would be repackaged to meet the DOE storage standard and would be stored at SRS until DOE makes long-term storage or disposition decisions.

For degraded reactor components (Mark-31 targets, Mark-16 and -22 fuels, other aluminum-clad targets, failed TRR fuel, and the failed canister of EBR-II metal slugs), DOE would remove the materials from the basins and place them in dry storage. Because of technical uncertainties (e.g., potentially pyrophoric hydrides of uranium, elimination of potential reactive material) associated with the dry storage of failed fuel and targets, DOE would perform additional research to demonstrate concepts for drying and placing the materials into canisters for storage. Work related to the dry storage of low enriched uranium and commercial spent nuclear fuel has already been done in the United States and other countries. This work has not focused on aluminum-clad highly enriched uranium fuels. In conjunction with this work, DOE would design and construct a Dry Storage Facility at SRS.

A typical dry storage facility would be a Modular Dry Storage Vault. This facility would consist of four major components: a receiving/unloading area, fuel storage canisters, a shielded container handling machine, and a modular vault for storing the fuel in storage canisters. As a variation, canisters could be stored in dry storage casks rather than a vault. The degraded fuel and target materials would be removed from the basins and dried; canned or placed directly in canisters; the cans or canisters would be filled with an inert gas to inhibit further corrosion; and if cans were used, loaded into storage canisters. This process could be varied as dictated by the condition of the material. After the targets were loaded in a canister, a machine would transport the canister to the modular storage vault. The vault would consist of a large concrete structure with an array of vertical tubes to hold the canisters. The canister transport machine would move into the vault and load the canister into a storage tube. A shielded plug would be placed on top of the tube. The transport machine and the vault storage tubes would be heavily shielded to reduce radiation levels from the canister. To use dry storage casks, the machine would transport the canister to a cask (horizontal or vertical) and discharge the canister into the cask, and then the cask would be sealed.

DOE evaluated the potential environmental impacts associated with two variations for implementing this alternative. The first involved the use of a traditional project schedule for design and construction of the facility, estimated to take about ten years. The second was an accelerated schedule for design and construction, estimated to take about five years. Until the Dry Storage Facility was completed, DOE would store the materials in existing basins, as described under Continued Storage (No Action).

As shown in Table-2, DOE designated Improving Storage as the preferred alternative for stabilizing some of the plutonium and uranium vault materials.

V. Environmental Impacts of Alternatives

The Final EIS for Interim Management of Nuclear Materials evaluated alternative stabilization methods for each category of nuclear materials at the Savannah River Site, as shown in Table 2. DOE analyzed the potential environmental impacts that would result from implementation of the alternatives and believes there would be little or no impact from implementation of any of the alternatives for any material group in the areas of geologic resources, ecological resources (including threatened or endangered species), cultural resources, aesthetic and scenic resources, noise, and land use. Impacts in these areas would be limited because facility modifications or construction of new facilities would occur within existing buildings or industrialized portions of the Savannah River Site. DOE anticipates that the existing SRS workforce would support any construction projects and other activities required to implement any of the alternatives. As a result, DOE expects negligible socioeconomic impacts from implementation of any of the alternatives.

Management alternatives requiring the use of the large chemical separations facilities (the canyons and B-Lines) would have greater environmental impacts during the time dissolving, processing or conversion activities are underway than when these facilities are storing nuclear materials. After materials have been stabilized, impacts of normal facility operations related to management of those materials would decline, and potential impacts of accidents associated with those materials would be reduced with certain kinds of accidents eliminated. Potential health effects from normal operations from any of the alternatives, including those involving the operation of the canyon facilities, would be low and well within regulatory limits. Alternatives requiring the use of the canyons are: Processing to Metal, Processing to Oxide, Blending Down to Low Enriched Uranium, Processing and Storage for Vitrification in the DWPF, and Vitrification (F-Canyon).

Improving Storage alternatives generally have lower impacts in the near term because they involve only heating, drying and repackaging the nuclear materials. These alternatives also potentially involve the use of new facilities, such as an Actinide Packaging and Storage Facility and a Dry Storage Facility. The newer facilities would incorporate improved designs for remote handling, shielding, containment, air filtration, etc.; these improvements could reduce worker exposures and releases to the environment below levels associated with existing storage basins and vaults.

Annual impacts from normal operations and potential accidents associated with material storage would be reduced after material stabilization alternatives are implemented. Stabilization alternatives requiring longer periods of time to complete are estimated to have relatively higher impacts from normal operation and potential accidents than alternatives requiring less time to complete.

Continuing Storage (or ''No Action'') alternatives are estimated to result in relatively low annual environmental impacts, but the impacts would continue for an indefinite period of time. Stabilization alternatives typically are estimated to result in slightly higher annual environmental impacts than ''No Action'' in the near-term, but upon completion of the stabilization action, result in lower annual impacts. Under Continuing Storage alternatives, no actions would be taken to chemically or

physically stabilize the storage conditions and reduce the potential for accidents. All of the stabilization alternatives, upon completion of the actions required, are estimated to reduce the potential for accidents and the associated consequences. Several of the stabilization alternatives would involve a short-term increase in the risks from accidents until the required actions are completed.

Emissions of hazardous air pollutants and releases of hazardous liquid effluents for any of the alternatives would be within applicable federal standards and existing regulatory permits for the SRS facilities. Similarly, high level liquid waste, transuranic waste, mixed hazardous waste and low level solid waste generated by implementation of any of the alternatives would be handled by existing waste management facilities. All of the waste types and volumes are within the capability of the existing SRS waste management facilities for storage, treatment or disposal.

SRS facilities that will be used to stabilize and store the nuclear materials incorporate engineered features to limit the potential impacts of facility operations to workers, the public and the environment. All of the engineered systems and administrative controls are subject to DOE Order requirements to ensure safe operation of the facilities. No other mitigation measures have been identified; therefore DOE need not prepare a Mitigation Action Plan.

VI. Other Factors

In addition to comparing the environmental impacts of implementing the various alternatives, DOE considered other factors in reaching the decisions announced here. These other factors included issues addressed by the National Academy of Sciences in the 1994 report, Management and Disposition of Excess Weapons Plutonium; the Office of Technology Assessment's 1993 report, Dismantling the Bomb and Managing the Nuclear Materials; comments received during the scoping period for the EIS on the Interim Management of Nuclear Materials, and comments received on the Draft and Final EIS's. The other factors considered are briefly summarized in the following paragraphs.

Implementation of certain alternatives would require construction and operation of new facilities. The new facilities described in the EIS are: (1) F-Canyon Vitrification Facility (for the Vitrification (F-Canyon) Alternative), (2) a Dry Storage Facility (for the Improving Storage Alternative for degraded reactor fuel and targets currently stored in basins), (3) a Uranium Solidification Facility (for the Processing to Oxide Alternative for highly enriched uranium solutions in H-Area and the Mark-16 and -22 fuel stored in basins), (4) an Actinide Packaging and Storage Facility (for the Processing to Metal and Processing to Oxide Alternatives for plutonium-bearing materials, for the Improving Storage Alternative for plutonium-bearing vault materials, for the Processing to Oxide Alternative for neptunium-237 materials, and for the Vitrification (F-Canyon) Alternative for materials containing plutonium and neptunium). Implementation of some alternatives would require minor modifications of existing facilities, as described in the EIS. Examples include minor modifications to the F-Canyon and H-Canyon facilities to provide the capability to load and unload radioactive solutions into containers for transport between facilities and installation of a spare dissolver in the FA-Line facility.

Preventing the spread of nuclear weapons has been a fundamental national security and foreign policy goal of the United States since 1945. The current U.S. policy is summarized in the White House Fact Sheet on Nonproliferation and Export Control Policy, dated September 27, 1993. This policy makes it clear that the United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing (that is, separation of plutonium from spent nuclear fuel) for either nuclear power or nuclear explosives purposes. In addition, it is U.S. policy to seek to eliminate where possible the accumulation of stockpiles of highly enriched uranium and plutonium. The stabilization alternatives vary in regard to the attractiveness of the stabilized plutonium or highly enriched uranium for use in nuclear weapons (either by the U.S. or an adversary). None of the alternatives would denature or eliminate the plutonium from the current inventory; it would still exist in some form. Of the alternatives for stabilization of highly enriched uranium, only Processing and Storage for Vitrification in the Defense Waste Processing Facility and Blending Down to Low Enriched Uranium would reduce the inventory of highly enriched uranium. Because of the potential concern regarding any processing and consolidating plutonium or highly enriched uranium from the SRS inventory, the Secretary of Energy has committed that any separated or stabilized plutonium-239 and highly enriched uranium would be prohibited from use for nuclear explosive purposes. This prohibition would apply to plutonium-239 and highly enriched uranium stabilized through actions implemented by this Record of Decision.

In the EIS on the Interim Management of Nuclear Materials, DOE examined the potential impacts associated with an integrated implementation schedule for management of nuclear materials. DOE examined several combinations of alternatives, or management scenarios, including continued storage of all the materials (No Action), stabilization using the preferred alternatives for each material, and alternatives requiring a minimum of chemical processing. DOE expects that it will take at least 6 to 7 years to stabilize all of the nuclear materials at SRS under any scenario due to the resources (primarily trained personnel) required and the time required to make facility modifications or construct new facilities. DOE has developed an optimum schedule of proposed actions in response to DNFSB Recommendation 94–1. DOE will revise and update the schedule as stabilization actions proceed and as future budget considerations dictate.

DOE considered technology availability and technical feasibility in reaching decisions on management alternatives. DOE considered the extent to which technology development would be required and the likelihood of success of such endeavors. All of the alternatives are technically feasible. In general, however, the more alternatives vary from the historical processes and facilities used at SRS, the greater the technical uncertainty and extent to which new facilities or modifications to existing facilities would have to be made.

DOE evaluated labor availability and the existence of core competency at the SRS in reaching decisions on management alternatives. DOE expects to use the existing workforce at SRS to implement the management alternatives selected. There would be differences between the level of personnel knowledge and training required for each alternative. In general, as an alternative varies from historical processes and facilities used at the SRS for material management, additional training of personnel may be required. The more unique or extensive the differences from past facility operations, the more training may be required.

In reaching decisions on management alternatives, DOE considered the fact that many SRS facilities are 30 to 40 years old and do not meet all current DOE requirements for the design and

construction of new nuclear facilities. DOE and the DNFSB have conducted many reviews to evaluate facility vulnerabilities and assess facility compliance with current requirements. One vulnerability common to many older facilities is that the facility could sustain structural damage in the event of a severe earthquake. Rather than initiate extremely expensive modifications, DOE has chosen to mitigate the potential consequences of a severe earthquake by using engineering safeguards, such as structurally reinforcing tanks, and administrative controls, such as limiting the amount of radioactive material that can be stored in a facility. Ultimately, removal of nuclear materials from vulnerable facilities would reduce the risks. All of the alternatives except Continued Storage (No Action) would support DOE's objective of removing nuclear materials from vulnerable facilities in preparation for decontamination and decommissioning.

Some level of custodial care will be required for the nuclear materials as long as they are stored at the SRS, and DOE considered minimizing the level of custodial care in reaching management decisions. Radioactive solutions require the greatest amount of custodial care to ensure safe storage, and radioactive materials in a glass matrix (i.e., vitrified) are expected to require the least. Many alternatives would produce concentrated oxide or metal forms that would be packaged and stored in compliance with new DOE standards for storage of nuclear materials. Compliance with the storage criteria will reduce the need to handle and repackage the material and is intended to minimize the future level of custodial care required.

In reaching decisions on management alternatives, an important consideration for DOE was cost. DOE evaluated the costs of implementing the various management alternatives for each type of material on both an individual basis and collectively, as part of an integrated stabilization program. DOE estimates it will cost approximately $3 billion to operate and staff the facilities used to stabilize and store the SRS nuclear materials over the next 10 years. A large fraction of this cost (approximately $2.8 billion) would be required for continued storage of the nuclear materials even if DOE implemented no stabilization alternatives (i.e., No Action). DOE expects annual costs of operating and maintaining the facilities to decrease as nuclear materials are removed, stabilized and consolidated for interim management. DOE expects further reductions in costs as, and if, facilities are deactivated.

VII. Environmentally Preferable Alternatives

As described in the Final EIS for Interim Management of Nuclear Materials, certain management alternatives are expected to result in lower environmental impacts than others. However, a single alternative was rarely estimated to have lower impacts for all environmental factors evaluated by DOE. For example, an alternative might be expected to result in lower releases of hazardous pollutants to air or water than the other alternatives, but might generate slightly higher amounts of radioactive waste. DOE reviewed the environmental impacts estimated for the alternatives evaluated for each type of nuclear material and identified the following as the environmentally preferable for each. The health effects from any of the alternatives are all low and well within regulatory limits. Included below is a qualitative description of how the identified environmentally preferable alternative compared with the other stabilization alternatives for the environmental factors that generally are of most interest.

Plutonium-242—Processing and Storage for Vitrification (DWPF)

Processing and Storage for Vitrification in DWPF is the environmentally preferable alternative for stabilizing the plutonium-242 solutions stored in H-Canyon. Processing and storage for vitrification in DWPF is estimated to result in the lowest radiological doses to the offsite public and the SRS workers; result in air and water emissions of hazardous pollutants comparable to the other alternatives; and result in the least amount of transuranic and mixed waste generated among the alternatives with comparable amounts of high level and low level waste.

Americium and Curium—Processing and Storage for Vitrification (DWPF)

Processing and storage for vitrification in the DWPF is the environmentally preferable alternative for stabilizing solutions and metal targets and slugs containing americium and curium isotopes. Of the stabilization alternatives, processing and storage for vitrification in DWPF is estimated to result in the lowest radiological doses to the offsite public and the SRS workers; have the lowest level of hazardous pollutant emissions to the air with comparable levels of liquid effluent emissions; and result in the least amount of high level, transuranic and mixed waste with comparable amounts of low level waste.

Neptunium-237—Vitrification (F-Canyon)

Vitrification in F-Canyon is the environmentally preferable alternative for stabilizing solutions and targets containing neptunium. Although vitrification in F-Canyon is estimated to result in slightly higher radiological doses to the SRS workers, it is estimated to result in the lowest radiological doses to the offsite public. Similarly, although it could result in higher airborne emissions of hazardous pollutants, the levels of liquid effluent emissions would be comparable to the other alternatives. Vitrification (F-Canyon) would generate the least amount of high level, transuranic and mixed waste, and would generate comparable amounts of low level waste to the other alternatives.

Plutonium-239 Solutions—Vitrification (F-Canyon)

Vitrification in F-Canyon is the environmentally preferable alternative for stabilizing the plutonium-239 solutions stored in H-Canyon. Of the stabilization alternatives, Vitrification in F-Canyon is estimated to result in the lowest radiological doses to the offsite public and SRS workers; result in comparable levels of hazardous pollutant emissions to the air and water; and result in the least amount of transuranic, mixed, and low level waste with comparable amounts of high level waste.

Highly Enriched Uranium Solutions—Processing to Oxide

Processing to Oxide is the environmentally preferable alternative for stabilizing highly enriched uranium solutions stored in H-Area facilities. Although it is estimated to result in slightly higher radiological doses to the offsite public and SRS workers, the Processing to Oxide alternative has comparable levels of air and water emissions to the other alternatives and would generate the least amount of high level, transuranic, mixed and low level waste.

Plutonium and Uranium Vault Materials—Improving Storage

Improving Storage in the environmentally preferable alternative for stabilizing plutonium and uranium vault materials. Although it is estimated to result in higher radiological doses to the offsite public and SRS workers, the Improving Storage alternative has comparable levels of air and water emissions to the other alternatives and

would generate the least amount of high level and mixed waste, with comparable amounts of transuranic and low level waste.

Mark-31 Targets—Improving Storage (Accelerated Schedule)

Improving Storage on an accelerated schedule is the environmentally preferable alternative for stabilizing the Mark-31 targets. Improving storage is estimated to result in lower radiological doses to the offsite public with doses to the SRS workers comparable to other alternatives; have the lowest estimates of air and water emissions; and result in the generation of the least amount of high level and transuranic waste with comparable levels of mixed and low level waste. However, improving storage will not reverse or arrest the corrosion of these targets and the release of fission products and radionuclides to the basin water for the several years prior to the construction and operation of the improved storage capability.

Failed TRR Fuel and EBR–II Slugs—

Improving Storage (Accelerated Schedule) Improving Storage on an accelerated schedule is the environmentally preferable alternative for stabilizing failed TRR fuel and EBR–II slugs stored in canisters in the Receiving Basin for Offsite Fuels. Improving Storage is estimated to result in the lowest radiological doses to the offsite public with doses to the SRS workers comparable to other alternatives; have the lowest estimates of air and water emissions; and, result in the generation of the least amount of high level, transuranic, mixed, and low level waste. However, as with the Mark-31 targets, improving storage will not reverse or arrest the corrosion of the fuel or slugs and the release of fission products and radionuclides to the basin water for the several years prior to the construction and operation of the improved storage capability.

VIII. Decision

After completion of the Final EIS, DOE received several letters from stakeholders on issues related to the interim management of nuclear materials at the SRS. Letters were received from the following individuals and organizations: DNFSB, U.S. Senator Strom Thurmond, U.S. Representative Charlie Norwood, U.S. Representative Lindsey Graham, U.S. Representative Edward J. Markey, U.S. Representative Frank Pallone, Jr., the Energy Research Foundation (ERF), the Natural Resources Defense Council (NRDC), and Governor David M. Beasley of South Carolina. Two principal issues were raised in the letters: (1) the method to be used for the interim- to long-term management of spent nuclear fuel, and (2) the operational status of the F- and H-Canyon processing facilities. The DNFSB, Congressional, and Governor Beasley letters recommended that DOE stabilize the Mark-16 and Mark-22 fuels through chemical treatment (processing), and that both the F- and H-Canyon facilities be maintained in support of DOE missions and tasks. The ERF/NRDC joint letter urged the Department to thoroughly consider alternatives, to include the development of new methods, for the management of spent nuclear fuel, and to consider carefully all factors, particularly safety, environmental, nonproliferation, and budgetary issues, in making its materials management and facility utilization decisions. Congressmen Markey and Pallone's joint letter urged the Department to pursue the closing of the H-Canyon at the earliest possible date on the understanding that substantial savings to taxpayers could be achieved. After careful consideration of the issues identified in these letters (addressed below), along with the analyses of environmental impacts and other factors identified in the Final EIS, DOE has made the following decisions for the interim management of the nuclear materials at the Savannah River Site:

Stable Material—Continuing Storage

DOE will continue storage of the stable materials in their existing physical and chemical forms. Programs and projects to consolidate material storage in order to reduce surveillance and maintenance costs to DOE will continue.

Plutonium-242—Processing to Oxide

DOE has decided to process the existing plutonium-242 solutions stored in H-Canyon to a purified oxide in HB-Line. The plutonium-242 oxide will be packaged and stored at the SRS. Processing to Oxide was selected for many reasons. First, the facilities and equipment to implement the alternative already exist, with HB-Line specifically designed for converting purified plutonium nitrate solutions to an oxide. The portions of the HB-Line facility required to convert the solutions to an oxide are already fully staffed and operational, nearing completion of plutonium-238 work in support of NASA. Although DOE could transfer the solutions to the adjacent high level waste tanks in H-Area along with other liquid high level waste for processing, storage and eventual vitrification in DWPF (the environmentally preferable alternative), the concentration of plutonium-242 would be significantly diluted due to the existing volume of liquids contained in the high level waste tanks (approximately 1 million gallons in each tank). The dilution and mixing of the plutonium-242 with cesium, strontium and other long-lived fission products contained in the high level waste tanks would effectively render any future recovery or use of the material impractical due to cost and technical complexity. In order not to preclude its recovery while the future use of plutonium-242 is being decided, DOE considers it prudent to stabilize the material to a concentrated oxide form, thereby preserving its availability for potential use. In evaluating the alternatives, DOE determined Processing to Oxide could be implemented sooner than the other alternatives, thus eliminating the need to further extend storage of the solutions. Although Processing to Oxide is not the environmentally preferable alternative, it is estimated to result in a similar level of impacts. Processing to Oxide is estimated to have slightly higher radiological doses to the public and worker populations, but result in the least amount of high level waste for the stabilization alternatives.

Americium and Curium—Vitrification (F-Canyon)—Solutions; Continued Storage (No Action)—Metal Targets and Slugs

DOE has decided to process the existing solutions containing americium and curium isotopes in F-Canyon to a glass contained within small stainless steel canisters. DOE will modify an existing portion of F-Canyon (previously called the Multi-Purpose Processing Facility) to install the necessary vitrification equipment. The glass canisters will be stored at the SRS until DOE makes programmatic decisions on the use of the americium and curium. DOE has also decided to continue wet storage of the reactor targets and slugs until such programmatic decisions are made.

DOE selected vitrification in F-Canyon for several reasons. First, no capability currently exists in either F-Canyon or its associated facilities (FA-Line or FB-Line) to convert the americium and curium solutions to a solid physical form suitable for continued safe storage. DOE could transfer the solutions via underground pipelines to the adjacent high level waste tanks in F-Area. The solutions, however, would have to remain stored in the high level waste tanks until they could be vitrified into glass by the DWPF (the environmentally preferable alternative). Vitrification of the

solutions by DWPF would not occur within the next 10 years due to the large existing inventory (34 million gallons) of high level waste which must be vitrified in DWPF. Transfer of the solutions to the high level waste tanks would result in significant dilution of the concentration of the americium and curium isotopes due to the large volume of the tanks (approximately 1 million gallons). The americium and curium isotopes would also be mixed with long-lived fission products such as cesium and strontium if transferred to the high level waste tanks. The vitrified glass form produced in DWPF would contain very dilute quantities of americium and curium combined with highly radioactive fission products. This would render use of the americium and curium isotopes impractical due to the technical complexity and cost of future recovery.

To maintain the americium and curium in a concentrated physical form, thus preserving their potential future use, DOE evaluated alternatives for converting the solutions to either an oxide or glass. Either form could support future use of the material, if required. The conversion process associated with the two alternatives would require a similar level of modifications and new equipment to be installed in F-Canyon. However, DOE found that the glass form offers significant advantages over the oxide form for future storage and handling. The glass matrix produced by the vitrification process provides some ''self-shielding'' compared to oxide. This reduces the radiation levels associated with the glass form, thereby reducing exposure to workers. The glass matrix is also a much less dispersible form of radioactive material compared to the oxide in the event of a severe facility-related accident, such as a major fire. Americium and curium isotopes do not pose a nonproliferation concern, irrespective of their physical form. Existing personnel at SRS will be used to operate the facilities and equipment required, and the level of additional training required would be similar whether DOE selected conversion to oxide or glass.

DOE has decided to maintain storage of the metal targets and slugs containing significant quantities of americium and curium isotopes in the existing storage basins at SRS primarily because there is not an immediate need for the isotopes. The targets are stored in the Receiving Basin for Offsite Fuel (RBOF). The RBOF facility has excellent water chemistry and the targets are in good physical condition, capable of being safely stored over the next 10 years. The metal slugs represent a very small amount of nuclear material whose continued storage can be accommodated by relocation to either the RBOF facility or the K-Reactor disassembly basin. DOE has made physical upgrades to the K-Reactor disassembly basin to provide storage conditions comparable to those in RBOF. By maintaining the targets and slugs in storage at the SRS, DOE can preserve the option of recovering, if needed, the americium and curium isotopes at a later date for programmatic use. The targets and slugs contain varying amounts and isotopes of americium and curium. It would not necessarily be advantageous for DOE to process and recover all of the americium and curium isotopes into a single physical form for continued storage, because such an operation would result in the mixing of many isotopes, increasing the technical complexity of their future separation and recovery or making it impractical.

Neptunium-237—Vitrification (F-Canyon) or Processing to Oxide

DOE has narrowed its alternatives under consideration for the stabilization of the neptunium-237 materials (neptunium contained in the H-Canyon solutions and nine (9) obsolete reactor targets) into either one of two physical forms: (1) a glass matrix using the same modified portion of F-Canyon used to vitrify the americium and curium solutions (the environmentally preferable alternative), or (2) a purified oxide using the HB-Line facility. Only one of these stabilization methods will be used. Both the vitrified glass and oxide forms can be stored safely pending DOE's decision on use or disposition. To implement the vitrification alternative, DOE would move the neptunium solutions from H-Area to F-Area using a special truck container designed for transport of highly radioactive solutions. The nine (9) obsolete reactor targets containing neptunium would be transported to F-Canyon in shielded casks, dissolved and the neptunium chemically separated from radioactive decay products and other impurities. The resulting purified neptunium solution would be vitrified in F-Canyon. SRS would store the canisters of neptunium glass until programmatic decisions on neptunium's use are made by DOE. To implement the Processing to Oxide alternative, DOE would start up and operate the Phase II portion of the HB-Line facility and would dissolve and process the obsolete reactor targets in H-Canyon.

Potential environmental impacts, as detailed in the Interim Management of Nuclear Materials EIS, of implementing any of the stabilization alternatives, irrespective of location, are low and well within acceptable regulatory and management limits. In addition, there are no substantial differences in potential environmental impacts should DOE operate either or both canyon facilities.

The final form of the neptunium depends on actions taken, if any, to consolidate certain activities in the F-Canyon as outlined in the facility utilization strategy report. The study principally considers what effect the consolidation of two primary processing areas to one would have on the ability to stabilize nuclear materials at the SRS. Budgetary pressures and safety requirements as well as preserving capability for future missions necessitates a thorough examination of the options for these facilities. The report is available to the public. A subsequent Record of Decision will be issued when DOE's review of the utilization strategy, the EIS, and the other relevant factors is complete.

Highly Enriched Uranium Solutions—Blending Down to Low Enriched Uranium

DOE has selected Blending Down to Low Enriched Uranium for stabilization of highly enriched uranium (HEU) solutions. These include existing HEU solutions stored in H-Area facilities and any HEU solutions produced in conjunction with the stabilization of other materials (e.g., plutonium and uranium vault materials). DOE will modify portions of the F- and H-Canyon facilities to provide the capability to load and unload containers for the transport of depleted, natural or low enriched uranium solutions. DOE will dissolve depleted uranium oxide in FA-Line. DOE will transport depleted uranium solutions to H-Area for blending with the highly enriched uranium solutions. The resulting low enriched uranium solutions will be transported back to F-Area and converted to an oxide in FA-Line. The low enriched uranium oxide will be stored at SRS until disposition decisions can be implemented.

DOE selected this stabilization alternative for several reasons. Blending down the highly enriched uranium will reduce DOE's inventory of this weapons-useable fissile material. This alternative can be implemented expeditiously at relatively low cost. Processing the solutions to a highly enriched uranium oxide (the environmentally preferable alternative) would require the completion and startup of the Uranium Solidification Facility. Processing for storage and vitrification in the DWPF would extend

the period of HEU solution storage with its attendant vulnerabilities while mechanisms are developed to assure the safe transfer and stabilization of this fissile material through the affected facilities.

Plutonium and Uranium Stored in Vaults—Improving Storage, Processing to Metal, Processing to Oxide, and Vitrification (F-Canyon)

DOE has decided to use a variety of alternatives to stabilize plutonium and uranium materials stored in vaults at SRS. DOE is installing a glove box in FB-Line (based upon previous decisions to stabilize F-Canyon plutonium solutions—see ''Background'') to provide the capability to handle and package plutonium metal without the use of plastic and other organic materials (rubber, elastomeric seals, etc.). This will provide SRS the capability to package (or repackage) plutonium metal in accordance with the DOE storage standard. Upon completion of the FB-Line modifications, DOE will repackage plutonium metal stored at SRS in accordance with the storage standard. This implements the environmentally preferable alternative for the candidate plutonium metals.

DOE will dissolve some of the existing vault materials that are Candidates for Stabilization in FB-Line and F-Canyon, and H-Canyon and HB-Line, chemically separate the plutonium from impurities that contribute to the stability concerns and radioactive decay products, and process the plutonium to a metal in FB-Line and an oxide in HB-Line. After vitrification of the americium and curium solutions in F-Canyon (see above) and subject to successful analytical laboratory work, timing and facility availability, and future decisions on plutonium disposition, DOE may stabilize some of the plutonium-bearing vault materials by vitrification in F-Canyon. DOE will dissolve vault materials containing scrap amounts of plutonium-238 that require chemical stabilization in HB-Line, chemically separate the plutonium-238 from impurities that contribute to the stability concerns and radioactive decay products, and convert the plutonium-238 to an oxide in HB-Line. The plutonium-238 oxide will be stored in an existing SRS vault.

DOE has decided to construct an Actinide Packaging and Storage Facility to provide the capability for handling, heating and packaging of plutonium oxide and metal in accordance with the storage standard (the environmentally preferable alternative) and to provide space necessary to consolidate storage of plutonium and special actinides at the SRS. DOE will incorporate requirements of the IAEA into the design and construction of the facility to provide the latitude for future international safeguards inspections. DOE is also pursuing declassification of information related to the amount of plutonium resulting from stabilization actions at the SRS that will be stored in the new packaging and storage facility.

The plutonium oxide and existing SRS vault materials that do not require chemical processing for stabilization, will be heated and repackaged in the Actinide Packaging and Storage Facility to meet criteria in the DOE storage standard. The amount of vault materials stabilized using each of the methods will be dependent upon: (a) the physical condition and chemical composition of the material (which DOE will determine upon opening each of the containers or packages inside a glove box in either FB-Line or HB-Line) and, (b) the availability of the required facilities. The plutonium will be stored at SRS until DOE can implement long-term storage or disposition decisions. Uranium recovered from the chemical stabilization of any vault materials will be blended down to low enriched uranium and the solutions will be stored or converted to an oxide, as described under the stabilization of highly enriched uranium solutions.

As previously discussed, the Improving Storage alternative is the environmentally preferable alternative. The environmental impacts associated with the other alternatives selected for stabilization of vault materials which require chemical processing (i.e., Processing to Metal, Processing to Oxide, and Vitrification in F-Canyon) all involve slightly higher but similar levels of impacts.

As explained in the Final EIS, some of the containers stored in vaults at SRS have internal packaging configurations which are unknown and the exact chemical composition of the material inside the containers may also be unknown, with the exception of its content of special nuclear materials. Because of the unknown content of some of the vault containers, and in light of pending DOE decisions on long-term management or disposition of surplus materials, several stakeholder groups have raised concerns regarding DOE's current and future compliance with the Resource Conservation and Recovery Act (RCRA). DOE has provided existing information on the vault materials and other materials stored at SRS to the applicable regulatory agency for RCRA at SRS, the South Carolina Department of Health and Environmental Control (SCDHEC). DOE is continuing the dialog with SCDHEC on the applicability of RCRA to any of the nuclear materials that will be stabilized as a result of this Record of Decision and will take appropriate management actions, as necessary to ensure compliance with RCRA.

Mark–31 Targets—Processing to Metal

DOE has selected Processing to Metal for stabilization of the Mark–31 targets stored in the F-Canyon basin, reactor disassembly basins and the Receiving Basin for Offsite Fuels (RBOF). DOE will dissolve the Mark–31 targets in F-Canyon and chemically separate the plutonium and depleted uranium from fission products and other materials. The plutonium solutions will be processed to metal in FB-Line. After modification of the FB-Line (see vault materials above), the metal will be packaged to meet the DOE storage standard. The plutonium metal will remain at SRS until DOE can implement long-term storage or disposition decisions on weapons usable forms of plutonium. The depleted uranium solutions recovered from dissolving the targets will be used to blend-down the highly enriched uranium solutions in H-Area (see highly enriched uranium solutions discussion above).

The stabilization of the Mark–31 targets by processing to metal can be accomplished one and one-half to nine years earlier than the other stabilization alternatives (four to nine years earlier than Improved Storage (the environmentally preferable alternative)). DOE believes further delay in removing the Mark–31 targets from wet basin storage where they have undergone significant corrosion and release of fission and radioactive products would serve no practicable purpose. This selected stabilization alternative relies upon existing operating equipment and trained personnel; the stabilized plutonium metal will be repackaged in conformance with DOE's storage standard within 3 years using the FB-Line bagless transfer facility. The technical uncertainty for this alternative is very low and the associated costs are well established. Potential waste generation impacts are comparable to the other alternatives, but greater than the environmentally preferable alternative for high level and transuranic waste, but lower for hazardous/mixed and low level radioactive wastes. Potential safety and health impacts to workers and the public are comparable for all the stabilization alternatives. Potential impacts to air and water resources are comparable to the other processing alternatives, and greater, but well within

regulatory and management control limits, than the Improved Storage alternatives. Processing and Storage for Vitrification in DWPF would make the plutonium more difficult to recover than the selected alternative. However, this alternative would also require the extended wet storage of these targets, continuing their corrosion and the release of fission and radioactive products to the basin water.

The selected stabilization action will result in plutonium metal, a weapons-useable product. However, the quantity produced will be a small fraction of DOE's existing inventory of plutonium metal, and DOE believes this small amount does not present nuclear proliferation concerns. None of the stabilization alternatives would denature the plutonium to preclude its recovery and use in nuclear weapons manufacture. The plutonium metal produced from this stabilization action will be prohibited for use in nuclear weapons. In addition, DOE is pursuing options for placing this material under international safeguards (e.g., International Atomic Energy Agency).

Taiwan Research Reactor Fuel and Experimental Breeder Reactor-II Slugs—Processing to Metal

The 81 canisters of failed Taiwan Research Reactor fuel and a single canister of Experimental Breeder Reactor-II slugs will be dissolved in F-Canyon and the plutonium recovered will be converted to a metal in FB-Line. The processing of these materials will be done in conjunction with processing of the Mark–31 targets (see above). Upon installation of the new glove box in FB-Line, the plutonium metal will be packaged in accordance with the DOE storage standard and be placed in an SRS vault until long-term storage or disposition decisions can be implemented on weapons usable plutonium. Natural or depleted uranium recovered by processing the fuel and slugs located in a failed canister will be stored at SRS in tanks or used to support blending down of highly enriched uranium solutions (see above).

DOE selected processing to metal for the Taiwan Research Reactor fuel and Experimental Breeder Reactor-II slugs for similar reasons as described for the Mark–31 targets. These materials are very similar in composition to the Mark–31 targets and can be stabilized concurrently, four to nine years earlier than the environmentally preferred alternative (Improving Storage—Accelerated Schedule). Potential waste generation impacts from the selected alternative are greater than those of the environmentally preferable alternative, but less than potential high-level waste impacts (equivalent DWPF canisters) from the Processing and Storage for Vitrification in DWPF alternative. The Processing and Storage for Vitrification in DWPF would make the plutonium more difficult to recover. However, this alternative would require the extended wet storage of these elements, continuing their corrosion and the release of fission and radioactive products to the basin water.

As with the Mark–31 targets, the plutonium metal produced would be in a form that is weapons-useable. None of the stabilization alternatives would denature the plutonium to preclude its recovery and use in nuclear weapons manufacture. The quantity of plutonium to be produced is such a small amount (a very small fraction) of DOE's current plutonium metal inventory that, standing alone, it does not present nuclear proliferation concerns. The plutonium metal produced will be prohibited for use in nuclear weapons. In addition, DOE is pursuing options for placing this material under international safeguards (e.g., International Atomic Energy Agency).

If after removing the Mark–31 targets, failed TRR fuel, and the failed canister of EBR-II slugs from RBOF, DOE determines that additional fuel, targets, or canisters have failed, as indicated by gas releases from a canister, or visible failure of cladding or canisters, DOE would categorize those materials as Candidates for Stabilization. DOE would perform the appropriate National Environmental Policy Act review and evaluation for the stabilization of any additional materials in RBOF that may be determined at a later date to have failed (e.g., Supplement Analysis).

Potential environmental impacts, as detailed in the Interim Management of Nuclear Materials EIS, of implementing any of the stabilization alternatives, irrespective of location, are low and well within acceptable regulatory and management limits. In addition, there are no substantial differences in potential environmental impacts should DOE operate either or both canyon facilities. DOE is considering this study and the results of the Interim Management of Nuclear Materials EIS, and at this time is announcing a narrowing of potential stabilization alternatives for the following materials.

Plutonium–239 Solutions—Processing to Metal, Processing to Oxide, or Vitrification (F-Canyon)

DOE will stabilize the existing plutonium–239 solutions stored in H-Canyon using one of three alternatives: (1) Processing the solutions to an oxide in HB-Line, (2) processing to a glass matrix by vitrifying the solutions in F-Canyon (the environmentally preferable alternative), or (3) processing to a metal in FB-Line. Only one of these stabilization methods will be used. To implement the processing to oxide alternative, DOE would start up and operate Phase II of the HB-Line facility. The oxide produced would be packaged and stored in an existing vault at SRS until the new Actinide Packaging and Storage Facility is constructed. To implement the vitrification alternative, DOE would transport the solutions from H-Canyon to F-Canyon using a special truck/container as described above for the movement of the neptunium solutions and the modifications made to F– and H–Canyon for loading/unloading of the solutions. The plutonium would be vitrified in F–Canyon using the equipment installed for vitrification of the americium and curium solutions. The canisters of plutonium glass would be stored in an existing SRS vault or the Actinide Packaging and Storage Facility, upon construction. To implement the processing to metal alternative, DOE would transfer the solutions to F-Canyon in the same manner as the vitrification alternative. The plutonium would be converted to a metal using the currently operating F-Canyon and FB-Line facilities. The metal would be packaged in conformance with DOE's storage standard and stored in an existing vault at SRS until the new Actinide Packaging and Storage Facility is available. Using any of these methods, the form of the plutonium (metal, glass matrix or oxide) will remain stored at SRS until DOE implements long-term storage and disposition decisions on weapons usable forms of plutonium. If vitrification of the plutonium solutions cannot be supported for technical or programmatic reasons, but the solutions are transferred to F-Canyon, then DOE will stabilize the plutonium by conversion to metal using the F-Canyon and FB-Line facilities.

One of the stabilization alternatives remaining under consideration (Processing to Metal) would result in plutonium metal, a weapons-useable product. However, the quantity produced will be a small fraction of DOE's existing inventory of plutonium metal, and DOE believes this small amount does not present nuclear proliferation concerns. None of the stabilization alternatives would denature the plutonium to preclude its recovery and used in nuclear weapons manufacture. The plutonium metal produced from this stabilization action will be prohibited to be used for nuclear

explosive purposes. In addition, DOE is pursuing options for placing this material under international safeguards (e.g., International Atomic Energy Agency).

Potential environmental impacts, as detailed in the Interim Management of Nuclear Materials EIS, of implementing any of the stabilization alternatives, irrespective of location, are low and well within acceptable regulatory and management limits. In addition, there are no substantial differences in potential environmental impacts should DOE operate either or both canyon facilities.

The final form of the plutonium solutions depends on actions taken, if any, to consolidate certain activities in the F-Canyon as outlined in the facility utilization strategy report. A subsequent Record of Decision will be issued when DOE's review of the utilization strategy, the EIS, and the other relevent factors is complete.

IX. Preferred Alternatives for Stabilizing Mark–16 and Mark–22 Fuels and Other Aluminum-clad Targets

In addition to reaching decisions on the management and alternatives under consideration for the materials described above, DOE is now designating its preferred alternatives for stabilization of the Mark–16 and Mark–22 fuels and Other Aluminum-clad Targets. As explained in the Final EIS, DOE identified Continued Storage (No Action) as the preferred alternative for management of these materials pending further analysis of whether alternatives involving chemical processing or dry storage were preferable as a stabilization method. The additional reviews were prompted by public comments that DOE received on potential stabilization alternatives involving technologies other than chemical processing. Based on these additional reviews (discussed in Attachment 2 of the Facility Utilization Strategy), DOE is designating the following as preferred stabilization alternatives:

Mark–16 and Mark–22 Fuels—Blending Down to Low Enriched Uranium

DOE is designating Blending Down to Low Enriched Uranium as its preferred alternative for stabilization of the Mark–16 and Mark–22 fuels. Under this alternative, DOE would remove the Mark–16 and Mark–22 fuels from the water- filled basins in which they are stored and transport them to one, or both, of the canyons using the existing SRS rail casks. All of the cask shipments would be confined within the boundaries of SRS, occurring near the center of the site. The fuel assemblies would be dissolved in nitric acid. The highly enriched uranium contained in the fuel would be chemically separated from fission products and other materials. The highly enriched uranium would be blended with existing SRS inventories of depleted uranium to produce a low enriched uranium solutions. The resulting low enriched uranium solution will be stored or converted to an oxide in FA-Line. The low enriched uranium will be stored at SRS until disposition decisions can be made. The neptunium separated during the processing of the fuels would be stabilized with the other neptunium solutions.

DOE is designating Blending Down to Low Enriched Uranium as the preferred alternative for several reasons. Stabilization of the fuels with their removal from basin wet storage and elimination of the wet storage vulnerabilities through processing can be accomplished two to seven years earlier than the improved storage alternatives. Blending down to LEU reduces the HEU inventory and eliminates nonproliferation and security issues associated with the indefinite storage of HEU fuel which is not self-protecting. Cost and cost uncertainties have also played a significant role in the selection of the preferred stabilization alternative. Near-term annual costs to process and blend down the HEU to LEU are estimated at $20 million to $95 million less than for the improved storage alternatives. Substantial uncertainty exists concerning the disposition of dry-stored (improved storage) HEU spent fuel. Little uncertainty exists with the stabilization of the fuels through blending down to LEU. Life-cycle costs evaluations favor blending down to LEU ($38 million to greater than $1 billion advantage)[Facility Utilization Strategy, Attachment 2]. The potential environmental impacts from any of the stabilization alternatives are acceptable and well below any regulatory or management control limits. Projected impacts evaluated in the Final EIS are several times lower for the improved storage alternatives than the preferred blending down to LEU alternative.

Other Aluminum-clad Targets—Processing and Storage for Vitrification in the DWPF

DOE is designating Processing and Storage for Vitrification in the DWPF as its preferred alternative for stabilization of the other aluminum-clad targets stored in reactor disassembly basins at SRS. Under this alternative, DOE would remove the other aluminum-clad targets stored in reactor disassembly basins and transport them to one of the canyons via SRS rail casks. The targets would be dissolved, the resulting solutions chemically adjusted, and transferred to the adjacent underground high level waste tanks. The solutions would be stored in the high level waste tanks until they could be processed in conjunction with the other high level waste in the tanks. The high level waste would eventually be vitrified in the DWPF. The stainless steel canisters of glass would be stored in a facility adjacent to the DWPF, awaiting geological disposal by DOE. DOE is designating this alternative as its preferred stabilization alternative for several reasons. These targets contain little or no fissile material, yet are in a variety of physical forms and shapes. Their dissolution and transfer for vitrification in DWPF (the environmentally preferable alternative) has a minimal impact on all processing facilities and places these many forms into a single physical form suitable for future emplacement in a geological repository. Improved storage would require the development of one or more packaging configurations for repository emplacement. Although vitrification in DWPF will not occur for several years, processing and storage for vitrification in DWPF can be implemented one to six years earlier than the improved storage alternatives. This will remove the targets and their deteriorating condition from the reactor disassembly basins, precluding further release of radioactivity to the basin water. As with the improved storage alternatives for the Mark–16 and Mark–22 fuels, near-term costs are considerably less for the processing alternative as compared with the improved storage alternative. The potential environmental impacts from any of the stabilization alternatives are acceptable and well below any regulatory or management control limits. As with the Mark–16 and Mark–22 fuels, projected impacts for the improved storage alternatives are lower than the preferred alternative of processing and storage for vitrification in DWPF.

Decisions on facility utilization will determine the canyon location(s) for implementing the preferred stabilization alternatives for the Mark-16 and Mark-22 fuels, and the other aluminum-clad targets. DOE will issue a Record of Decision(s) for the stabilization of these materials no sooner than thirty (30) days following the availability of this notice.

X. Conclusion

While the Final EIS focuses on the interim management of nuclear

materials at the Savannah River Site, the decisions associated with the safe management of these materials directly affect the operational status of the nuclear material processing facilities at the Site. These decisions have been made in the context of then Secretary Watkins' 1992 decision to phase out reprocessing at the Savannah River Site. The decisions in this ROD are structured to effect the earliest completion of actions necessary to stabilize or convert nuclear materials into forms suitable for safe storage and prepare the facilities for subsequent shutdown and deactivation. The actions being implemented will support the consolidation of the storage of nuclear materials at the SRS. To a great extent, the alternatives will result in stabilization of the nuclear materials and alleviation of associated vulnerabilities within the time frame recommended by the DNFSB.

The stabilization decisions utilize existing facilities and processes to the extent practical; can be implemented within expected budget constraints and minimal additional training to required personnel; rely upon proven technology; and using an integrated approach, represent the optimum use of facilities to stabilize the materials in the shortest amount of time. Although minor modifications of a few facilities will be required, only two new facilities will be needed: (a) design and construction of an Actinide Packaging and Storage Facility in F-Area, and (b) a small vitrification facility within the existing F-Canyon. The decisions in this ROD do not imply or contribute to any poential decision to change the baseline canyon operating strategy from the current two-canyon approach.

DOE expects to make decisions related to the future management of foreign research reactor fuel and on strategies for the disposition of surplus nuclear materials within the next year. Similarly, DOE is evaluating alternatives for stabilizing nuclear materials stored at other locations in the DOE complex. Several years will be required to achieve stabilization of the nuclear materials within the scope of this Record of Decision. Stabilization of the nuclear materials at SRS will entail the operation of many portions of the chemical processing facilities. Consistent with DNFSB Recommendation 94–1, this will preserve DOE's capabilities related to the management and stabilization of other nuclear materials until such decisions are made.

In summary, the Department has structured its decisions on interim actions related to management of the nuclear materials at SRS to achieve stabilization as soon as possible, consistent with earlier decisions to phase out processing activities at the Savannah River Site, while supporting U.S. nonproliferation policies in a safe and cost effective manner.

Issued at Washington, DC, December 12, 1995.

Thomas P. Grumbly,

Assistant Secretary for Environmental Management.

TABLE 1.—NUCLEAR MATERIALS AT THE SAVANNAH RIVER SITE

[From DOE/EIS–0220, ''Interim Management of Nuclear Materials'']

Description	Quantity [a]	Location(s)
Stable		
Spent fuel	3,000 items	Receiving Basin for Offsite Fuel (RBOF).
Unirradiated fuel, targets, reactor components, and scrap from fabrication operations.	315,000 items	Buildings 305A, 313–M, 315–M, 320–M, 321–M, 322–M, 341–M, K- and L-Reactor Assembly Areas.
Unirradiated fuel, targets, and reactor components.	6,900 items	K- and L-Reactors.
Unirradiated and irradiated reactor components and control rods.	420 items	C-, K-, L- and P-Reactors.
Depleted uranium oxide	36,000 drums	R-Reactor, Buildings 221–1F, 221–12F, 221–21F, 221–22F, 707–R, 714–7N, 728–F, 730–F, and 772–7B.
Depleted uranium solutions	300,000 liters (78,000 gallons)	F-Canyon, F-Area Outside Facilities, and TNX.
Sources, standards, and samples.	20,000 items	Sitewide.
Laboratory materials used in research and development.	260 items	Savannah River Technology Center (SRTC).
Programmatic		
Plutonium-242 solutions	13,000 liters (3,500 gallons)	H-Canyon.
Americium and curium solutions and targets.	14,000 liters (3,800 gallons)	F-Canyon.
	65 assemblies	RBOF.
	60 slugs	P-Reactor disassembly basin.
	114 slugs	RBOF.
Neptunium solutions and targets.	6,100 liters (1,600 gallons)	H-Canyon.
	9 targets	Building 321–M.
Candidates for Stabilization		
Plutonium-239 solutions	34,000 (9,000 gallons)	H-Canyon.
Highly enriched uranium solutions.	228,000 liters (60,000 gallons)	H-Canyon and H-Area Outside Facilities.
Plutonium vault materials	2,800 packages	FB-Line, HB-Line, Building 772–F, Building 235–F, and SRTC.
Mark-31 targets	16,000 slugs	K-Reactor, L-Reactor, F-Canyon, and RBOF.
Mark-16 and Mark-22 fuels	1,900 assemblies	K-, L-, and P-Reactors and H-Canyon.
Other aluminum-clad targets	1,800 slugs and assemblies	K-, L-, and P-Reactors.

TABLE 1.—NUCLEAR MATERIALS AT THE SAVANNAH RIVER SITE—Continued

[From DOE/EIS–0220, ''Interim Management of Nuclear Materials'']

Description	Quantity [a]	Location(s)
Failed TRR [b] and EBR–II [c] slugs.	82 canisters	RBOF.

[a] Quantities of materials shown are approximate. Quantities of radioactive solutions stored in tanks fluctuate due to natural evaporation and the addition of materials (e.g., nitric acid) to maintain chemistry within established parameters.
[b] Taiwan Research Reactor—81 canisters.
[c] Experimental Breeder Reactor–II—1 canister.

TABLE 2.—ALTERNATIVES FOR THE INTERIM MANAGEMENT OF NUCLEAR MATERIALS AT THE SRS

[From DOE/EIS–0220, ''Interim Management of Nuclear Materials'']

Material	Alternatives						
	Continuing storage (no action)	Processing to metal	Processing to oxide	Blending down to low enriched uranium	Processing and storage for vitrification (DWPF)[a]	Vitrification (F-canyon)	Improving storage
Stable	✔						
Plutonium-242	x	x	✔		x	x	
Americium and curium	✔½		x		x	✔[c]	
Neptunium	x		✔		x	x	
Plutonium-239 solutions	x	x	✔		x	x	
Highly enriched uranium solutions	x		x	✔	x		
Plutonium and uranium in vaults[d]	x	✔	✔		x	✔	✔
Mark-31 targets	x	✔	x		x	x	x
Mark-16 and Mark-22 fuels	✔		x	x	x		x
Other aluminum-clad targets	✔				x		x
Failed TRR fuel and EBR–II slugs[e]	x	✔	x		x	x	x

x=alternative evaluated.
✔=preferred alternative designated by DOE in Final EIS.
[a] DWPF=Defense Waste Processing Facility.
[b] Targets.
[c] Solutions.
[d] For the plutonium and uranium stored in vaults, there were four preferred alternatives. DOE will base its choice of the applicable alternative for a particular solid upon inspection of the material.
[e] TRR=Taiwan Research Reactor, EBR–II—Experimental Breeder Reactor–II.

[FR Doc. 95–30750 Filed 12–18–95; 8:45 am]
BILLING CODE 6450–01–P–M

Federal Energy Regulatory Commission

[Docket No. QF86–896–007]

Piney Creek Limited Partnership; Notice of Application for Commission Recertification of Qualifying Status of a Small Power Production Facility

December 13, 1995.

On November 28, 1995, Piney Creek Limited Partnership (Piney Creek) of 25 West 3rd Street, Suite 803, Williamsport, Pennsylvania, 17701 submitted for filing an application for recertification of a facility as a qualifying small Power production facility pursuant to Section 292.207(b) of the Commission's Regulations. No determination has been made that the submittal constitutes a complete filing.

According to the applicant, the bituminous coal refuse-fueled small power production facility is located in Clarion County, Pennsylvania. The Commission previously certified the capacity of the facility to be 29.9 MW. The facility consists of a fluidized bed boiler and an extraction/condensing steam turbine generator. The instant application for recertification was submitted to report a change in ownership of the facility and an increase in the maximum net electric power production capacity from 29.9 MW to 33 MW. In addition, applicant requests that the Commission certify certain proposed fuel sources as ''waste''.

Any person desiring to be heard or objecting to the granting of qualifying status should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street N.E. Washington, D.C. 20426, in accordance with rules 211 and 214 of the Commission's Rules of Practice and Procedure. All such motions or protests must be filed within 30 days after the date of publication of this notice in the Federal Register and must be served on the applicant. Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a petition to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,
Secretary.

[FR Doc. 95–30715 Filed 12–18–95; 8:45 am]
BILLING CODE 6717–01–M

[Docket Nos. CP66–111–003 and CP96–26–000]

Great Lakes Gas Transmission Company; Notice of Intent To Prepare an Environmental Assessment for the Proposed St. Clair River Crossing Project and Request for Comments on Environmental Issues

December 13, 1995.

The staff of the Federal Energy Regulatory Commission (FERC or Commission) will prepare an