

Interim Action Determination

K-Area Materials Storage (KAMS) Area Expansion at the Savannah River Site (SRS)

The Department of Energy, including the National Nuclear Security Administration (hereafter DOE) is preparing the Surplus Plutonium Disposition (SPD) Supplemental Environmental Impact Statement [SEIS] (DOE/EIS-0283-S2). In the SEIS, DOE is evaluating alternatives for disposition of plutonium that is surplus to the national security needs of the United States for which DOE has not made a disposition decision. DOE continues to evaluate alternative disposition paths for surplus plutonium materials and options for preparing plutonium oxide feed material for the Mixed Oxide Fuel Fabrication Facility (MFFF). DOE issued a Notice of Intent for the SPD SEIS on March 28, 2007 (72 Federal Register [FR] 14543), an Amended Notice of Intent for the SPD SEIS on July 19, 2010 (75 FR 41850) and, on January 12, 2012, a second Amended Notice of Intent (77 FR 1920). DOE issued the Draft SPD SEIS in July 2012 and anticipates issuing the Final SPD SEIS the summer of 2013.

In the Draft SPD SEIS, DOE states that the mixed oxide (MOX) fuel alternative is DOE's preferred alternative for surplus plutonium disposition. DOE's preferred option for pit disassembly and conversion of surplus plutonium metal to oxide to supply feed for the MFFF is to use some combination of facilities at the Los Alamos National Laboratory (LANL) and the K-Area, H-Canyon/HB-Line, and the MFFF at SRS. DOE's preferred alternative for disposition of surplus non-pit plutonium, that is not suitable for MOX fuel fabrication, is disposal at the Waste Isolation Pilot Plant. This preferred path, while efficient in terms of resources required, will abbreviate the period of time in which safe, secure storage could be constructed for the various plutonium materials that would be generated once a Record of Decision (ROD) to the SPD SEIS is rendered. In order to meet the safe, secure storage demand for pit disassembly metals and non-pit plutonium that may be available soon after the SPD SEIS ROD, DOE has a need to initiate storage area construction preparations in advance of the SPD SEIS ROD.

In 2007, DOE performed a *Supplement Analysis (SA) to the Storage and Disposition of Weapons-Usable Fissile Materials Environmental Impact Statement* (DOE/EIS-0229-SA4), following safeguards and security enhancements at SRS K-Area, as described in the *Environmental Assessment for the Safeguards and Security Upgrades for Storage of Plutonium Materials at the Savannah River Site* (DOE/EA-1538, December 2005). Following the 2007 SA, DOE decided (72 FR 51807) to consolidate plutonium storage at the KAMS Facility at SRS. The decision was based on assuring safe, secure storage in compliance with design basis threat guidance criteria, as well as the siting of plutonium disposition facilities at SRS. A KAMS expansion into the Final Storage Area and Presentation Room of the K-Area Complex presents an optimal storage area increase opportunity. Modifications would require very minor dismantlement and removal (D&R) activities and few physical enhancements, primarily for safeguards and security systems.

DOE regulations for implementing the National Environmental Policy Act (NEPA) at Title 10 Code of Federal Regulations Parts 1021.104 and 1021.211 describe requirements for an allowable interim action concerning a proposal that is the subject of an ongoing project-specific environmental impact statement. No action concerning such a proposal may be taken if the action would: (1) have an adverse environmental impact, or (2) limit the choice of reasonable alternatives.

KAMS Expansion into the Final Storage Area and Presentation Room¹

DOE proposes to extend the KAMS Area into the current Final Storage Area and Presentation Room to store additional quantities of surplus plutonium and, potentially, plutonium alloys. Typically, the plutonium will be packed in 3013 storage containers inside 9975, 9977, ALR8 and pipe overpack shipping containers. Some 3013 internal containers for K-Area Interim Surveillance (KIS) daughter products may also be stored. Minor D&R activities would be performed to enable material storage area (MSA) expansion, such as door and lighting removal and replacement. Examples of MSA modifications include the installation of new MSA access structures, fire protection/detection systems, ventilation, safeguards/security systems, and materials control/accountability systems.

DOE does not expect that the process for receipt and storage of plutonium would be significantly altered by this expansion, nor will the KIS process be affected. Since plutonium receipt and storage in KAMS began in 2002 (DOE/EIS-0229-SA2), K-Area has provided safe, secure storage of plutonium materials under strict controls described within safety analysis documentation. Documented safety analyses (DSAs) will be conducted to ensure that plutonium oxides and metals, in approved container/packaging configurations, are assessed against hazards criteria, prior to receipt and storage in the K-Area MSA.

Although one SPD SEIS option for pit disassembly and conversion (PDC) at K-Area would use the Final Storage Area and Presentation Room space as processing areas, a decision to initiate an early start for KAMS expansion (approximately May 2013) would present little risk should DOE select the PDC at K-Area option. The spaces would be prepared for vault storage only, and the floor space and footprint would remain available for other uses. Therefore, should DOE implement the PDC in K-Area option, DOE's ability to proceed with installation of PDC equipment would not be significantly impacted by a KAMS expansion start in May 2013.

Environmental Impacts

Environmental impacts from activities associated with the plutonium storage mission in KAMS are well understood. DOE does not expect that impacts would change significantly. DOE would expect small dose increases to workers involved in plutonium materials management. Current DSAs for storage of the 9977 package (two 3013s) in the K-Area MSA show potential dose increases that could result using current practices and KAMS configuration. However, the opportunity exists to space or shield high dose materials more effectively with a KAMS expansion. Dose to radiation workers would be monitored and maintained below administrative control levels (500 millirems per year). Additional reviews for safety will be performed as appropriate for the KAMS expansion effort. Implementation of administrative and engineered controls will be incorporated, as needed, to ensure safe operations to the onsite workers and the public.

The physical modifications required to expand KAMS will not result in radiological impacts to the public because the modifications would take place in an existing robust building. Minimal construction waste from D&R operations would be generated. Paints and wall and floor coatings

¹ This project is also known as the Purification Area Vault Project Phase II.

in the Final Storage Area and Presentation Room are known to contain low levels of polychlorinated biphenyls (PCBs) and potential hazardous metals. DOE expects that physical modifications would result in a generation of small quantities of radioactive waste. Replacement of lighting would generate waste lamps containing mercury vapor and require management as universal waste (recyclable). Hazardous, PCB, and construction waste would be managed in accordance with standard SRS waste management practices. Waste volumes are expected to be small and would be handled through routine procedures with current staffing.

Essentially, the only waste increase expected from the expanded storage mission would be from devices used on storage containers to provide materials control/accountability and safeguards/security information. The waste results from replacement of batteries, which are currently managed for recycle.

Choice of Reasonable Alternatives

In the SPD SEIS, DOE is evaluating the environmental impacts of alternatives for the disposition of surplus plutonium consistent with the national nuclear nonproliferation strategy. The SPD SEIS will support a decision for plutonium disposition and the facilities required for PDC to prepare surplus plutonium for disposition. Only the SPD SEIS option for PDC at K-Area involves the Final Storage Area and Presentation Room. KAMS expansion modifications proposed for the Final Storage Area and Presentation Room would be comparable with those currently installed in KAMS, essentially security and detection systems. Floor space that could be utilized for PDC at K-Area would be mostly unaffected by the KAMS expansion. Because the construction scope is for vault storage, impacts to potential SPD SEIS alternatives are negligible in terms of cost or schedule delays, should the PDC at K-Area option be selected. Conversely, cost and schedule impacts to the Surplus Plutonium Disposition Program may be detrimentally impacted if storage preparations are not initiated before the SPD SEIS is completed.

Conclusions

DOE has reviewed the alternatives evaluated in the SPD SEIS by which surplus pit and non-pit plutonium materials will be dispositioned. DOE states that the MOX fuel alternative is DOE's preferred alternative for surplus plutonium disposition. DOE's preferred option for pit disassembly and conversion of surplus plutonium metal to oxide to supply feed for the MFFF is to use some combination of facilities at the LANL and the K-Area, H-Canyon/HB-Line, and the MFFF at SRS. DOE's preferred alternative for disposition of surplus non-pit plutonium, that is not suitable for MOX fuel fabrication, is disposal at the Waste Isolation Pilot Plant. The Final Storage Area and Presentation Room would be utilized as a process area if the K-Area option was selected for a portion of the PDC mission. The Final Storage Area and Presentation Room footprint also provides an opportunity for KAMS expansion and would provide storage space to support alternatives evaluated in the SPD SEIS, including the preferred alternative. In addition, there would be no significant negative impacts to the environment, cost, schedule, or choice of alternatives by initiating an early start to construction activities for a KAMS. Therefore, this action is clearly an allowable interim action in accordance with DOE regulations for implementing NEPA at Title 10 CFR Parts 1021.104 and 1021.211.

Approved at the Savannah River Site, Aiken, South Carolina, April 25, 2013



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