

**Finding of No Significant Impact
for the
Safeguards and Security Upgrades for Storage of Plutonium Materials
at the
Savannah River Site**

Agency: U.S. Department of Energy

Action: Finding of No Significant Impact

Summary: The Department of Energy (DOE) has prepared an environmental assessment (EA) (DOE/EA-1538) to evaluate the potential environmental impacts associated with the implementation of proposed and alternative actions to enhance the safe and secure storage of plutonium-bearing materials at the Savannah River Site (SRS) to meet the enhanced terrorist threat. The draft EA was made available to the States of South Carolina and Georgia, and to the public, for a 30-day comment period. Based on the analyses in the EA, and after careful consideration of comments received, DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an environmental impact statement (EIS) is not required and DOE is issuing this finding of no significant impact (FONSI).

Public Availability: Copies of the EA and FONSI or further information on the DOE NEPA process are available from:

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Background: In response to the terrorist attacks of September 11, 2001, DOE has reassessed its threat criteria relative to the protection of special nuclear materials. The reassessment resulted in a number of changes to the criteria, and to the postulated capabilities of those who might perpetrate acts of violence against DOE assets. Prior to this reassessment, DOE had intended to modify a building in F Area to implement the surveillance requirements of DOE Standard (STD)-3013, including the ability to re-stabilize and re-package any non-compliant plutonium-bearing materials. This was called the Container Surveillance and Storage Capability (CSSC) project. Concurrent with the CSSC project, DOE had also intended to continue storing plutonium-bearing materials in compliance with DOE-STD-3013 in the K-Area Material Storage (KAMS) facility. In order for SRS to maintain two plutonium storage facilities and implement the

required safeguards and security adequate to respond to the enhanced terrorist threat at both locations, the agency would have to provide for significant additional security costs.

Purpose and Need for Agency Action: The purpose of the proposed and alternative actions is to enhance physical safety and security for plutonium-bearing materials stored at SRS, and to ensure the safe storage of plutonium-bearing materials by providing the capability to comply with the material surveillance and stabilization requirements of DOE-STD-3013. DOE needs to implement these actions in order to meet DOE-STD-3013 surveillance and stabilization requirements and to provide the safeguards and security improvements necessary to respond to the enhanced terrorist threat.

Proposed Action: The proposed action is comprised of the following activities: (1) the de-inventory of plutonium-bearing materials from the F-Area facility and installation of modified storage capability in K Area, (2) the construction and operation of surveillance and stabilization capabilities in K Area, (3) K-Area interim surveillance, (4) the installation of physical security upgrades in K Area and (5) the modification and upgrade of the Advanced Tactical Training Area (ATTA) Range. A brief description of each activity follows:

F-Area Facility:

Plutonium-bearing materials currently stored in the F-Area facility would be removed and transported to an existing room in the K-Area complex for management and interim storage. Implementation of this action would require no facility modifications or construction-related activities in F Area.

K-Area Complex:

An existing room in the K-Area complex would be modified to accommodate the safe storage of additional plutonium-bearing material primarily from F Area in different packaging configurations than currently approved for storage in K Area. The CSSC project would be installed in K Area to facilitate the stabilization, packaging, storage, and monitoring of plutonium-bearing materials in accordance with DOE-STD-3013. This project would incorporate destructive and non-destructive technologies, possess un-packaging and re-packaging capabilities, and be able to safely stabilize non-compliant materials. The CSSC project is expected to go online in 2009. While the CSSC project is being constructed, DOE-STD-3013 surveillance requirements would be met by constructing and operating the K-Area Interim Surveillance (KIS) project. This project would be able to unload and reload 3013 containers from 9975 shipping packages and conduct the necessary non-destructive and destructive examinations. General building modifications and upgrades related to worker safety, habitability, and fire protection would also be implemented.

Physical security upgrades to meet the enhanced terrorist threat would also be implemented in K Area. These upgrades would include: (a) the clearing and grubbing of

approximately 210 acres of land beyond the existing K-Area restricted area, (b) adding security fence lines and barriers, (c) installing lighting with diesel generator backup power, and (d) installing new security features and systems inside of the K-Area complex.

ATTA Range

Two new multi-purpose training ranges (984 and 1,312 feet in length, respectively) would be constructed and operated at the existing ATTA Range facility. Implementation of this action would not necessitate expansion of the facility's Surface Danger Zone. The new ranges would be located in undeveloped areas to the west and south of the existing Known Distance Range. A ten-foot earthen berm would surround both ranges, effectively segregating them from the surrounding terrestrial environment. Construction of these two ranges would require the clearing of approximately 17.3 acres of existing forestland.

Alternative Actions: In accordance with NEPA regulations, DOE examined the following alternatives to the proposed action:

No Action Alternative

This alternative would involve the continued storage of plutonium in both K and F Areas without performing the surveillance and monitoring requirements of DOE-STD-3013 or implementing the safeguards and security upgrades required by the enhanced terrorist threat. Environmental permitting and monitoring programs in F Area would have to be updated and continued. Presently, the F-Area building does not meet all of the safety standards or possess the surveillance capabilities required for extended storage of plutonium. While plutonium stored in K Area would be in DOE-STD-3013 containers inside of 9975 shipping packages, there is no destructive analysis capability in K Area to ensure the continued safe storage of these materials or to re-stabilize and re-package them should an unsafe condition be identified. Implementation of the no action alternative therefore may increase the potential of a radiological release to the environment due to the lack of surveillance capability.

Alternative 1

This alternative would involve maintaining two facilities (in K and F Areas) to support current plutonium storage and nondestructive surveillance capabilities, without installing the ability to perform destructive examinations or restabilize and repackage noncompliant material. Security upgrades would be implemented at both locations at significant expense to DOE. Presently, the F-Area building does not meet all of the safety standards required for extended storage of plutonium and would require substantial upgrades. Also, environmental permitting and monitoring programs in F Area would have to be updated and continued. While plutonium stored in K Area would be in DOE-STD-3013 containers inside of 9975 shipping packages, there is presently no capability to conduct non-destructive and destructive examinations or restabilize and repackage noncompliant

plutonium materials in K Area. Therefore, existing surveillance capabilities in F Area would either have to be duplicated in K Area, or material would have to be transported between the two areas in order to access the necessary surveillance equipment. Either action would be extremely costly.

Alternative 2

This alternative would involve consolidating and supporting the plutonium storage, surveillance, and stabilization mission in K Area only, without upgrading physical security. DOE-STD-3013 storage and surveillance requirements would be met, including the capabilities to perform destructive analysis and to restabilize and repackage noncompliant plutonium material. This alternative would result in significant savings by consolidating the plutonium storage mission into one location. However, under this alternative, actions to address and defend against the increased terrorist threat would not be taken.

Alternative 3

This alternative would involve co-locating the proposed multi-purpose training ranges at alternate locations in the immediate vicinity of the existing ATTA Known Distance Range. Implementation of this alternative would place the new ranges too close to U.S. Highway 278 and could potentially impact known red-cockaded woodpecker (RCW) colonies.

Environmental Impacts:

The F-Area facility and K-Area complex are both located in previously developed, industrialized landscapes on SRS. The environmental impacts associated with removing plutonium-bearing material from the F-Area facility and transporting it to the K-Area complex would be negligible. The proposed CSSC and KIS projects in the K-Area complex would be installed in an existing facility. The associated construction-related activities (e.g., structural modifications and upgrades, installation of equipment) would be relatively short-lived, cause minimal disruption to facility and area operations, and be conducted using best management practices (BMPs). Air emissions associated with these construction activities (e.g., equipment emissions, fugitive dust) would be temporary, their impacts minimal, and not require permitting. Any leaks or spills occurring during project installation would be contained and cleaned up in accordance with site procedures and protocols. The potential for these construction-related activities to adversely impact the human environment (e.g., air, land, water, biotic resources) would be negligible.

The proposed expansion of the K-Area security buffer and modification and upgrade of the ATTA Range facility would require the clearing of approximately 227 acres of forestland. The associated land clearing and soil disturbing activities would be conducted using BMPs (e.g., soil erosion and stormwater control). Any leaks or spills (e.g., fuel, oil) occurring during construction would be cleaned up in accordance with site procedures and protocols. The impacts to area streams and wetland resources would be

negligible. There are no threatened or endangered species within the respective project areas. Air quality emissions resulting with construction-related activities (e.g., fugitive dust associated with soil disturbing activities, equipment emissions) would be temporary, their impacts minimal, and not require permitting. Both of the project areas have previously been subjected to extensive land alterations (e.g., timber harvesting, modern construction activities), so the potential for impacting archaeological or cultural resources would be negligible. The proposed clearing of approximately 227 acres would have a negligible impact on terrestrial ecology and productivity at SRS. The ATTA Range facility is within an RCW habitat management area and, in part, bordered by ecological setasides. However, there are no active RCW colonies in or near the project area and the proposed new training ranges would be configured so that ecologically sensitive areas (e.g., wetlands/floodplains) would not be impacted.

Implementation of the proposed action would be supported by existing SRS infrastructure and resources (e.g. waste management, power, potable water, roads, etc.). Any additional waste loads and resource utilization generated by the proposed action would easily be accommodated by existing site facilities and the associated environmental impacts would be negligible. DOE does not expect any increase in site traffic accidents and associated injury rates as a result of construction or operation activities. Radiological and non-radiological air emissions resulting from operation of the K-Area projects would be well within established regulatory limits and not adversely impact local air quality. Surface and groundwater resources would not be impacted. Any spills or leaks occurring during facility operations would be cleaned up in accordance with site procedures and protocols. Operation of the expanded ATTA Range facility would result in no chemical usage or radiological impact. Lead and explosive materials would be introduced into the environment as a result of training exercises at the expanded Range. However, DOE expects that the amount of additional lead discharged into the environment as a result of these expanded operations would be minimal. Yearly studies and reviews of the amount of lead deposition would be conducted by Wackenhut Services, Inc., DOE's security contractor, to monitor the potential impact to human health and the environment, and to assure appropriate protections are implemented should any human health or environmental risk be detected. Following completion of operations at the ATTA Range, DOE, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control will conduct an evaluation to determine if a site closure is necessary to mitigate any long-term environmental effects that could result from lead in the environment.

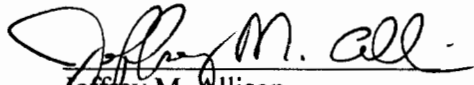
Workforce requirements and costs associated with implementation of the proposed action would be minimal compared to the total SRS budget and employment. Consequently, the potential for significant socioeconomic impacts within the SRS region-of-influence would be negligible. Any environmental impacts associated with the proposed action would be limited to specific geographic areas within SRS and not be evidenced beyond the site boundary. The potential for engendering environmental justice issues would therefore be negligible.

Impacts to worker health and safety would be negligible due to the use of appropriate safety practices, personal protective clothing and equipment, and enforcement of Occupational Safety and Health Administration (OSHA) compliant work conditions. The CSSC and KIS projects in K Area would employ engineered and procedural controls to ensure the protection of public and worker health and safety. Mitigation provided by these systems and processes would ensure that, even in a worst case accident scenario, radiological doses to the public would be less than 1000 mrem (50-year Total Effective Dose Equivalent), which is a 5×10^{-04} latent cancer fatality risk. The dose to the maximally-exposed individual resulting from expected radiological releases from the CSSC and KIS projects would be well below the applicable DOE standard. Human health risks would be no greater than those presently resulting from SRS operations dealing with routine plutonium work. The potential for impacting human health and safety (both on and offsite) would be minimal.

Implementation of the proposed action is not expected to have a measurable impact on the human environment (e.g., socioeconomics, human health and safety, threatened and endangered species, wetlands, migratory avian species, air, land, and water resources). The proposed action would not add measurably to the cumulative environmental effect of other ongoing actions and operations within SRS and the surrounding area. Implementation of the proposed action would significantly enhance the safety and security of plutonium-bearing materials stored at SRS and therefore reduce the potential for adverse health and safety impacts from long-term storage of plutonium.

Determination. Based upon the information and analyses in the EA (DOE/EA-1538) and after careful consideration of all comments, DOE has determined that the proposed action to enhance safety and security for storage of plutonium-bearing materials at SRS does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, an EIS is not required and DOE is issuing this FONSI.

Signed in Aiken, South Carolina, this 15th day of December 2005.


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