

**Finding of No Significant Impact
for the
Storage of Tritium-Producing Burnable
Absorber Rods in K-Area Transfer Bay
at the
Savannah River Site**

Agency: U.S. Department of Energy (DOE)

Action: Finding of No Significant Impact

Summary: The DOE Savannah River Operations Office (SR) and the National Nuclear Security Administration (NNSA) Savannah River Site Office (SRSO) have prepared an environmental assessment (EA), DOE/EA-1528, to evaluate the potential environmental impacts of the temporary dry storage of a cask containing Tritium-Producing Burnable Absorber Rods (TPBARs) in the Transfer Bay in K Area at the Savannah River Site (SRS). Based on the analyses in the EA, 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 is not required, and DOE is issuing this finding of no significant impact (FONSI). Transportation of the TPBARs to SRS has been evaluated in previous NEPA reviews as indicated in the EA.

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

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Background: The need to store irradiated TPBARs at SRS is dictated by a Memorandum of Agreement between the NNSA and Tennessee Valley Authority (TVA) that TPBARs, after completion of the irradiation cycle, would not be stored in TVA's Watts Bar Nuclear Generating Station (Watts Bar) spent fuel pool. The planned TPBAR storage location at SRS, the Tritium Extraction Facility (TEF), would not be ready to accept the TPBARs for about one year due to the construction and startup schedule.

A TPBAR is a welded closed stainless steel clad rod with an aluminide coating to minimize tritium diffusion. The TPBARs would be contained in a consolidation canister which is secured and maintained in the appropriate transport position within the cask cavity by the TPBARs basket assembly. The TPBARs would be shipped and stored in an NAC International, Inc. Legal Weight Truck (NAC-LWT) cask which is designed for the safe transport of Type B fissile and other radioactive materials. This cask would be positioned on an International Standards Organization (ISO) shipping container fitted with a cask support structure which would be mounted on a trailer. The cask would not be opened at any time.

The ISO container can be entered for receipt inspection, if needed. DOE anticipates that the material could be stored for up to two years with no routine maintenance or

inspections. The Transfer Bay would be locked after receipt and placement and inspected per security procedures until the planned shipment to TEF. The cask would be new and DOE does not expect contamination to be present. When TEF is ready to receive the NAC-LWT cask, the trailer would be moved out of the Transfer Bay.

Purpose and Need for Agency Action: The purpose of the proposed action is to provide safe and secure storage of irradiated TPBARs until the TEF is ready to receive and process the material. DOE needs to implement this action to comply with the Memorandum of Agreement between DOE and TVA which does not allow storage of irradiated TPBARs at Watts Bar. Conforming to the Memorandum of Agreement will help insure that DOE meets its national security commitment to the U.S. Department of Defense to develop a new source of tritium production to support the nuclear weapons stockpile.

Proposed Action: The proposed action is to implement the storage of TPBARs in the K-Area dry storage Transfer Bay for a period of up to two years. The Transfer Bay is proposed for the storage of TPBARs in a 10 CFR 71-certified shipping package that offers a high degree of protection for the tritiated rods. The shipping cask, its outer ISO container packaging, and the trailer portion of the tractor-trailer transporter would be parked in the Transfer Bay. The cask would remain in its assembled transport condition inside a closed ISO container for the duration of interim storage. The K-Area Transfer Bay has been de-inventoried and has been effectively retired. The TPBARs NAC-LWT cask would be placed on and covered with fire resistant canvas for storage.

Alternative Action and Locations: In accordance with NEPA regulations, DOE examined the following alternative to the proposed action: no action, continue to store the TPBARs at TVA's Watts Bar location. In addition, DOE considered but did not evaluate several alternative locations for temporary storage of TPBARs.

The No Action alternative would consist of TVA having to store irradiated TPBARs either in their Spent Fuel Pool or in the NAC-LWT cask within their security area at Watts Bar. If DOE chooses this alternative, none of the potential or expected impacts associated with the proposed action would occur. This alternative would not be in accordance with the Memorandum of Agreement with DOE which does not allow for storage at TVA facilities.

Several alternative potential storage locations at SRS were not analyzed since they were determined to be inadequate due to one or a combination of spacing, ongoing mission, and protection from weathering, cost, or security controls. These locations included L and H Areas and the Receiving Basin for Offsite Fuels facility.

Environmental Impacts: The K-Area Transfer Bay is a dry storage location which was used for loading trailers with reactor material casks, including tritium producing targets and poison rods. The TPBARs would be transported to SRS and stored in their shipping cask in accordance with a U.S. Nuclear Regulatory Commission Certificate of Compliance. Transport methods employed by DOE in the shipment are specifically designed to afford security against sabotage or terrorism, as well as safety in the event of an accident. The NAC, which presents the safety analyses and results for the structural, thermal, shielding, and containment evaluations, concludes that the NAC-LWT cask containing TPBARs meets the applicable requirements of 10 CFR 71.

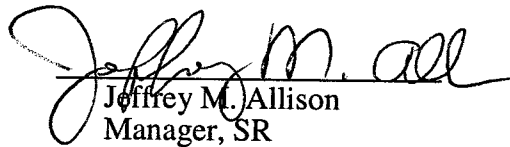
The postulated TPBARs design basis fire accident is similar in severity and duration to the 10 CFR 71 evaluation fire used in U.S. Nuclear Regulatory Agency evaluations. This fire in the Transfer Bay would result in damage in the immediate area; however the 10


CFR 71 Department of Transportation Type B NAC-LWT cask would protect the material from any impacts. It has been shown that the containment boundary of the NAC-LWT cask closed with metallic O-ring seals is capable of providing the required confinement of the TPBAR radioactive material contents for the evaluated onsite storage duration of two years. Therefore, the NAC-LWT package can be safely stored on SRS with up to 300 TPBARs.

DOE does not expect any measurable impact on the local economy as a result of the proposed action. No adverse impacts to either site surface water or groundwater quality would be expected. The proposed action would have no adverse impacts on threatened and endangered species, cultural resources, floodplains, or wetlands on SRS. Impacts to the local air quality would be negligible. The proposed action would not pose any additional potential problems for either public health or safety. Any increases in site traffic accident and fatality rates would be minimal as a result of the proposed action. An evaluation of the storage of TPBARs in the NAC-LWT cask shows that it can remain in safe condition for at least two years without adverse impacts. Therefore, human health impacts would be minimal. The proposed action would not add measurably to the impacts that result from the operation of SRS and surrounding facilities.

Determination: Based upon the information and analyses in the EA (DOE/EA-1528) and after careful consideration of all comments, DOE has determined that the proposed temporary dry storage of a cask containing TPBARs in the Transfer Bay in K Area 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 1st day of June, 2005.


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