

**FINDING OF NO SIGNIFICANT IMPACT**

**Defense National Stockpile Center  
Disposition of Thorium Nitrate  
Environmental Assessment**

**November 2003**

**Department of Defense  
Defense Logistics Agency  
Defense National Stockpile Center  
Fort Belvoir, Virginia**

**AGENCY: U.S. Department Of Defense****ACTION:** Finding of No Significant Impact

**SUMMARY:** As required under the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.), an environmental assessment (EA) has been prepared to assess the potential environmental impacts associated with the proposed action to transfer the Defense National Stockpile Center's (DNSC's) thorium nitrate to the Nevada Test Site (NTS) for disposal. The thorium nitrate is stored at DNSC's Curtis Bay, Maryland, and Hammond, Indiana, depots. Approximately 21,000 drums containing thorium nitrate and 10 drums containing converted thorium nitrate would be loaded into cargo containers and transported to the NTS, where the cargo containers would be placed in disposal cells. The EA also analyzed the no-action alternative. Based on the analysis in the EA, DNSC has determined that the proposed action is not a major federal action significantly affecting the quality of the human environment within the context of NEPA. Therefore, the preparation of an environmental impact statement is not required.

**ADDRESSES AND FURTHER INFORMATION:** Copies of this FONSI, the accompanying EA, and further information concerning the proposed action are available from

Attention: Project Manager, Disposition of Thorium Nitrate EA  
DNSC-E  
Defense Logistics Agency  
Defense National Stockpile Center  
8725 John J. Kingman Road  
Suite 3229  
Fort Belvoir, VA 22060-6223  
Fax: (703) 767-7620  
E-mail: michael.pecullan@dla.mil

Additional information about the NEPA process can be obtained from the Council on Environmental Quality (CEQ) "NEPANET" website at "<http://ceq.eh.doe.gov/nepa/nepanet.htm>."

**NEED FOR THE PROPOSED ACTION:** DNSC proposes to dispose of its thorium nitrate stockpile, which is currently stored at two U.S. locations. The purpose of the proposed action is to end the DNSC's stewardship of the thorium nitrate stockpile in a safe and environmentally sound manner, with minimum radiation exposure and risk to the workers, the public, and the environment. DNSC needs to perform the proposed action because the thorium nitrate stockpile is excess to the needs of the U.S. Department of Defense. No other agency of the federal government has a need for this thorium nitrate, and there is no market for its sale.

**BACKGROUND:** The thorium nitrate was acquired between 1957 and 1964 for the U.S. Government's strategic material stockpile. The thorium nitrate is stored in approximately 21,000 containers located at two DNSC depots: Curtis Bay, Maryland, and Hammond, Indiana. Historically, the thorium nitrate stockpile was acquired for the Atomic Energy Commission, a predecessor to the U.S. Department of Energy (DOE). The U.S. Congress has enacted legislation that cumulatively made the entire stockpile of thorium nitrate excess material and provided the authority to dispose of it. The thorium nitrate stockpile has been available for purchase in amounts of single drums or greater for many years, but there have been no offers to buy the material since 1990.

Because of the presence of thorium, the thorium nitrate is a radioactive material. The form of DNSC's thorium nitrate is an association of five water molecules for each molecule of thorium nitrate. Until recently, DNSC's thorium nitrate was suspected of having the characteristics of an oxidizer, as specified in the U.S. Department of Transportation's *Hazardous Materials Table* (49 CFR §172.101). However, a recent detailed analysis designed to better characterize the chemical and radiological nature of the stored thorium nitrate has shown that it does not exhibit any of the characteristics given in 40 CFR §§261.21-24 that would make it a hazardous waste under the Resource Conservation and Recovery Act.

**PROPOSED ACTION:** DNSC will transfer the thorium nitrate stockpile and a small quantity of converted thorium nitrate to the NTS for disposal. NTS has agreed to accept ownership and responsibility for this source material. This disposal will be performed in a manner that will be safe, secure, and environmentally sound, with minimal radiation exposure and risk to the workers, the public, and the environment.

The NTS—a DOE facility located about 65 miles (105 km) northwest of Las Vegas, Nevada—is the former continental U.S. site for atmospheric and underground nuclear weapons testing. One of the current missions of NTS is to manage wastes generated on its site and at other DOE-approved facilities across the United States. Low-level radioactive waste (LLRW) generated at NTS and at DOE-approved offsite generators is disposed of in Areas 3 and 5 at NTS. The Area 3 Radioactive Waste Management Site contains a large number of subsidence craters resulting from underground testing of nuclear weapons, and some of these craters have been prepared for disposal of LLRW. The Area 5 Radioactive Waste Management Site contains a series of engineered trenches for disposal of LLRW.

**ALTERNATIVES CONSIDERED:** The attached Disposition of Thorium Nitrate Environmental Assessment, DNSC, September 2003, provides the proposed action, other alternatives not considered in detail, and the no-action alternative.

**Preferred Alternative: Disposal at NTS:** Under this alternative, approximately 21,000 drums containing thorium nitrate and 10 drums containing converted thorium nitrate would be loaded into cargo containers at the DNSC depots in Curtis Bay, Maryland, and Hammond, Indiana, and transported to the NTS. At NTS, the cargo containers would be placed in disposal cells for shallow land burial.

**No Action Alternative:** Under the no-action alternative, the thorium nitrate inventories would remain in storage at the Curtis Bay and Hammond depots. No changes, other than repairs needed to assure safe storage, would be made to the existing warehouses. The thorium nitrate inventories would remain in proximity to wetlands, waterways, and major population centers: Baltimore, Maryland, and Chicago, Illinois. The DNSC would not be able to divest itself of the thorium nitrate stockpiles at the Curtis Bay and Hammond depots. The depots could not be closed as required by the long-term plans of the Defense Logistics Agency (DLA), causing an adverse programmatic impact for DNSC and DLA and preventing the depots from being released for further use or development.

**POTENTIAL ENVIRONMENTAL IMPACTS:** The attached EA presents assessments of potential impacts to human health and the human environment.

The potential for environmental impacts was assessed at each of the storage depots, along the potential cross-country transportation corridors, and at the proposed disposal sites at NTS. Cumulative impacts of the proposed action and the no-action alternative were also evaluated. The areas of assessment include potential impacts to land use from routine operations, including waste disposal and noise; ecological resources, including threatened and endangered species; water resources; socioeconomics; human health and safety; environmental justice; cultural resources; and air quality.

The proposed action was found to have no potential for adverse significant impacts to most of the areas of assessment because no drums of thorium nitrate or converted thorium nitrate would be opened, the proposed action would occur over a short period of time, only equipment suitable to industrial areas would be used, and the number of vehicles and trips would be relatively small. The areas of assessment that may need additional explanation are presented below.

The thorium nitrate is stored in a solid form, as distinguished from liquid or gas. Therefore, any accidental spill would be easily contained and cleaned up. There will be no significant potential adverse impacts to nearby bodies of water or to off-site populations.

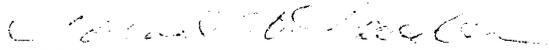
Because the possibility for accidents during transportation provides the greatest risk of adverse impacts from the proposed action, the potential impacts to human health from such accidents were evaluated. The accident analysis addresses only potential impacts to individuals because all credible accidents are too small to produce large-scale effects.

Accident analyses are framed in probabilistic terms; accident analysis can only estimate the likelihood that a particular event would occur. The results of the accident analysis in the EA show that much less than one expected fatality would be associated with the proposed action. Therefore, accidents during transportation of the thorium nitrate stockpile would produce no significant adverse impacts. In addition, all workers would be trained in the potential hazards associated with the proposed action, including radiation exposure, which would be monitored closely to ensure that no worker would receive an unacceptable radiation dose; and each worker would be issued and required to wear personal protective equipment appropriate to the hazards that may be encountered during the proposed action. Required training for workers would further minimize the potential risks to workers.

Based on the analysis of the potential impacts to the human environment, including noise and waste disposal, to water resources, land use, ecological resources, socioeconomics, human health and safety, environmental justice, and cultural resources, the EA concludes that the proposed action would produce no significant adverse impacts. Additionally, indirect (cumulative) impacts would also produce no significant adverse impacts to the human environment.

**DETERMINATION:** Based on the results of the analyses performed during the preparation of the EA, I conclude that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment within the context of NEPA. Therefore, an EIS for the proposed action is not required.

Issued at Fort Belvoir, Virginia this 25th day of November, 2003.

  
CORNEL A. HOLDER, Administrator  
Defense National Stockpile Center