Overview

Report to Congress on the Consolidation of the Mercury Contained in the National Defense Stockpile

Purpose

This report is submitted in accordance with Section 113 of the Consolidated Appropriations Act, 2004 (P.L. 108-199, January 23, 2004). Section 113 directed the Secretary of Defense to study issues related to the consolidation of the storage of mercury contained in the National Defense Stockpile and report to Congress on the results of the study by June 1, 2004. The statute further directed that a decision to consolidate the storage of mercury to a site that currently does not store National Defense Stockpile mercury shall occur no earlier than 180 days after the date of the report.

Background

The National Defense Stockpile was created during World War II to preclude U.S. dependence on foreign sources of supply during times of national emergency. In 1988, responsibility for the operational management of the NDS was assigned to the Defense National Stockpile Center (DNSC), a field activity of the Defense Logistics Agency (DLA). Since the early 1990s, over 99% of the NDS inventory has been determined to be excess to Department of Defense needs. Included in the material determined to be excess is approximately 4,890 tons of mercury (4,436 metric tons). The material is commodity grade elemental mercury, which continues to be imported into and exported from the United States, although use is declining as substitute products are found. Traditional uses for mercury include fluorescent light bulbs, dental amalgams, switches, and thermostats.

DSNC offered the material for sale until 1994 when concerns over mercury accumulation in the global environment prompted DNSC to suspend sales. As custodian of the mercury, DSNC then had to decide on a long-term strategy for management of this material. In compliance with the National Environmental Policy Act and DLA Regulation 100.22, Environmental Considerations in Defense Logistics Agency Actions in the United States, DNSC prepared an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts of a range of reasonable alternatives for long-term management of the mercury. In preparation of the EIS, DNSC worked closely with the Environmental Protection Agency and the Department of Energy, both of which are cooperating agencies.

The final EIS analyzes three alternatives: (1) no action, i.e., maintaining the storage at the existing locations; (2) consolidation and storage at one of the current DNSC storage sites or at one of the other candidate locations studies; and (3) sale of the mercury inventory. Other alternatives considered earlier in the process include various treatment options. Based on the immaturity of bulk mercury treatment technologies and the lack of an EPA-approved path forward for treatment and disposal, these alternatives were not considered viable and were not evaluated in detail in the EIS.

After extensive consideration of all the impacts, DNSC has selected consolidated storage at one location. The Record of Decision (Attachment 1) was published in the Federal Register on April 30, 2004.

Rationale for Decision to Consolidate at One Location

The decision to consolidate the elemental mercury at one site is based on a combination of environmental and economic factors, policy considerations, and stakeholder comments. The Final EIS consists of an Executive Summary, a detailed discussion of each of the alternatives and their effects on the environment (Volume I), listing of issues raised during the public comment process and responses to those comments (Volume II), and a Risk Assessment associated with each of the alternatives. The Consolidated Storage Alternative human health risks from normal operations are negligible and impacts to the environment are negligible to minor.

The Consolidated Storage Alternative and the rationale for selecting it are also presented in detail in the Supplementary Information Section of the Record of Decision (ROD). DNSC will select a site for consolidated storage after completion of a procurement process. If a site other than one of those evaluated in the Final EIS is selected, additional environmental documentation may be required. If no suitable site is found, the material may remain at the three current DNSC storage sites: Somerville, New Jersey; New Haven, Indiana; or Warren, Ohio. This outcome would adversely affect DNSC's closure plans.

The following is a summary of the analysis and factors considered:

- Consolidating the mercury at one site results in negligible-to-minor environmental impacts at that site and negligible-to-minor environmental improvements at the site(s) from which it would be removed.

- Human health and ecological risks are negligible.

- Consolidating the mercury inventory simplifies storage operations and results in economies of scale (i.e., fewer resources required to manage the mercury inventory).

- Consolidating the mercury facilitates DNSC's long-term closure strategy. As DNSC sells the excess NDS inventory, it is closing locations and turning those facilities over to the lessor. At current projections, the New Jersey and Ohio depots would close in 2019 and the Indiana depot in 2020.

- Removing the material from the DOE Y-12 site in Oak Ridge meets the national security mission of Y-12. As stated in the Record of Decision, that material will be re-located to Warren, Ohio for over packing consistent with the rest of the DNSC mercury inventory and ultimate removal to the final consolidated storage site (assuming that Warren, Ohio is not the selected site).

- The stored mercury will be available for future use should that become appropriate.

Each of these factors is discussed in greater detail in the Final EIS and the ROD.

Facility Requirements for Mercury Storage

There are five candidate locations for consolidated storage: DNSC's New Haven Indiana; Somerville, New Jersey; and Warren, Ohio Depots; Hawthorne Army Depot, Nevada; and the Utah Industrial Depot, Tooele, Utah. All these sites were analyzed in the Mercury Management EIS; all were found to be environmentally acceptable potential sites.

Facilities to support continued storage would have to be leased, either commercially or through an intra-government agreement. The total storage requirement is 200,000 ft2 (18,581 m2). The average annual cost for storage is estimated to be $3.50 per square foot ($37.67 per square meter) throughout the contiguous United States. Therefore, the estimated annual mercury storage cost is $700,000.

Assumptions

- Facility is located within the contiguous United States
- Staging and transportation will take one year; storage will be for an additional 40 years
- Y–12 mercury will be over-packed before storage at the consolidation warehouse
- Over-packs will not fail
- Existing storage buildings will be used; there will be no new construction or land disturbance
- Property will be either commercially or government-owned
- Lease rates will provide consideration for profit
- Lease rate will include all related property maintenance costs
- Lease rate will include all related utility costs
- Lease rates will provide consideration for recapitalization costs
- Lease rate will include security costs
- Actual facility costs will be established based on best value to the Government during a procurement process.

Basic facility requirements are subject to negotiation and will include, but are not limited to:

- Fully enclosed, secure, weather resistant warehouse
- Floor load capacity of 3,000 lbs/ft2 (14,648 kg/m2)
- Minimum ceiling height of 16 ft (4.9 m)

- Power operated overhead equipment access doors
- Personnel access doors
- Electrical power sufficient to provide lighting and operate the equipment doors and ancillary equipment
- Fire resistance (by means of a suppression system or non-flammable construction)
- Leak resistant floor sealant
- Three-inch-high curbing at all doors and ramping to accommodate material handling equipment

Other Considerations:

- Costs for special applications such as the floor sealant, curbing, and ancillary systems may be amortized during the early portion of the lease to offset acquisition and installation by the property owner.
- Geographic location of the consolidation warehouse will impact costs. Costs at storage facilities in rural locations may be below the estimate provided on page D-10 of the Final Mercury Management Environmental Impact Statement Volume, Attachment 3. Costs for storage facilities in urban and suburban locations may be above this estimate.

Conclusion:

DNSC has selected Consolidated Storage as its Preferred Alternative based on a combination of environmental, economic and technical factors; policy considerations; and stakeholder comments. DNSC believes that storing the mercury at one site is the best way to meet its objectives. Managing the mercury at one site rather than at multiple sites would simplify storage operations and result in economies of scale (fewer resources would be required to maintain the mercury inventory.) This decision also supports DNSC's long-term closure plans for various depots and preserves the mercury for future beneficial uses.

Annotated List of Attachments:

Attachment 1 - ***Defense National Stockpile Record of Decision for the Mercury Management EIS, April 2004 –*** Published in the April 30, 2004, Federal Register at 69 F.R. 23733. Announced DNSC's decision to consolidate the mercury at a single location and to proceed with the procurement of a site which will represent "best value to the government."

Attachment 2 - ***Executive Summary of the Final Mercury Management Environmental Impact Statement, March 2004***.

Attachment 3 - ***Final Mercury Management Environmental Impact Statement, Volume I, March 2004*** – Describes the potential environmental, human health, and socioeconomic impacts of these alternatives, together with cost considerations. Several treatment technologies were considered as possible alternatives for mercury management. Based on the immaturity of bulk mercury treatment technologies and the lack of an EPA-approved path forward for treatment and disposal of elemental mercury, this alternative is not considered viable and is not evaluated in detail in the EIS.

Attachment 4 - ***Final Mercury Management Environmental Impact Statement, Volume II, March 2004*** – Presents the record of comments on the Draft MM EIS, identifies the specific comment(s), and provides DNSC's responses. The majority of the comments received on the Draft MM EIS are related to the Consolidated Storage Alternative, impacts on human health and safety; and environmental and economic impacts.

Attachment 5 - ***DNSC Mercury Transportation and Storage Plan, April 2004*** – Summarizes information on regulatory requirements pertaining to transport of mercury from the current storage sites to a consolidation site as well as storage requirements at the consolidation site. The plan also provides procedures for transporting the mercury in a safe and environmentally sound manner, and in compliance with regulations.

Attachment 6 - ***Human Health and Ecological Risk Assessment Report, March 2004 –*** Provides the detailed health and ecological risk assessments summarized in Chapter 7 of Volume 1 of the Mercury Management Environmental EIS, Attachment 3, above.