

June 26, 1997

SECY-97-136

FOR: The Commissioners

FROM: L. Joseph Callan /s/
Executive Director for Operations

SUBJECT: REMOVAL OF THE ANNE ARUNDEL COUNTY/CURTIS BAY DEPOT
SITE
FROM THE SITE DECOMMISSIONING MANAGEMENT PLAN

PURPOSE:

To inform the Commission that remedial actions have been completed at the Anne Arundel County/Curtis Bay Depot site located in Curtis Bay, Maryland, and that the staff plans to release the site for unrestricted use and remove the site from the Site Decommissioning Management Plan (SDMP).

SUMMARY:

In SECY-90-121, the original SDMP, and in subsequent revisions to the SDMP (SECY-91-096, SECY-92-200, SECY-93-179, SECY-94-213, and SECY-95-209), the staff identified approximately 50 problematic sites where remedial actions were warranted because of the presence of residual radioactive material in excess of the U.S. Nuclear Regulatory Commission's current unrestricted use criteria. One of these sites was the Anne Arundel County/Curtis Bay Depot site in northern Anne Arundel County, Maryland. Beginning in the late 1950s, the General Services Administration (GSA) stored thorium nitrate in fiber and steel drums at the Curtis Bay Depot under NRC License STC-133, as part of the National Defense Stockpile. In the late 1970s and early 1980s the property was sold, and then transferred, to Anne Arundel County. In 1988, National Defense Stockpile responsibility was transferred to the Defense Logistics Agency (DLA). Surveys by the Oak Ridge Institute for Science and Education

CONTACT: Dominick A. Orlando, NMSS/DWM

301-415-6749 (ORISE) in 1992 indicated that the former warehouses and soil contained residual radioactive material (thorium) in excess of NRC's current limits for unrestricted use. DLA began remediating the site in July 1994 and completed remedial activities in October 1995. Based on DLA's remedial activities, the results of NRC's inspections, DLA's Termination Surveys, and ORISE's Confirmatory Surveys, the staff concludes that decommissioning activities are complete and the site is suitable to be released for unrestricted use.

DISCUSSION:

The Anne Arundel County/Curtis Bay site is located in a southern suburb of Baltimore in an industrialized area of Anne Arundel County, Maryland. The SDMP site consisted of open land and nine abandoned warehouses on a 12-hectare (30-acre) tract of land that is part of a larger, 35-hectare (87-acre) property currently owned by Anne Arundel County. Thorium contamination was present, in limited areas, on the floors and in soil beneath and/or adjacent to nine of the former warehouses. The SDMP site is part of a larger parcel of property that has been and is currently being used by the U.S. Government to store National Defense Stockpile materials, such as zinc, lead, chemical and refractory chrome ore, aluminum, tin, and copper.

Beginning in the late 1950s, GSA stored thorium nitrate (mantle and reactor grades, average 47 percent thorium nitrate by weight) in fiber and steel drums at the Curtis Bay Depot, under NRC License STC-133. In 1977, GSA notified NRC of its intention to excess the empty warehouses as part of a sale of U.S. Government land and buildings. The property was sold, and then transferred, to Anne Arundel County in the late 1970s and early 1980s. In 1988, National Defense Stockpile responsibility was transferred to DLA.

The interior surfaces of the warehouses were of tongue-and-groove wood construction and exterior walls were covered with corrugated asbestos siding. Each building contained approximately 300 square meters (m²)(3229 square feet (ft²)) of floor space. Brick pillars and wooden beams supported the warehouses, creating a crawl space under each building. Concrete loading

docks were located along the east side of Buildings M-421 through M-424. Loading docks were removed from Buildings L-411 through L-415 to allow construction of a chain link fence that separates the property from the current Curtis Bay Depot.

In 1977, NRC surveyed the warehouses and identified residual contamination in the tongue-and-groove joints of the wood flooring of several warehouses. In 1977, GSA remediation activities included removing various-sized areas of the floors and walls, as well as portions of subfloor beams and joists. Results of the NRC Confirmatory Survey of the buildings indicated that fixed residual activity limits were less than 17 Becquerels per 100 square centimeters (17 Bq/100cm²) (1000 disintegrations per minute per 100 square centimeters (100 dpm/100 cm²)) for alpha contamination and less than 2.0E-4 centigrays per hour (0.2 milliroentgen per hour) for beta-gamma contamination. Smear samples indicated that removable contamination levels were less than 4 Bq/100 cm² (200 dpm/100cm²). In 1977, soil contamination guidelines did not exist. Soil analysis at that time indicated that thorium was present in the soil in excess of the current 0.37 Bq/gram (0.37 Bq/g) (10 picocuries per gram (10 pCi/g)) limits under Buildings L-412, L-413, L-414, M-421, M-422, and M-423.

In 1992, local residents raised concerns about the presence of residual contamination during consideration of the site as the location of a new detention center. In response, NRC requested ORISE to conduct a radiological survey of the warehouses and adjacent land to determine the current radiological status of the site. The ORISE survey revealed spotty thorium contamination of building surfaces and soil. Surface contamination levels exceeded the current NRC guidelines in eight of nine buildings. Removable activity levels exceeding 200 Bq (12,000 dpm)/100 cm² were observed in Buildings M-421 and M-422. Interior exposure rates in all buildings were below 13 nanocoulombs per kilogram (5 microroentgens per hour) above background, at 1 meter (3.3 feet). Concentrations of thorium in surface soil exceeded the limits in Option 1 of the NRC's Branch Technical Position (BTP) entitled "Disposal or Onsite Storage of Thorium or Uranium Wastes From Past Operations" at 27 locations adjacent to or beneath the former warehouses. At 15 of these locations subsurface soil also exceeded BTP Option 1 limits for

thorium.

In January 1993, DLA assumed responsibility for remediating the site. In May 1993, NRC held a public meeting to discuss the radiological hazards associated with the site and established a repository for documents relating to the site in Glen Burnie, Maryland. DLA submitted a remediation plan for the site in October 1993. In May 1994, after several revisions to the plan, NRC held an additional public meeting to discuss the status of the plan with interested members of the local community. The plan was approved by NRC in June 1994, with conditions, and DLA began remediation in early July 1994. In October 1994, at the request of Anne Arundel County, NRC and Maryland Department of the Environment (MdDE) staff performed a survey of the former DLA property adjacent to the SDMP site to determine whether this portion of the former DLA facility was suitable for unrestricted use. In December 1994, NRC staff informed Anne Arundel County that the property adjacent to the SDMP site was suitable for unrestricted use.

In June 1993, DLA submitted an assessment of the groundwater at the site. In October 1993, NRC staff indicated that the assessment was not suitable for demonstrating that licensed activities had not impacted groundwater at the site. In August 1994, DLA submitted a plan to assess the groundwater at the site. Results of groundwater sampling by DLA in 1995 indicated that gross alpha concentrations in one of the site's monitoring wells was in excess of the Environmental Protection Agency's (EPA's) limits for drinking water. After several revisions to the assessment plan, it was approved by NRC in April 1995.

DLA completed remedial activities in October 1995. Remedial activities generated approximately 153 cubic meters (200 cubic yards) of building debris, soil, brick, and concrete. Remediation waste was disposed of at the Envirocare facility in Utah under a contract with the Industrial Operations Command of the U.S. Army. In December 1995, DLA submitted the Final Status Survey Reports for seven of the nine warehouses. The surveys for the

remaining warehouses and soil, as well as the groundwater assessment report, were submitted in January 1996. From January 1996 until March 1997, NRC and MdDE staff reviewed and requested revisions to these reports. In December 1996, NRC and ORISE staff performed confirmatory surveys and closeout inspections at the site. These surveys and inspections indicate that the decommissioning has been conducted safely and that residual radioactive material in soil, attributable to licensed activities, is less than the NRC's criteria of 0.37 Bq/g (10 pCi/g) and that gross alpha concentrations in site groundwater are less than the EPA's criteria of 0.55 Becquerels per liter (15 picocuries per liter). Therefore, the site meets NRC's guidelines for unrestricted use.

CONCLUSIONS:

Based on the results of NRC's inspections, DLA's Termination Surveys and groundwater assessment report, and ORISE's Confirmatory Surveys, the staff concludes that decommissioning activities are complete. Consistent with NRC procedures that implement the SDMP Action Plan (57 FR 13389), the staff will inform EPA of NRC's intent to release the Anne Arundel County/Curtis Bay Depot site. In addition, the staff will inform the Anne Arundel County Department Land Use and Environment Office that decommissioning is complete. The staff will also proceed to formally notify DLA that remediation of the site is complete, and that the site is suitable for unrestricted use and will not be subject to additional remediation. Attached are draft letters to be sent to EPA, DLA, and Anne Arundel County (Attachments 1, 2, and 3, respectively). Development of these letters was coordinated with the MdDE.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

RECOMMENDATION:

That the Commission note that the staff will initiate these actions with the letter to EPA within ten business days, unless otherwise directed by the Commission.

L. Joseph Callan

Executive Director

for Operations

Attachments:

1. Letter to EPA
2. Letter to DLA
3. Letter to Anne Arundel Co.

DRAFT

Mr. F. Kevin Reilly
DLA/DNSC-O
8725 John J. Kingman Rd.
Suite 4528
Ft. Belvoir, VA 22060-6223

SUBJECT: COMPLETION OF DECOMMISSIONING ACTIVITIES AT THE ANNE ARUNDEL
COUNTY/CURTIS BAY DEPOT SDMP SITE

Dear Mr. Reilly:

This letter is to notify you that U.S. Nuclear Regulatory Commission staff have completed their review of the Defense Logistics Agency's (DLA's) Final Status Survey Report for the former DLA facility in Curtis Bay, Maryland. Based on the staff's review, the decommissioning actions for the Anne Arundel County/Curtis Bay Depot site are complete. This site will be removed from the NRC's Site Decommissioning Management Plan.

The NRC staff's review included the results of NRC's inspections, the Oak Ridge Institute for Science and Education's (ORISE's) confirmatory survey, and

DLA's Final Status Survey and Groundwater Assessment Reports. DLA's decommissioning activities included decontamination and dismantlement of the former thorium storage warehouses and removal of radiologically contaminated soil from the warehouse footprints. DLA submitted radiological survey data for each phase of remediation, which staff reviewed. ORISE performed a confirmatory radiological survey during December 1996. These surveys consisted of document and data reviews, gamma surface scans, exposure rate measurements, and soil, and water sampling. The final surveys showed that the site met NRC's criteria for unrestricted use. An NRC Region I termination inspection conducted on December 11, 1996, did not identify any violations of NRC's regulations. In addition, gamma exposure rate measurements taken by the Region I inspector during the inspection did not reveal exposure rates in excess of the NRC's limits for unrestricted use in the areas evaluated.

NRC does not plan to take any further actions regarding this site and will not require any additional decommissioning in response to future NRC criteria or standards, unless additional contamination is found, indicating a significant threat to public health.

Development of this letter has been coordinated with the Maryland Department of the Environment. By separate letter we have informed the Anne Arundel County Department of Public Works and the U.S. Environmental Protection Agency of the NRC staff's conclusions regarding the site. If you have any questions, please contact me at (301) 415-7234, or Dominick A. Orlando at (301) 415-6749.

Sincerely,

John W. N. Hickey, Chief

Low-Level Waste and Decommissioning
Branch

Projects

Division of Waste Management

Office of Nuclear Material Safety

and Safeguards

cc:

Perry Weed, Legal Assistant
c/o Wayne T. Gilchrist
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412 Cannon Building
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Raymond Manley, Health Physicist
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Radiological Health Program
2500 Broening Highway
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DRAFT

Mr. Thomas Andrews
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Land Use and Environment
Heritage Office Complex
2662 Riva Road
Annapolis MD 21401-7374

SUBJECT: COMPLETION OF DECOMMISSIONING ACTIVITIES AT THE ANNE ARUNDEL
COUNTY/CURTIS BAY DEPOT SDMP SITE

Dear Mr. Andrews:

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DRAF

Mr. Stephen D. Luftig, Director
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U.S. Environmental Protection Agency
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SUBJECT: COMPLETION OF DECOMMISSIONING ACTIVITIES AT THE ANNE ARUNDEL
COUNTY/CURTIS BAY DEPOT SDMP SITE, CURTIS BAY, MD

Dear Mr. Luftig:

This letter is to inform the U.S. Environmental Protection Agency (EPA) that the U.S. Nuclear Regulatory Commission is preparing to release the Anne Arundel County/Curtis Bay Depot site for unrestricted use.

The staff is providing this information to EPA in accordance with the NRC policy published in its "Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites" (57 FR 13389), which states that NRC will inform EPA about specific decommissioning actions at Site Decommissioning Management Plan (SDMP) sites. NRC intends to remove this site from the SDMP.

Based on the NRC staff's review, the decommissioning actions for the Anne Arundel County/Curtis Bay Depot site are complete. The NRC staff's review included the results of NRC's inspections, the Oak Ridge Institute for Science and Education's (ORISE's) confirmatory survey, and DLA's Final Status Survey and Groundwater Assessment Reports. DLA's decommissioning activities included decontamination and dismantlement of the former thorium storage warehouses and removal of radiologically contaminated soil from the warehouse footprints. DLA submitted radiological survey data for each phase of remediation, which staff reviewed. ORISE performed a confirmatory radiological survey during December 1996. These surveys consisted of document and data reviews, gamma

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