

NUCLEAR REGULATORY COMMISSION

DOCKET NO. 030-29462

[NRC-2009-0024

**NOTICE OF AVAILABILITY OF ENVIRONMENTAL ASSESSMENT AND FINDING OF NO
SIGNIFICANT IMPACT FOR LICENSE AMENDMENT TO MATERIALS LICENSE NO.
45-23645-01NA, TO INCORPORATE THE DECOMMISSIONING PLAN FOR THE
HYPERVELOCITY GUN FACILITY AT THE NAVAL RESEARCH LABORATORY IN
CHESAPEAKE BEACH, MARYLAND**

AGENCY: Nuclear Regulatory Commission.

ACTION: Issuance of Environmental Assessment and Finding of No Significant Impact for License Amendment.

FOR FURTHER INFORMATION CONTACT: Orysia Masnyk Bailey, Health Physicist, Decommissioning Branch, Division of Nuclear Materials Safety, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406; telephone (864) 427-1032; fax number (610) 680-3497; or by e-mail: Orysia.MasnykBailey@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) is considering the issuance of a license amendment to Materials License No. 45-23645-01NA. The license is held by the Department of the Navy (Navy). This is a Master Materials License and covers many sites around the country. The proposed action pertains to the Hypervelocity Gun Facility at the Naval Research Laboratory, located about 2 miles south of Chesapeake Beach, Maryland. By letter dated May 22, 2008, the Navy submitted for NRC approval a decommissioning plan regarding the Hypervelocity Gun Facility. Granting the amendment request would incorporate the decommissioning plan into the

license authorizing decommissioning activities at the site and eventual unrestricted release of the Facility. The NRC has evaluated and approved the Navy's decommissioning plan. The findings of this evaluation are documented in a Safety Evaluation Report which will be issued along with the amendment. The NRC has prepared an Environmental Assessment in support of this proposed action in accordance with the requirements of Title 10, *Code of Federal Regulations* (CFR), Part 51 (10 CFR Part 51). Based on the Environmental Assessment, the NRC has concluded that a Finding of No Significant Impact is appropriate with respect to the proposed action. The amendment will be issued to the Navy following the publication of this Finding of No Significant Impact and Environmental Assessment in the *Federal Register*.

II. Environmental Assessment

Identification of Proposed Action

The proposed action would approve the Navy's May 22, 2008, license amendment request to incorporate the decommissioning plan into the license, resulting in final decommissioning of the Facility and subsequent release of the Facility for unrestricted use. The Hypervelocity Gun Facility was used to test the impact of high velocity projectiles on depleted uranium targets. The testing was conducted from the early 1970s until the early 1990s. Testing was authorized under NRC License No. SMB-448, and subsequently, by Naval Radioactive Materials Permit No. 08-00173-E1NP. The Naval Radioactive Materials Permit No. 08-00173-E1NP remains active under the Navy's Master Materials License. Depleted uranium was stored and used in the Building 218C target chamber and Building 227 vault, and these areas are included within the decommissioning plan's scope.

The Hypervelocity Gun Facility is located at the Naval Research Laboratory on a 168 acre site. The Facility is located against a hillside, approximately 1,000 feet from the Chesapeake Bay. The city of Chesapeake Beach is approximately two miles to the north of the Facility, and

North Beach is approximately six miles to the north of the Facility. The region surrounding the Naval Research Laboratory is sparsely populated.

The Hypervelocity Gun Facility consists of a light gas gun, a blast tank at the gun muzzle, a shadowgraph tube with optics to measure the projectile velocity, an orthogonal room and the target chamber, and a spherical target chamber that is 12 feet in diameter. All components are steel except for aluminum in a quick closing valve and the shadowgraph tube. Part of the gas gun is enclosed by concrete walls and ceilings and buried in the hill. The entire blast tube is buried in the hillside with a small access to crawl into the tube. The optics room containing the shadowgraph tube and orthogonal room are surrounded by concrete walls and ceilings and partly buried in a hill. The target chamber is contained in a structure called the environmental room, and it is this part of the Facility that contains the areas of residual contamination from past operations.

In the Hypervelocity Gun Facility, various metallic projectiles were fired against depleted uranium shapes and depleted uranium with explosives (targets) in a completely enclosed containment system. Depleted uranium targets were located in the spherical target chamber with target debris contained in the target chamber and flight tube. In a few tests, the quick closing valve did not function and allowed target debris from explosive tests to blow back through the flight tube into the orthogonal room, shadowgraph tube, and blast tank as far as the muzzle of the projectile launch tube. Depleted uranium remains embedded in some walls of the blast tank. It is possible that depleted uranium is lodged in inaccessible areas that were not affected by the routine cleaning and decontamination performed during testing. The decommissioning plan submitted by the Navy addresses the residual contamination in Buildings 218C and 227.

Need for the Proposed Action

The proposed action is to approve the decommissioning plan so that the Navy may complete Facility decommissioning activities. Completion of the decommissioning activities will reduce residual radioactivity at the facility. NRC regulations require licensees to begin timely decommissioning of their sites, or any separate buildings that contain residual radioactivity, upon cessation of licensed activities, in accordance with 10 CFR Part 30.36(d). The proposed licensing action will support such a goal. NRC is fulfilling its responsibilities under the Atomic Energy Act to make a decision on a proposed license amendment for decommissioning that ensures protection of the public health and safety.

Environmental Impacts of the Proposed Action

The historical review of licensed activities conducted at the facility shows that such activities involved the test firing of various metallic projectiles against depleted uranium shapes and depleted uranium targets and the storage of contaminated targets and debris.

The NRC staff has reviewed the Navy's amendment request for the facility and examined the impacts of granting this license amendment request. Potential impacts include water resource impact (e.g. water may be used for dust control), air quality impacts from dust emissions, temporary local traffic impacts resulting from transporting debris, human health impacts, noise impacts from equipment operations, scenic quality impacts, and waste management impacts.

Based on its review, the staff has determined that no surface or ground water impacts are expected from the decommissioning activities. Additionally, the staff has determined that significant air quality, noise, land use, and off-site radiation exposure impacts are also not expected. No significant air quality impacts are anticipated because of the contamination controls that will be implemented by the Navy during decommissioning activities. In addition, the

environmental impacts associated with the decommissioning activities are bounded by impacts evaluated by NUREG-1496, "Generic Environmental Impact Statement in Support Rulemaking on Radiological Criteria for License Termination of NRC Licensed Nuclear Facilities." Generic impacts for this type of decommissioning process were previously evaluated and described in NUREG-1496, which concludes that the environmental consequences are small.

The Navy estimates that approximately 78 cubic yards of solid radioactive waste will be generated during decommissioning activities. The risk to human health from the transportation of all radioactive material in the United States was evaluated in NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes." The principal radiological environmental impact during normal transportation is direct radiation exposure to nearby persons from radioactive material in the package. The average annual individual dose from all radioactive material transportation in the United States was calculated to be approximately 0.5 mrem, well below the 10 CFR Part 20.1301 limit of 100 mrem for a member of the public.

This proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Thus, waste management and transportation impacts from the decommissioning will not be significant.

Occupational health was also considered in the "Final Environmental Impact Statement of the Transportation of Radioactive Material by Air and Other Modes." Shipment of the 78 cubic yards of materials from the facility would not affect the assessment of environmental impacts or the conclusions in the "Final Environmental Impact Statement of the Transportation of Radioactive Material by Air and Other Modes."

The staff also finds that the proposed license amendment will meet the radiological criteria for unrestricted release as specified in 10 CFR Part 20.1402. The Navy demonstrated

this through the development of building surface derived concentration guideline limits for its Facility. The Navy conducted site specific dose modeling using parameters specific to the Facility that adequately bounded the potential dose. The release limits for soil at the Facility will be that published in the *Federal Register* on December 7, 1999 (Volume 64, Number 234, Pages 68395 – 68396).

The Navy will maintain an appropriate level of radiation protection staff, procedures, and capabilities, and will implement an acceptable program to keep exposure to radioactive materials as low as reasonably achievable. Work activities are not anticipated to result in radiation exposures to the public in excess of 10 percent of the 10 CFR Part 20.1301 limits.

The NRC also evaluated whether cumulative environmental impacts could result from an incremental impact of the proposed action when added to other past, present, or reasonably foreseeable future actions in the area. The proposed NRC approval of the license amendment request, when combined with known effects on resource areas at the Naval Research Laboratory site, including further site remediation, are not anticipated to result in any cumulative impacts at the site.

Environmental Impacts of the Alternatives to the Proposed Action

Due to the largely administrative nature of the proposed action, its environmental impacts are small. Therefore, the only alternative the staff considered is the no-action alternative, under which the staff would leave things as they are by simply denying the amendment request. This no-action alternative is not feasible because it conflicts with 10 CFR Part 30.36(d), requiring that decommissioning of byproduct material facilities be completed and approved by the NRC after licensed activities cease. The no action alternative would keep radioactive material on-site without disposal. Additionally, denying the amendment request would result in no change in current environmental impacts. The environmental impacts of the proposed action and the no-

action alternative are therefore similar, and the no-action alternative is accordingly not further considered.

Conclusion

The NRC staff has concluded that the proposed action is consistent with the NRC's unrestricted release criteria specified in 10 CFR Part 20.1402. Because the proposed action will not significantly impact the quality of the human environment, the NRC staff concludes that the proposed action is the preferred alternative.

Agencies and Persons Consulted

NRC provided a draft of this Environmental Assessment to the Radiological Health Program in the Air and Radiation Management Administration of the Maryland Department of the Environment on November 17, 2008. On December 16, 2008, the State of Maryland responded by e-mail. The State agreed with the conclusions of the Environmental Assessment, and otherwise had no comments.

The NRC staff has determined that the proposed action is of a procedural nature, and will not affect listed species or critical habitat. Therefore, no further consultation is required under Section 7 of the Endangered Species Act. The NRC staff has also determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties. Therefore, no further consultation is required under Section 106 of the National Historic Preservation Act.

III. Finding of No Significant Impact

The NRC staff has prepared this Environmental Assessment in support of the proposed action. On the basis of this Environmental Assessment, the NRC finds that there are no significant environmental impacts from the proposed action, and that preparation of an environmental impact statement is not warranted. Accordingly, the NRC has determined that a Finding of No Significant Impact is appropriate.

IV. Further Information

Documents related to this action, including the application for license amendment and supporting documentation, are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. From this site, you can access the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The documents related to this action are listed below, along with their ADAMS accession numbers.

1. NUREG-1757, "Consolidated NMSS Decommissioning Guidance;"
2. Title 10, *Code of Federal Regulations*, Part 20, Subpart E, "Radiological Criteria for License Termination;"
3. Title 10, *Code of Federal Regulations*, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions;"
4. NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities;"
5. NUREG-1720, "Re-evaluation of the Indoor Resuspension Factor for the Screening Analysis of the Building Occupancy Scenario for NRC's License Termination Rule – Draft Report;"
6. NRC License No. 45-23645-01NA inspection and licensing records;

7. Department of the Navy, Decommissioning of the Hypervelocity Gun Facility at Naval Research Laboratory, Chesapeake Beach Detachment, dated January 19, 2007 (ML070330468); and
8. Department of the Navy, Decommissioning Plan for Hypervelocity Gun Facility at Naval Research Laboratory, Chesapeake Beach Detachment, dated May 22, 2008 (ML081640631).

If you do not have access to ADAMS, or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room Reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr@nrc.gov. These documents may also be viewed electronically on the public computers located at the NRC's Public Document Room, O 1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The Public Document Room reproduction contractor will copy documents for a fee.

Dated at Region I, 475 Allendale Road, King of Prussia, PA this 6th day of January 2009.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Eugene Cobey, Chief
Decommissioning Branch
Division of Nuclear Materials Safety
Region I