

NUCLEAR REGULATORY COMMISSION

[Docket No. 040-06377; NRC-2014-0041]

**Department of the Army, U.S. Army Research, Development and Engineering Command,
Armament Research, Development and Engineering Center, Picatinny Arsenal;
Picatinny, New Jersey**

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is considering the issuance to license amendment of SUB-348, issued on July 13, 1961 and held by the Department of the Army, U.S. Army Research, Development and Engineering Command (RDEC), Armament Research, Development and Engineering Center (ARDEC or the licensee), for its facilities located at the Picatinny Arsenal in Morris County, New Jersey.

DATES: The Environmental assessment and finding of no significant impact referenced in this document is available on January 12, 2017.

ADDRESSES: Please refer to Docket ID **NRC-2014-0041** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2014-0041**. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. For the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Laurie A. Kauffman, Division of Nuclear Materials Safety, Region I, U.S. Nuclear Regulatory Commission, King of Prussia, PA 19406; telephone: 610-337-5323; e-mail: Laurie.Kauffman@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is considering the issuance of a license amendment to NRC's Source Materials License No. SUB-348 (License No. SUB-348). The license is held by the Department of the Army, U.S. Army Research, Development and Engineering Command (RDEC), Armament Research, Development and Engineering Center (ARDEC or the licensee), for its facilities located at the Picatinny Arsenal in Morris County, New Jersey. The

ARDEC submitted to the NRC a license amendment request and proposed decommissioning plan for Area 1222. The ARDEC requested authorization to decontaminate the small remaining amounts of depleted uranium and radium in Area 1222, and proposed a decommissioning plan that included information describing how Area 1222 would meet the criteria described in part 20 of title 10 of the *Code of Federal Regulations* (CFR), subpart E, “License Termination Criteria” following decommissioning. Issuance of the amendment would authorize the decontamination of Area 1222. The ARDEC license would not be otherwise affected, and the ARDEC will continue to conduct authorized activities under this license at other locations on the Picatinny Arsenal site. The ARDEC requested this action in a letter dated July 23, 2013 (ADAMS Accession No. ML14078A564). The NRC’s consideration of the license amendment request for the proposed decommissioning plan, and notice of an opportunity to request a hearing was publicly noticed in *Federal Register* notice (79 FR 18934-18936; March 27, 2014) (ADAMS Accession No. ML14058A702).

The NRC has prepared an environmental assessment (EA) in support of its review of the proposed actions in accordance with the requirements of 10 CFR part 51 “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” which implements the NRC’s environmental protection program under the National Environmental Policy Act (NEPA) of 1969, as amended. Based on this EA, the NRC has concluded that a finding of no significant impact (FONSI) is appropriate. The NRC will make a decision to amend the license following completion of a safety evaluation report.

II. Environmental Assessment

Description of the Proposed Action

The proposed action is to amend NRC License No. SUB-348 to authorize the decontamination of Area 1222 so that residual radioactivity above background can be reduced to a level that meets the criteria in 10 CFR part 20, subpart E, “License Termination Criteria,”

specifically, 10 CFR 20.1402, "Radiological Criteria for Unrestricted Use." This criteria allows unrestricted use of a site if the maximum total effective dose equivalent to an average member of the critical group is 25 millirem per year (0.25 millisievert (mSv) per year) and the residual radioactivity above background has been reduced to levels that are as low as is reasonably achievable.

The NRC License No. SUB-348 was issued on July 13, 1961, pursuant to 10 CFR part 40, and has been amended periodically since that time. This license authorizes ARDEC to use uranium and thorium in any form for purposes of conducting research and development activities. The ARDEC conducts authorized activities under this license at numerous other locations on the arsenal, and is not requesting license termination.

The Picatinny Arsenal is situated on 6,500 acres of land and consists of office space, laboratories, and specialized facilities. The Picatinny Arsenal is located in a mixed residential and commercial area. Area 1222, which includes an open detonation pit area and the adjacent hillside areas, is located on the arsenal property in the valley toward the northern end of the arsenal and lies at the base of the Copperas Mountain. In the 1970's, the ARDEC used Area 1222 for open detonation of munitions and as a demilitarization area. NRC-licensed activities performed in Area 1222 were restricted to the detonation of a limited number of mines containing small quantities of depleted uranium and radium, specifically, the demilitarization of excess, unserviceable, or obsolete conventional munitions and explosives. Materials that are treated by open detonation at the arsenal include items such as small arms ammunition, land mines, mortars, bombs, fuses, detonators and other types of ordnance. The open detonation pit was subdivided into two areas: the interior area, which is within the berm area (approximately 1,800 square feet (ft²)), and the exterior area, which includes the area outside of the berm area (approximately 21,200 ft²). The hillside area is approximately 17,222 ft². The total area boundary of Area 1222 is approximately 40,222 ft². There are numerous structures in and around the open detonation pit exterior area. The largest

structure is a blast shield which has a total surface area of 38 square meters and is constructed of steel. There are no contaminated systems or equipment on the site.

In the late 1990's, ARDEC determined that Area 1222 was no longer required for licensed activities and initiated a survey and decontamination program. In 2011, ARDEC submitted an amendment application to renew their NRC Source Material License (SUB-348). The request noted that Area 1222 was considered potentially radiologically contaminated with depleted uranium, and possibly with fragments of luminescent gauges or dials containing radium from past limited research and development testing operations at the site. The request also included provisions for conducting minor surficial soil remediation if soil contamination is identified above the criteria identified for cleanup. In a letter dated July 23, 2013 (ADAMS Accession No. ML14078A564), ARDEC submitted a license amendment request and proposed decommissioning plan for Area 1222. In the proposed decommissioning plan, the ARDEC provided information regarding the previous characterization and remediation surveys, and a plan for the radiological survey and subsequent excavation, decontamination, and proper disposal of licensed radioactive material identified within Area 1222. The ARDEC also provided information to the NRC stating that after decommissioning, Area 1222 would meet the criteria for release for unrestricted use as described in 10 CFR part 20, subpart E, "License Termination Criteria."

Need for the Proposed Action

The current ARDEC license does not authorize decontamination activities to be conducted. The NRC regulations in 10 CFR 40.42, in part, require a decommissioning plan to be submitted and approved prior to the initiation of decommissioning if the procedures and activities necessary to carry out decontamination of an area could increase potential health and safety impacts to workers or the public. The proposed action would allow the ARDEC to remove any remaining radioactive material in Area 1222 to ultimately meet the criteria for

release for unrestricted use as described in 10 CFR part 20, subpart E, "License Termination Criteria" following decommissioning.

Environmental Impacts of the Proposed Action

A historical review of licensed activities conducted in Area 1222 shows that such activities involved use of depleted uranium and radium. The ARDEC proposes to conduct radiological surveys and subsequent excavation, decontamination, and disposal of licensed radioactive material identified within Area 1222. Following completion of these activities, the ARDEC would conduct a final status survey of the area. The ARDEC proposes to undertake this effort in accordance with the guidance contained in the "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," NUREG-1575, Rev. 1 (ADAMS Accession No. ML082470583). The final determination that the site area meets the radiological criteria for release for unrestricted use would be contingent upon the NRC staff's approval of the licensee's final status survey report.

The NRC staff has reviewed the decommissioning plan for ARDEC's Area 1222 site and examined the impacts of decontamination activities. Based on its review, the staff has determined that the affected environment and the environmental impacts associated with this decommissioning action are bounded by information contained in the "Generic Environmental Impact Statement (GEIS) in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities," NUREG-1496, Vols. 1, 2 and 3 (ADAMS Accession Nos. ML042310492, ML042320379, and ML042330385, respectively).

The NRC staff determined that the contaminants, the potential dose scenarios or pathways, the physical size of the area, and the volumes of waste expected to be generated are similar to those in the GEIS reference facilities, and do not change conclusions regarding environmental impacts. No additional non-radiological impacts were identified. A beneficial

environmental impact of the proposed action is that there will no longer be depleted uranium contamination to the soil in Area 1222 because the depleted uranium contamination would be removed.

In the Decommissioning Plan, the ARDEC states that they would implement controls and perform radiological sampling and analysis to limit the potential release of radioactive material. Contamination controls, such as the use of covers for loaded containers or vehicles, or water sprays for dust control, will be implemented during decommissioning activities to prevent airborne contamination from escaping the remediation work areas; therefore, no significant release of airborne contamination is anticipated. Air sampling and analysis will be conducted to ensure regulatory criteria are met for air effluents. No liquid effluents are expected to be generated during decommissioning. Controls, such as silt fences and water diversion berms will be put in place to control water inflow or runoff due to precipitation. Any radioactive waste generated will be placed in suitable transport containers that will be covered and staged within the property pending shipment to a licensed radioactive waste treatment or disposal facility.

The ARDEC intends to use a contractor to perform remediation activities at Area 1222. The contractor will perform these activities under the authority of its NRC license. The ARDEC will oversee the activities and will maintain primary responsibility for the decommissioning project. As noted, the ARDEC has prepared a decommissioning plan describing the work to be performed, and, work activities are not anticipated to result in a dose to workers or the public in excess of the limits in 10 CFR part 20, "Standards for Protection Against Radiation," consistent with decommissioning activities at similar sites.

Alternatives to the Proposed Action

The only alternative the NRC staff considered is the no-action alternative, under which the staff would deny the amendment request to initiate remediation activities at Area 1222. Denying the amendment request would result in no decontamination at the site, leaving residual contamination. The environmental impacts of the no-action alternative are greater than the proposed action, therefore no-action alternative is accordingly not further considered.

Agencies and Persons Contacted

The NRC staff prepared this EA with input from the Department of the Army, Installation Management Command, Environmental Affairs Division; the U.S. Fish and Wildlife Service New Jersey Field office; and the State of New Jersey Department of Environmental Protection (NJDEP).

In accordance with Section 106 of the National Historic Preservation Act, the NRC staff contacted the Environmental Affairs Division of the Department of the Army, Installation Management Command. In a response letter dated February 1, 2016 (ADAMS Accession No. ML16060A404), the Environmental Affairs Division, on the basis of current information, indicated that surrounding, above ground, structures of age for historic assessment have been determined to not be eligible for listing on the National Register of Historic Places (NRHP) and that the likelihood of encountering and impacting below ground cultural resources, such as archaeological materials and property, is low. The above ground structures are considered equipment and are used as blast and exhaust deflectors and/or explosive barriers and therefore are not real property under NRHP assessments. Archaeological artifacts are not likely to be identified because Area 1222 is previously disturbed due to the munitions testing. However, the Environmental Affairs Division also indicated that cultural resources potentially eligible for the NRHP could be encountered and impacted because the depth of the excavations, as described in the decommissioning plan, will go below four feet, which is the

depth to which munitions were buried. Because of the potential impact on cultural resources, ARDEC will stop the project if cultural/archaeological resources are discovered in Area 1222 so the Environmental Affairs Division can determine the significance of the identified resources.

In accordance with Section 7 of the Endangered Species Act, the NRC staff contacted the Environmental Affairs Division of the Department of the Army, Installation Management Command. (U.S. NRC e-mail to Department of the Army dated December 2, 2014 (ADAMS Accession No. ML14357A609)). In a response letter dated February 1, 2016 (ADAMS Accession No. ML16060A404), the Environmental Affairs Division indicated, on the basis of current information, that three federally-listed endangered species, two state-listed endangered species, and one additional state species may have potential habitats within the project boundary. The three federally-listed endangered species identified are: the Indiana Bat (IBAT – *Myotis sodalist*); Northern Long-eared Bat (NLEB – *Myotis septentrionalis*); and the Bog Turtle (*Glyptemys muhlenbergii*). Since there will be no impacts to any vegetation (such as trees), there will be no impacts to the two federally-listed bat species. The Bog Turtle could be potentially impacted because the reptile could be in or around Area 1222 during the summer months. The two state-listed endangered species identified are: the Timber Rattlesnake (*Crotalus horridus*) and the Wood Turtle (*Glyptemys insculpta*). Both reptiles could be in the project area during the summer months; the rattlesnake lives near rocks and the turtle lives along Gorge Road and along the banks of Green Pond Brook. The last State species, which is not listed as endangered or threatened, is the Eastern Small-footed Bat (*Myotis leibii*). Although, this species is not listed as either endangered or threatened, there is a remote chance that this bat could be using the rip-rap hillside above the open detonation pit as a diurnal roost site and could be encountered in Area 1222. If any of the above species are

encountered or observed in Area 1222, ARDEC stated it will stop the project so the Environmental Affairs Division can determine significance of the presence of the identified species.

Based upon the above, the NRC staff also contacted the U.S. Fish & Wildlife Service, New Jersey Field office, for consultation and concurrence on the rare, threatened or endangered species that were identified by the Army's Environmental Affairs Division and could be present in the vicinity of the site (U.S. NRC e-mail to U.S. Fish & Wildlife dated August 10, 2016 (ADAMS Accession No. ML16246A209)). In an e-mail dated September 1, 2016 (ADAMS Accession No. ML16244A708), a representative of the U.S. Fish & Wildlife Service New Jersey Field office agreed with the conclusions of this EA that the proposed action would not result in impacts to endangered and threatened species and to cultural/archaeological resources.

On August 23, 2016, the NRC staff provided a draft of this EA to the NJDEP for comment. In an e-mail dated September 6, 2016 (ADAMS Accession No. ML16250A386), a representative of the NJDEP agreed with the conclusions of this EA.

III. Finding of No Significant Impact

The NRC staff has prepared this EA as part of its review of the requested license amendment for decommissioning the ARDEC's Area 1222 on the Picatinny Arsenal site, Picatinny, New Jersey to reduce residual radioactivity to levels consistent with the release criteria for unrestricted use. On the basis of this EA, the NRC staff finds that there are no significant environmental impacts from the proposed amendment action, and that preparation of an environmental impact statement is not warranted. Accordingly, the NRC staff has determined that a FONSI is appropriate.

IV. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

DOCUMENT	ADAMS ACCESSION NO. / WEB LINK / FEDERAL REGISTER CITATION
New World Technology, Final Report, Radiological Surveys and Sampling, Area 1222, ARDEC Picatinny Arsenal NJ, Revision 1, January 30, 2006	ML090820710
New World Technology, Final Report, Radiological Remediation/Release Surveys and Sampling Project, Revision 4, September 27, 200	ML062840662
Department of the Army, Final Report on Radiological Surveys and Support, Revision 3, dated July 21, 2006	ML062910337
Department of the Army, Picatinny Arsenal Radiological Remediation/Release Surveys & Sampling Project, USA 99-109, Revision 1, dated January 30, 2006	ML090820710
Department of the Army, Picatinny Arsenal Radiological Remediation/Release Surveys & Sampling Project, USA 99-109, Revision 3, dated January 30, 2006	ML061510185
Letter dated October 19, 2011	ML112930069
Department of the Army, License Renewal Amendment 31, Control No. 575463, dated November 10, 2011	ML113140090
Department of the Army, License Renewal Letter, Control No. 575463, dated November 10, 2011	ML113140075
Request for Comment on Plan to Release Area 1222, letter dated July 23, 2013	ML14078A564
Department of the Army, e-mail dated October 31, 2013: Re: Additional Response to Request for Additional Information Regarding Plan to Release Area 1222	ML13310B506
Department of the Army, Acknowledgement of Receipt of MARSSIM Final Status Survey and Sampling Work Plan, dated November 4, 2013	ML13310B861
Department of the Army, e-mail dated January 28, 2014, Request for Additional Information	ML14041A364
Department of the Army, letter dated February 21, 2014, Re: Response to Comments on Plan to Release Area 1222	ML14258A062
Department of the Army, e-mails dated February 26, 2014 and January 28, 2014, Re: Request for Additional Information	ML14062A097
Department of the Army, e-mail dated March 20, 2014, Re: Follow up and 2 nd Deficiency Request	ML14080A210
<i>Federal Register</i> Notice (79 FR 18934-18936) for Department of Army Picatinny Arsenal, Opportunity to Provide Comments, Request a Hearing and to Petition for leave to Intervene, dated March 27, 2014	ML14058A702

Response to NRC Request for Additional Information; Area 1222 Radiological Release, letter dated April 11, 2014	ML14122A099
R. Lamoreaux Letter Re: DandD Code Transmittal, letter dated June 9, 2014	ML14161A038
Department of the Army, e-mail dated June 10, 2014, Re: Deficiency Response Update	ML14177A375
Department of the Army, Deficiency Response, letter dated July 10, 2014	ML14205A271
Department of the Army; E-mail dated December 02, 2014, Re: Deficiency Request for NEPA Compliance and Section 106 Review(s) Concerning the Dept. of the Army, ARDEC, Picatinny Arsenal, NJ Decommissioning Plan	ML14357A609
Department of the Army, Request for Additional Information Concerning NRC License Application, letter dated June 10, 2015	ML15188A078
Department of the Army, Memorandum dated 9 July 2015, Received in LAT on July 24, 2015, Subject: Response to NRC Request for Additional Information dated 10 June 2015; Area 1222 Radiological Release	ML15222A258
Department of the Army, Telephone Conversation Record dated August 10, 2015, Deficiency Response to NRC Request for Additional Information, (Revised Decommissioning Plan Attachments 1 and 2)	ML15239A789
Endangered Species Review in Support of the Proposed Gorge Radiological Release Project dated February 1, 2016	ML16060A404
Record of Historic Property Consideration, Department of the Army Installation Management Command headquarters, United States Army Garrison, Picatinny, Picatinny Arsenal, New Jersey 07806-5000, dated February 2, 2016	ML16060A403
U.S. NRC e-mail to U.S. Fish & Wildlife Service dated August 10, 2016	ML16246A209
The U.S. Fish & Wildlife Service letter dated August 29, 2016	ML16244A708
State of New Jersey Department of Environmental Protection - e-mail dated September 1, 2016	ML16250A386
<i>Federal Register</i> Notice, Volume 65, No. 114, page 37186, dated Tuesday, June 13, 2000, "Use of Screening Values to Demonstrate Compliance with the Federal Rule on Radiological Criteria for License Termination."	ML003721257
Title 10 <i>Code of Federal Regulations</i> , part 20, subpart E, "Radiological Criteria for License Termination."	http://www.nrc.gov/reading-rm/adams.html
Title 10 of the <i>Code of Federal Regulations</i> , part 40, "Domestic Licensing of Source Material."	http://www.nrc.gov/reading-rm/adams.html
Title 10 of the <i>Code of Federal Regulations</i> , part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."	http://www.nrc.gov/reading-rm/adams.html

NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities."	http://www.nrc.gov/reading-rm/adams.html
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Dated at King of Prussia, Pennsylvania this _27th_ day of December 2016.

For the Nuclear Regulatory Commission.

/RA/

Raymond J. Powell, Chief,
Decommissioning and Technical Support Branch,
Division of Nuclear Materials Safety, Region I.