

June 29, 2005

Brigadier General Roger A. Nadeau
Department of the Army
U.S. Army Research Development and Engineering Command
5183 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5424

SUBJECT: AMENDMENT NO. 2 TO SOURCE MATERIAL LICENSE NO. 19-10306-02
AUTHORIZING DECOMMISSIONING OF BUILDING 7304 AT FORT BELVOIR
(TAC NO. L52638)

Dear Brigadier General Nadeau:

I am responding to the letter from Major General John Doesburg, dated May 17, 2004, requesting that the U.S. Nuclear Regulatory Commission (NRC) amend Material License No. 19-10306-02 to place Building 7304 into an active decommissioning status. The NRC staff has evaluated the Army's request and has developed an environmental assessment (EA) (See ADAMS ML050630024) to support the review of the Army's proposed decommissioning plan and license amendment request, in accordance with the requirements of 10 CFR Part 51. Based on the staff evaluation, the conclusion of the EA is a Finding of No Significant Impact (FONSI) on human health and the environment for the proposed licensing action. A Safety Evaluation Report was also prepared for this licensing action and is included as an attachment. Approval of this decommissioning plan by the NRC does not relieve you from complying with other applicable Federal, State, and local regulations governing the decommissioning and remediation of this facility.

Enclosed is License No. 19-10306-02, Amendment No. 2, authorizing the decommissioning of Building 7304. The authorized use under this license is changed to read:

9. Authorized use:

For activities related to decommissioning and characterization of contaminated facilities, equipment, and land, and maintenance of control over licensed materials in accordance with statements, representations, and conditions contained in the application submitted by letter dated May 17, 2004, and supplemented by a letter dated Nov. 1, 2004 (regarding a change in the licensing official).

Brigadier General Nadeau

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No other use of radioactive materials is authorized under the current license amendment. License conditions 10, 12, 13, 14, 15, 17, 18, and 23 are deleted from the license. All other license conditions shall remain the same.

If you have any questions, please contact Tom McLaughlin, of my staff at (301) 415-5869.

Sincerely,

/RA/

Daniel M. Gillen, Deputy Director
Decommissioning Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

Docket No.: 030-36574
License No.: 19-10306-02

Enclosures:

1. Amendment No. 2 to License 19-10306-02
2. Safety Evaluation Report

Brigadier General Nadeau

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1. Amendment No. 2 to License 19-10306-02
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DISTRIBUTION:

DCD r/f BSmith OGC

ML050960044

*See previous concurrence

OFC	DWMEP:PM	DWMEP:SC	OGC	DWMEP:DD
NAME	TMcLaughlin*	KGruss*	STreby	DGillen
DATE	04/13/05	0413/05	06/15/05	06/28/05

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ENCLOSURE 1

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee 1. Department of the Army U.S. Army Research, Development and Engineering Command (RDECOM) 2. ATTN: AMSRD-MSF 5183 Blackhawk Road Aberdeen Proving Ground, Maryland 21010-5424	3. License number 19-10306-02 4. Expiration date September 30, 2010 5. Docket No. 030-36574 Reference No. 45-00953-01/03006511
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6. Byproduct, source, and/or special nuclear material A. Any byproduct material with atomic numbers 5-95, inclusive B. Hydrogen 3 C. Any byproduct material with atomic numbers 1-96 D. Any special nuclear material	7. Chemical and/or physical form A. Sealed, plated or foil sources and gas or liquid sources in sealed or closed containers B. Sealed luminous sources C. Any D. Any	8. Maximum amount that licensee may possess at any one time under this license A. Not to exceed 185 gigabecquerels (GBq) [5 curies (Ci)] per radionuclide and 370 GBq (10 Ci) total B. Not to exceed 925 GBq (25 Ci) per source and 18.5 terabecquerels (TBq) [500 curies] total C. Not to exceed 370 megabecquerels (MBq) [10 millicuries (mCi)] per radionuclide and 3.7 GBq (100 mCi) total except as specified in Condition 20 D. Not to exceed 370 kilobecquerels (kBq) [10 microcuries (uCi)] per radionuclide and 3.7 MBq (100 uCi) total
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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-10306-02Docket or Reference Number
030-36574
45-00953-01/03006511

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9. Authorized use:

For activities related to decommissioning and characterization of contaminated facilities, equipment, and land, and maintenance of control over licensed materials in accordance with statements, representations, and conditions contained in the application submitted by letter dated May 17, 2004, and supplemented by a letter dated Nov. 1, 2004 (regarding a change in the licensing official)

CONDITIONS

10. Deleted by this Amendment
11. The licensee shall maintain records of individuals designated as users for 3 years following the last use of licensed material by the individual.
12. Deleted by this Amendment
13. Deleted by this Amendment
14. Deleted by this Amendment
15. Deleted by this Amendment
16. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
17. Deleted by this Amendment
18. Deleted by this Amendment
19. Moved to License Condition 23 when license was reissued as 19-10306-02 on July 28, 2004.
20. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the limit specified in 10 CFR 30.35(d) or 40.36(b) or 70.25(d) for establishing decommissioning financial assurance.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number 19-10306-02
Docket or Reference Number 030-36574 45-00953-01/03006511
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- 21. Radioactive waste possessed under this license shall be stored in accordance with the statements, representations, and procedures included with the licensee's waste storage plan described in the application dated March 31, 1989.
- 22. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
- 23. Deleted by this Amendment



For the U.S. Nuclear Regulatory Commission

Date _____ By _____

Daniel M. Gillen, Deputy Director
Decommissioning Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

ENCLOSURE 2

DOCKET NO: 030-36574
LICENSE NO: 19-10306-02
FACILITY: FORT BELVOIR, VIRGINIA
SUBJECT: SAFETY EVALUATION REPORT FOR DECOMMISSIONING OF
BUILDING 7304 AT FORT BELVOIR, VA (TAC #52638)

1. EXECUTIVE SUMMARY

In a letter dated May 24, 2004, the U.S. Army Research Development and Engineering Command, (the licensee) forwarded a Decommissioning Plan (DP) (See ADAMS ML041490071) for Building 7304 at its Fort Belvoir, VA facility, for U.S. Nuclear Regulatory Commission (NRC) staff review and approval. The decommissioning objective of the licensee is unrestricted use as defined in the License Termination Rule (LTR), as Subpart E to 10 Code of Federal Regulations (CFR) Part 20. For the decommissioning of Building 7304, a dose objective of 25 mrem/year (0.25 mSv/year) above background is the basis for demonstrating that the site can be released for unrestricted use.

The purpose of this safety evaluation report (SER) is to (1) evaluate the licensee's proposed request to remediate Building 7304 and the soil beneath the building floor, to determine whether unrestricted release criteria will be met and (2) decide if decommissioning activities will be conducted in a safe manner in accordance with NRC regulations. This safety evaluation has been developed in conjunction with an environmental assessment (EA) (See ADAMS ML050810012) which evaluates the potential environmental impacts associated with this action. If this action is approved, the licensee would remediate Building 7304 using the methods and criteria proposed in the May 2004 DP.

The decommissioning activities include the demolition and removal of Building 7304 structure, concrete foundation, subsurface drainage system, and any soils impacted above the radiological screening criteria published by NRC in the Federal Register. There will be no liquid effluents released during the decommissioning activities and no concern about the potential for groundwater contamination.

2. FACILITY OPERATING HISTORY

NRC staff has reviewed the information in the Facility Operating History section of the DP for Building 7304, license number 19-10306-02, located at Fort Belvoir, Virginia, according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 16.2 (Facility Operating History). Based on this review, NRC staff has determined that the licensee has provided sufficient information to aid NRC staff in evaluating the licensee's determination of the radiological status of the facility and the licensee's planned decommissioning activities, to ensure that the decommissioning can be conducted in accordance with NRC requirements.

Radioactive materials were used in several other buildings at Fort Belvoir under the NRC license and have already been successfully decommissioned.

3. FACILITY DESCRIPTION

Building 7304 is a concrete bunker-style building measuring 12 feet by 16 feet enclosed within an earthen cover approximately 3 feet thick. The entire area to be remediated is approximately 500 square feet. This includes an additional 4 feet on three sides of the structure and approximately 60 square feet in the front of the building for the removal of the exterior walkway and shield wall. There is a floor drain that may discharge directly into the ground beneath the Building 7304 structure. The floor drain pipe, the exterior foundation drain, and the underlying soil will be surveyed and remediated upon building demolition and excavation. The licensee assumes that the removal of the drain line will not require activities in excess of shallow trenching.

Building 7304 has been used as a radioactive waste storage area in support of the Fort Belvoir research laboratory. All radioactive materials were removed from Building 7304 and transported to offsite facilities for disposal. A Form 314 was submitted to NRC (See ADAMS ML050120350) describing the disposition of all the removed waste material. A Characterization Survey (See ADAMS ML041490105) was performed on Building 7304 which showed elevated levels of tritium, carbon-14, cesium-137, promethium-147, americium-241, and thorium-232. Elevated levels of radioactivity were detected at the interior of Building 7304 floor, the soil beneath the floor, at wall storage vaults, and at floor storage vaults. These elevated levels indicate the need for the removal of the Building 7304 structure and any underlying soil with concentrations above the soil screening criteria, then transport of building materials (or debris) and soil to an authorized disposal facility.

4. RADIOLOGICAL STATUS OF FACILITY

NRC staff has reviewed the information in the Facility Radiological Status section of the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 16.4 (Facility Radiological Status). Based on this review, NRC staff has determined that the licensee has described the types and activity of radioactive material contamination at its facility sufficiently to allow the NRC staff to evaluate the potential safety issues associated with remediating the facility, whether the remediation activities and radiation control measures proposed by the licensee are appropriate for the type of radioactive material present at the facility, and whether the licensee's waste management practices are appropriate.

5. DOSE MODELING

The staff has reviewed the dose modeling analyses for the removal of Building 7304 and soil impacted above the soil screening guidelines as part of the review of the Army's DP, using the Consolidated NMSS Decommissioning Guidance, Volume 2, Section 5.1.2 (Surface Soil Evaluation Criteria). The staff concludes that the dose estimate calculated using the default screening analysis is appropriate for the decommissioning option and exposure scenario assumed. In addition, this dose estimate provides reasonable assurance that the dose criterion in 10 CFR 20.1402 will be met. This conclusion is based on the modeling effort performed by the staff in initially developing the default screening analysis.

In determining the dose to the average member of the critical group, the licensee has used the assumptions inherent in the screening analysis and the parameter uncertainties have been previously evaluated on a generic basis by the staff as part of establishing the default screening analysis.

6. PLANNED DECOMMISSIONING ACTIVITIES

NRC staff has reviewed the decommissioning activities described in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.1 (Planned Decommissioning Activities). Based on this review, NRC staff has determined that the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's planned decommissioning activities. The NRC staff concludes that the decommissioning can be conducted in accordance with NRC requirements.

7. PROJECT MANAGEMENT AND ORGANIZATION

NRC staff has reviewed the description of the decommissioning project management organization, position descriptions, management and safety position qualification requirements and the manner in which the licensee will use contractors during the decommissioning of its facility according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.2 (Project Management and Organization). Based on this review, NRC staff has determined that the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's decommissioning project management organization and structure. The NRC staff concludes that the decommissioning can be conducted safely and in accordance with NRC requirements.

8. HEALTH AND SAFETY PROGRAM DURING DECOMMISSIONING

8.1 Radiation Safety Controls and Monitoring for Workers

8.1.1 Workplace Air Sampling Program

NRC staff has reviewed the Workplace Air Sampling Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.1 (Workplace Air Sampling Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information on: the frequency of air samples taken in work areas, the types of air sampling equipment to be used and where they will be located in the work areas, calibration of flow meters, minimum detectable activities (MDA) of equipment to be used for analysis of radionuclides collected during air sampling, and action levels for airborne radioactivity (and corrective actions to be taken when these levels are exceeded). The NRC staff concludes that the licensee's air sampling program will comply with 10 CFR 20.1204, 20.1501(a)-(b), 20.1502(b), 20.1703, and Regulatory Guide 8.25.

8.1.2 Respiratory Protection Program

NRC staff has reviewed the Respiratory Protection Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.2 (Respiratory Protection Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information to implement an acceptable respiratory protection program. The NRC staff concludes that the licensee's program will comply with 10 CFR 20.1101, and 10 CFR 20.1701 to 20.1704 and Appendix A of 10 CFR Part 20.

8.1.3 Internal Exposure Determination

NRC staff has reviewed the Internal Exposure information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.3 (Internal Exposure Determination). Based on this review, NRC staff has determined that the licensee has provided sufficient information on methods to calculate internal dose of a worker based upon measurements from air samples or bioassay samples. The NRC staff concludes that the licensee's program to determine internal exposure will comply with 10 CFR 20.1101, 20.1201, 20.1204 and 20.1502.

8.1.4 External Exposure Determination

NRC staff has reviewed the External Exposure information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.4 (External Exposure Determination). Based on this review, NRC staff has determined that the licensee has provided sufficient information on methods to measure or calculate the external dose of a worker. The NRC staff concludes that the licensee's program to determine external exposure will comply with the requirements of 10 CFR 20.1101, 20.1201, 20.1203, 20.1501, 20.1502 and 20.1601.

8.1.5 Summation of Internal and External Exposures

NRC staff has reviewed the Summation of Internal and External Exposures information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.5 (Summation of Internal and External Exposures). Based on this review, NRC staff has determined that the licensee has provided sufficient information on its program for summation of internal and external exposures. The NRC staff concludes that the licensee's program will comply with the requirements of 10 CFR 20.1202, 20.1208 and 20.2106.

8.1.6 Contamination Control Program

NRC staff has reviewed the Contamination Control Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.6 (Contamination Control Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information to control contamination on skin, on protective and personal clothing, on fixed and removable contamination on work surfaces, on transport vehicles, on equipment, and on packages. The NRC staff concludes that the licensee's contamination control program will comply with 10 CFR 20.1501, 20.1702, 20.1906.

8.1.7 Instrumentation Program

NRC staff has reviewed the Instrumentation Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.1.7 (Instrumentation Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information on the sensitivity and the calibration of instruments and equipment to be used to make quantitative measurements of ionizing radiation during surveys. The NRC staff concludes that the licensee's instrumentation program will comply with 10 CFR 20.1501.

8.2 Nuclear Criticality Safety

NRC staff has reviewed the Nuclear Criticality Safety information in the DP for Building 7304 according to the definition of Special Nuclear Material found in 10 CFR 70.4. Based on this review, NRC staff has determined that the licensee has provided sufficient information and concludes that the radionuclides identified at the site will not trigger or sustain a critical reaction.

8.3 Health Physics Audits and Recordkeeping Program

NRC staff has reviewed the description of the licensee's audit and recordkeeping program which the licensee will utilize during the decommissioning of its facility according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.3.3 (Health Physics Audits, Inspections, and Recordkeeping Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's executive management and radiation safety officer (RSO) audit and recordkeeping program to determine if the decommissioning can be conducted safely and in accordance with NRC requirements (10 CFR 20.1101 and 20.2102).

9. ENVIRONMENTAL MONITORING AND CONTROL PROGRAM

NRC staff has reviewed the Environmental Monitoring and Control Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.4 (Environmental Monitoring and Control Program). Based on this review, NRC staff has determined that the licensee has provided sufficient information on its environmental ALARA evaluation program, effluent monitoring program, and effluent control program. The NRC staff concludes that the licensee will comply with 10 CFR 20.

10. RADIOACTIVE WASTE MANAGEMENT PROGRAM

NRC staff has reviewed the Radioactive Waste Management Program information in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.5 (Radioactive Waste Management Program). Based on this review, NRC staff has determined that the licensee's programs for the management of radioactive waste generated during decommissioning operations ensure that the waste will be managed in accordance with NRC requirements (10 CFR Part 20, Subpart K, 10 CFR 61.55, 61.56, 61.57 and 71.5) and in a manner that is protective of public health and safety.

11. QUALITY ASSURANCE PROGRAM

NRC staff has reviewed the Quality Assurance Program in the DP for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 1, Section 17.6 (Quality Assurance Program). Based on this review, NRC staff has determined that the licensee's Quality Assurance Program is sufficient to ensure that information submitted to support the decommissioning of its facility should be of sufficient quality. The NRC staff concludes that the licensee's planned decommissioning activities can be conducted in accordance with NRC requirements contained in 10 CFR 30.63(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), and 72.54(g)(6).

12. FACILITY RADIATION SURVEYS

12.1 Release Criteria

NRC staff has reviewed the Release Criteria information in the Final Status Survey Plan (an appendix in the DP) for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 2, Section 4.1 (Release Criteria). Based on this review, NRC staff has determined that the licensee has adequately summarized the DCGLs and area factors used for survey design and for demonstrating compliance with the radiological criteria for license termination.

12.2 Characterization Surveys

NRC staff has reviewed the information in the Characterization Survey (an appendix in the DP) for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 2, Section 4.2 (Characterization Surveys). This review has determined that the radiological characterization of the site is adequate to: permit planning for remediation that will be effective and will not endanger the workers, demonstrate that it is unlikely that significant quantities of residual radioactivity have not gone undetected, and provide information that will be used to design the final status survey.

12.3 Final Status Survey Design

NRC staff has reviewed the information in the Final Status Survey Plan (an appendix in the DP) for Building 7304 according to the Consolidated NMSS Decommissioning Guidance, Volume 2, Section 4.4 (Final Status Survey Design). Based on this review, NRC staff has determined that the licensee's final status survey design is adequate to demonstrate compliance with the radiological criteria for license termination contained in 10 CFR 20.1501(a), 30.36(g)(4)(iv), 40.42(g)(4)(iv), 70.38(g)(4)(iv), and 72.54(g)(4).

STATE CONSULTATION

The Virginia Department of Environmental Protection was notified of the proposed decommissioning of Building 7304 and it did not object.

CONCLUSIONS

Based on the considerations discussed above, the NRC staff concludes that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed decommissioning activities; and (2) such activities will be conducted in compliance with NRC regulations.

REFERENCES

1. 10 CFR Part 20, License Termination Rule. "Radiological Criteria for License Termination." June 1997.
2. NUREG-1757, Volume 1, Revision 1. "Consolidated NMSS Decommissioning Guidance: Decommissioning Process for Materials Licensees." September, 2003.

3. NUREG-1757, Volume 2. "Consolidated NMSS Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria." September, 2003.