

**U.S. NUCLEAR REGULATORY COMMISSION**

Amendment No.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, 37, 39, 40, 70 and 71, 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	In accordance with letter dated June 1, 2015
1. United States Army Installation Management Command  2. ATTN: IMSO, Building 2261, 2405 Gun Shed Road, Fort Sam Houston, Texas, 78234-1223	3. License number SUC-1593 is amended in its entirety to read as follows:
	4. Expiration date: March 21, 2026
	5. Docket No. 040-09083 Reference No. Amendment No.1

6. Source Material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
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Uranium (depleted)	Any	5700 kg, as distributed below
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Installation	DU mass (kg)
A. Fort Benning, GA (Georgia)	A. 1850
B. Fort Bragg NC, (North Carolina)	B. 810
C. Fort Campbell, KY (Kentucky)	C. 130
D. Fort Carson, CO (Colorado)	D. 270
E. Fort Gordon, GA (Georgia)	E. 30
F. Fort Hood, TX (Texas)	F. 770
G. Fort Hunter Liggett, CA (California)	G. 30
H. Fort Jackson, SC (South Carolina)	H. 30
I. Fort Knox, KY (Kentucky)	I. 760
J. Fort Polk, LA (Louisiana)	J. 370
K. Fort Riley, KS (Kansas)	K. 20
L. Fort Sill, OK (Oklahoma)	L. 120
M. Donnelly Training Area, Fort Wainwright, AK (Alaska)	M. 20
N. Joint Base Lewis-McChord/Yakima Training Center, WA (Washington)	N. 340
O. Joint Base McGuire-Dix-Lakehurst, NJ (New Jersey)	O. 10
P. Schofield Barracks/ Pohakuloa Training Area, HI (Hawaii)	P. 140

Total	5700 Kg
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## 9. Authorized Use:

Activities necessary for the possession and management of depleted uranium spotting rounds and fragments as a result of previous use of depleted uranium at sites located at U.S. Army installations.

These activities include:

- A. Activities necessary to maintain the sites in a safe condition and to prevent the unauthorized removal of licensed material from the authorized places of use;
- B. Activities necessary to determine the presence of licensed material at the sites;
- C. Activities necessary to monitor the radiological environmental conditions in and around the authorized places of use to determine if licensed material is being transported in the environment; and
- D. Activities necessary for the packaging, transport and disposal of incidentally identified licensed material to a licensed/permitted disposal facility.

**CONDITIONS**

10. The authorized places of use (possession) shall be at U.S. Army installations at Donnelly Training Area, Fort Wainwright, AK; Fort Benning GA; Fort Bragg, NC; Fort Campbell, KY; Fort Carson, CO; Fort Gordon, GA; Fort Hood, TX; Fort Hunter Liggett, CA; Fort Jackson, SC; Fort Knox, KY; Fort Polk, LA; Fort Riley, KS; Fort Sill, OK; Joint Base Lewis-McChord/Yakima Training Center, WA; Joint Base McGuire-Dix-Lakehurst, NJ; and Schofield Barracks/Pohakuloa Training Area, HI.
11. Except as specifically provided otherwise, the licensee shall conduct operations in accordance with the commitments, representations, and statements contained in the license amendment application:
  - Programmatic RSP, "Radiation Safety Plan for IMCOM Ranges Affected by M101 Davy Crockett Spotting Round Depleted Uranium," dated December 31, 2015 (ML16004A369);
  - Programmatic PSP; "Physical Security Plan for US Army Installation Management Command Ranges Affected by Depleted Uranium in M101 Davy Crockett Spotting Rounds," dated December 31, 2015 (ML16004A369);
  - Army's Form 313, "Application for Materials License," items 1-7, dated June 1, 2015 (Pkg. ML15161A454);
  - Attachment 3, "Calculation of TEDE to Individual Likely to Receive Highest Dose," dated June 1, 2015 (Pkg. ML15161A454);
  - Attachment 4, "Attachment 4. How the Army Determined the M101DU RCAs," dated June 1, 2015 (Pkg. ML15161A454);
  - Attachment 5, "Bounding Calculations Using RESRAD 7.0 and RESRAD-OFFSITE 3.1," dated June 1, 2015 (Pkg. ML15161A454);
  - Attachment 8, "Arguments against Air Sampling During HE [High Explosive] Fire into RCAs [Radiation Control Areas]," dated June 1, 2015 (Pkg. ML15161A454);
  - Email clarifying RCAs at Fort Knox, KY, dated January 29, 2016 (ML16041A107);
  - Attachment 8, "Estimating Public Exposure to Airborne Depleted Uranium Outside the U.S. Army Pohakuloa Training Area, Hawaii," September 30, 2015, (ML15294A276);
  - Attachment 9, "Examples of Army Range fires," September 30, 2015, (ML15294A276);

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- Attachment 10, "Arguments against Air Sampling During HE Fire into RCAs, rev. 1," September 30, 2015, (ML15294A276);
- Attachment 11, "Calculation of Public Dose SOP," September 30, 2015, (ML15294A276);
- Programmatic ERMP, "Programmatic Approach for Preparation of Installation-specific Environmental Radiation Monitoring Plans", dated December 31, 2015 (ML16004A369);
- "US Army Decommissioning Funding Plan (DFP) for License Number SUC-1598," dated February 9, 2016 (ML16042A232);
- Maps of the locations of the RCAs, "M101 Impact Areas," dated December 31, 2015 (but, sent February 12, 2016, (ML16048A358);
- Army's email clarifying M101 Target Areas (Radiation Control Areas), dated February 12, 2016 (ML16048A347); and
- Army's Statement of Intent, dated June 1, 2015 (ML15161A458).

The approved license application is hereby incorporated by reference, except where superseded by license condition(s) below:

12. If the licensee identifies information indicating that Davy Crockett-related depleted uranium may be present at a U.S. Army installation not identified in License Condition 10 or included on another NRC license, then the licensee will notify the NRC in writing within 15 calendar days of the identification of this information and this notice must include a schedule for evaluating the presence of depleted uranium. The evaluation schedule should not exceed 90 calendar days from the date of the notification letter.
13. If it is determined that Davy Crockett-related depleted uranium is present at a U.S. Army installation not listed in License Condition 10 or included on another NRC license, the licensee shall submit a request to include the installation in this license within 60 calendar days of the determination. The request will address Radiation Safety, Environmental Radiation Monitoring, Physical Security, Decommissioning Financial Assurance, and the name of the Garrison Radiation Safety Officer. Any additional procedures necessary to ensure compliance with License Conditions 9A - 9D that are not included in the licensee's application referenced in License Condition 11 will also be included in the request.
14. The licensee shall submit an updated site-specific decommissioning cost estimate and financial assurance instrument for each U.S. Army installation listed in License Condition 10 on a triennial basis, by December 31<sup>st</sup> of each year or, if applicable, in accordance with the requirements of 10 CFR 40.36(c)5.
15. The licensee shall post "Caution - Radioactive Material" signs at a sufficient number of locations around each the Radiation Control Areas to ensure that individuals entering the Radiation Control Area are aware of the presence of depleted uranium. The signs may be placed at the perimeter of the range impact areas if posting them at the Radiation Control Area boundary is unsafe due to the presence of unexploded ordnance.
16. Decommissioning is not authorized without NRC approval:
  - a. The licensee shall not perform any decommissioning or ground disturbing activities to collect or remove depleted uranium fragments or contaminated soil that is identified during routine range activities at any of the Radiation Control Areas without prior authorization from the NRC. Picking up incidental pieces of DU that the Army finds during training exercises would be allowed without NRC approval, if it

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does not involve ground disturbing activities;

b. NRC or Agreement State licensed contractors may undertake decommissioning or ground disturbing activities to collect or remove depleted uranium fragments or contaminated soil that is identified during routine range activities at any Radiation Control Area consistent with the conditions and commitments of their license(s); and

c. When the licensee engages an NRC or Agreement State licensed contractor to undertake decommissioning or ground disturbing activities to collect or remove depleted uranium fragments or contaminated soil that is identified during routine range activities at any of the Radiation Control Areas, the licensee will notify NRC in accordance with the requirements of 10 CFR 40.42(g)(1). The licensee shall provide NRC with the contractor's site-specific decommissioning plans and all other documents associated with radiation safety and environmental monitoring associated with the proposed decommissioning or ground disturbing activities in accordance with the requirements of 10 CFR 40.42 prior to the commencement of the activity. If issues are identified by NRC that could impact radiological health and safety, they will be resolved prior to the commencement of the activity.

17. When analytical sampling results from locations outside of the Radiation Control Area indicate that the U-238/U-234 activity ratio exceeds 3, the licensee shall notify NRC within 30 calendar days and collect additional environmental samples within 30 calendar days of the notification of NRC, unless prohibited by the absence of the sampling media (e.g., lack of well water).
18. Within 6 months of the effective date of the license amendment, the licensee shall provide to the NRC for approval, site-specific environmental radiation monitoring plans for each installation listed in License Condition 10 that address all RCAs at the installations. The licensee shall fully implement each installation's site-specific environmental radiation monitoring plan within 6 months of NRC approval.
19. Within 6 months of the effective date of this license amendment, the licensee shall provide to the NRC for verification, documentation, including site-specific dose modeling parameters, showing that the approved dose modeling methodology was applied and that the calculated site-specific all pathway dose for each Radiation Control Area at each installation listed in License Condition 10 does not exceed  $1.0E-2$  mSv/yr (1.0 mrem/yr) TEDE.

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20. All written notices and reports to USNRC required under this license shall be addressed to: ATTN: Document Control Desk, Deputy Director, Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards, Mailstop T8 F5, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by express delivery to 11545 Rockville Pike, Two White Flint North, Rockville, MD 20852-2738. Required telephone notification shall be made to the NRC Operations Center at (301) 816-5100, unless otherwise specified in license conditions.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: March 21, 2016By: */RA/*

John R. Tappert, Director  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards