UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

July 9, 2007

Kelly W. Crooks
Army Joint Munitions Command
1 Rock Island Arsenal
Attention: AMSJM-SF
Rock Island, IL 61299-6000

SUBJECT: NRC INSPECTION REPORT 040-08767/07-001

Dear Mr. Crooks:

This refers to the inspection conducted on May 25-27, 2007, at Fort Hood, Texas. The inspection was an examination of activities conducted as they relate to safety and compliance with the Commission's rules and regulations. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. The inspection included a review of the Army's Phase I scoping survey for contamination from fired depleted uranium munitions on the Trapnell Multi-Use Range at Ft. Hood. Details of the inspection were presented to your representatives at the exit briefing conducted telephonically on June 27, 2007.

During the inspection, an Unresolved Item was identified. An Unresolved Item is an issue about which more information is required to determine if it is acceptable, if it is a safety-significant finding, or if it constitutes a deviation or violation. The Unresolved Item involves the question of whether the Army is in violation of NRC requirements for possessing quantities of licensed material (depleted uranium) in a location that is not currently authorized on an Army license, or whether the amount of material at this location can be possessed under a general license. As identified in Section 1.2 of the enclosed report, additional information from the Army is necessary before the NRC can complete its review of this Unresolved Item. Therefore, you are requested to provide this additional information to the NRC within 30 days of the date of this letter, or alternatively, provide a date or timetable when the requested information will be made available, so we can resolve this Unresolved Item.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact the undersigned at (817) 860-8191 or Mr. Robert J. Evans, Senior Health Physicist, at (817) 860-8234.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

Docket No.: 040-08767
License No.: SUC-1380

Enclosure:
NRC Inspection Report
040-08767/07-001

cc w/enclosure:
Horst Loechel, RSO
HQ III CORPS & FT HOOD
AFZF-GA-SAFE-G MR. LOECHEL
BLDG 1001 RM E126C
761st TANK BN AVE
FT HOOD, TX 76544-5000

Richard A. Ratliff, P.E., L.M.P.
Radiation Program Officer
Division of Regulatory Services
Texas Department of State Health Services
1100 W. 49th Street
Austin, TX 78756

bcc w/enclosure (via ADAMS e-mail distribution):
LDWert
DBSpitzberg
LMGersey
RJEvans
PLLouden, RIII/DNMS/DB
GMMcCann, RIII/DMNS/DB
RTadesse, FSME/DWMEP/DURLD
RITS Coordinator
FCDB
RIV Nuclear Materials File - 5th Floor

SUNSI Review Completed: RJE ADAMS: ■ Yes ☐ No Initials: RJE
■ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ■ Non-Sensitive

DOCUMENT NAME: s:\dnms\!fcdb\!rje\70876701.wpd final r:_dnms

RIV:DNMS:FCDB	RIII:DNMS:DB	C:FCDB
RJEvans	GMMcCann	DBSpitzberg
/RA/	***/RA RJE for via email***	***/RA/***
06/07/07	06/27/07	07/09/07

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	040-08767
License No.:	SUC-1380
Report No.:	040-08767/07-001
Licensee:	Department of the Army
Facility:	Trapnell Multi-Use Range
Location:	Fort Hood, Texas
Date:	May 25-27, 2007
Inspectors:	Robert Evans, P.E., C.H.P., Senior Health Physicist Fuel Cycle & Decommissioning Branch
	G. Michael McCann, Senior Health Physicist Decommissioning Branch Division of Nuclear Materials Safety Region III
Approved by:	D. Blair Spitzberg, Ph.D., Chief Fuel Cycle & Decommissioning Branch
Attachment:	Supplemental Inspection Information

EXECUTIVE SUMMARY

Trapnell Multi-Use Range, Ft. Hood, Texas
NRC Inspection Report 040-08767/07-001

This decommissioning inspection was conducted in response to information provided by the Army to the NRC regarding the possibility of unlicensed depleted uranium contamination existing in munitions tests areas at Ft. Hood. The inspectors observed scoping survey activities performed by the Army's contractor at the Trapnell Multi-Use Range at Ft. Hood.

Decommissioning Inspection Procedure for Materials Licensees

- The Army's scoping survey identified depleted uranium contamination from fired munitions in about ten discrete locations in one area of the Trapnell range. Soil and metal fragment samples from these locations were collected for off-site analysis. The Army plans to assess the contractor's final survey report prior to determining its next course of action (Section 1).

- An Unresolved Item was identified involving the question of whether the Army is in violation of NRC requirements for possessing quantities of licensed material (depleted uranium) in a location that is not currently authorized on an Army license, or whether the amount of material at this location can be possessed under a general license (Section 1).

Report Details

Site Status/Background

During August 2005, the Department of the Army discovered remnants of munitions containing depleted uranium (DU) at the Schofield Army Barracks in Hawaii. The remnants were identified as spotting rounds, which were used with the Davy Crockett Weapon System. Records suggest that there may have been two types of spotting rounds, the 20-millimeter round and the 35-millimeter round. The Davy Crockett Weapons System was available for military during the 1950's - 1960's, after which it was removed from service.

The spotting rounds were manufactured and distributed under the authority of a number of U.S. Atomic Energy Commission licenses that were in effect at the time. The 20-millimeter spotting round, the type identified in Hawaii, weighed approximately one pound and contained about 0.45 pounds of DU. DU is the by-product that remains after natural uranium ore has been processed for use in nuclear reactors. DU is defined as source material uranium in which the isotope uranium-235 is less than 0.711 weight percent of the total uranium present.

The discovery of the Davy Crockett spotting rounds at Hawaii prompted the Army to conduct a historical review to ascertain if other locations existed where the spotting rounds may have been used. The review identified Ft. Hood as one such location. Munitions testing has occurred at Ft. Hood since the 1940's. The Trapnell Multi-Use Range is an area where different types of munitions continue to be tested and is not accessible to the public. Historical records suggest that this range may have been used for testing of the 35-millimeter spotting round. Accordingly, the Army elected to conduct a radiological survey at the Trapnell Multi-Use Range to determine whether DU was present on the range.

Concurrently with the Army's records review, the NRC is conducting a review of archived docket files to identify the licenses under which these munitions were previously manufactured, distributed, and possessed.

1 Decommissioning Inspection Procedure for Materials Licensees (87104)

1.1 Inspection Scope

The purpose of the inspection was to determine if decommissioning activities were being conducted in a manner that was protective of workers, the general public, and the environment. The inspection included observation of a scoping survey being conducted at Ft. Hood, Texas, for detection of DU contamination.

1.2 Observations and Findings

The Army elected to conduct a Phase I survey at the Trapnell range. A Phase I survey is considered to be a preliminary, discovery phase survey. The Phase I survey was performed only to ascertain the presence or absence of DU but not to quantify the amount of DU that may be present.

The Army's contractor performed scanning surveys of the Trapnell range surface soils with a field instrument for detection of low energy radiation (FIDLER) survey meter. The

FIDLER was used because of its greater sensitivity to low-energy gamma radiation. DU is less radioactive than natural uranium, and as a result, can be difficult to detect in the field. The contractor complied with its survey procedures for daily source checks, meter calibration, conduct and documentation of survey data.

Depleted uranium was identified in 10 discrete locations clustered in one area of the range. The DU contamination consisted of metal fragments and elevated soil measurements due to oxidation of the DU fragments. The survey team collected soil and metal fragment samples for off-site, laboratory analysis. The samples were collected in accordance with the contractor's field sampling procedure.

The FIDLER surveyor stated that the background measurements for the meter were about 6,000-10,000 counts per minute. The maximum survey measurement observed in the field was about 110,000 counts per minute. This measurement was observed at a discrete location where DU was identified and subsequently excavated.

The contractor is expected to submit its survey report to the Army about 3-4 weeks after the completion of the survey. The Army verbally agreed to share the report findings with the NRC after the Army has completed its review of the report. At the conclusion of the onsite inspection, the Army had not formulated its plans for the future. Possible future actions include conduct of a detailed, site characterization survey to quantify the amount of DU present at the Trapnell range.

In accordance with 10 CFR 40.3 and 40.22, possession of greater than 15 pounds of source material requires a specific NRC license. The amount of material present at the Trapnell range was not quantified; therefore, it was not clear if the Army is in violation of NRC requirements by possessing licensable quantities of DU in a location that is not currently authorized on an NRC license, or if the Army could possess the material under a general license as allowed by 10 CFR 40.22. This issue was considered an Unresolved Item (040-08767/0701-01) pending further review by the NRC of the information provided by the Army.

1.3 Conclusions

The Army's contractor identified the presence of DU in about 10 discrete locations in one area of the Trapnell range. Soil and metal fragment samples were collected for off-site analysis. The Army plans to assess the contractor's final survey report prior to determining its next course of action. An Unresolved Item was identified involving the question of whether the Army is in violation of NRC requirements for possessing quantities of licensed material (DU) in a location that is not currently authorized on an Army license, or whether the amount of material at this location can be possessed under a general license.

2 Exit Meeting Summary

The inspectors telephonically presented the inspection results to the licensee's representatives, including Ft. Hood's Occupational Health and Health Specialist and Rock Island Arsenal's project manager, on June 27, 2007. During the inspection, the licensee did not identify any information reviewed by the inspectors as proprietary.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Baldwin, Health Physics/Quality Assurance Supervisor, Pika International
J. Cehn, Radiation Safety Officer, Pika International
R. Holthouser, Ammunition Specialist/International Waste Broker, Pika International
H. Loechel, Occupational Safety & Health Specialist, III Corps Safety, Department of the Army
D. Summers, Range NEPA Specialist, DPW Environmental
D. Thedford, Senior UXO Supervisor, Pika International

ITEMS OPENED, CLOSED, AND DISCUSSED

Open

040-08767/0701-01	URI	Determine whether the Army needs a site-specific license for possession of DU at Ft. Hood

Closed

None

Discussed

None

INSPECTION PROCEDURES USED

IP 87104	Decommissioning Inspection Procedure for Materials Licensees

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
DU	depleted uranium
FIDLER	field instrument for detection of low energy radiation
IP	NRC Inspection Procedure
URI	Unresolved Item