



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

February 25, 2004

Lt. Col. Kali Mather
Department of the Air Force
USAF Radioisotope Committee
HQ AFMSA/SGPR
110 Luke Ave, Suite 405
Bolling AFB, DC 20322-7050

SUBJECT: NRC INSPECTION REPORT 030-28641/04-001

Dear Lt. Col. Mather:

This refers to the inspection conducted on February 9-11, 2003, at Eglin Air Force Base, Florida. The inspection was limited to a review of decommissioning activities conducted under Master Materials License 42-23539-01AF and Air Force Permit No. FL-08883-02/00AFP. An exit briefing was conducted with the Eglin Air Force Base staff at the completion of the onsite inspection. No violations of NRC requirements were identified; therefore, no response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Mr. Anthony Gaines at (817) 860-8252 or the undersigned at (817) 860-8197.

Sincerely,

/RA/

Jack E. Whitten, Chief
Nuclear Materials Licensing Branch

Docket No.: 030-28641
License No.: 42-23539-01AF

Enclosure:
NRC Inspection Report
030-28641/04-001

cc w/enclosure:
Florida Radiation Control Program Director

bcc w/enclosure (via ADAMS distrib):

EECollins

CLCain

JEWhitten

DBSpitzberg

ADGaines

RJEvans

OMasnyk-Bailey, RII

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No. 030-28641

License No. 42-23539-01AF

Air Force Permit No. FL-08883-02/00AFP

Report No. 030-28641/04-001

Licensee: Department of the Air Force

Facility: Test Area C-74L

Location: Eglin Air Force Base, Florida

Dates: February 9-11, 2004

Inspector: Robert Evans, P.E., C.H.P., Senior Health Physicist
Fuel Cycle and Decommissioning Branch

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

Attachment: Supplemental Information

EXECUTIVE SUMMARY

Department of the Air Force
NRC Inspection Report 030-28641/04-001

The purpose of this inspection was to review the licensee's progress in decommissioning of Test Area C-74L at Eglin Air Force Base, Florida.

Decommissioning Inspection Procedure for Materials Licenses

- The licensee and its contracted work force were performing reclamation activities in accordance with the guidance provided in the unapproved decommissioning plan (DP), with several minor exceptions. The exceptions included use of plastic sheeting, silt fencing, and dosimeters. These variations were implemented at the discretion of work supervisors based on actual conditions at the site. Postings, radiological controls, survey instruments, and work accomplished were in agreement with regulatory requirements and consistent with the unapproved DP. No occupational or environmental health and safety issues were identified during the site tour (Section 1.2.a).
- The contractor was maintaining radiation protection program records including radiation work permits, survey meter calibration records, radiation worker training, radiological surveys, occupational exposures, and bioassay results. The inspector confirmed that the Air Force was providing routine oversight of the contractors (Section 1.2.b).

Report Details

Summary of Facility Status

The Department of the Air Force (Air Force) submitted a DP to the NRC by Memorandum dated May 24, 2002. The licensee subsequently submitted supplemental information by Memorandums dated November 1, 2002, and August 21, 2003.

The Air Force requested approval to decommission Test Area C-74L, a site previously used for depleted uranium (DU) munitions testing between 1974-1978. Test Area C-74L is in Walton County, Florida, located in the north-central portion of Eglin Air Force Base. At the time of this inspection, the Air Force permittee, Eglin Air Force Base, had almost completed the decommissioning activities in Test Area C-74L, although the DP had not been approved by the NRC at the time of this inspection.

1 Decommissioning Inspection Procedure for Materials Licenses (87104)

1.1 Inspection Scope

This inspection was performed to determine whether decommissioning activities were being conducted safely and in accordance with NRC requirements and the licensee's unapproved DP.

1.2 Observations and Findings

a. Site Tour

At the time of the inspection, decommissioning activities were in progress in the Installation Restoration Program Site No. RW-41, specifically, the radioactive material controlled area at Test Area C-74L. The licensee contracted with Earth Tech Environment & Infrastructure, Inc. (Earth Tech) to perform the field work, the characterization survey, and the final status survey of the radiologically restricted area.

The characterization survey consisted of a walkover survey of the site using a Field Instrument for the Detection of Low-Energy Radiation (FIDLER) detector. Any area with a count rate above the 22,000 cpm action limit was flagged for remediation. As soon as a hot spot was identified, the spot was remediated by scooping up discrete DU particles and surrounding soil as necessary. The contaminated soil was recovered by hand or by a front-end loader and then placed directly into shipping containers. The soil was inspected for unexploded ordnance by explosive ordnance disposal personnel. The inspector confirmed through interviews and documentation reviews that the contractor was verifying that each box did not contain free-standing liquids prior to closing and sealing the box lid.

During the site tour, the inspector observed area postings and radiological controls. The restricted area was clearly posted with warning signs. Survey equipment was appropriate for its purpose and was properly calibrated. Personal protective equipment required by the radiation work permit was available for use.

After remediation is complete, the licensee plans to conduct a 100 percent walkover survey with FIDLER survey instruments as the final status survey. Thirty soil samples will be obtained in a biased manner to verify the reliability of the FIDLER survey. The Air Force believes that random, systematic soil sampling is not a reliable indicator of site-wide contamination levels because the DU contamination is not evenly dispersed across the site. The contractor plans to commence with final status surveys immediately after the completion of site reclamation.

The NRC inspector conducted a review of waste material in storage. According to information provided by Earth Tech and the Air Force, 116 boxes were being stored at the site including 106 B-25 boxes and 10 roll-off boxes. In addition, there were 16 drums of DU contaminated soil, 5 drums of contaminated personal protective equipment, and 2 B-25 boxes of contaminated soil in storage at Area C-64. The material will remain in storage until shipment for disposal through a waste broker.

The inspector determined that overall reclamation activities were being conducted in accordance with the unapproved decommissioning plan, although several minor variations were noted. At the discretion of the Earth Tech radiation safety officer and others, the contractor was not using silt fencing, plastic sheeting, and dosimeters as discussed in the unapproved DP. The inspector noted that these items were not necessary based on the environmental and occupational safety hazards present at the site. The Air Force agreed to review the unapproved DP and to propose changes to the plan which will require use of the items only at the discretion of the radiation safety officer or work supervisors.

b. Records Review

The NRC inspector conducted a review of radiation protection records being maintained by Earth Tech, the contractor that was responsible for conducting the reclamation work at the time of the inspection. The records reviewed included occupational exposures, bioassay, radiation work permits, swipe surveys, training, and air sampling records. Overall, the records reviewed by the inspector indicated that the reclamation of the DU contaminated soil was not a significant health and safety hazard to site workers.

Earth Tech began reclamation activities during late-October 2002. Occupational exposure records for 2002-2003 were reviewed. The monitored workers included one environmental scientist, two technicians, and the radiation safety officer. The maximum deep dose equivalent exposure to one individual was 17 millirems per year, although Earth Tech believes that some of this dose may have been received at other work projects. The inspector noted that all doses were well below the annual regulatory limit of 5 rems (5000 millirems) total effective dose equivalent.

Air sampling was conducted in late-2002 during excavation of the stockpiled soil containing DU. Air samples were taken during this task because Earth Tech determined that this activity had the highest potential for airborne exposures. The sampling included both general area and lapel air sampling. Earth Tech obtained four sets of general area air samples and six sets of lapel air samples. The general area air sample results review by the inspector were less than 1 percent of the action level of

6E-10 $\mu\text{Ci/ml}$, the derived air concentration value for uranium-238. The lapel air sample results were not available by the end of the onsite inspection and were not reviewed.

Limited bioassay sampling was conducted by Earth Tech. Seven baseline samples were collected during October 2002. All sample results were at background levels. Collection of future bioassay samples will be at the discretion of the Earth Tech radiation safety officer.

Swipe surveys for removable contamination were collected tri-weekly from the onsite trailer and from each B-25 box after it was loaded and sealed. The B-25 boxes were surveyed on the five accessible sides (the bottom of the box was not always accessible). The trailer swipe survey results taken by Earth Tech were less than 10-percent of the 1000 dpm/100 cm^2 action level. The swipe survey results for the B-25 boxes were less than or equal to 11-percent of the 1000 dpm/100 cm^2 action level. In addition, Earth Tech also surveyed the B-25 boxes for ambient gamma exposure rates. The exposure rates on the B-25 box surfaces were at or below 0.06 millirems per hour. Earth Tech used these box survey results for information only. The B-25 boxes will be formally radiologically surveyed prior to shipment for disposal.

The inspector reviewed the radiation work permits. Earth Tech issued radiation work permits on a daily basis. The permits reviewed by the inspector included radiological restrictions such as personal protective equipment and survey requirements.

Radiation worker training was provided by Earth Tech to its site workers. In addition to training required by the unapproved decommissioning plan, the licensee provided site specific training at a kickoff meeting just prior to recommencing work in early January 2004. The inspector confirmed that the two unexploded ordnance workers who were not Earth Tech employees had also received training similar to that offered by Earth Tech.

In addition to Earth Tech's records, the inspector reviewed limited Air Force records during the inspection. The Air Force conducted an annual audit of the applicable permit, No. FL-08883-02/00AFP during October 2003. The auditor did not include Test Area C-74L in the audit because no work activities were in progress at that time. However, the inspector noted that the Eglin Air Force Base alternate radiation safety officer visited the site several times a week to observe work being conducted by the contractors.

1.3 Conclusions

The licensee and its contracted work force were performing reclamation activities in accordance with the guidance provided in the unapproved DP, with several minor exceptions. The exceptions included use of plastic sheeting, silt fencing, and dosimeters. These variations were implemented at the discretion of work supervisors based on actual conditions at the site. Postings, radiological controls, survey instruments, and work accomplished were in agreement with regulatory requirements and the unapproved DP. No occupational or environmental health and safety issues were identified by the inspector during the site tour.

The inspector confirmed that the contractor was maintaining radiation protection program records including radiation work permits, survey meter calibration records, radiation worker training, radiological surveys, occupational exposures, and bioassay results. The inspector confirmed that the Air Force was providing routine oversight of the contractors.

2 Exit Meeting Summary

The inspection results were presented to representatives of the licensee at the conclusion of the onsite inspection on February 11, 2003. Licensee representatives acknowledged the findings as presented. The licensee did not identify any information reviewed by the NRC inspector as being proprietary information.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Department of the Air Force, Eglin Air Force Base

R. Armstrong, Installation Restoration Project Manager
S. Curry, Alternate Base Radiation Safety Officer
D. Davis, Permit Radiation Safety Officer
J. Moyer, Range Engineer
M. Rodriguez, Installation Restoration Program Manager
J. Sirmans, Director, Environmental Management
B. Sobel, Major, Installation Radiation Safety Officer
T. Walker, Deputy Director, Environmental Management

Others

R. Button, Health Physicist, U.S. Environmental Protection Agency
A. Macbeth, Chief Project Manager, Earth Tech
M. Nunley, Environmental/Marine Scientist, SAIC
A. Pryce, Radiation Safety Officer, Earth Tech
B. Pritchett, Project Manager, Earth Tech
B. Wendel, Site Chief, Earth Tech

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None.

Closed

None.

Discussed

None.

LIST OF ACRONYMS USED

DP	Decommissioning Plan
DU	depleted uranium
dpm/100 cm ²	disintegrations per minute per 100 square centimeters
FIDLER	Field Instrument for the Detection of Low-Energy Radiation
μCi/ml	microcuries per milliliter