

PART I - LICENSE, INSPECTION, INCIDENT/EVENT AND ENFORCEMENT HISTORY

1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
11	05/21/2020	Renewal
10	03/04/2020	Appointed new Radiation Safety Officer (RSO)
9	11/26/2019	Appointed new RSO
8	08/08/2019	Appointed new RSO

2. INSPECTION AND ENFORCEMENT HISTORY:

The last inspection of this licensee was on November 27, 2018. One non-cited violation was documented concerning a licensee identified failure to maintain constant control and surveillance of a chemical agent detector containing a 250 microcuries of americium-241 (Am-241).

3. INCIDENT/EVENT HISTORY:

The inspector also reviewed that facts and circumstances of an event reported to the NRC on October 2, 2019, involving an M1A1 collimator, containing an estimated 1.27 Curies of hydrogen-3, that was found in a dumpster in Stafford County, Virginia. Discussions with Army personnel indicated that the device was manufactured in 1983 and was likely deployed overseas prior to 2012. The licensee believes that the device was probably brought back to the United States, unbeknownst to the Army, by an unknown returning military service member, who later placed it in the dumpster. The NRC acknowledges that once notified of the collimator in the dumpster, the Army took prompt action to recover and properly dispose of the device. The NRC considers this event to be of very low safety significance because the risk of exposure to any individual was extremely low given the self-contained nature of the device. Based on the information in the Army's written report and information gathered by the NRC during discussions with Army staff, the NRC did not identify any violation of NRC requirements with regard to this event.

PART II - INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:

U.S. Army Tank-automotive and Armaments Command is authorized to possess and use a variety of military control devices and chemical agent detectors containing H-3, nickel-63 (Ni-63), or Am-241 at various locations within the United States. The Pine Bluff Arsenal is an authorized location primarily used to store chemical agent detectors until such time that funding is available to demilitarize the devices and dispose of the sources. The last shipment of sources for disposal occurred on July 28, 2016, and contained 7,420 Am-241 sources.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The inspector toured the licensee's facility in Pine Bluff, Arkansas to evaluate the licensee's measures for material security, hazard communication, and exposure control. All devices in storage awaiting final disposal were secured in warehouses in accordance with the licensee's inventory records. Devices are moved to the chemistry department within the facility for demilitarization when the licensee is budgeted for the processing. The inspector observed the active demilitarization of M43A1 Chemical Agent Detectors, which included volume reducing the devices into separate scrap components, isolating the Am-241 cell, leak testing a statistical sample of 1 out of 17 devices, and packing the source cells for disposal. The inspector also reviewed a selection of licensee records for inventories, leak tests, material shipment manifests, and procedures.

3. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

During the inspection, the inspector noted that licensee personnel were collecting leak test samples for chemical agent detectors removed from storage incident to disposal and measuring them using a Ludlum Model 3A survey meter equipped with a scintillator probe to determine if the sources were leaking. The inspector discussed and reviewed this procedure with the chemistry manager and the RSO and determined that the analysis of leak test samples is not authorized by the NRC license. Although these devices have not yet been transferred for disposal, the inspector reviewed two previous shipments of chemical agent detector sources that were shipped for disposal having leak tests analyzed by the licensee, who is not authorized to perform such analyses. To the licensee's knowledge, no leakage or contamination events have been identified by the Department of Energy or the United States Air Force, who were the recipients of these sources.

License Condition No. 13.G of Amendment No. 7 to NRC License No. 21-32838-01 states, in part, that analysis of leak test samples must be performed by persons specifically licensed by the Commission or an Agreement State to performs such services.

Contrary to the above, on January 13, 2015, and from January 11, 2016, through July 28, 2016, the licensee failed to have leak test samples analyzed by persons licensed by the NRC or an Agreement State to perform such services. Specifically, the licensee performed the analysis of their statistical leak test samples for approximately 470 Chemical Agent Detectors, each containing 15-30 millicuries of nickel-63, that were disposed of January 13, 2015; and 436 Chemical Agent Detectors, each containing 300 microcuries of Am-241, that were disposed of in July 28, 2016. The license is not authorized by their NRC license to perform these analyses.

This is a Severity Level IV violation (Section 6.7).

The inspector determined that the root cause of the violation was a misunderstanding of the leak testing requirements for these specific devices under the license. As corrective actions to restore compliance and to prevent recurrence, the licensee: (1) committed to

submitting an amendment request to the NRC to gain authorization to analyze leak tests for statistical samples of devices removed from storage incident to disposal; and (2) will hold all shipments of devices intended for disposal until they are leak tested in a manner approved by the license.

5. PERSONNEL CONTACTED:

LTC Kimberly Alston, RSO
Michael Gray, Health Physics Manager
Steven Gray, Chem-Bio Production Chief
Nathan Krzyaniak, Health Physicist

Attended exit meeting on June 16, 2020.

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