DEPARTMENT OF THE ARMY
UNITED STATES ARMY TANK - AUTOMOTIVE AND ARMAMENTS COMMAND
ARMAMENT AND CHEMICAL ACQUISITION AND LOGISTICS ACTIVITY
ROCK ISLAND, ILLINOIS 61299-7630

REPLY TO
ATTENTION OF

25 MAY 1999

NW
10CFR 30.50(b).(1)

Safety Office, Armament and Chemical
Acquisition and Logistics Activity

Mr. Jamnes Cameron
U.S. Nuclear Regulatory Commission
Region III
801 Warren Road
Lisle, Illinois 60532-4351

RE: LICENSE NUMBER 12-00722-06 03013027

Dear Mr. Cameron:

Attached is the 30-day follow-up report that involved a broken tritium source in an Arms Room at Fort Drum, New York. It was telephonically reported to the Nuclear Regulatory Commission (NRC) Operations Center on April 22, 1999 (NRC Report #35620). This report is being provided in accordance with Title 10 CFR 30.50(b)(1).

The incident involved an M224 Mortar Range Indicator containing 3.2 curies of tritium gas. The incident resulted because of improper repair procedures in an Arms Room.

The enclosure is a report from the Fort Drum Radiation Protection Officer providing a chronological description of the contamination event, how the Range Indicator had been handled, decontamination actions and corrective actions implemented at Fort Drum. Corrective actions include:

a. Action taken to install a maintenance room with a ventilation system.

b. Maintenance personnel will be trained.

c. TACOM-ACALA published a Ground Precautionary Message (GPM) 99-01.

All follow-up wipe tests at Fort Drum indicate the contamination has been cleaned up.

9907070192 990525
PDR ADOCK 03013027
C PDR

MAY 27 1999

IE-72

NMED 990267

The point of contact for this action is Mr. Gavin Ziegler, (309) 782-2995.

Sincerely,

Vernon E. Vondera
Chief, Safety Office

Enclosure

REPLY TO
ATTENTION OF

AFZS-SO (385-11) 11 May 1999

MEMORANDUM FOR Safety Office (AFPI-SO/Mr. Trunk), CDR FORSCOM,
1777 Hardee Ave SW, Fort McPherson, GA 30330-1062

SUBJECT: Incident Report of Damaged Radioactive Device (M224 Mortar, 60mm Range Indicator)

1. Reference telephone conversation between, CW2 Caraballo, C Co, 710th MSB, and Clifton Hebert, AIRPO, 22 April 1999, 1606, SAB.

2. CW2 Caraballo stated that he received a report from his Armament Section (Bldg P-4475, Rm 118A) that one of the instruments they had received was not illuminating. He requested that a visual survey of the item be conducted to determine if there was any leakage of the Tritium H3 Gas.

3. The following is a chronological order of actions taken:

a. On 22 Apr 99, 1621, Mr. Hebert, AIRPO, arrived at the maintenance area and inspected the M224 Mortar Range Indicator. His inspection revealed that one of the (4 ea 0.80 Ci) vials was not illuminating, indicating a possible vial breakage.

b. On 22 Apr 99, 1625, Mr. Hebert informed CW2 Caraballo that the range indicator appeared to be damaged and there was a distinct possibility of Tritium H3 gas release and possible shop contamination.

c. On 22 Apr 99, 1630, Mr. Hebert determined that three soldiers were directly involved with, and handled, the range indicator (WO1 Clinton, SGT Modeste, and SPC Chan). He had these soldiers call for clean clothing so they could remove possible contaminated clothing, shower and adorn clean clothes. He instructed CW2 Caraballo to have the three soldiers report immediately to Guthrie Clinic for a radiobioassay.

d. On 22 Apr 99, 1630, Mr. Hebert posted restricted access to the armament section.

e. On 22 Apr 99, 1645, Mr. Hebert returned to the Command Safety Office and contacted Mr. Trunk, FORSCOM Safety, and informed him of the actions taken (wipe test of the entire room and work area, restricting access to work area, and radiobioassay of personnel with follow-on decontamination operation as required). He

range indicator)

concurred with the plan and requested I contact Mr. Mohes at ACALA TACOM. Mr. Mohes also concurred with the procedures and volunteered to assist if the clean-up operations proved to be extensive and requested that I keep him informed of the progress of this operation.

f. On 22 Apr 99, 1730, Mr. Hebert returned to the work area and performed 56 swipe tests of the entire work site for any detectable traces of Tritium H3. He also bagged and removed the range indicator from the work site and stored it in the Installation Radiation Waste Storage Area, Bldg 11143.

g. On 22 Apr 99, 1745, Mr. Hebert interviewed SGT Modeste (the armament repairer) to determine exactly what steps she had followed in the repair of this item. She reported that the following steps were taken:

(1) 22 Apr 99, 1500 - Received the M224, SN 1270 from A Co 4-31, Inf Bn with a clearance letter from Command Safety Office. She inspected the item, all vials were properly illuminating when placed on the work bench.

(2) 22 Apr 99, 1515 - Consulted TM 9-1010-223-34&P for level of maintenance repair and parts listing and cost of repairs. This job was within 710th MSB's Direct Support mission.

(3) 22 Apr 99, 1530 - Disassembled the range indicator from the mortar tube by using a screwdriver to remove the screws from the mounting assembly and pry the plastic apart from the mounting assembly (the assembly was stuck). This prying action possibly caused the glass vials to break and release Tritium in the workshop.

(4) 22 Apr 99, 1600 - Noticed that one of the vials was no longer illuminating and notified WO1 Clinton. Both W01 Clinton and SPC Chen touched and inspected the range indicator. The item was then placed in double plastic bags in an attempt to contain contamination.

(5) 22 Apr 99, 1606 - WO1 Clinton dispatched SPC Boatwright to inform CW2 Caraballo of the incident.

(6) 22 Apr 99, 1606 - CW2 Caraballo notified Mr. Hebert, Command Safety Office AIRPO.

h. On 23 Apr 99, 1000, Mr. Hebert sent the 56 ea swipes (V41 to V96) to Rock Island Arsenal Rad Test Lab for analysis via FEDEX service.

Range indicator)

i. On 26 Apr 99, 1630, Mr. Hebert received telephonic report from Mr. Gizicki that all swipes (V41-V96) had readings ranging from 391DPMs to 11M DPMs.

j. On 27 Apr 99, 0800, Mr. Hebert contacted Fort Drum Fire Chief and requested a portable ventilation system be set up prior to performing any decontamination operations. The system was delivered to building P-4475 and installed by Mr. Hebert in the work area to assist in ventilating the work site during decontamination operations.

k. On 27 Apr 99, 1000, Mr. Hebert, assisted by the ORPOs, started performing decontamination operations of the highest contaminated areas in the immediate work site, using a 5% Hydrogen Peroxide solution. All personnel was equipped with proper PPE. The ORPOs worked in the contaminated areas that were less then 10,000 DPMs. After the first area was cleaned, Mr. Hebert took 15 ea additional swipe tests (V97 to V111) of the work site and sent these to Rock Island Arsenal Rad Test Lab for analysis via FEDEX service.

l. On 28 Apr 99, 0800, decontamination operations of P 4475 Rm 118A were continued. Mr. Hebert took an additional 22 ea (V112 to V133) swipe tests of the work shop as cleaning operations continued.

m. On 28 Apr 99, 1542, Mr. Hebert received a fax report from Rock Island Arsenal Rad Test Lab with reading results of 248 DPMs and lower for V97 to V111.

n. On 29 Apr 99, 0930, decontamination operations of P-4475, Room 118A were continued and Mr. Hebert took an additional 20 ea (V134 to V153) swipe tests of the work shop and sent these to Rock Island Arsenal Rad Test Lab for analysis via FEDEX.

o. On 30 Apr 99, 1200, Mr. Hebert received a fax report from Rock Island Arsenal Rad Test Lab with reading results of 134 DPMs and lower for V112 to V133.

p. On 30 Apr 99, 1255, Mr. Hebert received a fax report from Rock Island Arsenal Rad Test Lab with reading results of 125 DPMs and lower for V134 to V153.

q. On 3 May 99, 1300, Mr. Hebert received a fax report from Rock Island Arsenal Rad Test Lab with reading results of 122 DPMs and lower for V154 to V158.

r. On 3 May 99, 1500, the last area to be decontaminated was the ORF room. Mr. Hebert took an additional 5 ea (V154 to V158) swipe tests of this area and sent them to Rock Island Arsenal Rad Test Lab for analysis via FEDEX. Mr. Hebert took possession of the Individuals' chemical suits and placed them in Radiation Waste Storage Area, Bldg 11143 as lab waste.

Range Indicator)

4. Operational Results: Results of swipe tests of all areas within and outside of the work area were below the 1000 DPM contamination limits for an uncontrolled area.

5. Observations:

a. Although the level of maintenance was authorized for 710th MSB, the area where maintenance is being performed does not have an adequate ventilation system to prevent the spread of Tritium gases through the building if there was a spill.

b. Personnel were not wearing protective gloves when working on radioactive materials.

c. Kraft paper was not used to line radiation work area surfaces.

d. Personnel working on radioactive materials were not adequately trained on the required emergency procedures to take in the event of radiation incidents or informed of the hazards involved.

6. Corrective Action:

a. Commander was informed to stop performing maintenance operations (Tritium H3 vial replacement) on Fire Control Devices in building P-4475, Room 118A until a separate (Hot Room) ventilation system is installed in the work area.

b. Commander was informed that equipment containing Tritium H3 vials requiring replacement should be evacuated to DOL/SMA until a facility is approved.

c. Commander was informed that maintenance personnel must receive training as outlined in the ACALA's Radiation Material Handling Safety Course.

7. As of this date, the results of Radiobioassay Collection have not been returned. Test results will be forward for inclusion into this report upon arrival.

8. The POC for this action is Mr. Hebert, ext 2-4674.

DAVID C. MUSHTARE
Installation Radiation Protection Officer