



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND  
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333 - 0001



November 20, 1995

U.S. Nuclear Regulatory Commission  
Region I  
Nuclear Materials Licensing Section  
ATTN: Ms. Betsy Ullrich  
475 Allendale Road  
King of Prussia, Pennsylvania 19406-1415

Reference Fort Drum, New York

Dear Ms. Ullrich:

We are reporting on the situation at Fort Drum which you referenced in your memorandum to us of August 29, 1995.

We have investigated the concerns as relayed in the enclosure to your memorandum. Our report, including findings and recommendations to the installation, is provided as the enclosure to this memorandum. A copy of the report is being furnished to the affected radioactive commodity command licensees for their information and appropriate action.

For further information or assistance, please contact me at (703) 274-9475, by facsimile at (703) 274-9469, or by electronic mail at jmanfre@hqamc.army.mil.

Sincerely,

John G. Manfre  
Health Physics Manager  
Safety Office

Enclosure

Copies Furnished:

COMMANDER

U.S. Army Forces Command, ATTN: Safety Office (Mr. Lynn Clements), Fort McPherson, GA 30330-5000

Fort Drum, ATTN: Safety Office (Mr. Mushtare), Fort Drum, NY 13602

U.S. Army Communications-Electronics Command, ATTN: Safety Office (Mr. Joe Santarsiero), Fort Monmouth, NJ 07703-5000

DIRECTOR

U.S. Army Test, Measurement, and Diagnostic Equipment Activity, ATTN: Radiation Standards Directorate (Mr. Jerry Gray), Redstone Arsenal, AL 35898-5400

U.S. Army Armament and Chemical Acquisition and Logistics Activity, ATTN: Safety Office (Ms. Betty Peterson), Rock Island, IL 61299-6000

Information in this record was deleted  
in accordance with the Freedom of Information  
Act, exemptions 6  
FOIA-2006-0238

DD/1



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 29, 1995

Mr. John Manfre  
Department of the Army  
U. S. Army Materiel Command  
ATTN: AMCSF-P  
5001 Eisenhower Avenue  
Alexandria, VA 22333-0001

Dear Mr. Manfre:

This refers to the telephone conversation on August 1, 1995, between you and Betsy Ullrich of my staff regarding information that the U.S. Nuclear Regulatory Commission recently received concerning activities at Ft. Drum in New York. Details are enclosed for your review and follow-up.

We request that the results of your review and disposition of this matter be submitted to Region I within 30 days of the date of this letter. We expect that your evaluation of this matter will be thorough, objective and of sufficient scope and depth to resolve this matter. We request that your response contain no personal privacy, proprietary, or safeguards information so it can be released to the public and placed in the NRC Public Document Room. If necessary, such information shall be contained in a separate attachment, appropriately marked, which will be withheld from public disclosure. The affidavit required by 10 CFR 2.790(b) must accompany your response if proprietary information is included.

The enclosure to this letter should be controlled and distribution limited to personnel with a "need to know." The enclosure to this letter is considered Exempt from Public Disclosure in accordance with Title 10 Code of Federal Regulations, Part 2.790(a). However, a copy of this letter, excluding the enclosure, will be placed in the NRC Public Document Room.

The response requested by this letter and the accompanying enclosure are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. 96-511.

If you have any questions concerning this request, please contact Betsy Ullrich at (610) 337-5040.

Your cooperation with us is appreciated. We will gladly discuss any questions you may have concerning this information.

Sincerely,

*for Betsy Ullrich*  
Mohamed M. Shanbaky, Chief  
Research and Development Section  
Nuclear Materials Safety Branch, RI

Enclosure: As stated  
(10 CFR 2.790(a) INFORMATION)

Enclosure to letter to John Manfre, U. S. Army Materiel Command

The NRC recently received information that radioactive material has been stored on site at Ft. Drum for at least five years in a warehouse that may be designated as T-92 or T-93, but is also known as the "Turn-In Warehouse". This building was described as approximately 15 feet by 20 feet in size, and full of radioactive material, including: americium-241; hydrogen-3 (tritium) in open containers; "source sticks"; calibration and check sources of with activities ranging from 87 to 140 millicuries; and alpha sources. Some of the material was said to be stored in the hallway which is accessible to many people. According to the information given us, the persons who are working in the warehouse are aware that radioactive material is stored there, but do not know what radiation levels are present and are not issued dosimeters. In addition, the information indicated that the warehouse was to be cleaned in mid-July and that there were questions about the adequacy of radiation safety practices to be used in the clean-up.

REPORT  
NUCLEAR REGULATORY COMMISSION CONCERNS  
FORT DRUM, NEW YORK  
JUNE-OCTOBER 1995

1. Summary. In August 1995, the Nuclear Regulatory Commission (NRC) sent a memorandum to the Army Materiel Command (AMC) Safety Office concerning the storage practices at a warehouse located at Fort Drum New York. There had been concerns by an employee of Fort Drum reference the storage of radioactive items in Warehouse T-91 (stated in the NRC memo as T-92 or T-93). The employee noted that the items consisted of different commodities, including americium-241, hydrogen-3 (tritium), source sticks (calibration sources) and alpha sources. The employee was concerned about:

a. Accessibility of the material, i.e., that the materials were not always locked away;

b. Lack of surveys of the area (to determine radiation levels) and communication of those readings to employees working in the warehouse;

c. Lack of dosimeters issued to people working in the warehouse;

d. Adequacy of clean-up procedures for a radiation clean-up planned to occur in July 1995.

2. The NRC Region 1 Licensing Office asked the Army Materiel Command (AMC) to investigate the allegations. The AMC Safety Office inquiry was performed telephonically and via written correspondence with the command(s) in question. As a result of the reported received, a more complicated scenario emerged.

a. The radiation storage room in the warehouse also served as a room in which Army radiation instruments were taken apart (military term: demilitarized) and the radium sources (night-glo instrument dials) were collected for disposal. Stick sources containing krypton-85 gas (millicurie amounts) and check sources containing thorium -232 (nanocurie amounts) were also collected for disposal. No grinding or crushing of the sources was performed; the meter dials were placed intact in drums for disposal.

REPORT, CONTINUED  
NUCLEAR REGULATORY COMMISSION CONCERNS  
FORT DRUM, NEW YORK  
JUNE-OCTOBER 1995

b. The "clean-up" referenced in the enclosure to the NRC memorandum did involve the movement of the radioactive items from the hallway into a room that was at all times lockable. The "clean-up" also involved removal of minor tritium contamination discovered as a result of moving the items stored in the storage room. No contamination was detected outside the storage room, in the area generally accessible to personnel.

c. Two individuals from the Army's radiation instrumentation directorate participated in the demilitarization operations on July 14, 1995, wherein the radium gauges were removed. They didn't find out about the minor tritium contamination until July 27. The subsequent investigation revealed that neither person received a radiation dose as a result of the tritium contamination.

3. The AMC Safety Office asked the parent Army command of Fort Drum to investigate the incident. Fort Drum was tasked to investigate the incident at the installation level and to provide a report to us (Army Materiel Command) directly. That report is enclosed as Attachment 1 to this report). The Fort Drum report speaks of the instrumentation operations, tritium contamination, and storage issues interchangeably. The facts below are based on our review of that report, as well as on telephone conversations with Fort Drum personnel.

4. Facts.

a. The sources in question were:

(1) Tritium (Hydrogen-3), maximum activity 10 Curies, sealed glass ampules in metal source holders (parts of fire control devices), utilized for night-sight operations.

(2) Krypton-85 in stick (instrument check) sources, krypton gas.

(3) Radium-226, in instrument dials and gauges, as luminous paint.

REPORT, CONTINUED  
NUCLEAR REGULATORY COMMISSION CONCERNS  
FORT DRUM, NEW YORK  
JUNE-OCTOBER 1995

b. Radioactive commodities were found to have been stored in the hallway adjacent to the storage room in Building T-91. The items were determined to have been tritium fire control devices, used by the military services to direct artillery positioning. The tritium is used for night sighting. The maximum activity in one source was 10 Curies. All items were in serviceable condition.

c. Although the warehouse was accessible to personnel during the daytime, it was secured at night. During the day, the only way into the warehouse was through an office.

d. The store room was routinely used for the short term storage of commodities, but it was not classified as a bulk storage area. On the door of the store room were posted Parts 19, 20, and 21 of 10 CFR, as well as an NRC Form 3. Additionally, appropriate radiation warning signs were also posted on the door of the store room.

e. The licensed items were moved into the locked room immediately upon discovery.

f. A survey was performed on both the hallway and the storage room on July 12, 1995. (Attachment 2). The wipes were sent out to the servicing laboratory and the results were not received by Fort Drum until July 27, 1995. Minor tritium contamination was discovered and ultimately cleaned up. Personnel who had used the room for an instrument demilitarization operation, as well as personnel who had participated in the cleanup were determined to have received no tritium dose (attachment 3).

g. Quarterly radiation surveys for tritium were performed for the storage area. The latest quarterly survey of the area was performed in January 1995. The retirement of the Fort Drum RPO was shortly thereafter (attachment 4). There was a temporary RPO in place until the replacement for the RPO could be assigned. The next quarterly survey of the warehouse was then done in July 1995, after the arrival of the new RPO.

REPORT, CONTINUED  
NUCLEAR REGULATORY COMMISSION CONCERNS  
FORT DRUM, NEW YORK  
JUNE-OCTOBER 1995

h. Dosimeters were not issued to the people working in the warehouse. Only one individual routinely working in that warehouse had a job that had anything to do with radiation. Dosimeters are not required for any licensed commodities that were generally stored in that room. The room is locked when unattended. Finally, the commodities that were found stacked outside the room contained tritium, for which dosimeters are not utilized.

i. The clean up of the minor tritium contamination was discussed with the licensee at Rock Island, IL and instructions were tendered from the licensee on July 27, 1995 (Attachment 5).

j. The one individual who was working in the storeroom had received training in the handling of hazardous materials (Attachment 6). As far as can be determined, documentation indicating that the worker had attended formal training devoted to radiation safety could not be located. We are still trying to locate proof of his training.

k. Personnel from the Fort Drum Test, Measurement, and Diagnostic Equipment Activity (TMDE) assisted in a demilitarization operation of radium dialed instruments on July 14 1995, in the radioactive material storeroom. Through an apparent oversight, these TMDE personnel were not aware of the fact that the room was slightly contaminated. The TMDE personnel would not know that for another two weeks, when the wipe test results were returned from the laboratory (Attachment 6).

l. The TMDE personnel ARE routinely issued dosimeters to perform their jobs because they work with higher level radiation sources than those in question. The TMDE personnel wore the dosimeters as a matter of course, since they were dealing with radium.

#### 4. Conclusions.

a. There was no health and safety hazard to personnel resulting from the items stored in Building T-91, Fort Drum, New York. This conclusion was developed from personnel bioassay and radiation surveys performed at the site.

REPORT, CONTINUED  
NUCLEAR REGULATORY COMMISSION CONCERNS  
FORT DRUM, NEW YORK  
JUNE-OCTOBER 1995

b. Although radioactive commodities were found outside of the locked storeroom, they were immediately moved inside and secured, where the items have been since that day.

c. The minor tritium contamination was cleaned up to acceptable limits.

5. Actions taken and planned to preclude recurrence.

a. The Fort Drum Office of Safety Management has notified the responsible personnel that the store room is for radioactive commodities, and that no radioactive material is to be left unsecured outside of the room. The logistics personnel have also been instructed not to let such a big buildup of items occur at the site. The items will be processed sooner, precluding future backlogs.

b. The U.S. Army Armament and Chemical Acquisition and Logistics Activity (ACALA), Tritium commodity licensee for the Army, will conduct an on-site visit to Fort Drum January 8-12, 1996, to review the entire radiation safety program as it applies to the ACALA NRC licenses.

c. The worker in charge of the storage room in which the commodities were found will be given radiation protection training when the commodity commands visit Fort Drum.



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 10TH MOUNTAIN DIVISION (LIGHT INFANTRY) AND FORT DRUM  
FORT DRUM, NEW YORK 13602-5000



REPLY TO  
ATTENTION OF

AFZS-SO

13 Sep 95

MEMORANDUM FOR Commander, Forces Command, ATTN: AFPI-SO, Fort McPherson,  
GA 30330-6000

SUBJECT: Nuclear Regulatory Commission (NRC) for Information

1. Information pertaining to the radiation issue at the Storage Room in building T-91 is as follows:

- a. On 21 Jun 95, the Office of Safety Management (OSM) was notified of a potential radiation safety issue at the DOL Storage Room in building T-91.
- b. On 23 Jun 95, members of the OSM conducted an assessment of the reported issue. It was observed that licensed radiation material was stacked in the aisle outside the storage room. The supervisor for the storage room was briefed on the violation, the potential hazard to personnel, and was instructed to immediately move the items inside the storage room. On-site correction was accomplished.
- c. On 26 Jun 95, members of the OSM conducted a follow-up to ensure that the items moved to the storage room remained there and that no new items had been placed outside of the storage room.
- d. On 7 Jul 95, members of the OSM coordinated with local technicians from the 95th TMDE and the Direct Support Maintenance Shop to schedule a demilitarization operation of unserviceable radiac equipment. The operation was scheduled for 14 Jul 95.
- e. On 11 Jul 95, members of the OSM conducted a survey of the storage room to assess the amount and type of items being stored. It was observed that 21 each M43A1 Chemical Detectors and several other radiation and non-radiation items were in storage.
- f. On 12 Jul 95, the supervisor of the storage room was briefed on the storage problem, advised of the scheduled demilitarization operation scheduled for 14 Jul 95, and the need to eliminate the backlog of items being stored.
- g. On 13 Jul 95, members of the OSM made contact with the item manager at Rock Island for the M43A1 to discuss wipe testing and demil instructions.
- h. On 14 Jul 95, the scheduled demil operation was conducted - 195 unserviceable radiac meters were demiled. In addition, the 21 M43A1 Chemical Detectors were wipe tested and all

non-radioactive items, that were stored separately from the radioactive items, were removed from the storage room and placed in the warehouse.

i. On 20 Jul 95, the item manager at Rock Island for the M43A1 Chemical Detector was provided serial numbers via facsimile.

j. On 26 Jul 95, the supervisor of the storage room provided the OSM with an updated inventory of all radioactive items remaining in the storage room.

k. On 27 Jul 95, the OSM received the lab results for the wipe tests conducted on 11 Jul 95 and decontamination instructions from the Health Physicist at Rock Island. In addition the OSM coordinated with the Occupational Health Division for bioassays of the five individuals that had contact with the storage room. Further, the supervisor of the storage room was notified to temporarily suspend receipt and process of radioactive items.

l. On 28 Jul 95, the bioassays were accomplished. In addition, the remaining radioactive items in the storage room were double bagged and transferred to the Installation Radiation Storage Facility.

m. Between 31 Jul - 3 Aug 95, three decontamination/cleaning processes were accomplished of the storage room and fixtures.

n. On 4 Aug 95, members of the OSM conducted wipe testing of the storage room and fixtures.

o. On 8 Aug 95, the OSM received the lab test results on the wipe tests. Results indicated that two areas within the storage room were slightly over the threshold limit.

p. On 9 Aug 95, members of the OSM conducted a decon/cleaning process and wipe testing.

q. On 17 Aug 95, the OSM received the lab test results on the wipe tests from 9 Aug 95 and the results indicated that we successfully reduced the contamination in all areas below the threshold limit.

r. On 30 Aug 95, the OSM received the formal results of the bioassays conducted and the results were negative with a zero (0) reading.

2. As a precautionary measure, wipe tests were conducted in the other DOL warehouse, T-93 on 3 Aug 95. Results of those tests were negative.

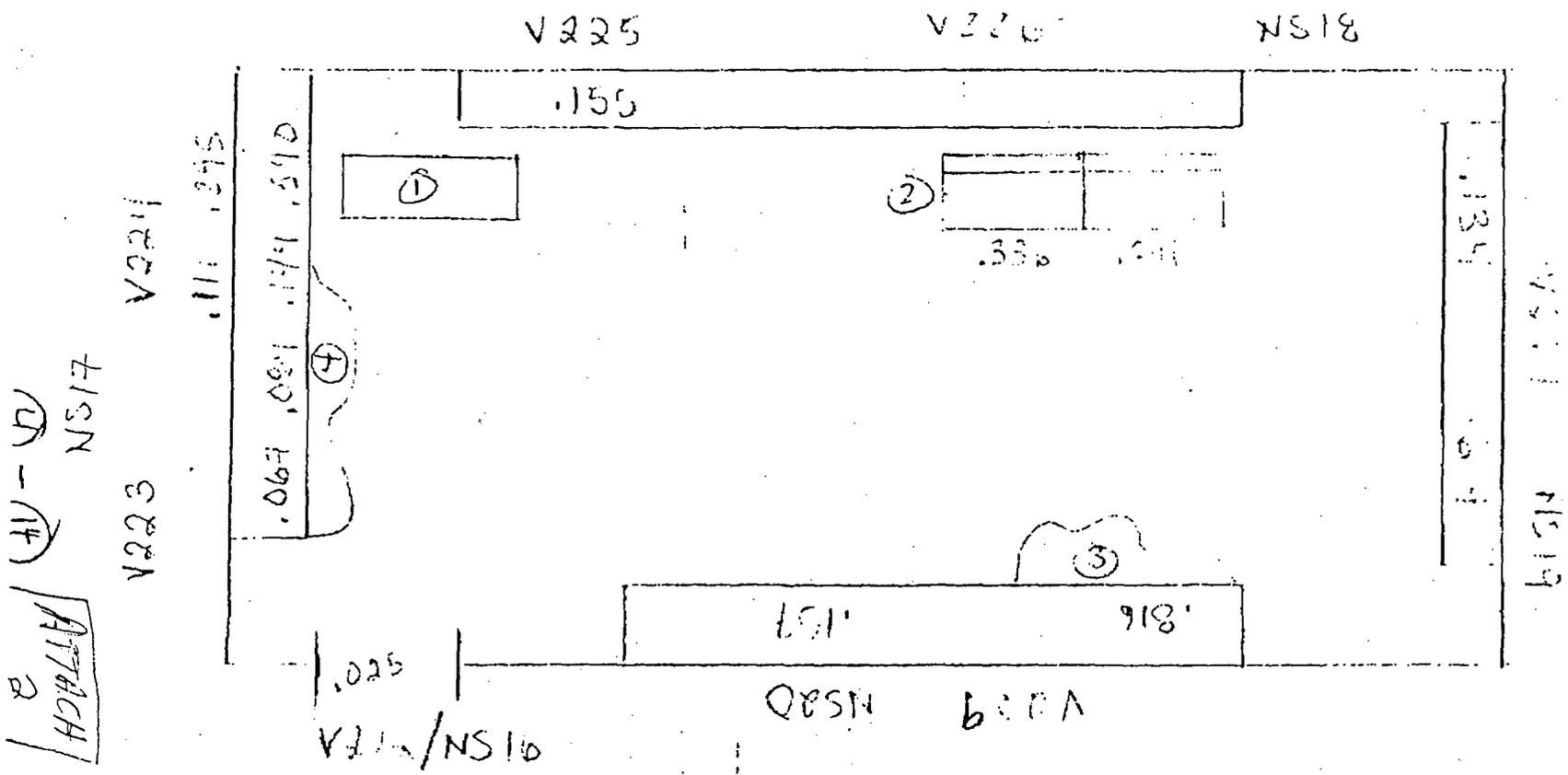
3. The radiation issue with the storage room is considered closed.

4. The OSM continues to monitor the handling, storage, and process of radioactive items within the DOL Storage Section.

5. POC for this office is the undersigned, DSN: 341-5352 or commercial (315) 772-5352.

A handwritten signature in black ink, appearing to read "David C. Mushtare", with a long horizontal flourish extending to the right.

DAVID C. MUSHTARE  
Command Safety Director



PROJECT: SURVEY of T-91  
 SURVEY OFFICER: STE HARKER  
 DATE: 12 JULY 95  
 TIME BEGIN: 1320 HRS  
 TIME END: 1430 HRS  
 POB:

- NOTES:
- ① BOXES
  - ② PDR-27
  - ③ FQ ON FLOOR
  - ④ FQ ON FLOOR

RADIO METER PDR 77 S/N 0107A  
 Calibration void 5 AUG 95



DEPARTMENT OF THE ARMY  
U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE (PROVISIONAL)  
ABERDEEN PROVING GROUND, MARYLAND 21010-5422



REPLY TO  
ATTENTION OF

MCHB-DS-MH (40)

8 17 1995

MEMORANDUM FOR Chief, U.S. Army Ionizing Radiation Dosimetry  
Center, U.S. Army Test Measurement and  
Diagnostic Equipment Activity, ATTN:  
AMSMI-TMDE-SR-DD/Bldg 5417, Redstone Arsenal,  
AL 35898-5400

SUBJECT: Interpretation of Tritium Bioassay Results

1. References:

a. Radiological Bioassay and Dosimetry (RBD) Software  
Package, Version 4.1, 1 August 1992.

b. AR 40-14, Control and Recording Procedures for Exposure  
to Ionizing Radiation and Radioactive Materials, 15 March 1982.

c. Laboratory results, U.S. Army Center for Health Promotion  
and Preventive Medicine (Provisional), Radioisotope Analysis  
Program, 9 August 1995.

d. ICRP Publication No. 54, "Individual Monitoring for  
Intakes of Radionuclides by Workers: Design and  
Interpretations," 1988.

e. Memorandum, MEDDAC, Fort Drum, MCID-PM, 2 August 1995,  
subject: Request for Priority Analytical Support.

2. As requested, the bioassay results provided to us in  
reference 1c have been used to estimate radionuclide uptake and  
dose for the individuals involved in the incident on 12 July 1995  
at Fort Drum, New York (reference 1e).

3. The estimated doses were calculated using the RBD computer  
package (reference 1a) and were verified using hand calculation  
estimates.

*Readiness thru Health*

ATTACH 5

MCHB-DS-MH

SUBJECT: Interpretation of Tritium Bioassay Results

4. Estimated dose for the individuals is listed below, rounded to the nearest millirem.

Name	SSN	DOB	Assay	Period	Dose
		EX 6	Urine	7/12 - 8/02	0
			Urine	7/12 - 8/02	0

5. The point of contact is 2LT Kenneth Guiberson, DSN 584-3548/8258.

FOR THE COMMANDER:

*Samuel G. Dunston*  
 SAMUEL G. DUNSTON  
 MAJ, MS  
 Program Manager  
 Medical Health Physics

CF:  
CDR, MEDDAC, FT DRUM, ATTN: MCID-PM (MS. ANN LEWIS, RN)

MCHB-DS-MH

SUBJECT: Interpretation of Tritium Bioassay Results

4. Estimated dose for the individuals is listed below, rounded to the nearest millirem (mrem) -

Name	SSN	DOB	Assay	Period	Dose
			Urine	7/12 - 7/28	0
			Urine	7/12 - 7/28	0
			Urine	7/12 - 7/28	0

5. The point of contact is 2LT Kenneth Guiberson, DSN 584-3548/8258.

FOR THE COMMANDER:

*Samuel G. Dunston*  
 SAMUEL G. DUNSTON  
 MAJ, MS  
 Program Manager  
 Medical Health Physics

CF:  
CDR, MEDDAC, FT DRUM. ATTN: MCID-PM (MS. ANN LEWIS, RN)



DEPARTMENT OF THE ARMY  
U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE (PROVISIONAL)  
ABERDEEN PROVING GROUND, MARYLAND 21010-5422



REPLY TO  
ATTENTION OF

MCHB-DS-MH (40)

30 219 1005

MEMORANDUM FOR Chief, U.S. Army Ionizing Radiation Dosimetry  
Center, U.S. Army Test Measurement and  
Diagnostic Equipment Activity, ATTN:  
AMSMI-TMDE-SR-DD/Bldg 5417, Redstone Arsenal,  
AL 35898-5400

SUBJECT: Interpretation of Tritium Bioassay Results

1. References:

- a. Radiological Bioassay and Dosimetry (RBD) Software Package, Version 4.1, 1 August 1992.
- b. AR 40-14, Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials, 15 March 1982.
- c. Laboratory results, U.S. Army Center for Health Promotion and Preventive Medicine (Provisional), Radioisotope Analysis Program, 7 August 1995.
- d. ICRP Publication No. 54, "Individual Monitoring for Intakes of Radionuclides by Workers: Design and Interpretations," 1988.
- e. Memorandum, MEDDAC, Fort Drum, MCID-PM, 28 July 1995, subject: Request for Priority Analytical Support.

2. As requested, the bioassay results provided to us in reference 1c have been used to estimate radionuclide uptake and dose for the individuals involved in the incident on 12 July 1995 at Fort Drum, New York (reference 1e).

3. The estimated doses were calculated using the RBD computer package (reference 1a) and were verified using hand calculation estimates.

*Readiness thru Health*

AFZS-SO

*file copy*  
27 Jan 95

MEMORANDUM FOR RECORD

SUBJECT: Quarterly Radiation Safety Survey

1. The subject survey for 2nd Qtr 95 has been accomplished and there were no deficiencies noted.
2. Due to my retirement, I requested that Mr. Mushtare ensure the revised Fort Drum Radiation Protection Regulation be distributed as soon as it arrives from the printer.
3. All radiation detection devices, the key to the Installation Radiation Storage Facility, wipe test materials, and hazard signs were accounted for and placed in the work area locker.

Mr. Lapusnak/2-6457

*ATTACH 4*



## FAX TRANSMITTAL

Armament and Chemical Acquisition  
and Logistics Activity  
ATTN: AMSTA-AC-SF (Safety Ofc)  
Rock Island, IL 61299-7630  
FAX (309) 782-6758/DSN 793-6758

To: Sgt Harper / Dave M Date: 27 July 95  
# Of Pages: Header + FAX #: 341-3021

### FROM:

- John Mattila, Chief, Safety Office, x1690
- Betty Peterson, Health Physicist, x2962
- Jeff Havenner, Health Physicist, x2965
- Tim Mohs, Health Physicist, x6228
- Gavin Ziegler, Health Physicist, x2995
- Sonja Benavidez, Secretary, x6499
- Adrienne Blackwell, Student Aide, x3121

### Comments

*Suggested SOP for your clean up.*

*Note mop is like I'd buy at grocery  
with sponge at ~~end~~ end Not "rag mop"*

*Call me Friday AM. After 8:30 your time*

Subject: DECON INSTRUCTIONS

A. Decontamination instructions for the radioactive material storage area:

1. SET UP WORK AREA

- a. Before starting work, determine where to place plastic on floor, an approx 4'x4' sheet, out side the area to be cleaned. Plastic should be placed in front of the door to the room about two feet from the door way. Put down this plastic.
- b. To left of plastic (when facing room) and outside room place a plastic lined recepticle (recepticle will be used to collect used gloves and cleaning "rags"). Mark outside of the bag "radioactive waste", "tritium-H3", "date".
- c. To right of plastic (when facing room) and outside room, place a supply of cleaning supplies: spray bottles, bottles of hydrogen peroxide, and paper towels, jug of water, scrub pads. NOTE paper towels must have strength when wet.
- d. Make a series of 3x5" cards with one name and NSN of item per card using the inventory previously taken of items in the room.

2. REMOVE RADIOACTIVE ITEMS FROM THE ROOM

- a. With the RPO, alt RPO or other suitable trained person remove all tritium containing devices (MIA1 collimator, Infinity Collimator, elbow telesscope, etc) from the area using the following steps
  1. person,A who is to remove items from the room, dons disposable plastic/latex gloves, two pair one over another. PersonA puts three plastic bags over each shoe and secures with tape.
  2. person,B who is to receive the items from the room stands on plastic with good supply of plastic bags, and roll of masking tape, 1/2 " width..
  3. personA goes into room and pick up an item. Carry item so that it does not touch parts of body out to person on the plastic. Person A does NOT step on plastic
  4. personB have ready an open plastic bag, into which person A will place item. PersonA places item in bag so as to not touch outside of bag or person B. Once item is in bag, person B closes bag, twists end and wraps tape around twisted end. Put the right 3x5" card on the bag. The bagged item is then set off on the floor.
  5. Continue above steps until all items have been removed from the room and bagged.

3. REMOVAL OF DIRTY GLOVES

- a. Person A remove top layer of gloves PEEL EACH GLOVE OFF SLOWLY SO THAT THE GLOVE IS TURNED INSIDE OUT. WHEN REMOVING THE SECOND GLOVE ONLY TOUCH THE INSIDE OF THE "DIRTY GLOVE" WITH THE CLEAN GLOVE. and place in plastic lined recepticle. If gloves have split during removal of devices. then

change BOTH sets of gloves.

#### 4. DECON OF THE SHELVES

- a. Person A puts on two sets of new gloves.
- b. Person B Fill a spray bottle with 1/2 Hydrogen peroxide and 1/2 water. and hand to person A.
- c. Person A Spray the area to be decontaminated with the spray bottle (mist is preferred so as not to saturate the area).
- d. Wipe the area with paper towels to remove loose dirt and residual surface contamination. Use following techniques:
  - (1). WIPE SURFACE IN ONE DIRECTION WITH TOWEL. THEN FOLD DIRTY SIDE OF TOWEL TOGETHER.
  - (2). WIPE SURFACE WITH CLEAN TOWEL SURFACE. THEN FOLD DIRTY SIDE OF TOWEL TOGETHER.
  - (3). CONTINUE UNTIL NO CLEAN TOWEL SURFACE TO USE.
- e. Dispose of towel in lined waste recepticle. and secure a new towel from person B.
- f. Rewet the area using the spray bottle as above. Clean as above with more towels.
- g. If necessary, rewet area and clean the area with a scrub pad (no brushes), then wipe the area with paper towel as above to remove residual contamination. NOTE area is usually clean if no DIRT comes off on towel. Allow area to dry.
- h. Dispose of the scrub pad(s) and used paper towels in the plastic lined recepticle.
- i. Continue to clean until the shelves are all clean.

#### 5. DECON OF THE FLOOR

- a. In same fashion as shelves, the floor must be cleaned. To make this work easier, a broom, or stiff mop, can have towels secured on the surface and pulled across the floor. NOTE towel can only have surface used once then new surface must be made available on the broom.
- b. So Person A dons clean gloves, spray's small area of floor and using towel covered broom pulls broom across the moistened area, then changes surface of towel and pulls broom across floor again. This work continues until no more dirt comes off floor.
- c. When floor seems reasonably clean. Go out remove plastic bags from shoes and step on plastic. place used shoe bags in lined recepticle. Put on new bags, three per shoe. Now go over the floor for the last time. Be sure to clean all the way out to the plastic outside the door to the room.

NOTE Upon completion of decontamination effort. ensure all cleaning materials. bags for shoes and gloves which have been contaminated

are properly disposed of in the plastic line recepticle.

## B. Survey of Area Which has been Decontaminated

1. PREPARE FOR SURVEY. Do this work in an area outside the building where the room is located if possible.

a. Prepare a map of area to be surveyed. Number locations where samples will be taken on survey map. Be certain to take sufficient samples to show that this room is clean.

SUGGESTED places are corners or crevices in floors, cracks in shelving, etc. At least 20-30 samples will "tell the story"

b. Number the scintillation vials with the numbers marked on the survey map. Add 1 ml or 20 drops of deionized water to each scintillation vial.

c. Have metricel filters and deionized water.

d. Place scin vials, metricel filters, survey map, deionized water on a table or box to right of plastic outside room.

## 2. DO THE WIPES

a. Person A, don two NEW plastic bags per shoe. Don two pairs of gloves.

b. Person B, don two NEW plastic bags per shoe.

c. Person B will wet a metricel with deionized water and person A will take it from person B.

d. Person A will take a wipe. With moderate pressure wipe the surface so as to obtain a surface wiped of approx 4x4". Keep thumb off surface.

e. Person A will place wipe into scin vial taking care to keep surface of wipe which touched surface of room folded inward. Person B will bring scin vial in room and hold vial while person A places wipe in scin vial. Once wipe in in vial person B will cap vial and place it outside room.

NOTE all metricel filters and scin vials will remain outside room at all times except when having wipe placed into vial.

## 3. REMOVE BAGS AND GLOVES

a. When all wipes have been taken, person B will remove shoe bags and place in plastic lined recepticle. Person A will remove gloves, see discussion above, and place in recepticle. Then Person A will remove shoe bags and place in recepticle.

## C. Securing Radioactive Waste.

1. Remove plastic from floor and place in recepticle.

2. Carefully close bag which lines recepticle to left of door. Place bag in a second plastic bag. Mark this bag as described above in Set Up Work Area above.

3. Place in Secure Waste Storage area

United States Army



Logistics Management College

*For successful completion of the*

DEFENSE HAZARDOUS WASTE COURSE (REFRESHER) (ALMC-DM)

*this*  
Certificate  
*is awarded to*

LOREN T. WALDRON

THIS 23RD DAY OF AUGUST 1995

COURSE DIRECTOR

COMMANDANT U. S. ARMY  
LOGISTICS MANAGEMENT COLLEGE

ATTACHMENT 6

Agency code and subelement, and submitting office number (xx-xx-xxxx)	B. Stand ant number (Ctg id..... FY, Doc/ type code/ Serial number)	C. Request Status (1) Initial (2) Resubmission (3) Correction (4) Cancellation	is Code (X one)	D. Amendment No.
---	---	--	-----------------	------------------

Section A - TRAINEE / APPLICANT INFORMATION

Name (Last, First, Middle Initial) <b>DRON, LOREN T.</b>	2. Last 5 letters of last name <b>WALDR</b>	4. Ed. level <b>04</b>	5. Continuous Federal Service a. Years <b>34</b> b. Months
Home Address (Street, City, State and ZIP Code) (optional) <b>444, CARTHAGE NY 13619</b>	7. Phone Numbers (Include area code) a. Home b. Office	8. Position Title <b>FUEL DISTRIBUTIONS SYSTEM WORKER LEADER</b>	9. Position Level (X one) a. Executive b. Manager c. Supervisory d. Non-Supervisory e. Other (Specify)
Organization Name <b>S&amp;S DIV</b>	(1) Commercial <b>315-772-5979</b> (2) Autovon <b>341-5979</b>	10. Pay Plan / Series / Grade / Step (Rank / MOS / AFSC / or Navy Designator) <b>WL/6907/6/5</b>	14. Type of Appointment <b>C</b>
Organization Mailing Address (Include ZIP) <b>MTN DIV (LI) &amp; FT DRUM N: AFZS-DL-S T DRUM, NY 13602-5095</b>	13. Organization UIC <b>W0XQAA</b>	15. No. prior non-government training days	16. Are you handicapped or disabled? (X one) X Yes No

Section B - TRAINING COURSE DATA

Course Title <b>DEFENSE HAZARDOUS MATERIALS HANDLING COURSE</b>		19. Recommended Training Source, School or Facility a. Name <b>DR LEON DONALDSON</b> b. Mailing address (Include ZIP) <b>USA LOGISTICS MANAGEMENT CENTER (ALMC) FT LEE, VA 23801</b>	
Training Objectives (Benefits to be derived by the Government)		4. Location of training site (If other than 19b) <b>S-2507, FT DRUM, NY</b>	
Course Codes	f. Security Clearance <b>U</b>	k. Training Program	21. Course hours (4 digits)
Purpose <b>6</b>	g. Allocation Status <b>1</b>	l. Reason for Selection	22. Course Identifiers
Type <b>5</b>	h. Priority	23. Training Period (YYMMDD)	a. Duty <b>0080</b>
Course <b>A</b>	i. Training Level <b>2</b>	a. Start <b>930614</b>	b. Non-duty <b>0000</b>
Special Interest	j. Method of Training <b>8</b>	b. Complete <b>930618</b>	c. TOTAL <b>0080</b>
Training Vendor			d. Offering / TLN

Section C - COST INFORMATION (Costs incurred and billed are not to exceed amount in item 30.)

Training does not involve expenditure of funds other than salary, pay or compensation, skip the remainder of questions in Section C and X this box			
Direct Costs	28. Indirect Costs (For information only)	27. Accounting Classification	
Personnel cost	a. Travel cost		
Material, other costs	b. Per diem/other costs		
Indirect costs	c. Total indirect costs		
Funding source	28. Labor Costs	29. Signature of Fiscal Officer (Follow local procedure)	30. Total of Direct & Indirect Costs
Order No.			

Section D - APPROVAL / CONCURRENCE / CERTIFICATION

Supervisor: I certify training is job related and nominee meets prerequisites. (not attach w/over)		33. Training Officer: I certify this training meets regulatory requirements.	
a. Name (Last, First, Middle Initial) <b>H, MILLEDGE R.</b>	b. Phone number (Include area code) <b>315-772-5661</b>	a. Typed Name (Last, First, Middle Initial)	b. Phone number (Include area code)
Signature & Title <b>CH, S&amp;S</b>	d. Date	c. Signature & Title	d. Date
Authorizing Official	35. Course Acceptance (To be completed by school official)		
in (X one) <b>(1) Approved</b>	(2) Disapproved	a. Accepted	c. School Official Signature
d. Name (Last, First, Middle Initial) <b>DR, TERRANCE J.</b>	c. Phone number (Include area code) <b>315-772-5218</b>	b. Not Accepted	d. Date
Signature & Title <b>DEP DOL</b>	e. Date	36. Course Completion (To be completed by school official)	
37. Training Instructions (Identify discount terms and attach original invoice and 3 copies to:)		a. If course was not completed, X this box, leave this section blank, and return this form with an explanation memo.	b. Actual Completion Date (YYMMDD)
		d. Signature & Title	e. Date
38. Certifying Government Official			
a. I certify that this account is correct and proper for payment in the amount of: <b>\$</b>			
b. Signature		c. Date Signed	
d. OASN Number		e. Check Number	f. Voucher Number

Invoice should be sent to office indicated in item 37. Please refer to standard document number given in item 8 at top of page to assure prompt payment.

MAR 87

DoD exception to SF 182 approved by GSA/IRMS 11-86.

(5) - (14)

# DISPOSITION FORM

For use of this form, see AH 340-15; the proponent agency is TAGO.

*MAJ*

REFERENCE OR OFFICE SYMBOL

SUBJECT

A5ZS-LG-T

Hazardous Cargo Certification

TO SEE DISTRIBUTION

FROM G4

DATE 31 Mar 87

CMT 1

MSG Deuink/sah/6652

1. Effective 27 Mar 87, the attached personnel are authorized to certify and sign DD Form 1387-2, Special Handling Data/Certification for a period of two (2) years from the effective date.
2. Prior to 27 Mar 89, each individual will have to be recertified to continue certifying DD Form 1387-2 for their respective units.
3. POC this action is MAJ Tibbs or MSG Deuink, ext 6409/6652.

FOR THE ACOFS, G4:

*Kenneth N. Haynes*

KENNETH N. HAYNES  
MAJ, GS  
Deputy G4

Atch

DISTRIBUTION:

A

*CF: storage  
5 Apr 87*

## HAZARDOUS CARGO CLASS 87-1 (23-27 MAR 87)

LAST, FIRST, MI	GRADE	SSN	UNIT	CO	POS	FT DRUM	MAC	HAZ COMPASS	SMPC	XV111	REMARKS
ACKLEY, LINDA	GS03		DOL	TRANS	TECH			8703			
ARMSTRONG, RODNEY J.	E5		1/22 INF	C	TM LDR			8703			
BRETON, RENE B.	E4		10TH MP		MECH			8703			
BUEHRING, CHARLES H.	O1		2/22 INF	A	PL LDR		8605	8703			
CASEY, MARK E.	E5		2/22 INF	C	TM LDR			8703			
CORKRAN, RONALD E.	O3		2/22 INF	HHC	UMO		8605	8703	8702		
DEUINK, ROBERT G.	E8		10 MTN DIV	HHC	DTO			8703	8702		
DUNN, WILLIAM J.	E7		10 S&T	A	UMNCO		8606	8703			
EDWARDS, STANLEY J.	E5		10 S&T	D	A SQD LDR			8703			
FILARSKI, CHRIS	E5		10 SIG BN		GEN SUP			8703			
FURNACE, WILFRED M.	E5		200 CSS		CUP REP			8703			
GAMMILL, WILLIAM	E5		DIVARTY	HHC	TM CHF			8703			
HARLOW, WILLIAM C.	O3		DISCOM	HHC	FASCO			8703			
HEMINGWAY, JUDITH	E6		10TH MED	HSC	UMNCO		8605	8703			
HENRY, BARTON R.	WO1		121 CAC		UMO			8703	8702		
JOHNSON, FRED W.	O2		2/22 INF	HHC	PL LDR			8703			
JOHNSON, ROBERT	E7		2-108 INF	HHC	BN SUP SGT			8703			
LAFACE, JEFFREY L.	E5		2/22 INF	B	TM LDR			8703			
LANE, THOMAS R.	E5		121 CAC		MAINT SUP			8703			
LEFFINGWELL, DONALD	E7		1-105 INF	HHC	VEH MECH			8703			
LEVAN, STEPHEN J.	E6		1/22 INF	HHC	PSG		8611	8703			
MACKLIN, ANDRE	E5		247 TAMC		TECH			8703			
MAINVILLE, ROBERT R.	E6		200 CSS		MAT CTL			8703			
MARSHALL, BRIAN K.	O1		710 MAINT	B	FSP PL			8703			
NEMCHEK, ANDREW	E5		247 TAMC		MAINT			8703	8702		
NOYES, NILLIA J.	GS06		DOL	ITO	FREIGHT			8703			
PIRTLE, JAMES	O1		41 ENGR	A	PL LDR			8703			
RYAN, MATTHEW E.	O2		10 S&T	HSC	SUP PL			8703	8702		
SANCHEZ, RUDOLPH JR	E5		3-108 INF	HHC	ASST SUP SGT			8703			
SMITH, HOWARD G.	E7		27TH BDE	HHC	MAINT SUPV			8703			
TAYLOR, ALEXANDER D.	E5		1/22 INF	A	TM LDR		8611	8703			
VAUGHEN, VANETA	E5		10 MTN DIV	HHC	MOT SGT			8703			
WALDRON LOBEN,	WL06		DOL	S&S DIV	WHS LDR			8703			
WALTON, PEGGY S.	O2		10 S&T	A	SUP PL			8703			
WHITE, MARK D.	E5		710TH	HQ&LT	MECH			8703			
WILLIAMS, RONALD	O1		10TH MED	A	XO			8703			
ZUCKER, JAMES A.	O1		1-156 FA	A	FIRE DIR OFF			8703			



DEPARTMENT OF THE ARMY  
UNITED STATES ARMY MISSILE COMMAND  
REDSTONE ARSENAL, ALABAMA

REPLY TO  
ATTENTION OF

AMSMI-TMDE-SR

20 September 1995

MEMORANDUM FOR

Commander, U.S. Army Materiel Command, ATTN: AMCSF-P,  
5001, Eisenhower Avenue, Alexandria, VA 22333-0001  
Commander, U.S. Army Forces Command, ATTN: FCJ1-SO,  
Fort McPherson, GA 30330-6000

SUBJECT: Final Report: Tritium Contamination Incident at  
Fort Drum, NY

1. Enclosed is the final report on the investigation of the tritium contamination incident involving personnel from the U.S. Army Test, Measurement, and Diagnostic Equipment Support Team (ATST-10), Fort Drum, NY.
2. The point of contact for questions is Jerry D. Gray, Health Physicist, DSN 746-1987.

Encl

PATRICK KUYKENDALL  
Chief, Rad Stds and Dos Lab

13 September 1995

## MEMORANDUM FOR RECORD

SUBJECT: Final Report: Tritium Contamination Incident at Fort Drum, NY

1. On 27 July 1995, this office was notified that two personnel from the U.S. Army TMDE Support Team (ATST-10), Fort Drum had been potentially exposed to tritium during a demilitarization of unserviceable RADIAC equipment at Fort Drum. The incident occurred on 14 July 1995 and involved CW2 Bennett, ATST-10 Radiation Protection Officer (RPO) and SGT Bathke, ATST-10 Alternate RPO.
2. The demil operation consisted of the removal of radium-226 meter faces from IM-174s, the removal of the kryton-85 radioactive check source from AN/PDR-27s, and the removal of the thorium-232 radioactive check which is part of the large area alpha probes on the AN/PDR-56F. Telephone conversions with both individuals involved in the demil operation found that they had taken proper precautions in preparing the work area for the demil operation and had followed good radiation safety practices for the isotopes involved in the demil operation.
3. Both individuals were wearing Thermoluminescent Dosimeters (TLD) during the demil operation. As a precaution, the TLDs were evaluated to determine whether either individual received an external exposure from the radium, kryton, or thorium sources identified above. The dosimeter results indicated no external exposure. The incident occurred because the equipment was stored with damaged tritium devices.
3. The post RPO had performed an area survey to include seven wipe test samples on 5 July 1995 and had submitted the samples to Rock Island, IL for analysis. He did not delayed the demil operation pending the results of the survey. The results of the analysis did not arrive at Fort Drum until the 27th of July and indicated the presence of removable tritium contamination. The results of the analysis were:

Sample 1	door/floor	126 dpm
Sample 2	shelve	1568 dpm
Sample 3	shelve	2058 dpm
Sample 4	shelve	3089 dpm
Sample 5	shelve	1741 dpm
Sample 6	shelve	1253 dpm
Sample 7	shelve	1713 dpm

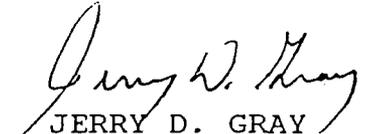
The lower limit of detection for the counter was 25 dpm. The Nuclear Regulatory Commission decontamination limits for removable contamination is 1000 dpm.

4. Because of the tritium contamination, the post RPO was instructed by the FORSCOM RPO to decontaminate the storage facility and the equipment. CW2 Bennett and SGT Bathke were also instructed to go the installation occupational health clinic for a tritium bioassay. The results of the bioassay indicated that neither individual had received an internal exposure.

5. This incident was the result of poor radiation safety planning and oversight by the Fort Drum RPO. The demil operation should have been delayed until the results of the 5 July survey had been reviewed. The tritium contamination would have been identified and the facility and equipment would have been decontaminated prior to the demil operation.

6. Since neither CW2 Bennett nor SGT Bathke received a tritium exposure, this office recommends that no further action be taken by this command concerning this incident.

7. The point of contact is the undersigned, 876-1987.

  
JERRY D. GRAY  
Health Physicist