



DEPARTMENT OF THE ARMY
WALTER REED ARMY MEDICAL CENTER
WALTER REED HEALTH CARE SYSTEM
WASHINGTON, DC 20307-5001

REPLY TO
ATTENTION OF

MCHL-HP (340b)

29 January 1999

MEMORANDUM THRU Director, Walter Reed Army Institute of Research (WRAIR)
Chief, Division of Military Casualties Research, WRAIR

FOR LTC Thomas Reid, Chief, Hematology, WRAIR

SUBJECT: Suspension of Privileges to Use Radioactive Material
Radioactive Material Authorization

1. On 28 January 1999, [redacted] a co-investigator on your Radioactive Material Authorization Number [redacted] attempted to turn-in a bag of radioactive waste to health physics in room [redacted] WRAIR. The door was secured when [redacted] arrived; the health physics technologist left to get the key. When he returned with the key he noticed that [redacted] had placed the bag on the floor. After checking the bag into the radioactive waste system, he monitored the spot on the floor where the bag had been and found the floor contaminated. The floor was decontaminated so that no removable contamination was present. Mr. Burton, who helped in this effort, returned to the Health Physics Office and I was briefed on the situation. I directed Mr. Burton and CPT Morton of this office to return and very closely monitor the route from room [redacted] the lab where the waste originated, to room [redacted] to ensure there was no further contamination. I also directed that the technologist be monitored, as well as the Room [redacted]. No further contamination was found between room [redacted] and room [redacted] was still in [redacted] lab. Contamination was found on the bottom of [redacted] shoes. The shoes were decontaminated. Significant contamination was very easily detected on the floor in front of the radioactive waste container and in the laboratory hood in [redacted] lab. The area was marked off and CPT Morton indicated health physics personnel would return early on 29 January 1999 to continue decontamination. On 29 January 1999, discussion of the incident by CPT Morton with [redacted] continued. [redacted] finally stated that on 26 January 1999, [redacted] had started an experiment with 1.6 mCi of ^{32}P . [redacted] used the centrifuge immediately outside the posted lab. The 1.6 mCi had been divided among 8 vials; 4 of the vials cracked in the centrifuge. [redacted] terminated the experiment and cleaned up the contamination and monitored the area finding no contamination. CPT Morton monitored the inside of the centrifuge and found significant contamination. The centrifuge has been sealed shut with tape and has been moved back into the posted lab room [redacted]. Note: this centrifuge had previously been located in [redacted] lab and had been authorized for use with radioactive materials. However, the centrifuge had been monitored for contamination, cleared, deposited for use of radioactive materials, and moved into the hallway outside [redacted] lab. After clearance and relocation, the use of this centrifuge for radioactive materials was not authorized.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 2 & 6
FOIA- 2006-0238

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2. I was updated on the situation about 1000 and paged LTC Reid, the Principal Investigator for the authorization. We agreed to meet and further discuss the incident with [redacted]. I left the health physics office to inspect the site myself. We stopped by the WRAIR Safety Office to brief Tanya Griffea, the WRAIR Radiation Safety Officer. Ms. Griffea was not in, but Mr. Burt Mueck, the WRAIR Safety Officer, was. He notified COL Crumrine, Director, WRAIR of the incident. COL Crumrine met us at [redacted] where we discussed the incident. COL McQueen, Chief, Division of Military Casualty Research, and LTC Reid, the Principal Investigator, and [redacted] were also present. I indicated my serious concerns about the incident. First, the researcher terminated an experiment with 1.6 mCi, and although the amount spilled was less than 1 mCi, notification of health physics should have been a priority. Second, the researcher used a centrifuge in an area not authorized for use of radioactive materials. Third, although records indicated a survey was done of the work area, it was inadequate; the contamination was wide spread, and easily detected in the hood, on the floor in front of the radioactive waste container, and in the centrifuge. Fourth, any researcher cleaning up even a minor spill should monitor their hands and feet very closely after completion of the decontamination. [redacted] should have been able to detect that [redacted] shoes were contaminated. Because of my serious concerns, I stated to [redacted] that [redacted] privileges to use radioactive materials were immediately suspended. A complete investigation of the incident would be presented to the WRAMC Radiation Control Committee (RCC) on 24 February 1999. I stated that we would coordinate for the Occupational Health Clinic to see [redacted] to provide a sample for bioassay to verify that there was no internal uptake from this incident. Also, [redacted] dosimeters would be collected and sent in for determination of any external exposure. [redacted] has been seen by Occupation Health Clinic personnel and a bioassay sample taken.

3. In summary the following actions have been directed and are on-going:

- a. [redacted] privileges to use radioactive material have been suspended by myself, the WRAMC Radiation Protection Officer.
- b. [redacted] whole body dosimeter and ring dosimeter will be sent to the Army processing facility to determine any external exposure. A spot urine bioassay sample has been obtained through the Occupational Health Clinic, and will undergo laboratory analysis to determine if there was any internal uptake.
- c. A full report of this incident will be presented to the WRAMC RCC. The RCC members will review the actions taken and may recommend further courses of action.
- d. Health Physics personnel will support in further decontamination efforts of all affected areas.

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e. The Health Physics Office personnel will review lessons learned from this incident and will provide information to all users of radioactive materials through training sessions and distribution of information through the Health Physics Newsletter.

William B. Johnson
WILLIAM B. JOHNSON
COL, MS
Radiation Protection Officer

CF:
DCCS, WRAMC (Chairman, RCC)
Chief, Preventive Medicine, WRAMC
RPO, WRAIR

WRAIR

5 February 1999

MEMORANDUM FOR Chairman, Radiation Control Committee

SUBJECT: Decontamination of Room [] and the Floor Outside Room []

1. On 28 January 1999 contamination with radioactive materials was discovered in the hallway outside of Room [] and in Room []

The details of the circumstances surrounding this contamination are described in Memorandum, Health Physics Office, MCHL-HP, 29 January 1999, Subject: Suspension of Privileges to Use Radioactive Material, - Radioactive Material Authorization []

3. On 1 February 1999, extensive efforts were initiated to remove the fixed contamination from the affected areas. The area outside of [] was resurveyed in the morning on 1 February. Initial readings in the contaminated area using a Ludlum-3 survey meter were about 1000 counts per minute (cpm) of fixed contamination. The area was repeatedly cleaned with a decontaminating solution and scrubbed with steel wool. After these cleanings, an activity of 400 cpm was measured. Since the area outside of [] is an unrestricted area, reducing the activity to background levels was a priority. To reduce the activity below 400 cpm, the Department of Public Works (DPW) was contacted to assist in the decontamination effort. DPW personnel used a circular hammer to shave the top layer of concrete off of the floor. All of the shavings and dust were collected using a vacuum cleaner posted for use with radioactive materials. After the area was again cleaned and decontaminated, the activity in the affected area was less than 100 cpm and indistinguishable from background radiation levels. Wet swipes also indicated that no removable contamination remained in the area. DPW patched the concrete in the afternoon.

4. Decontamination efforts were also undertaken in the affected areas of Room [] A survey was conducted outside of Room [] the area where the centrifuge was used with radioactive materials. No contamination above background levels could be detected. Contaminated equipment in the laboratory was cleaned until readings were below 200 cpm. Contaminated equipment that could not be cleaned was taken to Building 516, the Health Physics low-level radioactive waste storage and processing facility, and held for decay. This equipment included the centrifuge in which the test tubes broke, several test tube

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stands, an ice bucket, and other items that would be very difficult to decontaminate. These items will be stored in Building 516 for ten ^{32}P half-lives, approximately six months, and then returned to LTC Reid, Principal User, Radioactive Material Authorization. The entire fume hood was surveyed and affected areas were decontaminated until readings below 200 cpm were achieved.

5. An extensive effort was undertaken to decontaminate the floor of Room. Activity on the tiles near the radioactive waste container measured 2000 cpm of fixed contamination. These tiles were removed. The concrete under the tiles measured 100,000 cpm. This area was repeatedly cleaned with steel wool and cleaning solution until readings of 40,000 cpm were achieved. Further cleaning did not remove any of this remaining contamination. DPW was again called to chip the concrete from the affected area. After about a quarter of an inch of concrete had been removed, the area was cleaned and monitored. An exposure rate of 10,000 cpm was still easily detectable. Chipping more concrete from the affected area did not reduce this activity. Several small cracks were observed in the floor. It is likely that the areas between the cracks were contaminated and that shaving more concrete from the floor would not remove the contamination. Wet swipes confirmed that there was no remaining removable contamination. Analysis of the concrete shavings stripped from the floor confirmed that the contaminant was ^{32}P . Surveys of the ceiling below Room confirmed that the radioactive materials had not leaked through the floor to the room below. The concrete was patched by DPW on 4 February, and the tiles were replaced. A subsequent survey confirmed that less than 200 cpm could be detected on the surface of the patched floor. The remaining fixed contamination under the concrete patch will be fully decayed in six months.

6. Further surveys revealed many other floor tiles which had fixed contamination at levels above 200 cpm. Floor tiles which measured more than 200 cpm were removed and taken to Building 516. In several areas the radioactive materials leaked through the seams in the floor tiles and contaminated the concrete. All of these areas were decontaminated until readings of less than 200 cpm were achieved, and the affected areas were released to LTC Reid.

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7. On 2 February, CPT Arthur Morton and I briefed COL Crumrine, Director, WRAIR, COL Jarbo, Deputy Director, WRAIR, COL McQueen, Chief, Division of Military Casualty Research, and Ms. Tanya Griffea, Radiation Safety Officer, WRAIR, on the decontamination effort. COL Crumrine suggested having an information briefing for WRAIR personnel to discuss the lessons learned from this incident. Health Physics Office personnel will be available to participate in this briefing at the request of the WRAIR staff.

8. In summary, the following actions have been taken or are on-going:

a. All unrestricted areas affected by this incident have been decontaminated so that radiation levels are indistinguishable from background levels.

b. All restricted areas affected by this incident have been decontaminated so that radiation levels are below 200 cpm.

c. All contaminated equipment that could not be easily decontaminated is being held by Health Physics for decay and will be returned to LTC Reid in six months.

d. An information briefing will be scheduled for WRAIR personnel to discuss lessons learned from this incident.

9. Questions concerning the decontamination efforts or the briefing for WRAIR personnel can be directed to me at 356-0064.


JUSTIN M. HARTINGS
CPT, MS
Health Physics Office

CF:

Director, WRAIR

Deputy Director, WRAIR

Chief, Division of Military Casualties Research, WRAIR

RPO, WRAMC

RPO, WRAIR

Chief, Preventive Medicine, WRAMC

LTC Thomas Reid, Chief, Hematology, WRAIR

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