



DEPARTMENT OF THE ARMY

INDEX - 31-51-123

HEADQUARTERS US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703

REPLY TO
ATTENTION OF:

DRSEL-SF-H

3 SEP 1981

US Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Sir:

Reference is made to a telephone conversation between Mr. Barry J. Silber, this command, and Dr. Laurence Friedman, your organization, on 19 August 1981, subject: Loss of Radioactive Material. This conversation was immediately initiated by this command upon receipt of message, AEAGD-MMC-RA-CS, DTG 171559Z Aug 81, subject: Reporting of Lost Radioactive Material, MX-7338/PDR-27R Radioactive Test Sample (Incl 1) in compliance to paragraph 20.402 of Title 10, Code of Federal Regulations, Part 20 and to US Nuclear Regulatory Commission Byproduct Material License Number 29-01022-11 authorizing the possession and use of the MX-7338/PDR-27R Radioactive Test Sample by the Department of the Army.

As was indicated in reference conversation, the following information is provided for your information:

a. The radioactive material lost was one (1) each MX-7338/PDR-27R Radioactive Test Sample containing five millicuries of ⁸⁵Krypton. The MX-7338/PDR-27R is a five inch wand-shaped check source used to check the functional operation of the AN/PDR-27() standard Army beta-gamma radiation detection instrument (radiac set). The AN/PDR-27() Radiac Set includes a metal carrying case incorporating the radiation detection instrument, the MX-7338/PDR-27R, spare Geiger-Mueller tubes and other ancillary components.

b. The MX-7338/PDR-27R and AN/PDR-27() Radiac Set were assigned to the 66th Maintenance Battalion located at Kaiserslautern, Germany. The exact circumstances under which the loss occurred is unknown. It is suspected that the loss may have occurred during a military exercise when AN/PDR-27() Radiac Sets were drawn by decontamination teams. However, this is not certain since these radiac sets were not properly inventoried either prior to, or after, turn-in by these teams. The Nuclear, Biological, Chemical (NBC) room where the item was stored was thoroughly searched along with any areas where the item was known to have been located on prior occasions. Other AN/PDR-27() Radiac Sets were also searched to insure that the missing MX-7338/PDR-27R was not accidentally stored as an additional component in these sets.

C/19

3 SEP 1981

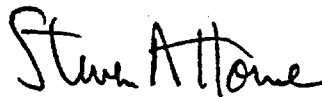
c. There is no evidence of radiation exposure at this time. Theoretical calculations, with consideration to both bremsstrahlung and gamma emissions, have been performed with the following results:

- (1) 188 mR/hr at one centimeter
- (2) 29.1 mR/hr at one inch
- (3) 809 uR/hr at six inches
- (4) 202 uR/hr at one foot

Continuous occupational exposure to personnel in a one foot vicinity to a "lost" source will result in a radiation dose of less than the non-occupational dose limit of 500 mRem for a one year exposure.

d. Accountability forms are now being completed for all radiac sets issued prior to removal from the NBC room. Prior to accepting returned radiac sets, the NBC supervisor will visually inventory each set against a master components listing associated with that specific piece of equipment. If a missing component is discovered at this time, an aggressive search of the immediate area will be initiated along with a search of any areas previously occupied by the equipment. All test sample serial numbers have been recorded for accountability purposes. All test samples have been physically secured to their radiac set cases with rope and chain to preclude future loss or misplacement.

Please contact us directly if you have any questions, or if we may be of further assistance to you regarding this matter. We may be reached by telephone on (201) 544-4427.



STEVEN A. HORNE
Acting Chief, Safety Office

1 Incl
as

CF:
Cdr, DARCOM, ATTN: DRCSF-P

REGION I

MATERIALS RADIOLOGICAL PROTECTION SECTION
NON ROUTINE EVENT REPORT

I. Action Control Data

Report Date: Sept 3 1981 Event Date: Aug 1981

Licensee: Department of the Army

License No: 29-01022-11 Docket No: 30-10342 Cat/Pri: 7k

Event Description: Loss of Kr-85 source

II. Reporting Requirement

- 10 CFR 20.402 - theft or loss
- 10 CFR 20.403(a) overexposure/ release immediate
- 10 CFR 20.403(b) over-exposure/release 24 hr.
- 10 CFR 20.405 - 30 day
- License Condition
- other _____

III. Region I Preliminary Response

Immediate Site Inspection

A. Inspector Assigned: _____

B. Date of Inspection: _____

Special Inspection

A. Date Scheduled: _____

Inquiry

A. Date: _____ Inspector: _____

B. Licensee Representative & Title: _____