



DEPARTMENT OF THE ARMY

HEADQUARTERS US ARMY COMMUNICATIONS-ELECTRONICS COMMAND

AND FORT MONMOUTH

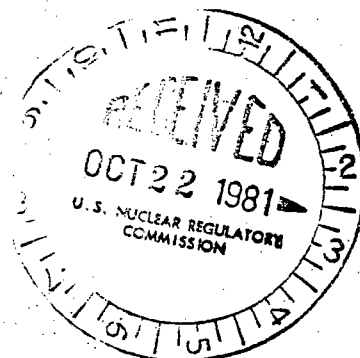
FORT MONMOUTH, NEW JERSEY 07703

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 <sup>85</sup>Krypton. 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.

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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

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CF:  
Cdr, DARCOM, ATTN: DRCSE-P

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A. REF MSG NO. ME-212-02 THE FOLLOWING INFO IS PROVIDED:

1. THE RADIOACTIVE MATERIAL LOST WAS ONE EA AN PDR-27 TEST SAMPLE MX 7338. THE SAMPLE IS APPROX 6 INCHES IN LENGTH, CYLINDRICAL IN FORM AND PAINTED WITH A RED RADIOACTIVELY CHARGED DUF.
2. THE EXACT CIRCUMSTANCES UNDER WHICH THE LOSS OCCURRED IS UNKNOWN. IT IS SUSPECTED THE LOSS OCCURRED DURING A READINESS TEST WHEN THE ANPDR 275 WERE DRAWN BY THE DECON TEAMS. THEY WERE NOT INVENTORIED PRIOR OR AFTER TURN-IN.

3. THERE IS NO EVIDENCE OF EXPOSURE AT THIS TIME.

4. THE 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 PDR 27S WERE SEARCHED TO INSURE THAT THE MISSING TEST SAMPLE COMPONENT HAD NOT BEEN STORED AS A COMPONENT OF ANOTHER KIT. A HEALTH AND WELFARE INSPECTION HAS BEEN CONDUCTED.

5. ALL SETS ARE NOW BEING SIGNED FOR AS THEY ARE ISSUED OUT OF THE NBC ROOM UTILIZING A MODIFIED HQ AER 17-4 RECEIPT CARD. PRIOR TO ACCEPTING THE SET BACK FOR TURN IN THE NBC NCO WILL VISUALLY INVENTORY EACH SET AGAINST A MASTER COMPONENTS LISTING FOR 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 SAMPLES SERIAL NUMBERS HAVE BEEN RECORDED ALL TEST SAMPLES HAVE BEEN SECURED TO THEIR BOXES WITH ROPE AND CHAIN.

B. POC THIS HQS IS CPT CREAR, VOG MTL (2226-) 6434/7601.

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