



**DEPARTMENT OF THE NAVY**

NAVY ENVIRONMENTAL HEALTH CENTER  
2510 WALMER AVENUE  
NORFOLK, VIRGINIA 23513-2617

6470

Ser OMSJW/09416

11 APR 1997

From: Commanding Officer, Navy Environmental Health Center

Subj: NAVY RADIOACTIVE MATERIAL PERMIT (NRMP) PROGRAM  
INFORMATION NOTICE 97-02

Ref: (a) Title 10, Code of Federal Regulations

Encl: (1) Description of Iodine-125 Spill  
(2) Radioactive Material Shipping Information  
(3) 1996 NAVENVIRHLTHCEN Information Notices  
Pertaining to the NRMP Program

1. Enclosure (1) describes a recent incident where radioactive material was improperly packaged for shipment, resulting in leakage and contamination of several areas. Please share this information with all appropriate personnel.

2. I would like you to review your radioactive material shipping practices and provide us information so that we may assess the status of NRMP radioactive material transportation. Complete a separate copy of enclosure (2) for each type of material you have shipped in the past year and return to us no later than May 1, 1997. Fax transmission is acceptable.

3. Effective immediately, the Radiation Safety Officer or a qualified designee will personally approve all transfers of radioactive materials covered by your permit. This includes a review of the packaging, labeling and documentation of each outgoing shipment as well as the receipt process for each incoming shipment.

4. Enclosure (3) is a list of all previous NRMP Information Notices issued by NAVENVIRHLTHCEN during calendar year 1996. Copies of letters listed in this enclosure are available from NAVENVIRHLTHCEN.

5. You may contact my staff for more information at DSN 864-5575, (804)363-5575, fax at DSN 564-3672 or (757)444-3672 or by e-mail at wolffs@ehc50.med.navy.mil.

*S. J. Wolfe*  
S. J. WOLFF  
By direction

Distribution:

All medical NRMP Radiation Safety Officers

Subj: NAVY RADIOACTIVE MATERIAL PERMIT (NRMP) PROGRAM  
INFORMATION NOTICE 97-02

Copy to:

CNO (N455)

BUMED (MED-211)

NUMI Groton CT

NSHS Bethesda MD (Attn: Clinical Nuclear Medicine School)

## DESCRIPTION OF IODINE-125 SPILL

1. Navy Environmental Health Center (NAVENVIRHLTHCEN) was notified by the Commanding Officer of a Navy Drug Screening Laboratory (NAVDRUGLAB) that a package sent by the NAVDRUGLAB had been discovered to be leaking radioactive material in a Federal Express truck making deliveries to an Air Force Base (AFB). The package contained approximately 375 microcuries of iodine-125.

2. The AFB Radiation Safety personnel had contained the spill and were in control of the situation, including monitoring and decontamination efforts. The AFB Radiation Safety Officer on-site stated that the Nuclear Regulatory Commission (NRC), the applicable State Bureau of Radiation Control (BRC), the Federal Aviation Administration (FAA) and the Environmental Protection Agency (EPA) had been notified.

3. Further investigation revealed:

a. An Air Force drug lab requested three radioimmunoassay (RIA) kits due to a supply shortage at their facility. The NAVDRUGLAB Assistant Radiation Safety Officer prepared the package for shipment by Federal Express. Since the original manufacturer's shipping package was unavailable, he improvised using common packing materials.

b. The package contained three RIA kits, a total of nine bottles of reagents. Six were glass, and three of those contained a total of 375 microcuries of iodine-125. The cardboard box was packed with foam between and surrounding the bottles. Nonetheless, two of the bottles of radioactive material had broken and liquid was leaking from the box upon delivery to the AFB drug lab.

c. According to the Federal Express Radiation Physics Consultant no aircraft or off-base facilities were contaminated. The highest contamination level measured was 145,000 dpm per hundred square centimeters in the cargo area of the truck. The truck could not be decontaminated to a level allowing free release due to liquid seepage into cracks in the floorboards and was held for two weeks to allow decay as directed by the state BRC. The remaining contamination was then sprayed with a fixative to preclude any further cross-contamination.

Enclosure (1)



d. The driver was contaminated on one shoe to a level of 10,000 dpm; the shoes were detained by AFB personnel. There was no skin contamination found on the driver or any other individuals involved in handling the packages at the drug lab.

e. The loading dock of the drug lab and one other package were contaminated to 24-26 thousand dpm/100 sq cm. Air Force personnel have decontaminated all necessary areas.

f. The state BRC representative was on the scene within hours. An FAA representative arrived the following day to investigate. The local newspaper published a brief report on the incident.

4. Causes for the incident were determined as follows:

a. The immediate cause of the spill was determined to be insufficient packaging of the bottles.

b. The root cause of the incident is deemed to be inadequate training of individuals involved in packing and shipping of radioactive materials.

5. The following regulations were not followed:

a. 49 CFR 173.410(f) requires that the package be capable of withstanding the effects of normal conditions of transport.

b. 49 CFR 173.421(a)(3) requires that removable surface contamination on the package not exceed 22,000 dpm per 100 sq.cm.

c. Package labeling was not in accordance with 49 CFR 173.421(a)(4) and 173.422(a).

d. The NAVDRUGLAB failed to verify that the Air Force Drug Lab's permit authorized them to receive the RIA kits as required by 10 CFR 30.41(c).

e. 49 CFR 172.704 (a)(2) requires that each hazmat employee receive function-specific training concerning requirements specifically applicable to the functions the employee performs.

RADIOACTIVE MATERIAL SHIPPING INFORMATION

1. Type of material shipped by your command:  
(Fill out a separate form for each type, for example generators, leased brachytherapy sources, RIA kits, decayed calibration sources, etc.)
2. Number of shipments in the last twelve months:
3. List the recipient(s) of the items:
4. List the mode(s) of transportation of the items:  
(Federal Express, Yellow Freight, etc.)
5. Describe in detail the packaging of the items:
6. Describe the labeling of the packages, internal and external:
7. List your source(s) of information for shipping requirements:  
(Manufacturer, regulation number, SOP, etc.)  
(Attach any pertinent local procedures.)
8. Specify who prepares the packages and their training:
9. State whether the RSO reviews every package for compliance:

Signature of RSO \_\_\_\_\_ Date \_\_\_\_\_  
Command: \_\_\_\_\_

Enclosure (2)

1996  
NAVENVIRHLTHCEN INFORMATION NOTICES  
NAVY RADIOACTIVE MATERIALS PERMIT PROGRAM

- 96-01: NAVENVIRHLTHCEN ltr 6470 Ser OMSJW/03976 of 01Apr96  
10 CFR Part 19 Training and Posting Requirements  
Distributed to all medical permittees
- 96-02: NAVENVIRHLTHCEN ltr 6470 Ser OMPDT/08465 of 31Oct96  
Inventory of brachytherapy sources  
Distributed to Naval Medical Centers only
- 96-03: NAVENVIRHLTHCEN ltr 6470 Ser OMSJW/08543 of 19Nov96  
Commonly Violated NRC Regulations  
Distributed to Naval Hospitals only
- 96-04: NAVENVIRHLTHCEN ltr 6470 Ser OMDMC/08594 of 26Nov96  
Corrective action process  
Loss of control of licensed material  
Distributed to all medical permittees
- 96-05: NAVENVIRHLTHCEN ltr 6470 Ser OMSJW/08687 of 17Dec96  
Annual Review of the Quality Management Program  
Distributed to Naval Hospitals only

Enclosure (3)