



Veterans
Administration

July 28, 1981



Mr. G.S. Spencer, Director
Division of Technical Inspection
U.S. Nuclear Regulatory Commission, Region V
1990 North California Boulevard
Suite 102, Walnut Creek Plaza
Walnut Creek, CA 94596

LICENSE NO. 46-00990-01

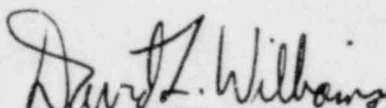
SUBJECT: Letter of July 17, 1981 regarding suspension of site-use
permit at U.S. Ecology burial site in Richland, Washington

Dear Mr. Spencer:

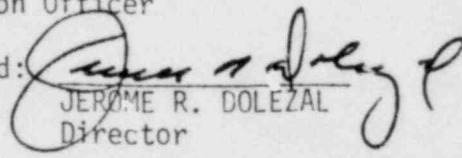
On July 8, 1981, I responded to the State of Washington, Department of Social and Health Services with our course of action for reinstatement of our site-use permit. A copy of this response is enclosed. I have developed a quality assurance program for radioactive waste management, revised our Radiation Safety Plan Manual to current practice for radioactive waste storage and disposal, and have held a mandatory training seminar for all personnel using radioactive materials, including their superiors.

With the institution of these measures, I anticipate no future violations of state and federal regulations.

Sincerely,


DAVID L. WILLIAMS, PH.D.
Radiation Protection Officer

Noted and forwarded:


JEROME R. DOLEZAL
Director

Enclosures

In Reply Refer To:

8108170161 810811
NMS LIC30
46-00990-01 PDR

Veterans
Administration

July 8, 1981



E. Lee Gronemyer
Transportation & Waste Management Div.
Dept. of Social & Health Svc. (M/S LD-11)
Olympia, WA 98504

Dear Mr. Gronemyer:

This letter is an application to reissue our site-use permit for the commercial low-level burial site at Richland, WA. Our permit was suspended by you on June 10, 1981 for two violations of U.S. Department of Transportation regulations. The following actions have now been initiated:

1. Development of a quality assurance program for radioactive waste management (copy enclosed).
2. Revision of our management procedures for radioactive wastes (copy enclosed). This document is Section 14 of our Radiation Safety Plan and Health Physics Manual.
3. Initiation of a request to construct a controlled-access fence around our radioactive waste storage area. A written record of persons requesting the key to this area will be kept.
4. Increased emphasis in training of personnel in collection, handling and storage procedures for radioactive waste. A meeting was held on July 7, 1981 to review radioactive waste management procedures for all personnel, including service chiefs and principal investigators, whose activities involve the use of radioactive materials.

These actions will bring our activities in compliance with state and federal regulations.

Sincerely,

DAVID L. WILLIAMS, PH.D.
Radiation Protection Officer

Noted and forwarded:

JEROME R. DOLEZAL
Director

Enclosures

In Reply Refer To:

663/115

cc: All Radiation Safety Committee Members

QUALITY ASSURANCE PROGRAM
FOR RADIOACTIVE-WASTE MANAGEMENT

Veterans Administration Medical Center
Seattle, Washington

Revision 0.0
June 26, 1981

1. PURPOSE

This quality assurance program is intended to insure radioactive-waste collection, transport and disposal procedures at the Seattle VA Medical Center are in compliance with local, state and federal regulations.

2. POLICY

Radioactive-waste management will be practiced in accordance with the principles covered in the attached revision of Section 14, "Management Procedures for Radioactive Wastes" of the RADIATION SAFETY PLAN AND HEALTH PHYSICS MANUAL, VA MEDICAL CENTER, SEATTLE, WA, AUG. 1977 (REV.).

3. RESPONSIBILITIES

- A. As stated in Section 4, "Responsibility of Authorized Users" of the RADIATION SAFETY PLAN AND HEALTH PHYSICS MANUAL, each Service Chief or Principal Investigator authorized by the Radiation Safety Committee to use radioactive materials accepts the responsibility: 1) for the supervision of radioactive-waste management in his laboratory, 2) for the transport of such waste to the medical center's central radioactive-waste collection facility, and 3) for the segregation and deposit of such waste at that facility.
- B. The Radiation Safety Officer (RSO) is responsible for the administration of the Quality Assurance Program for Radioactive-Waste Management. He is responsible for maintaining the central collection facility where steel drums and the animal freezer are located. Additionally, the RSO is responsible for insuring compliance with local, state and federal regulations of all radioactive wastes which leave the premises of the Seattle VA Medical Center.
- C. The Facility Manager of the Animal Research Facility is responsible for maintaining the animal freezer and is available to answer questions related to the handling and storage of radioactive animal wastes.
- D. The Health Physics Contractor (HPC) reports directly to the Radiation Safety Officer. The HPC performs a final inspection of all radioactive wastes before they leave the medical center for transport to the burial site at Richland, WA.

4. PROCEDURES

The procedures for management of radioactive wastes are described in the attached revision of Section 14, "Management Procedures for Radioactive Wastes" of the RADIATION SAFETY PLAN AND HEALTH PHYSICS MANUAL.

5. FOLLOW-UP RESPONSIBILITY

To insure compliance with local, state and federal regulations, the Radiation Safety Officer will conduct a once-weekly inspection of all containers at the medical center's central radioactive-waste collection facility. A written report following each inspection will indicate the status of radioactive wastes deposited in the containers, and identify persons depositing improperly packaged waste by use of the internal labeling system. Such persons will be notified to correct their violations of radioactive-waste-management procedures. In addition, the health physics contractor (who transports radioactive wastes to the burial site at Richland, WA) will inspect the contents of each 55-gallon steel barrel before it leaves the premises of the VA Medical Center. Improperly packaged waste identified during this audit will be corrected by the contractor; and a written report will be transmitted to the RSO indicating the nature of any violations and persons responsible. Violations discovered by RSO or contractor inspections will be transmitted to the Radiation Safety Committee and will be grounds for suspension of committee approval of radioisotope usage by the responsible Service Chiefs or Principal Investigators.

SECTION 14

14. MANAGEMENT PROCEDURES FOR RADIOACTIVE WASTES

14.1 REVISION STATUS

Revision: 1.0

Date: July 2, 1981

This material supercedes Section 14 of the "RADIATION SAFETY PLAN AND HEALTH PHYSICS MANUAL," VA MEDICAL CENTER, SEATTLE, WA, Aug. 1977 (REV.).

14.2 GENERAL GUIDELINES

General procedures and responsibilities related to the disposal of hazardous waste materials at the Seattle VA Medical Center are contained in VAMC MEMORANDUM 138-14 (REVISED): "DISPOSAL PROCEDURES FOR HAZARDOUS WASTE MATERIALS."

14.3 CLASSIFICATION OF UNCONTROLLED RADIOACTIVE WASTES

Certain radioactive materials (e.g., Iodine-125, H-3, and C-14) may be discharged by fumehoods or into the sewer system. These materials are subject to concentration limits as defined in Appendix B of 10CFR20. In order to demonstrate compliance with NRC regulations, persons releasing radioactive wastes to the air or sewer are required to calculate and maintain a record of the waste concentration resulting from each discharge. Sewer discharges must be water-miscible materials with no toxic or combustible properties. Normally, this method of discharge is limited to dilute wash water, rinse water, cell harvester effluent, animal urine, and exempt human wastes. Deliberate release of airborne discharges other than routine fumehood exhaust incidental to laboratory procedures is not approved.

14.4 CLASSIFICATION OF SHORT-LIVED RADIOACTIVE WASTES

All radioactive wastes with half-lives less than twenty days are classified as "short-lived" radioactive wastes. Such wastes are permitted to "decay-in-storage" in lieu of being transported and stored at the medical center's central radioactive-waste collection facility. Use of this method, when applicable, minimizes the volume of stored waste. For instance, most radioactive wastes resulting from clinical nuclear medicine procedures can use this method of disposal.

When the method of "decay-in-storage" is chosen, the Service Chief or Principal Investigator in whose laboratory such waste is generated is responsible for 1) providing a shielded and identified area where these wastes can be stored, and 2) for compliance with the following NRC regulations:

1. Effected radioactive waste shall be held for decay a minimum of ten (10) half-lives.
2. Prior to disposal as normal waste, radioactive waste shall be monitored to determine that its radioactivity cannot be distinguished from background with typical low-level laboratory survey instruments. All radiation labels must be removed or obliterated.
3. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

14.5 CLASSIFICATION OF CONTROLLED RADIOACTIVE WASTES

All radioactive wastes generated in laboratories at the medical center and taken to the central radioactive-waste collection facility must be classified and segregated as either 1) dry solid wastes; including solidified liquid wastes, 2) liquid scintillation vials, or 3) biological wastes. Separate steel barrels at the collection facility must be used to segregate each class of waste. The animal freezer, adjacent to the barrel area, is to be used for the storage of steel drums containing radioactive animal remains. Persons who use the central collection area are responsible for proper identification, segregation and storage of their wastes.

A. Solidified Liquid Waste

DEFINITION: RADIOACTIVE LIQUIDS WHICH HAVE BEEN SOLIDIFIED IN ABSORBENT MATERIAL.

All radioactive liquid waste must first be solidified in an approved absorbent before being placed in steel drums at the central collection facility. Federal regulations require that the amount of absorbent used must be two times that which would just absorb the quantity of liquid being disposed. Solidification of liquid waste should take place in the laboratory where such waste is generated. Once solidified, this waste should be disposed of as dry solid waste. Under no circumstances can free-standing liquids be deposited in the steel drums. Federal regulations prohibit the transport of free-standing liquids.

APPROVED ABSORBENTS:

Only absorbent materials approved by the Washington State Radiation Control Unit can be used as agents to solidify liquid wastes. Eagle-Picher Inc. Floor-Dry SUPER FINE GRADE (diatomaceous earth) is the approved absorbent routinely used at the medical center. The RSO should be contacted for permission to use other materials. Bags of absorbent are available at the central collection area.

B. Dry Solid Waste

DEFINITION: ALL RADIOACTIVE WASTE IN A DRY SOLID FORM.

This category includes wastes such as paper, plastic, glass and wood that have been contaminated with radioactivity, and properly solidified liquids. Biological wastes are not included in this category.

C. Liquid Scintillation Vials

DEFINITION: WASTE WHICH CONSISTS ENTIRELY OF VIALS CONTAINING SOLUTIONS USED IN SCINTILLATION COUNTING.

Scintillation vials should be double-bagged with plastic bags before being taken to the central collection area. A minimum of 6" of approved absorbent material must be placed in the bottom of each 55-gallon steel barrel before depositing these bags. No other waste of any kind can be deposited in steel drums which contain scintillation vials.

D. Biological Waste

DEFINITION: RADIOACTIVE WASTES CONSISTING ENTIRELY OF BIOLOGICAL MATERIALS, INCLUDING ANIMAL CARCASSES, ANIMAL REMAINS AND EXCRETA.

Such wastes must be double-bagged with plastic bags and placed in 35-gallon steel barrels. There must be a minimum of 5" of approved absorbent in the bottom of these barrels; and absorbent must completely surround and cover the waste material. Barrels containing biological wastes are to be stored in the animal freezer. Before removal from the premises of the medical center the health physics contractor will place each 35-gallon drum into a 55-gallon drum completely surrounding the smaller drum with absorbent material.

Assistance with the handling and storage of radioactive biological wastes can be obtained by contacting the Facility Manager of the Animal Research Facility.

14.6 THE CENTRAL RADIOACTIVE-WASTE COLLECTION FACILITY

A secured and covered area adjacent to the west end of the Engineering Shops and between these shops and Building 9 (the new Animal Quarters) has been designated as the central radioactive-waste collection facility. It is identified by "Radioactive Area" warning signs. The area contains 55-gallon and 35-gallon steel barrels for the deposit of radioactive wastes and bags of approved absorbent material. The area must be kept locked at all times.

Access to the radioactive-waste facility is by key, available in the nuclear medicine office. Each time the key is requested, the nuclear medicine secretary will record the date, person requesting the key, service chief or principal investigator in whose laboratory the waste was generated, and the radioactive-waste label numbers assigned.

Properly-packaged and identified liquid scintillation vials and radioactive dry solid wastes (including solidified liquid wastes) are to be segregated and deposited in 55-gallon barrels. All liquid radioactive wastes must first be solidified in an approved absorbent material before being brought to the collection area. Radioactive biological wastes (animal carcasses, animal remains and excreta) in double plastic bags are to be placed only in 35-gallon barrels and then transferred to the animal freezer adjacent to the radioactive-waste facility. Access to this freezer is by the same key which permits entry to the barrel area. The doors which provide access to the freezer must be kept locked at all times.

The animal freezer is supervised by the Facility Manager of the Animal Research Facility who can provide assistance with the storage and disposal of radioactive biological wastes. Problems encountered in the use of the radioactive-waste collection area should be brought to the attention of the Radiation Safety Officer.

14.7 RADIOACTIVE WASTE IDENTIFICATION REQUIREMENTS

Each individual unit of radioactive waste (eg., plastic bag, box, animal, etc.) taken to the central collection facility and deposited in the steel drums or animal freezer must be identified with a yellow "V.A. Medical Center, Seattle, WA, Low-Level Radioactive Waste" label. These labels are available in the nuclear medicine office, and an example is shown below.

V. A. Medical Center Seattle. WA	
LOW-LEVEL RADIOACTIVE WASTE	
No. 10820	
No. 10820	
NUCLIDES	QTY (mCi)
MIXED DRY SOLID () SCINT. VIALS () ANIMAL REMAINS ()	
INIT. _____ DATE _____	

LOW-LEVEL RADIOACTIVE WASTE LABEL

Each label has a serial number that identifies the Service Chief or Principal Investigator to whom the label is assigned and the person who takes possession of the label at the nuclear medicine office. Each label has two parts. The top section contains only the serial number and must be placed on the individual waste unit being disposed. The bottom section identifies the nuclides, an estimate of their quantity, the type of waste (dry solid waste, scintillation vials or biological waste), the initials of the person who transfers the waste into the steel drums, and the date of disposal. The bottom section of the label must be affixed to the outside of the steel barrel in which waste is deposited so that the health physics contractor can identify the type and quantity of radioactive materials being transported from the medical center to the burial site at Richland, WA.

14.8 RECOMMENDED LABORATORY PROCEDURES

Each user of radioactive materials must exercise informed judgement in selecting appropriate means for collection, storage and disposal of radioactive wastes resulting from laboratory operations.

Short-lived radioactive wastes can be permitted to "decay-in-storage" as discussed in section 14.4 "CLASSIFICATION OF SHORT-LIVED RADIOACTIVE WASTES." Long-lived radioactive wastes must be safely collected in the laboratory, transferred to the central collection facility and deposited in steel barrels.

Glass scintillation vials must be collected in double plastic bags. Solid wastes, such as laboratory glass, plastic, paper, etc., contaminated with radioactivity can be collected in metal or plastic cans lined with a plastic bag. All liquid wastes must be solidified in the laboratory prior to their transfer to the collection area and stored as dry solid waste. Covered steel or plastic cans double-lined with plastic bags containing approved absorbent material are satisfactory for solidifying radioactive liquids. The amount of absorbent used must be at least twice that which will just absorb the quantity of liquid being disposed. After solidification, Iodine-125 wastes should be double-sealed in plastic bags or aluminum foil to prevent the escape of radioactive vapors.

Radioactive animal carcasses and remains must be double-wrapped in plastic bags before being deposited in 35-gallon steel barrels. A minimum of 5" of absorbent must be placed in the bottom of each barrel; and absorbent must completely surround and cover each bag. Steel barrels containing biological wastes must be transferred to the animal freezer for storage.

Each container or package of radioactive waste taken to the central collection area must be identified by the top section of a numbered "Low-Level Radioactive Waste" label. The bottom section of the label must be affixed to the outside of the barrel in which waste is deposited. The health physics contractor uses the information contained on these labels to estimate the type and amount of radioactivity being transported for burial. In addition, the size of each container or package must be chosen such that the limit of 20 millicuries of radioactivity per cubic foot is not exceeded. Radioactive waste meeting this requirement can be transported in compliance with U.S. Department of Transportation regulations.

Indiscriminate mixing of radioactive wastes may generate airborne contamination. Reactive wastes (including solidified liquids) must be isolated in sealed containers,

plastic bags or aluminum-foil packages. Iodine-125 wastes which emit gas vapors should be double-sealed in plastic bags or aluminum foil.

14.9 QUALITY-ASSURANCE INSPECTIONS

The Radiation Safety Officer will conduct weekly inspections at the central collection facility as part of the Quality Assurance Program for Radioactive-Waste Management. The inspections will cover the following:

- A. D.O.T. Specification 17H barrels, in good condition.
- B. Proper segregation of radioactive wastes in the barrels and animal freezer.
- C. No evidence of free-standing liquids in the barrels.
- D. Proper use of absorbent materials.
- E. Proper use of the internal labeling system.
- F. Lids on barrels.
- G. Tightly-sealed lids on full barrels.
- H. Proper identification and labeling of barrels ready for shipment, per D.O.T. regulations.
- I. Correctly completed Radiation Shipment Record.
- J. The availability of an adequate supply of lined, empty barrels and approved absorbent material.

The RSO will retain a written report following each inspection. Each report will document the status of the central collection area and deposited radioactive wastes. Violations of waste-management procedures will be noted, and the persons responsible will be contacted to correct their deficiencies. The RSO will present a summary of these reports to the Radiation Safety Committee.