NSIC

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November 15, 1979

Mr. Boyce H. Grier, Director
U.S. Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, Penna. 19406

Subject: IE Bulletin No. 79-19

Dear Mr. Grier:

Enclosed please find the information required in connection with IE Bulletin No. 79-19.

Please contact me if you have any further questions in this matter.

Very truly yours,

Vijay Kumar Jain

Vijay Kumar Jain, Ph.D.
Radiation Protection Officer

VKJ:acj
Encs:

cc:U.S. NRC
Office of Inspection
& Enforcement
Div. Fuel Facility &
Materials Safety Inspection

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# PROGRAM FOR THE SAFE TRANSFER, PACKAGING AND TRANSPORT OF LOW-LEVEL RADIOACTIVE WASTE

On November 1, 1979 Berlex Laboratories Inc., a subsidiary of Schering AG, Berlin, West Germany acquired the Internal Medicine Division of Cooper Laboratories, Inc. We are in the process of applying for a new license for the use of radioisotopes ($^{14}C$ & $^{3}H$) from the U.S. Nuclear Regulatory Commission.

At present, under Cooper Laboratories, Inc. license (29-15472-02), we have a program as listed below concerning the safe transfer, packaging and transport of low-level radioactive waste:

1. We have the latest set of DOT and NRC regulations regarding the transfer, packaging and transport of low-level radioactive waste. These regulations are discussed with all personnel handling radioisotopes for chemical and biological studies.
2. Our radioactive waste collection is handled by Radiac Research Corporation, 261 Kent Ave., Brooklyn, New York 11211. We have already received the packaging instructions fr m our contractor.
3. Vijay K. Jain, Ph.D., has been designated by Berlex Laboratories Inc. as the individual who is responsible for the safe transfer, packaging and transportation of low-level radioactive waste. A copy of this appointment is attached.

4. A copy of our standard operating procedure for the transfer, packaging and transport of low-level radioactive waste is attached.
5. All personnel handling radioisotopes are well qualified to understand the usage of radioactive compounds in chemical and biological studies. We plan to discuss in our group meetings the latest information and techniques in handling the low-level radioactive waste.
6. Records of all radioactive waste handled by us are permanently retained in our files. The representative of Radiac Research Corporation gives us a signed receipt for the removal of radioisotope waste containers from our laboratories. The containers are labeled with the type and approximate quantity of radioactive waste. These records are approved by our management and are opened for inspection by NRC and DOT inspectors.

Records of Radioactive Waste Shipments in 1978 and for Six Months of 1979:

The license for possession and use of radioisotopes for research was issued to Cooper Laboratories, Inc. by NRC and allows us to possess a maximum of 20 millicuries of carbon-14 and 20 millicuries of hydrogen-3 at any given time. Our records are as follows:

1. Four shipments were made during the period indicated Eight 30-gallon containers were shipped through Radiac Research Corporation.

2. The total amount of radioisotopes (carbon-14) shipped during the period specified above was approximately ten (10) millicuries.

3. There was no measurable amount of liquid radioactive waste generated in our work during the above-mentioned period of time.

Prepared by: Vijay Kumar Jain

Vijay K. Jain, Ph.D.
Radiation Protection Officer

VKJ:acj

Date: November 15, 1979

# STANDARD OPERATING PROCEDURE FOR THE PACKAGING OF RADIOISOTOPIC WASTE

Each person working with radioactive material is instructed to keep all the radioactive waste in specially marked radioactive trash cans, duly locked. The animal carcus and excreta will be kept frozen until ready to be picked up by Radiac Research Corp.

The radioactive waste will be packed in specified drums according to the type of waste as listed below:

Packaging Scintillation Vials:

1. Container must be DOT approved 17H drum, either 30 or 55 gallons. These are supplied by Radiac Research Corp.

2. Container must be lined with 4 mil plastic liner and sealed when full.

3. Approximately 3" of absorbent must be placed at the bottom of the drum. Vials and absorbent must be placed in the container in layers not exceeding 6" in depth. At least 1" of absorbent must be placed between each layer. The top layer of absorbent must be approximately 3" in depth.

4. The vials are not to be opened.

5. Container must be filled with a two-to-one ratio of absorbent to liquid in the vials.

6. Approved absorbents are Perlite (medium grade), Diatomaceus Earth (medium grade), Diatomite (super fine), and Speedi Dry.

Packaging Animal Carcasses:

1. Container must be a DOT approved double-walled 30 gallon size placed inside a 55 gallon drum.

2. The 30 gallon drum must be lined with a 4 mil plastic liner.

3. The animal carcasses must be placed into the 30 gallon drums with absorbent and lime. Ratio: one part lime to ten parts absorbent.

4. Seal the plastic liner and the 30 gallon drum.

5. Place the 30 gallon drum into the 55 gallon drum.

Packaging Animal Carcasses: *(continued)*

6. Place absorbent between walls of the 30 gallon drum and the 55 gallon drum.

7. Seal the 55 gallon drum.

8. Approved absorbents: Same as in packaging liquid scintillation vials.

Packaging Absorbed Liquids:

1. Container must be a DOT approved 17H drum, either 30 gallon or 55 gallon.

2. Container must be lined with 4 mil plastic liner and sealed at the top when container is packed.

3. Container must be filled with a two-to-one ratio of absorbent to liquid layered in approximately one foot layers to ensure even dispersion.

4. Approved absorbents: Same as in packaging liquid scintillation vials.

The packaging of radioactive waste will be supervised by Vijay K. Jain, Ph.D., or by trained personnel assigned by him in his absence. The packaging in containers will be done in the laboratory where the radioactive waste is generated.

All containers will be labeled with respect to the type of waste and approximate quantities and the type of radioisotope ($^{14}C/^{3}H$). The containers will then be picked up by the representative of Radiac Research Corp. who will issue a signed receipt for the containers for our records.

Prepared by: Vijay Kumar Jain 11/12/79

Vijay Kumar Jain, Ph.D.
Radiation Protection Officer

Approved by: J. Diamond 11/12/79

J. Diamond, Ph.D.
Director of Basic Research

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