

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20585

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60127

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR (Check appropriate item):

☐

A. NEW LICENSE

☐

B. AMENDMENT TO LICENSE NUMBER _____

☒C. RENEWAL OF LICENSE NUMBER 52-19547-01

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Ponce School of Medicine
University Street
P.O. Box 7004
Ponce, P.R. 00732-7004

3. ADDRESSES WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED:

Ponce School of Medicine:
Department of:

1. Biochemistry 3. Microbiology
2. Pharmacology

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Dr. Yasuhiro Yamamura

TELEPHONE NUMBER

(809) 840-2519

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED:

attached

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE

attached

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

attached

9. FACILITIES AND EQUIPMENT

attached

10. RADIATION SAFETY PROGRAM

attached

11. WASTE MANAGEMENT

attached

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY AMOUNT
ENCLOSED \$ Dues paid

13. CERTIFICATION: (Must be certified by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE OF AUTHORIZING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

Enrique Méndez, Jr.

Enrique Méndez, Jr., M.D. President and Dean

24/11/86

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS

<\$250K \$1M-\$3.5M
\$250K-\$500K \$3.5M-\$7M
\$500K-\$750K \$7M-\$10M
\$750K-\$1M >\$10M

b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

c. NUMBER OF BEDS

15. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (dollar and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)

☐ YES

☐ NO

FOR NRC USE ONLY

TYPE OF FEE

FEE LOG

FEE CATEGORY

COMMENTS

APPROVED BY

8707210538 870309
REG2 LIC30
52-19547-01 PDR

DATE

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission
Director, Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

Item 5 - Radioactive Material

(a) Elements and Mass Number	(b) Chemical Form	(c) Maximum Amount
A. Carbon-14	Any	40 millicuries
B. Calcium-45	Any	1 millicurie
C. Hydrogen-3	Any	20 millicuries
D. Iodine-125	"	20 millicuries
E. Phosphorus-32	"	50 millicuries
F. Sodium-22	"	300 microcuries
G. Sulfur-35	"	5 millicuries
H. Any by-product material with atomic nos. 3 throughly 83 inclusive	"	500 microcuries
I. Chromium 51	"	5 millicuries
J. Iodine-131	"	10 millicuries

Item 6 - Purpose for which licensed material will be used.

All by-product materials will be used for research projects or anticipated research projects which have indicated a need for the use of radioactive material. Among the techniques to be used are the following:

- (a) Radioimmuno assays of human and animal sera.
- (b) The establishment of biomedical pathways using appropriately labeled precursors.
- (c) The study of mechanisms of action of antibiotics and drugs at the cellular level "in vitro".
- (d) Study of the mechanism of action of hormones at cellular level "in vitro".
- (e) In situ phosphorylation of intact erythrocytes.
- (f) Physiochemical studies in artificial model systems.

None of the research projects include the internal or external administration of radioactive material to human beings.

Experiments in the biochemistry curriculum will use radio-isotopic techniques to determine the extent of "amino acid incorporation" on protein biosynthesis.

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25% COTTON FIBER

Amino acids: i.e. ^{14}C and/or ^3H phenylalanine, proline, alanine, etc in aqueous solutions with 2% ethanol as stabilizer in the 50 uCi-100 for ^{14}C and in the range of 250 uCi-1 mCi range for ^3H .

Sulfur-35 methionine aqueous solutions containing 0.1%-2 mercaptoethanol in the 2mCi range.

Nucleosides: i.e. $^{14}\text{C}/^3\text{H}$ thymidine, uridine in the aqueous solutions with 2% ethanol or stabilizes in the 10 uCi for ^{14}C and 1 mCi range for ^3H .

Sugars: ^{14}C glucose, ^{14}C sucrose aqueous solution containing 3% ethanol, sterilized 1 mCi range each.

Drugs: ^3H pyromycin, ^3H actinomycin D, 250 uCi range each. ^3H methroxate 1 mCi.

Fatty acids: $^3\text{H}/^{14}\text{C}$ linoleic, oleic, palmitate and decanoic acids in the 50 uCi range for ^{14}C and 2 mCi range for ^3H .

The purpose is to maintain a complete list of isotopes even though they are not always in use or in storage in order to develop at any time or carry out research projects as our staff researchers make proposals:

The isotope committee will evaluate any proposal for use of radioactive material and a protocol is requested from each researcher.

Item 7: Radiation Safety Program.

Responsability for our Institutional Radiation Safety Program will reside mainly on the Radiation Safety Committee and the services of a radiation protection consultant who also is a member of our committee. Dr. Yasuhiro Yamamura will be the Chairman of the committee and will perform as the R.S.O. with the assistance of Mr. Daniel Torres, M.S., Radiation Physicist and consultant for several years to our Institution.

Enclosed you will find a new copy of the "Radiation Safety Committee" members' "Curriculum Vitae".

Also enclosed is a copy of the radiation safety rules in operation at our laboratories.

Item 8: Training for Individuals Working in Restricted Areas.

The Radiation Safety Committee will evaluate the experience and knowledge of each radioactive material user in handling radioactive sources. If it is necessary, provisions are taken to maintain a routine in-service training program in radiation safety for laboratory assistance personnel as well as students. The subjects covered in the routine lectures include, but are not limited to:

- (a) Radiation Safety - General Subject.

- (b) Decontamination Procedures.
- (c) Radiation Detection Instrumentation.
- (d) Personnel Monitoring.
- (e) Radiation Rules and Regulations.

Constant evaluation of radiation safety conditions in each laboratory are maintained and revised by the Safety Committee. Authorization to perform laboratory investigations with radiation is denied if the protocol submitted is inadequate in terms of radiation safety practices.

Item 9: Facilities and Equipment.

The Ponce School of Medicine maintains the same facilities as when our first license was requested in 1979 and renewed in February, 1981. See enclosed counting room sketch.

At the counting room we have all the necessary instrumentation for radiation detection and measurements.

We have the following equipment:

1. Liquid Scintillation Counter - Beckman LS-3133T.
2. Gamma Counter - Beckman 4000
3. Beckman Ultracentrifuge. Model L-5-65.
4. Refrigerated Centrifuge - Sorvall RC-5.
5. Survey Meters:
 - (a) Victoreen 290 - Probe Model 489-110A.
 - (b) Victoreen 491 - Probe 489-4
 - (c) Civil Defense CDV-700
6. Fume hood - for Low Level Radioactive Experiments.

All radioactive material will be kept in the special refrigerator until use. The hood is equipped with lead and vinyl shielding to maintain low levels of radiation during storage for decay purpose. All the gamma emitters will be shielded with lead sheets.

We have several leaded waste containers in the counting room. (See sketch)

The counting room will be the area assigned for receipt and storage. Delivery of radioactive material will be made to the counting room only during weekly hours. Upon receipt, each package will be checked for radiation levels and contamination.

If contamination is detected, the package will be placed in a shielded area and notification made to the Chairman of the Radiation Safety Committee and the R.S.O.

Item 10: Radiation Safety Program.

The Radiation Safety Committee has developed a set of rules to be followed in each working area. Written radiation safety procedures are provided and posted at each laboratory. Copy of the rules are enclosed.

Laboratory personnel are aware of all safety rules and the commitment of the school to the ALARA concept. The ALARA document was submitted with the initial renewal request.

Routine formal lectures will be included as part of the training program in radiation safety conducted by the radiation safety consultant. He will visit our laboratory twice a month to perform surveys and make arrangements for waste disposal. Radioactive material shipments will be examined and monitored before they are opened to assure the integrity of the packing. Radioisotopes will be stored properly behind suitable shielding to avoid overexposure or contamination.

The Radiation Safety Committee will have the responsibility of establishing and administering the Institution's Radioisotope Program. They will approve or disapprove proposals for radioisotope uses. They will establish the radiation safety program.

The Committee will meet at least three times a year. Each meeting will be devoted to discuss the whole program or to review qualifications of individuals desiring to use isotopes. The committee will recommend remedial actions to correct safety infractions and also formulate the training program.

Dosimetry services provided by Lanundauer Co. will continue. Film and ring badges will be issued according to the needs and the radioactive materials to be used in each laboratory.

Survey instruments will be calibrated by Mr. Daniel Torres, M.S., the consultant. He has extensive experience and at the present time has a license to carry leak tests and calibration procedures. His license number is 52-18306.

Item 11: Waste Management.

At the present time our experience with waste disposal has been minimal due to our limited amount of radioactive materials used. The use of low level tritium material has been our main concern. The waste has been handled through release into sanitary sewer system after corroboration that the limits are in conformance with section 20-303 of the regulations.

If at any time we develop amounts of wastes in excess of the limits, we will arrange with the University of Puerto Rico School of Medicine to transfer our wastes, because they are authorized to incinerate radioactive wastes under certain

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limitations.

The Radiation Safety Committee will check very closely the handling of radioactive waste during the routine surveys and inspections of each working area.



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PONCE SCHOOL OF MEDICINE
RADIATION SAFETY PROGRAM
RADIOISOTOPES COMMITTEE

useds radong -

I. INTRODUCTION

The purpose of this document is to provide information that facilitates and insures the safe usage of radioisotopes by investigators at the Ponce School of Medicine. The document begins by defining the composition and functions of the Radioisotopes Committee. Expanding this theme, the document details the authorization process for qualified users and subsequently **THEIR** responsibilities regarding the use of radioisotopes. Included in this section is a protocol for the safe conduct after an accident involving radioisotopes. The document then addresses the complex subject of radioactive waste storage and disposal. Finally presented are a set of laboratory safety rules that are to be posted in each laboratory that utilizes isotopes.

II. RADIOISOTOPES COMMITTEE

- A. Policy and Mandate - The Ponce School of Medicine, in accordance with the U.S. Nuclear Regulatory Commission regulations, has set forth a program for the efficient and safe use of radioactive materials. This program will be under the control of the Radioisotopes Committee.
- B. Committee Membership - The Radioisotopes Committee is appointed by the Dean, Ponce School of Medicine. The Committee consists of the Radiation Physics Consultant and representatives from the different departments involved in Radioisotope research. At present the Committee has three full members.
- C. Committee Responsibilities - The Radioisotopes Committee is responsible for radioisotopic usage including the authorization of specific users and protocols. The Committee insures that radioisotope users comply with the requirements of the license and the rules presented in this document. These regulations are enforced by the Committee in order to maintain clean and safe working areas.

III. THE AUTHORIZATION OF QUALIFIED USERS AND THEIR RESPONSIBILITIES

Of particular importance in the review of an application to possess and to use radioactive materials are the qualifications of the investigator(s) and the suitability of the laboratory. No single set of standards can be established since the isotope, the activity, the chemical form, the handling, and the experimental processing strongly affect conditions necessary for safe usage. Therefore, The Radioisotopes Committee must

evaluate each individual investigator and their experimental protocols. In order to facilitate this authorization process, we first require that a detailed questionnaire (Appendix I) be completed by all investigators desiring to use radioisotopes. Upon the authorization, the responsibilities of authorized users regarding the receipt, storage, use, and waste disposal of radioisotopes are as follows:

- a. Notify the Radioisotopes Committee **BEFORE** acquiring an isotope for which you have approval. Each separate isotope requires authorization of a complete experimental protocol.
- b. Upon receipt of an isotope, survey the containers for possible radioactive leakage. If leakage is detected (50cpm above background), immediately notify the Radioisotopes Committee.
- c. Provide the Radioisotopes Committee with a copy of the shipping invoice or acknowledgement of receipt if not purchased.
- d. Store high specific activity isotopes in the Radioisotopes Laboratory (unless specifically exempted).
- e. Maintain laboratory records of receipt, use, transfer, and a full inventory of radioactive materials including waste. **All authorized users must submit a Quarterly Isotope Report to the RIC.**
- f. Keep a full record of isotopic waste including site of storage, physical form, total activity, and date of storage.
- g. Store isotopes and isotopic waste only in the manner specifically approved by the Radioisotopes Committee (see section IV for a general discussion).
- h. Notify the Radioisotopes Committee **BEFORE** disposing of isotopic waste. Dispose of waste only in the manner specifically approved by the Radioisotopes Committee and keep a complete record for each disposal.
- i. Survey the isotopic usage area with an approved monitoring device and wipe tests after **EACH** experiment employing radioisotopes. When isotopes are not in use, the area should be surveyed at least every month.
- j. Areas for housing radioactive animals and areas adjacent must be routinely surveyed during and after experiments and also after cleaning.

- k. Keep a thorough record of survey results complete with floor plans.
- l. Post the following notices in your labs, or a notice indicating where they may be found.
 - a. Notice to Employees
 - b. Emergency Plan (Section IV).
 - c. Laboratory Safety Rules (Section VI).

IV. Emergency Plans for Accidents Involving Radioisotopes - Recommended Procedure for Authorized Users.

- A. Notification of Radioisotopes Committee:
In the event of an accident (spill, ingestion, overexposure, etc.) notify the Radioisotopes Safety Office phone 840-2519 ext. 307 as soon as possible without thereby causing excessive spreading of contamination.

Contact should be made with one of the following listed individuals:

Dr. Yasuhiro Yamamura	Tel: (809) 840-2519 ext. 200
	Home: (809) 843-1031
Dr. Fred Soltero- Harrington	Tel: (809) 840-2551
	Home: (809) 833-9827
Dr. Edwin Eylar	Tel: (809) 844-3620
	Home: (809) 724-2931
Mr. Daniel Torres, MS	Tel: (809) 843-0800
	Home: (809) 833-3452

B. Decontamination

After notification (or if notification cannot be made), the following corrective procedures should be started pending the arrival of individual listed above.

Personnel Decontamination:

- a. Remove all-contaminated clothing.
- b. Immediately flush any possible contaminated, areas, especially the eyes and any open cuts, with running water.

- c. Wash off any contamination of the skin with soap or decontaminating detergent.
 - d. Monitor exposed areas and continue to wash until wipe tests return to background levels.
2. Area Decontamination - Procedures to Limit The Spread of Contamination:
- a. The area should be immediately closed to all personnel except those necessary to cope with the contamination.
 - b. No one should be allowed to leave the area with contaminated footwear unless removal of footwear will involve an even greater hazard.
 - c. Immediate steps should be taken to prevent spread of contamination by absorbing or restraining the flow of liquid. Be sure you know the pertinent chemical and physical properties of contaminant. All absorbant materials should be collected in plastic bags and properly stored.
 - d. Central air conditioning or ventilation equipment should be shut down immediately.
 - e. Monitor area and continue to wash until wipe tests return to background levels.

V. RADIOACTIVE WASTE DISPOSAL

Radioactive wastes, in general, cannot be disposed of by normal waste disposal methods. The problem of radioactive waste disposal falls into three parts; collection, storage, and ultimate disposal. Records of all radioactive wastes collected, stored, and disposed of must be maintained by THE AUTHORIZED USERS for their records and for the records of the Radioisotopes Committee. All waste must be maintained and disposed of as outlined in NRC Regulations Part 20.

A. Collection and Storage

The PSM shall provide suitable waste containers for all radioactive wastes that result from the use of radioactive materials. The containers should be marked "Radioactive Material" and carry the usual radiation symbol. Radwaste containers must be labelled with the type, date and amount of radioactive material. Containers for liquid waste should be so designed that accidental breakage or spillage will not result in a serious contamination problem.

B. Disposal

1. Insoluble Radiactive Waste - One method of disposal is storage of short-lived radioactive material until their natural decay has rendered them normal "non-radioactive" waste. Another method is the use of commercial waste disposal service. Laboratory users should consult the Radioisotopes Committee for details about disposal services or to determine what period of storage is necessary for sufficient decay.
2. Water Soluble Radiactive Waste - Some water-soluble radioactive waste may be disposed of via the sanitary sewage system within the limits defined by the N.R.C. Records must be kept of the amount disposed. All waste disposal techniques **MUST BE APPROVED BY THE RADIOISOTOPES COMMITTEE**. By their nature, some water soluble and insoluble radioactive wastes may have to be disposed of via a commercial waste disposal service.

VI. RADIATION SAFETY RULES FOR THE LABORATORY

POLICY: The following rules should be posted in each area using radioisotopes in the laboratory facilities of the Ponce School of Medicine. Copies of the license and regulations pertaining the use of radioactive material in parts 19 and 20 of Chapter I "Code of Federal Regulations -Energy" are available in the Radioisotopes Laboratory facility. The use of the Radioisotopes Laboratory facility requires the supervision and authorization from the **RADIOISOTOPES COMMITTEE** as specified by the N.R.C. Materials License.

1. Frequently review pertinent safety practices. This is especially important before using a new radioisotope and/or new laboratory personnel.
2. All undiluted, high activity isotopes are to be stored in the isotopes laboratory, diluted isotopes may be stored in individual laboratories upon approval by the Radioisotopes Committee.
3. Wear prescribed personnel dosimeters when in areas containing isotopes.

4. Wear a laboratory coat and disposable gloves when using radioisotopes. Use plastic disposable containers when possible.
5. All radioactive work should be performed in an area lined with absorbent paper. This paper should indicate that radioactive work is done in that area (e.g., "Caution, Radioactive Material" tape can be used to tape it down). It is suggested that radioisotope work be conducted in an impervious tray or pan lined with such paper.
6. All containers with radioactive material should be labeled with radiation warning signs or tapes.
7. Solid and liquid radioactive waste should be stored in separate containers labeled as to content, date and radiation level.
8. Disposal of liquid and solid radioactive waste must be in compliance with NRC regulations. Contact the Radioisotopes Committee for details.
9. Utilize shielding and maintain distance when using radioisotopes.
10. Monitor hands, shoes and clothing frequently.
11. Thoroughly wash hands after manipulating isotopes, before eating or smoking, and on completion of work.
12. Report accidental inhalation, ingestion, injury or spills to your supervisor and the Biohazards Committee.
13. Never pipette by mouth.
14. Do not smoke or eat in the work area.
15. Do not store food in refrigerators containing isotopes.

MEMORANDUM

TO: Users and Potential Users of Radioactive Materials

FROM: Radioisotope Committee

DATE: March 15, 1985

SUBJECT: Questionnaire Concerning the Use of Radioisotopes and a Request for Updated
Experimental Protocols

Part A

ANSWER THE FOLLOWING QUESTIONS AS PRECISELY AS POSSIBLE:
(the information should be typewritten)

Previous experience of investigator(s) with radioisotopes including institution
and training.

When do you expect to begin using radioisotopes?

What radioisotopes do you plan to use?

What type of radiation monitoring does your protocol require?

BADGE _____ RING _____ OTHER _____
(e.g. thyroid scan)

Do you wish to have cumulative reporting of your exposure to radioisotopes?
(Radiation monitoring devices from other institutions may not be used at PSM)

Part B

1. Provide an updated experimental protocol

The protocol should contain sufficient detail to allow adequate evaluation and should include (in addition to your experimental procedures) the following information:

- a. Isotopes and amounts that you plan to use
- b. Experimental methods
- c. Provisions for the disposal of non-aqueous soluble fluors
- d. Safety precautions that are included in your experimental techniques
- e. Appropriate methods of survey and record keeping
- f. A short description of the safety-training regimen for the individuals working on your project
- g. A list of all personnel working on your project

EXPERIMENTAL METHODS AND PROTOCOL

A floorplan of your laboratory and, if necessary, the radioisotope lab, indicating:

- a. Sites of usage
- b. Sites of isotope storage
- c. Sites of waste storage
- d. Sites of survey
- e. Equipment to be used with the radioisotopes

FLOORPLAN(S)

3. If your protocol will result in the production of radioactive animal carcasses and other waste (bedding, etc.), include the following information:

- a. The amounts of radioactivity per animal (uCi/gm):
- b. Anticipated waste products:
- c. Procedures for housing the animals:
- d. Procedure for disposal of carcasses and other wastes:

4. The following statement must be read and signed by the project director before protocols will be considered:

I, the undersigned, agree to adhere to the rules established by the NRC and the Ponce School of Medicine Radioisotope committee for the safe handling of radioisotopes in my research project. I understand that failure to do so may result in the withdrawal of isotope use privileges at Ponce School of Medicine.

Signature of Project Director

Date

You should send your updated protocol to the Radioisotope Committee as rapidly as possible. All protocols should be approved before you conduct any experiments using radioisotopes. Upon approval, you should contact this committee before ordering/acquiring any radioisotope.

cc: Dr. Enrique Méndez, Dean
Members of Biohazards Committee

MEMORANDUM

TO: Users and Potential Users of Radioactive Materials

FROM: Radioisotope Committee

DATE: March 15, 1985

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RING _____

OTHER _____
(e.g. thyroid scan)

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Signature of Project Director

Date

You should send your updated protocol to the Radioisotope Committee as rapidly as possible. All protocols should be approved before you conduct any experiments using radioisotopes. Upon approval, you should contact this committee before ordering/acquiring any radioisotope.

cc: Dr. Enrique Méndez, Dean
Members of Biohazards Committee

C U R R I C U L U M V I T A E

NAME : Daniel Torres Ortiz

ADDRESS : B-2 Yaurel St., Alturas de Mayaguez
Mayaguez, Puert Rico 00708

DATE OF BIRTH : July 22, 1936

CIVIL STATUS : Married - 3 children

EDUCATION : Bachelor Degree - Mathematics 1960
College of Agriculture and Mechanic Arts - Mayaguez

Master Sciences - Radiation Physics 1969
University of Puerto Rico - Río Piedras

Master Arts - Public Administration 1975
University of Puerto Rico - Río Piedras

SPECIAL COURSES OR TRAINING:

- a. Artillery Officers School - 1962 Fort Sill Okl.
- b. Health Physics Course (10 weeks) Oak Ridge
National Laboratory - Oak Ridge - Tenn.
- c. Community Air Pollution (two weeks) Public Health Service
- d. Fundamentals of Occupational Radiation
Protection (one week) Public Health Service
- e. Regulatory Practices and Procedures
U.S. Atomic Emerg. Commission (3 weeks)
- f. Advance C.B.R. Course #2 U.S. Army (3 weeks)
- g. Instructor Radiological Defense - Civil Defense (two weeks)

WORK EXPERIENCE:

1972 Present: Medical Physicist Mayaguez Medical Center. Perform as
physicist with responsibility in dosimetry, safety and
calibration of equipment in Nuclear Medicine and Radiotherapy.

- 1970-1972: Associate Director - Radiological Health Program
Department of Health. Supervise and control the
inspection, island wide of all radiation Sources
in Puerto Rico.
- 1965-1970: Radiation Protection Specialist in charge of the
inspection and evaluation of radiation hazards in
Puerto Rico. Puerto Rico Department of Health.
- 1962-1964: U.S. Army Officer
Artillery Officer in charge of Range Safety, including
Nuclear Weapons - Fort Hood, Texas.
- 1958-1960: High School Teacher - Teaching Algebra and Geometry to
High School Students.

ADDITIONAL EXPERIENCE: 1973 - Present

1. Instructor in Mathematics
Inter American University (Part time)
2. Physics Instructor to X-ray Technologist
University of Puerto Rico - School of Medicine
1975-76 (part time)
3. Consultant in Radiation safety and Medical Physics to:
 - a) Oncologic Hospital - Ponce, P.R.
 - b) San Lucas Hospital - Ponce, P.R.
 - c) Damas Hospital - Ponce, P.R.
 - d) Dr. Pila Hospital - Ponce, P.R.
 - e) Doctors Hospital - Santurce, P.R.
 - f) San Pablo Hospital - Bayamón, P.R.

AUCTORIBUS · PROFESSORIBUS · QUIBUS · HOC · MUNUS · COMMISSUM · EST

CURATORES

UNIVERSITATIS · PORTORICENSIS

Daniel Torres Ortiz

AD · GRADUM

Magistri Scientiarum Radiologicae Valetudinis

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IN · CUIUS · REI · TESTIMONIUM · NOS · HUIUS · UNIVERSITATIS · RITE
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CANCELLARIUS

