



UNIVERSIDAD DE PUERTO RICO. RECINTO DE CIENCIAS MEDICAS  
UNIVERSITY OF PUERTO RICO. MEDICAL SCIENCES CAMPUS

OFICINA DEL RECTOR  
OFFICE OF THE CHANCELLOR

August 6, 1991

Mr. Stewart D. Ebnetter  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, N. W.  
Atlanta, GA 30303

RE: License No. 52-01946-07

Dear Mr. Ebnetter:

Pursuant to the points discussed in the NRC/UPR joint enforcement conference held on July 26, 1991 in Atlanta, GA, we have devoted a great effort in finding a solution to the problem posed by the waste storage room located on the first floor of our main building. What follows is our immediate problem solving strategic approach (PSSA).

I. Identification of the magnitude of the problem

A. Based on our disposal log record we have on storage the following materials:

1. Forty two point five (42.5) millicuries of H-3.
2. Two point five (2.5) millicuries of C-14
3. Five (5) millicuries of I-125
4. Forty two (42) millicuries of P-32. (Some of the bags are ready to be disposed due to decay.
5. Seven point five (7.5) millicuries of S-35.
6. Two point five (2.5) millicuries of Ca-45

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REGS LIC30 910806  
52-01946-07 PIR

- B. Based on our findings, we identified five (5) different scintillation cocktails which may have been used by the research labs. for counting low energy beta emitters and which may generate harmful vapors. These are:
1. Econofluor from New England Nuclear
  2. Scinti Verse II from Fisher Scientific
  3. Ready Protein from Beckman
  4. Ready Solv from Beckman
  5. Bio Fluor from Dupont

A rough estimate of those boxes disposed which may contain one of any of those scintillation solutions may approach a number of twenty (20) out of a total of sixty two (62) packages.

- C. Dose rate of ambient inside the room is closed to background. The previous information tends to indicate that the disposal of radionuclides responds to a steady annual rate over the past few years at the MSC.

We share and agree with NRC point that if some of the harmful vapors concentrate to a certain extent the proper flash point is attained, they might ignite or explode. Nevertheless, the chances of this occurring outside the room are remote, because ventilation outside is plenty and air leakage to the outside is minimal. Furthermore, nobody except the radiation safety personnel have access to the inside. This decreases the opportunity of explosion because this personnel knows exactly what the actual situation is.

## II. Remedial actions taken or in progress

- A. A portable, explosion proof Air Blower with a high efficiency activated charcoal filter is on the way to be installed inside the room within the next 72 hours. With the help of this device, air will be recirculated inside the room 24 hours a day. Organic vapors passing through the filter will be absorbed on the surface of the charcoal particles (Device description and filter specifications are enclosed). Filter will be changed as often as needed until all vapors are removed and the situation is under controlled. (Remember that vapors diffusion to the outside is minimal). So, once this is done the probability of an accidental explosion should be very, very low.

- B. Parallel or simultaneously to this action, these other ones have been undertaken:
1. Contacts with the Eastern Chemical Waste System - Caribe, Inc. with office in Barceloneta, Puerto Rico were made in order to determine the feasibility of disposing our LLW through them. These were not successful because as we were told, there is no waste disposal company in Puerto Rico authorized by NRC to dispose of Low Level Radioactive Wastes (LLW).
  2. On Tuesday, July 30, 1991 contacts were made with the NSSI/Sources and Services, Inc. located in Houston, Texas. Mr. Robert D. Gallagher, President of NSSI stressed to us the Embargo Status imposed to Puerto Rico in relation to shipment of LLW to the U. S. continent. Further negotiations are being held with Mr. Gallagher, that will allow us to dispose of our waste in an expeditious manner. NSSI is another company we have approached for assistance and advice regarding disposal of our wastes.
  3. On July 9, 1991 an Environmental Impact Statement (EIS) was submitted to the Puerto Rico Environmental Quality Board (EQB) for their evaluation. This document is part of the incineration permit which needs approval from local state agencies. It is expected that the EQB will emit a final decision within the next ten (10) working days.
  4. In the meantime, specific instructions have been given to the appropriate individuals to stop processing any purchase order for radioactive material for use at the Medical Sciences research laboratories.
  5. Arrangements will be made to have people doing research where scintillation solutions are needed, to switch to a different brand with the properties of Non-Flammable, Non-Toxic and Biodegradable.

LICENSE COMPLIANCE STATUS

The following comments refer to the actions taken to address situations which were identified as apparent violations during your June 17-19, 1991 inspection. (License Number 52-01946-07 Broad Scope).

II-C Failure of the Radiation Safety Committee to meet at least quarterly and to establish a quorum in order to conduct business. 10 CFR 35.22 (a) (2).

Response - Schedules of RSC meetings have been planned to be held at the middle of each calendar quarter. So, if quorum is not achieved, the meeting could be postponed and still allow time to meet within the required period.

II-C Failure of the Radiation Safety Committee to provide copies of meeting minutes to its members. 10 CFR 35.22(a) (5).

Response - This will be corrected starting with the next meetings and subsequently.

II-C Failure to assure that specified training and experience requirements were submitted prior to authorizing individuals for nonhuman uses of license material. Condition 20 of License Application.

Response - Although records of authorization showed individual training and experience implicitly, it was not explicitly stated. To bring this condition into compliance, a complete renewal of all users applications was initiated in July 1991. Copy of a modified Supplement A, Exhibit 2 - Training and Experience, authorized user - was sent to each applicant.

II-C Failure to assure that licensed material for nonhuman use was used only by, or under the supervision of, individuals designated by the RSC. Condition 12 of License Application.

Response - The individual identified in this apparent violation, Dr. José Rodríguez of the Department of Pathology, was working under the supervision of Dr. George Hillyer who is an authorized user. We request a re-consideration of this issue.

II-E Failure to evaluate the radiation dose received by individuals whose personnel dosimetry badges were non-readable by the dosimetry processor. 10 CFR 20.201(b).

Response - On July 21, 1991 an investigation was carried out. An empiric dose was determined by comparison of past exposure in similar situations and with interviews with the affected user. Corrections and annotations were made. All changes will be reflected in the future records of permanent accumulated dose of the users.

II-F Failure to receive all packages containing radioactive materials, not associated with Nuclear Medicine, at the Health Physics Office (Room R-179) at the Medical Sciences Campus. Condition 20 of License Application.

Response - Effective July, 30, 1991 all radioactive material purchases by the Neurobiology Laboratory were stopped until the license is amended to reflect the actual practice. Personnel from Neurobiology will be trained in the procedures for picking up, receiving and opening packages. 10 CFR 20.1906 (b).

II-G Failure to secure licensed material in an unrestricted area against unauthorized removal from the place of storage 10 CFR 20.207 (a).

Response - Although this apparent violation appeared to be a repeated one this time it refers to a different situation and circumstances. (Research laboratory with 250 uCi of S-35). All measurements have been taken to request from research laboratory users to secure material at all times, either by physical methods or to ensure the presence of personnel in the working areas all the time.

II-G Failure to place radioactive waste in a receptacle marked with a standard radiation tag or label. Condition 20 of License Application.

Response - Almost immediately after NRC inspection, material users were urged to identify and mark all receptacles and wastes baskets with standard radiation tags when such labels were required.

II-G Failure to label the source container in the source storage vault. 10 CFR 20.203 (f).

Response - Identification of some unlabeled material sources left during the activities of the former Puerto Rico Nuclear Center (PRNC) which was an Atomic Energy Commission (AEC) Contractor, is a very difficult if not an impossible task. For some unknown reason this material was not included in the inventory when the Department of Energy (DOE) decommissioned the material left at the PRNC - Mayaguez Campus.

II-H Failure to leak test all sealed sources that require leak testing. 10 CFR 35.59 (b) (2).

Response - Cs-137 and Ba-133 calibration sources located at the Nuclear Medicine Hot Room were leak tested on June 21, 1991.

II-H Failure to maintain a record of the leak test results for sixteen Cesium 137 sources. 10 CFR 35.59 (d).

Response - Leak test report form is being modified to reflect all the sources that are in inventory and leak tested. This information will be reflected in the next leak test section which is due on October 19, 1991.

II-H Failure to record all required information on inventory records. 10 CFR 35.59 (g).

Response - This apparent violation was corrected on July 22, 1991 when inventory form was modified and last inventory performed.

II-H Failure to record actions taken in cases where radiation or contamination levels found during survey of research laboratories exceeded the action level and failure to record follow-up survey information. Condition 20 of License Application.

Response - This apparent violation was corrected on July 8, 1991. Contamination report is also being modified.

II-H Failure to perform required weekly surveys of radiopharmaceutical waste storage areas. 10 CFR 35.70 (b).

Response - On July 19, 1991, we started taking remedial actions to correct this apparent violation. Subsequent reports should reflect weekly data.

Mr. Stewart D. Ebnetter

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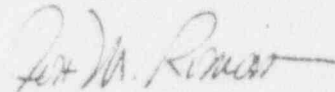
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II-H Failure to label containers in the radioactive waste building as required. 10 CFR 20.203.

Response - The arguments and reasons given in IIF also apply to this apparent violation. It is worth mention however that on July 7, 1991 we started disposing short-lived isotopes which had decayed after ten (10) half lives.

We will continue to keep you abreast of further compliance to assure that the Medical Sciences Campus fullfills all Nuclear Regulatory Commission requirements.

Sincerely,



John M. Roman, J. D.  
Dean of Administration

JMR/mc

(NRC-5)

cc Dr. Manuel Marina, Chancellor  
Dr. José M. Saldaña, President, UPR