

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	Docket No. 030-13584,
UNIVERSITY OF PUERTO RICO	)	License No. 52-01946-07
San Juan, Puerto Rico	)	EA 91-089

ORDER IMPOSING CIVIL MONETARY PENALTY

I

University of Puerto Rico (Licensee) is the holder of Broad Medical, Teletherapy and Research and Development License Nos. 52-01946-07, 52-01946-09, 52-01986-04, 52-01986-01, 52-10510-04, 52-19434-02 issued by the Nuclear Regulatory Commission (NRC or Commission) on January 3, 1978, March 8, 1990, March 18, 1969, February 13, 1957, August 15, 1978, and March 9, 1982, respectively. The licenses authorize the Licensee to use byproduct material in accordance with the conditions specified therein.

II

An inspection of the Licensee's activities was conducted on June 17-21, 1991. The results of this inspection indicated that the Licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was served upon the Licensee by letter dated August 28, 1991. Section I of the

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Notice (Violations Assessed a Civil Penalty) states the nature of the violations, the provisions of the NRC's requirements that the Licensee had violated, and the amount of the civil penalty proposed for the violations associated with License Number 52-01946-07. The Licensee responded to the Notice by letter dated September 27, 1991. In its response to the violations in Section I of the Notice, the Licensee admitted nine violations, partially admitted five violations (Violations I.E, I.G, I.I.3, I.I.4, and I.L), and denied one violation (Violation I.D). In addition, the Licensee requested that the amount of the civil penalty be reduced.

### III

After consideration of the Licensee's response and the statements of fact, explanation, and argument for mitigation contained therein, the NRC staff has determined, as set forth in the Appendix to this Order, that the violations, with the exception of Violation I.D., occurred as stated. With respect to Violation I.D., the NRC staff has determined that the violation should be withdrawn.

IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The Licensee pay a civil penalty in the amount of \$5,830 within 30 days of the date of this Order, by check, draft, money order, or electronic transfer, payable to the Treasurer of the United States and mailed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555.

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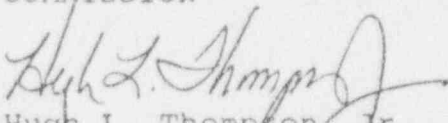
The Licensee may request a hearing within 30 days of the date of this Order. A request for a hearing should be clearly marked as a "Request for an Enforcement Hearing" and shall be addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555. Copies also shall be sent to the Assistant General Counsel for Hearings and Enforcement at the same address and to the Regional Administrator, NRC Region II, 101 Marietta Street N.W., Atlanta, Georgia 30323.

If a hearing is requested, the Commission will issue an Order designating the time and place of the hearing. If the Licensee fails to request a hearing within 30 days of the date of this Order, the provisions of this Order shall be effective without further proceedings. If payment has not been made by that time, the matter may be referred to the Attorney General for collection.

In the event the Licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) Whether the licensee was in violation of the Commission requirements as set forth in Violations I.E, I.G., I.I.3., I.I.4, and I.L of the Notice, and
- (b) Whether, on the basis of such violations and the additional violations set forth in the Notice of Violation that the Licensee admitted, this Order should be sustained.

FOR THE NUCLEAR REGULATORY  
COMMISSION

  
Hugh L. Thompson, Jr.  
Deputy Executive Director for  
Nuclear Materials Safety,  
Safeguards and Operations Support

Dated at Rockville, Maryland  
this 30<sup>th</sup> day of December 1991

## APPENDIX

### EVALUATIONS AND CONCLUSION

On August 28, 1991, a Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was issued for violations identified during an NRC inspection. The University of Puerto Rico responded to the Notice in a letter dated September 27, 1991. In its response to Section I (Violations Assessed a Civil Penalty), the licensee denied one violation (Violation I. D.) and admitted in part five violations (Violations I.E., I.G., I.I.3., I.I.4, and I.L.). In addition, the licensee requested a reduction of the civil penalty. The NRC's evaluation and conclusion regarding the licensee's requests are as follows:

#### Restatement of Violation I.D.

Condition 12.C. of License No. 52-01946-07 requires that licensed material for other than human use be used by, or under the supervision of, individuals designated by the Radiation Safety Committee.

Contrary to the above, on June 18, 1991, a researcher located in Room 617A of the Medical Sciences Building was using sulfur 35 for other than human use and was not designated by the Radiation Safety Committee to do so, nor was he using the licensed material under the supervision of an individual designated by the Radiation Safety Committee. The researcher ordered and received licensed material under his own name and was not, at the time, conducting his research under the supervision of an individual designated by the Radiation Safety Committee.

#### Summary of Licensee's Response to Violation I.D.

The licensee denied that a researcher who was not designated by the Radiation Safety Committee had ordered, received and used licensed material. The licensee stated that during the NRC inspection the Radiation Safety Officer confused an unauthorized individual with an authorized individual having the same name, and thus, it appeared that an unauthorized individual had ordered and received licensed material when in fact it was ordered and received by an authorized individual. (The unauthorized individual was in fact working under the supervision of an authorized user.)

#### NRC Evaluation of Licensee's Response

The inspectors acknowledge that during the inspection, they were aware that there were two researchers with the same last name, and there was a possibility for confusion.

Therefore, the NRC is withdrawing this violation. Since the civil penalty was assessed equally among 15 violations, NRC is reducing the civil penalty by 1/15, or \$420, based on the withdrawal of Violation I.D.

Restatement of Violation I.E.

10 CFR 35.70(b) requires the licensee to survey with a radiation detection survey instrument at least once each week all areas where radiopharmaceutical waste is stored. 10 CFR 35.70(h) requires the licensee to retain a record of this survey with specific information for three years.

Contrary to the above, between April 3, 1990, and June 19, 1991, the licensee did not survey with a radiation detection survey instrument at least once each week in areas where radiopharmaceutical waste is stored.

Summary of Licensee's Response to Violation I.E.

The licensee denied that radiation surveys were not being made at least once each week in areas where radiopharmaceutical waste is stored but admitted that the Radiation Safety Officer failed to keep records of the results.

NRC Evaluation of Licensee's Response

During the inspection, the Radiation Safety Officer stated that he or someone from his office visited the radiopharmaceutical waste storage area weekly and carried a survey instrument. However, he indicated no measurements of radiation levels were performed in or around the radiopharmaceutical waste storage facility (restricted and unrestricted areas).

Therefore, NRC concludes that the violation did occur as stated in the Notice.

Restatement of Violation I.G.

10 CFR 35.22(a)(2) requires the Radiation Safety Committee to meet at least quarterly.

Contrary to the above, the Radiation Safety Committee failed to meet from December 20, 1989 through April 4, 1990, and from December 19, 1990 through April 3, 1991, periods in excess of one calendar quarter.



Summary of Licensee's Response to Violation I.G.

The licensee stated that the Radiation Safety Committee met four times each year during 1989 and 1990, but failed to meet during each calendar quarter which constituted only a deviation of 15 days.

NRC Evaluation of the Licensee's Response

10 CFR 35.22(a)(2) requires the Radiation Safety Committee meetings be held at least quarterly. The periods of time between meetings (from December 20, 1989 through April 4, 1990, and December 19, 1990 through April 3, 1991) are in excess of one calendar quarter.

Therefore, the NRC concludes that the violation did occur as stated in the Notice.

Restatement of Violation I.I.3.

Condition 20 of License No. 52-01946-07 requires that the licensee conduct its program in accordance with the statements, representations, and procedures described in the licensee's application dated August 29, 1988.

Attachment 8.2 of the licensee's application states that candidates for use of radioactive materials in research should submit evidence of training and experience equivalent to 40 hours of academic radiation disciplines including specific subjects.

Contrary to the above, on September 19, 1990, November 8, 1990 and November 30, 1990, candidates for use of licensed materials in research were approved without submitting evidence of training and experience equivalent to 40 hours of academic radiation disciplines.

Summary of Licensee's Response to Violation I.I.3

The licensee stated that most of the radioisotope users have been on-campus for more than 10 years and have taken courses and on-the-job training in radioisotope handling at the Medical Sciences Campus, but no certificates have been issued, and that in the past it was not required to submit evidence of training.

NRC Evaluation of Licensee's Response

The licensee's procedures as written in Attachment 8.2 of the licensee's application dated August 29, 1988, require research

candidates for use of radioactive material to submit evidence of training and experience equivalent to 40 hours of academic radiation disciplines including specific subjects. The researchers who were approved on September 19, 1990, November 8, 1990 and November 30, 1990, were new candidates for use of materials, and no evidence of training and experience equivalent to 40 hours of academic radiation disciplines, including specific subjects, was submitted prior to their approvals.

Therefore, NRC concludes that the violation did occur as stated in the Notice.

#### Restatement of Violation I.I.4

Condition 20 of License No. 52-01946-07 requires that the licensee conduct its program in accordance with the statements, representations, and procedures described in the licensee's application dated August 29, 1988.

Attachment 10.12 of the licensee's application states that the licensee will establish and implement the model procedure for area surveys that was published in Appendix N to Regulatory Guide 10.8, Revision 2 (August 1987). Item 1.e (Records) of Appendix N specifies that the licensee will keep records which include actions taken in the case of excessive dose rates or contamination and follow up survey information.

Contrary to the above, as of June 18, 1991, records of surveys performed in the research laboratories did not indicate the actions taken and followup survey information for cases involving excessive dose rates or contamination.

#### Summary of Licensee's Response to Violation I.I.4

The licensee partially admitted the violation and stated that when high dose rates or contamination were detected, areas were initially surveyed and decontaminated until dose rates reached approved levels; however, the licensee failed to keep records of the action taken.

#### NRC Evaluation of Licensee's Response

This citation was not for failing to survey or decontaminate areas, but rather for not retaining records of actions taken and follow up survey information for cases involving excessive dose rates or contamination. The licensee admitted that it had not kept these records.



Therefore, NRC concludes that the violation did occur as stated in the Notice.

Restatement of Violation I.L.

10 CFR 35.59(d) requires the licensee to retain leak test records for five years which contain specified information for all sources tested.

Contrary to the above, as of June 17, 1991, records of leak tests were not maintained for sixteen Cesium 137 sources received in August 1990.

Summary of Licensee's Response to Violation I.L.

The licensee stated that the sealed sources were leak tested as required, but the new cesium 137 sources were not clearly identified in the form used as a permanent record.

NRC Evaluation of Licensee's Response.

This citation was not for failing to leak test sealed sources, but rather for not maintaining leak test records as required. The licensee's leak test records did not identify the sources tested and did not contain the specified information on the sixteen cesium 137 sources received in August 1990.

Therefore, NRC concludes that the violation did occur as stated in the Notice.

Summary of Licensee's Request for Mitigation.

The licensee stated that, as of September 27, 1991, more than 75 percent of the violations had already been corrected, and that in order to develop a stronger Radiation Safety Program, the University of Puerto Rico has initiated the acquisition of personnel, equipment and materials. The licensee requested that, for these reasons, the NRC consider reducing the amount of the proposed civil penalty.

NRC Evaluation of Licensee's Request for Mitigation.

Corrective actions are always required for identified violations. As stated in the NRC letter dated August 28, 1991, neither escalation nor mitigation was warranted for corrective action to prevent recurrence because, at the time of the enforcement conference, even though immediate corrective actions had been taken for some of the violations, adequate long-term corrective

action to address the root cause issues had not been formulated and implemented. Therefore, NRC concludes that the licensee has not provided a sufficient basis for mitigation of the proposed civil penalty.

#### NRC Conclusion

The NRC has concluded that, with the exception of Violation I.D., the violations occurred as stated, and that the licensee has not provided a sufficient basis for any mitigation of the civil penalty. However, based on the withdrawal of Violation I.D., a reduction of the civil penalty in the amount of \$420 is warranted.

Consequently, a civil penalty in the amount of \$5,830 should be imposed.

ENCLOSURE 2

EVALUATION OF VIOLATIONS

NOT ASSESSED A CIVIL PENALTY

Of the violations not assessed a civil penalty, the licensee admitted nine of the 13 violations (Violations II.3.(a), II.3.(b), II.4., III.A., III.B., IV.A.1., IV.A.2., IV.A.3., and IV.B.), denied one violation in its entirety (Violation III.C.), and admitted in part three violations (Violations II.1., II.2., and IV.A.4.).

Restatement of Violation III.C.

10 CFR 20.203(e) requires that rooms or areas in which specified amounts of licensed material are used or stored be conspicuously posted "Caution - Radioactive Material."

Contrary to the above, on June 20, 1991, a refrigerator which contained eleven vials of carbon 14 ranging from 50 to 386 microcuries per vial and which was located in an open hallway was not posted as required.

Summary of Licensee's Response to Violation III.C.

The licensee denied that posting was required for this refrigerator. The licensee stated that the activities of carbon 14 stored in a refrigerator at the Agricultural Experiment Station and recorded by the inspector were misread on the container labels during the NRC inspection. By checking old papers on the containers, the licensee found that the total activity stored in the refrigerator was less than 0.8 millicuries of carbon 14; therefore, the refrigerator did not require a sign warning "Caution Radioactive Material" in accordance with 10 CFR 20.203(e), which requires posting for more than one millicurie of carbon-14.

NRC Evaluation of Licensee's Response

The inspector agrees that the labels on the containers were difficult to read. Since the licensee was able to check old papers after the inspection and determined that the total activity in the refrigerator was less than 0.8 millicuries, then the refrigerator would not require posting in accordance with 10 CFR 20.203(e).

Accordingly, Violation III.C is withdrawn.

Restatement of Violation II.1.

Condition 15 of License No. 52-C1986-04 requires that the licensee conduct its program in accordance with the statements, representations, and procedures described in the licensee's application received November 9, 1989, and letter dated July 24, 1990.

Procedure 5.c. of Item 10 of the licensee's application states that the surface of the source container will be checked for contamination using a cotton swab when initially opening packages containing radioactive material.

Contrary to the above, as of June 20, 1991, the surface of source containers received in Room JGD 217 were not being checked for contamination when initially opening packages containing material.

Summary of Licensee's Response to Violation II.1.

The licensee stated that the incoming packages were checked for contamination but negative results were not recorded.

NRC Evaluation of Licensee's Response

Based on a telephone conversation between the Radiation Safety Officer and an inspector on November 4, 1991, it is our understanding that there was a misunderstanding as to what constituted the required surveys on incoming packages. The researcher in Room JGD 217 indicated to the Radiation Safety Officer that he was performing the required surveys and not recording negative results. However, the Radiation Safety Officer indicated that the researcher had been surveying the exterior surface of the incoming packages for radiation levels but had not performed the required checks for contamination on the surface of the source containers when initially opening the packages.

Therefore, NRC concludes that the violation did occur as stated in the Notice.

Restatement of Violation II.2.

Condition 15 of License No. 52-01986-04 requires that the licensee conduct its program in accordance with the statements, representations, and procedures described in the licensee's application received November 9, 1989, and letter dated July 24, 1990.

Procedure 5.d. of Item 10 of the licensee's application states that the Radiation Safety Technician is to be notified upon receipt of material.

Contrary to the above, as of June 20, 1991, the Radiation Safety Technician had not been notified of all receipt of material in Rooms JGD 107 and JGD 216.

#### Summary of Licensee's Response to Violation II.2.

The licensee stated that the violation was due to a misunderstanding of the use of the form employed to notify the RSO. The licensee stated that the personnel in Room JGD 107 always notified the Radiation Safety Technician (RST) by telephone of receipt of material and the personnel in Room JGD 216 always notified the RST in writing and not by telephone. The licensee also stated that the notification forms are available in the RST's files.

#### NRC Evaluation of Licensee's Response

The information provided to the NRC inspectors concerning not notifying the RST was obtained through interviews with personnel in the laboratories during the inspection. There is a possibility that other personnel in the laboratory who were not present during the inspection may have notified the RST of receipt of these materials, and since the RST has forms in his files which demonstrate that he was notified, we agree with the licensee's conclusion that Item II.2. did not constitute a violation.

Accordingly, Violation II.2 is withdrawn.

#### Restatement of Violation IV.A.4.

Condition 20 of License No. 52-10510-04 requires that the licensee conduct its program in accordance with the statements, representations, and procedures described in the licensee's application dated August 9, 1983, which includes the licensee's Radiation Safety Regulations Manual, and letter dated April 11, 1986.

The licensee's letter dated April 11, 1986, states that the Radiation Safety Committee will meet no less than once each fiscal year.

Contrary to the above, the Radiation Safety Committee failed to meet during the fiscal year 1989.

Summary of Licensee's Response to Violation IV.A.4.

The licensee stated that the Radiation Safety Committee met at least once each year, including 1989; however, no record of the meeting held in 1989 had been kept.

NRC Evaluation of Licensee's Response

At the time of the inspection, there were minutes for other Radiation Safety Committee meetings, but no minutes for a meeting held during fiscal year 1989. Also, through interviews with the Radiation Safety Officer, it was determined that no Radiation Safety Committee meeting was held during fiscal year 1989.

Therefore, NRC concludes that the violation did occur as stated in the Notice.

NRC Conclusion

The NRC concludes that the licensee provided an adequate basis for withdrawal of Violations II.2. and III.C. of the Notice of Violation dated August 28, 1991. Consequently, Violations II.2 and III.C are withdrawn. However, the NRC concludes that the licensee did not provide an adequate basis for withdrawal of any additional violations. Therefore, the NRC concludes that Violations II.1. and IV.A.4. occurred as stated in the Notice.



Encl 5

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
WASHINGTON, D.C. 20555

February 5, 1990

NRC INFORMATION NOTICE NO. 90-09: EXTENDED INTERIM STORAGE OF LOW-LEVEL  
RADIOACTIVE WASTE BY FUEL CYCLE AND  
MATERIALS LICENSEES

Addressees:

All holders of NRC materials licenses.

Purpose:

This information notice provides guidance to fuel cycle and materials licensees on information needed in license amendment requests to authorize extended interim storage of low-level radioactive waste (LLW) at licensed operations. NRC previously provided guidance on storage of LLW at nuclear power plant sites in Generic Letters 81-38 and 85-14. However, until now NRC has not provided similar guidance for fuel cycle and materials licensees who may, for reasons stated below, need to store their LLW for periods longer than in the past. It is expected that recipients will review this information notice, distribute it to management and staff involved with licensed activities, including responsible radiation safety staff, and consider actions, as appropriate, to assure compliance with NRC requirements. No specific written response to this information notice is required.

Description of Circumstances:

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) established a series of milestones, penalties and incentives to ensure that States or Regional Compacts make adequate progress toward being able to manage their LLW by 1993. On January 1, 1993, the existing LLW disposal sites are expected to either close or to stop receiving LLW from outside their Regional Compacts. What this means to licensees who generate LLW is that, unless their State or Regional Compact either has a disposal facility operational on January 1, 1993 or has made other arrangements for storage or disposal, such licensees may have to store their LLW onsite until disposal capacity is available. Storage of LLW in accordance with NRC requirements may be necessary for anywhere from several months to several years.

Discussion:

Not all licensees who will need to store LLW onsite will need amendments to their licenses to do so. However, if the possession limits specified in a license need to be increased to allow storage, or if the terms and conditions of a license

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otherwise need to be modified, a licensee will need to apply for a license amendment. Attachment 1 to this notice identifies information which licensees will need to provide to NRC in such amendment requests. This information may also be useful to licensees who will not need license amendments to store waste, as well as to persons considering applying for a license to construct a centralized storage facility to receive waste from others until State or Regional disposal capacity is available. The following considerations are central to extended storage, and are the basis of the information included in Attachment 1.

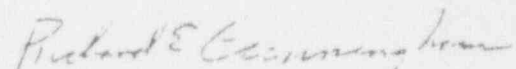
1. Storage is not a substitute for disposal. Other than storage for radioactive decay, LLW should be stored only when disposal capacity is unavailable and for no longer than is necessary. Licensee planning should consider a specific date by which storage will end and disposal of the LLW will take place.
2. In general, waste should be processed before storage, packaged in a form ready for transport and disposal at the end of the storage period, and clearly labeled in accordance with 10 CFR Subsection 20.203(f) and Section 20.311. Adequacy of the waste form or package may have to be reassessed before disposal.
3. To ensure integrity of packaging and maintenance of waste form, stored waste should be shielded from the elements and from extremes of temperature and humidity.
4. Waste should be stored in an area which allows for ready visual (direct or remote) inspection on a routine basis. Licensees should plan to conduct and document such inspections at least quarterly.
5. Depending on the specific waste involved, licensees may need to have procedures and equipment in place or readily available to repackage the waste, should the need arise.
6. Decomposition and chemical reaction of incompatible waste materials over time can result in gas generation or other reaction products. Licensees should evaluate what they are planning to store and use measures to prevent these reactions. Further, licensees should determine if the need exists for additional ventilation or fire protection/suppression systems.
7. For most waste forms, storage of waste in containers suitable for disposal will not represent a significant increment of direct radiation exposure potential to workers. However, licensees should consider their specific waste and storage plans and determine if additional shielding or other actions are warranted to keep exposures as low as is reasonably achievable (ALARA).
8. Stored waste should be located in a restricted area and secured (e.g., in a locked room) against unauthorized removal for the term of storage.

NRC does not advocate extended storage of LLW, as long as disposal capacity is available to licensees. However, NRC recognizes that storage is allowed for, as an interim measure, in the framework of the LLRWPA, and this guidance is being issued in recognition of that fact. NRC continues to believe that, whenever possible, storage should only be an interim step between activities that generate waste and ultimate disposal of that waste. In the interest of public health and safety, as well as maintaining exposures ALARA, the length of time LLW is placed in storage should be kept to a minimum. Accordingly, NRC's approval of requests by materials and fuel cycle licensees for interim extended storage will generally be for a period of time no greater than five years.

Some licensees will need to store LLW which also contains hazardous waste as specified under the Resource Conservation and Recovery Act, as amended (RCRA). These mixed wastes, as they are called, are regulated both by NRC - for the radioactive component of the waste - and the U.S. Environmental Protection Agency (EPA) - for the hazardous component of the waste. The information and guidance contained in this notice apply to NRC's regulations only. For information on permitting of storage by EPA, licensees should contact the appropriate EPA regional office or, in those States with approved mixed waste programs, the appropriate State regulatory authority.

If you have questions about your State or Regional Compact, a list of contact persons is provided in Attachment 2 of this notice.

Questions on your specific license or general procedures for license amendments and reviews related to extended interim storage should be addressed to the appropriate NRC regional office or, in the case of fuel cycle licensees, to the Division of Industrial and Medical Nuclear Safety in NMSS.



Richard E. Cunningham, Director  
Division of Industrial and Medical  
Nuclear Safety  
Office of Nuclear Material Safety  
and Safeguards

Technical Contact: George Pangburn, NMSS  
(301) 492-0628

Attachments:

1. Information Needed in an Amendment Request to Authorize Extended Interim Storage of LLW.
2. Regional Compacts and Unaffiliated States.
3. List of Recently Issued NMSS Information Notices.
4. List of Recently Issued NRC Information Notices.

INFORMATION NEEDED IN AN AMENDMENT REQUEST TO AUTHORIZE  
EXTENDED INTERIM STORAGE OF LOW-LEVEL RADIOACTIVE WASTE

The following paragraphs identify the information which NRC considers necessary in an amendment request from a materials or fuel cycle licensee to authorize extended interim storage of low-level radioactive waste (LLW).

1. Identification of Waste to be Stored

- a. Specify any possession limit increases needed for extended interim storage of LLW.
- b. Identify the estimated maximum amount of LLW to be stored, both in terms of volume and activity, by radionuclide.
- c. Characterize the LLW to be stored:
  - (1) Volume of waste by Class (A, B, or C)
  - (2) Physical form of the waste: solid, liquid or gas
  - (3) Waste processing: volume reduction, solidification or other treatment.
  - (4) Additional non-radiological properties of LLW (if any): hazardous, biologic/pathogenic, corrosive, flammable, etc.
- d. Describe the amount and type of LLW currently being stored or processed.
- e. Identify any additional permits or approvals necessary for storage (i.e., EPA hazardous waste permit, State or local approvals, etc.) and the status of each required approval.

2. Plans for Final Disposal

- a. Specify when disposal capacity will no longer be available to you and onsite storage will begin.
- b. Specify the State/Regional disposal facility to be used for ultimate disposal of your LLW and when that facility is scheduled to begin accepting LLW. Your Regional Compact or State LLW authority should be able to provide this information if you do not have it.
- c. Specify when you will begin shipping LLW to that facility and how long it will take for your estimated storage inventory to be moved out.

3. Physical Description of Storage Area

- a. Identify the location and provide a diagram of the LLW storage area which demonstrates where packages will be stored and how packages will be accessible for inspection purposes. Include the locations of waste processing equipment (if applicable), air sampling stations, effluent filters and any sources of flammable or explosive material.
- b. Specify the maximum volume of LLW that can be stored in the proposed waste storage area and relate this to annual volume of waste generated.
- c. Specify the type of building/structure in which the waste will be stored and demonstrate that the waste will be protected from weather at all times.
- d. Describe the measures to control access to the LLW storage area and thereby ensure security of the waste.
- e. Describe the ventilation system and how it will assure adequate ventilation of the storage area.
- f. Describe the fire protection and suppression system to minimize the likelihood and extent of fire.
- g. Describe how the adverse effects of extremes of temperature and humidity on waste and waste containers will be avoided.
- h. Describe vulnerability to other hazards such as tornado, hurricane, flood, industrial accident, etc.

4. Packaging and Container Integrity

- a. Describe the packages or containers to be used for storage of LLW, any hazards the waste may pose to their integrity, and the projected storage life of the packages or containers.
- b. Describe your program for periodic inspections of LLW packages to ensure that they retain their integrity and containment of LLW.
- c. Describe your program and equipment (if applicable) for remote handling and/or repackaging damaged or leaking waste containers.

5. Radiation Protection

- a. Describe your program for safe placement and inspection of waste in storage and maintaining occupational exposures as low as is reasonably achievable (ALARA). This program should include periodic radiation and contamination surveys of individual packages and the storage area in general, as well as posting the storage area in accordance with 10 CFR Section 20.203.



- b. Describe projected exposure rates, needs for shielding (if any) and any changes in personnel monitoring which will be required as a result of waste storage.
- c. Describe your procedures for responding to emergencies, including notification of and coordination with local fire, police and medical departments.
- d. Describe your system for maintaining accurate records of waste in storage (including any waste receipts or transfers from or to other licensees) to assure accountability.

6. Training

- a. Describe your program for training personnel in procedures for packaging, handling, placement, inspection, surveying and emergency response for LLW storage.

7. Financial Assurance

- a. Review the relevant sections of Parts 30, 40 and 70 regarding financial assurance for decommissioning. If your proposed maximum possession limits exceed the limits specified in Sections 30.35, 40.36 or 70.25, submit with your amendment request a decommissioning funding plan or certification of financial assurance, as appropriate. In either case, this submittal should demonstrate that financial resources are or will be in place not only to decommission the licensed operation, but also to provide for the estimated costs of handling, transport and ultimate disposal of all LLW stored onsite.

8. Emergency Preparedness

- a. Review the relevant sections of Parts 30, 40 and 70 regarding emergency preparedness. If your proposed maximum possession limits exceed the limits specified in Subsections 30.32 (i)(1), 40.31(j)(1) or 70.22 (i)(3), you will be required to either demonstrate that an emergency plan is not needed or to develop and maintain a plan that meets the requirements of the aforementioned sections.