UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

October 24, 2006

Docket Nos.	03000638	License Nos.	08-02075-03
	04006329		SUD-157
	07000190		SNM-164
Control Nos.	137357		
	137358		
	137359		

Louis P. Alar
Director, Environmental Health and Safety
The Catholic University of America
Marist Annex Building
Cardinal Station
Washington, DC 20064

SUBJECT: THE CATHOLIC UNIVERSITY OF AMERICA, REQUEST FOR ADDITIONAL INFORMATION CONCERNING FINANCIAL ASSURANCE DOCUMENTS, CONTROL NOS. 137357, 137358, AND 137359

Dear Mr. Alar:

This is in reference to the letter dated October 13, 2006, providing financial assurance for decommissioning for Nuclear Regulatory Commission License Nos. 08-02075-03, SUD-157, and SNM-164. In order to continue our review, we need the following additional information:

1. Your application should have been signed by a management representative rather than the Radiation Safety Officer. A letter signed by a management representative indicates that management has reviewed the application and concurs in the statements and representations contained therein. Note also that a management representative should sign all future correspondence that requests a change in your license.

2. Both the Decommissioning Funding Plan (DFP) submitted with the June 27, 2006, letter, and the DFP submitted with October 13, 2006, letter are listed as being prepared in March 2006, with no reference to revisions that were made or the date of a revision. Please use a method to designate the most recent version of the DFP, such as a revision number and/or date in the title of your DFP when it is revised to include the information requested in subsequent items.

3. The response dated October 13, 2006, did not include a Certification of Financial Assurance as requested in Item 1 of our letter dated July 10, 2006. You should follow the Model Certification of Financial Assurance (enclosed) from Appendix A.2.4 of NUREG-1757, “Consolidated NMSS Decommissioning Guidance”, Volume 3, “Financial Assurance, Recordkeeping, and Timeliness” (NUREG-1757, Vol. 3). (Note: you may request to wait until the DFP, with its cost estimate, is reviewed and determined to be acceptable, prior to submitting documents in which the cost estimate is listed.)

4. The response dated October 13, 2006, does not appear to include any revisions based on Item 2 of our letter dated July 10, 2006. As stated in that letter, laboratories and other areas of your facilities, even if released by you in the past, may not meet the NRC's current license termination criteria for all radionuclides, particularly alpha-emitters.

   a. Confirm that the DFP will be based on past activities performed under the licenses since issuance in 1957, not just on activities that are currently performed. This may require revision of Appendices A, B, and C. According to NRC licensing and inspection records, other materials and facilities were used in the past than those listed as currently in use in the DFP Appendices. In particular, other special nuclear materials than plutonium were used in the Physics Department, and will need to be included in the surveys prior to release of that facility.

   b. Confirm that the following activities will be performed prior to the release of facilities for unrestricted use and/or termination of the licenses, and submit a revised DFP and cost estimate to include these activities:

      i. For all laboratories in which licensed materials are currently OR WERE PREVIOUSLY used since licensed operations began in 1957, including those which may have been released in accordance with the conditions of the license,

         (1) survey records will be reviewed to determine if the surveys previously performed meet the NRC's license termination criteria at the time the NRC releases a facility (an entire building) for unrestricted use and/or the license is terminated.

         (2) if survey records are no longer available for those laboratories, they will be re-surveyed to determine if they meet NRC's license termination criteria.

      ii. Decommissioning surveys of a facility will be performed in accordance with NUREG-1757 procedures, including

         (1) a historical site assessment to determine the types, quantities, forms, and uses of licensed materials in the facility;

         (2) a site characterization survey, if necessary, to determine the type and extent of radiological contamination in order to classify areas appropriately;

         (3) decontamination and remediation of contaminated areas, if any;

         (4) a final status survey that demonstrates the facility meets NRC's license termination criteria for the radionuclide(s) used in the facility.

5. The response dated October 13, 2006, did not include all the information requested in Item 3 of our letter dated July 10, 2006. Although The table "Total Decommissioning Costs" was revised to show that these costs are from vendor quotes, describe: (a) the types of equipment, supplies, and survey equipment; (b) the estimate of the costs for the various types of equipment and supplies; and (c) how these costs will be adjusted in the future.

6. The response dated October 13, 2006, for Item 6 of our letter dated July 10, 2006, appears to include a vendor disposal cost of $3,500 for vitrified plutonium in Table 2 on page 15 of the DFP. However, the cost listed on page 12 for disposal of the vitrified plutonium is $3,700. Correct Table 2, and other tables in which this value was incorporated, in the revised DFP.

7. The response dated October 13, 2006, did not include a response to Item 7 of our letter dated July 10, 2006. Explain why the Appendix C Cost Estimating Table on page 14 uses different labor rates than are used in Table 3 on page 15. We note also that the labor costs on both tables are different than the labor rate described in Basic Assumptions No. 11 that was used in Appendix A. Either justify the use of different labor rates, or revise the DFP to use the same labor rates throughout, and explain why the labor rate you use is the best choice.

8. Paragraph 3 of the "Introduction" to the DFP submitted with the October 13 letter was changed to indicate that you plan to use a self-guarantee as your financial assurance instrument. However, an Escrow Account agreement dated October 11, 2006, was also submitted with the October 13 letter. Revise the DFP to refer to an Escrow Agreement, or provide the necessary information for a self-guarantee and request that the Escrow Agreement be returned.

9. On page 5, the table "Total Decommissioning Costs" does not appear to be in complete agreement with other sections of the DFP and cost estimate.

   a. Line 1, "Planning an Preparation" lists the cost estimate from Table 1 on page 14. Line 3, "Dismantling of radioactive facility components..." lists the cost estimate from Table 3 on page 15. Line 4, "Packaging, shipping and disposal of radioactive waste" lists the cost estimate from page 15. Although the titles of each of these lines imply that these activities cover all licenses, the cost estimates are from Appendix C, which applies only to License SUD-157.

      i. Revise the table so that the title for each listed cost accurately describes the activities and the license(s) that are included in the cost estimate.

      ii. Appendix B contains cost estimates only for the disposal of materials currently possessed under License No. SNM-164. Confirm if the activities performed under License No. SNM-164 were performed in the same facilities as used for License No. SUD-157, so that the oterh decommssioning costs are applicable to both licenses. If current or previous activities under License No. SNM-164 were performed in other

areas, a cost estimate for decommissioning of the other areas must be provided.

iii. Appendix C did not include a cost estimate for performing final radiation surveys of the source and special nuclear material facilities. Provide a cost estimate for performing final radiation surveys of these facilities where source and special nuclear materials are/were used. Keep in mind that the screening values for these radionuclides are very low [For example: 6 disintegrations per minute (dpm) per 100 square-centimeters area (cm^2) for thorium-232, 28 dpm/100 cm^2 for plutonium 239, and 101 dpm/100 cm^2 for uranium-238. These values represent total residual contamination, and removable contamination cannot exceed 10% of these values.] Surveys for radionuclides at these low concentrations usually require equipment of sufficient sensitivity to detect alpha emitters, and longer survey times and analysis times than for beta-gamma emitters.

iv. Revise Line 4 to reflect the correct cost of disposal of the vitrified plutonium waste. See also Item 6 above.

b. Line 7, “Final Radiation Survey” lists the total cost estimate from page 7 and 8. This cost estimate is from Appendix A, which refers to License No. 08-02075-03. This does not appear to be the cost of performing final radiation surveys, but a total cost of various decommissioning activities. Specifically, part of the total cost is based on the current 25 laboratories in use, the activities of decommissioning (retrieve records, inventory material, transfer waste to EHS, initial survey and decontamination, final survey, and records/filing), and an estimate of 400 person-hours to complete these activities. The remainder of the cost is based on the current use in three laboratories in the Physics building, some decommissioning activities (remove equipment, prepare waste for disposal, final survey, and records/filing), and an estimate of 598 hours to complete these activities.

i. Revise the table so that the title for each listed cost accurately describes the activities and the license(s) that are included in the cost estimate. Line 7 is not the cost of “final radiation surveys”.

ii. Appendix A does not list any waste disposal cost estimates for the decommissioning of the 25 research laboratories, except for the disposal of sealed sources. Although most of the waste from research activities can be disposed of to the sewer or by decay-in-storage, the DFP should include an estimate of the cost(s) of disposal of liquid scintillation waste, any dry waste contaminated with tritium, carbon-14 or other long-lived materials, and the cost of disposal of any dry waste generated during decommissioning activities (disposable protective clothing such as gloves and booties, cleaning materials, bench paper, etcetera) that may be contaminated with tritium or other long-lived materials. Revise the DFP to include a cost estimate for such wastes.

iii. The three laboratories (please note that four laboratories are listed in person-hours estimate) in the Physics building appear to be the same facilities listed in Appendix C. If so, the decommissioning activities, amount of time, and the cost of labor estimates are different in Appendix A than in Appendix C for these same facilities. The duplication of these efforts results in a greater cost estimate than may be necessary, and is acceptable to the NRC. However, you may prefer to revise the DFP to use only the Appendix C estimates. See also Items 7 and 9.a.iii above.

10. The following items refer to the Escrow Agreement signed October 11, 2006, by Julie Englund for the licensee. You may commit to providing a revised or new Escrow Agreement after the DFP is revised and the new cost estimate is determined to be acceptable.

a. Although Item 1 lists the licenses under which facilities require financial assurance is, it does not state the amount of financial assurance provided for each license. The Escrow Agreement must be revised to state the corresponding estimated and/or certified decommissioning costs for each. Also, this paragraph must indicate the total amount of financial assurance provided by the Escrow Account.

b. Item 2 of the Escrow Agreement must list the assets that were delivered to the escrow agent, and indicate the market value of each item

c. Item 12, “Amendment to this Agreement”, must be revised in accordance with NUREG-1757, Vol. 3, Appendix A.5.4, “Model Escrow Agreement” to state that “This Agreement may be amended by an instrument in writing executed by the licensee, the escrow agent, and NRC, or by the escrow agent and NRC if the licensee ceases to exist. All amendments shall meet the relevant regulatory requirements of NRC.”

d. The Escrow Agreement must include a paragraph “Acceptance of Appointment by Escrow Agent”. Acceptable wording for this can be found in NUREG-1757, Vol. 3, Appendix A.5.4, “Model Escrow Agreement”, Paragraph 14.

11. When an Escrow Agreement is used, additional documents must be submitted as part of the financial assurance as described in NUREG-1757, Vol. 3, Appendix A.5., “Escrow Accounts”, Checklist 5-A. Model documents are also in Appendix A.5. Provide the following documents:

a. a specimen Certificate of Events (Appendix A.5.5). Please note that this document should not be executed until you decommission your facility, but should be submitted with the information (such as the licensee’s name) that is pertinent at this time.;

b. a specimen Certificate of Resolution to Commence Decommissioning (Appendix A.5.6) Please note that this document should not be executed until you

decommission your facility, but should be submitted with the information (such as the licensee's name) that is pertinent at this time.;

c. a certified resolution authorizing the making and performance of the escrow agreement (Appendix A.5.7);

d. a Certificate of Names and specimen signatures (Appendix A.5.8); and

e. a receipt or statement from the escrow agent showing the escrow's current market value.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Medical, Academic, and Industrial Uses of Nuclear Material;** then **Toolkit Index Page.** Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 8:00 p.m. EST, Monday through Friday (except Federal holidays).

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office and refer to Mail Control Nos. 137357, 137358, and 137359. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5040.

Sincerely,

Original signed by Elizabeth Ullrich

Betsy Ullrich
Senior Health Physicist
Commercial and R&D Branch
Division of Nuclear Materials Safety

cc:
Mahmoud S. Haleem, Radiation Safety Officer

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