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Decanato de Administración  
Oficina de Salud, Seguridad Ocupacional y Ambiental  
CALL BOX 9000  
Mayagüez, Puerto Rico 00681-9000



University of Puerto Rico  
MAYAGÜEZ CAMPUS  
Dean of Administration  
Environmental Health and Safety Office  
CALL BOX 9000  
Mayagüez, Puerto Rico 00681-9000

January 15, 2016

Scott Wilson  
Health Physicist  
Commercial, Industrial, R & D and Academic Branch  
Division of Nuclear Materials Safety  
US Nuclear Regulatory Commission Region I

Subject: Additional information concerning application for renewal license no.52-10510-04 (Control No. 589049) *103014313*

Dear Mr. Wilson:

This is in reference to your letter dated on December 22, 2015 requesting additional information concerning our renewal application for the license 52-10510-04 (control No. 589049).

The document enclosed intends to provide to you all the information necessary to complete and support the application for material license. Each item was carefully revised and answered according to our best knowledge and intentions.

If you have any additional question regarding our application, or this letter, please contact us.

Cordially,

A handwritten signature in black ink, appearing to be "D. Santiago", is written over a horizontal line.

Mrs. Damaris Santiago  
Radiation Safety Officer/ EHS Specialist  
University of Puerto Rico- Mayagüez Campus

License 52-10510-04  
Docket No. 03014313  
Control No. 589049

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Additional Information  
License renewal 52-10510-04  
Docket No. 03014313  
Control No. 589049

**1. Item 2 of your application states the mailing address for the license is "Call Box 9000;" however, the mailing address on your current license is P.O. Box 9050. Please clarify this discrepancy.**

Answer to Item 1:

The P.O. Box 9050 was in use until April 2009. Thus, the P.O. Box 9050 is no longer in use as an official University address. Our current mailing address is:

*Call Box 9000, Mayagüez, P.R. 00681-9000*

**2. We identified a discrepancy in the spelling of the University Chancellor's name, where it is spelled "John Fernandez-Van Cleve" on the application (NRC Form 313) and in section "A" of the application; however, the spelling in section "B" of the application is "John Fernandez-Van Cleave". Please respond with the correct spelling.**

Answer to item 2:

The correct name of the University of Puerto Rico- Mayaguez Campus (UPRM) Chancellor is **John Fernández-Van Cleve**. The spelling in section "B" of the application is incorrect.

**3. Item 3 of your application, "Address where licensed material will be used or possessed," did not include "College Station, Mayagüez." This location is listed as a location of use on your current license. Please either state that this location is to remain on the license or provide evidence that the location is acceptable for unconditional release in accordance with 10 CFR 30.36.**

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Answer to item 3:

The street address described as "College Station" as shown in the last version of the license is no longer in use. Thus, the renewal application eliminates the words "College Station".

According to the NUREG 1556 vol.7, the address where the license material will be used or possessed should *"specify the street address, city, and state or other descriptive address for each facility at which licensed material will be used or stored (e.g., include locations for field studies or other off-site locations; list activities to be conducted at each location)"*. In that matter, the street address is included in the renewal application. The street address is:

University of Puerto Rico- Mayagüez Campus, 259 Alfonso Valdez Boulevard, Mayagüez, P.R. 00680 and Isla Magueyes- Marine Sciences Department, Road 304 at the end, Lajas P.R. 00667.

All of our licensed materials has been always used or stored in the same location, thus no further changes has been made and the location is in accordance with the 10 CFR 30.36 for unconditional release.

**4. Item 8 of your application, "Training for Individuals working in or frequenting restricted areas" states the requirements for personnel training prior to use of radioactive materials. NUREG-1556, Volume 7, Section 8.8, states that the applicant must provide a description of the radiation safety training program including the frequency of training. Please provide the frequency of refresher training for individuals working in or frequenting restricted areas.**

Answer to item 4:

The Radiation safety Officer (RSO) has reviewed the Radiation Safety Regulation Manual (RSRM) for details about the refreshing training program at UPRM. The RSRM does not provide guidelines for training frequency or refresher training for individuals working in or restricted areas. Even so, trainings were conducted prior the personnel begin to work in the area and two refreshers were performed. To comply with the NUREG-1556, Vol. 7, section 8.8, we will describe in the RSRM the frequency of the trainings and we will provide the training as stated in the Appendix A.4.

The Appendix A.4 will be added to the RSRM and will read as follow:

**A.4 Frequency**

***New personnel (support workers, technicians, students, supervisory personnel and other similar personnel) in restricted areas will receive training prior begin to work in a restricted area and prior to use radioactive material. A refresher training will be provided every other year.***

**5. Item 11 of the application, regarding radioactive waste decay-in-storage, states that "Ten half-life spans must pass in order to consider the waste as non-radioactive."**

**a. Item 11 of NUREG-1556, Volume 7, states that such waste may be disposed of as ordinary trash if radiation surveys of the waste at the end of the holding period indicate that radiation levels are indistinguishable from background. Please verify that the University will perform radiation surveys of waste material and that radiation levels will be indistinguishable from background prior to discarding any material as non-radioactive trash.**

**b. The NRC will allow radioactive waste with half-lives of less than or equal to 120 days to be held for decay-in-storage for a period of time less than 10 half-lives, as long as a survey is performed at the end of the holding period as described above, and the radiation levels are indistinguishable from background. Confirm if you wish to change your procedure so that you do not have to hold the waste for 10 half-lives as specified in your application.**

**Answer to item 5:**

- a. Radiation surveys of waste material are performed at the end of the holding period. Radiation levels are recorded and only waste material with radiation levels equal to background levels are considered and treated as non-radioactive trash.**
- b. The RSO Office want to confirm that the procedure for radioactive waste disposal will be changed for decay-in-storage for a period of time less than 10 half-life, as long as a survey is performed at the end of the holding period, and the radiation levels are indistinguishable from background.**

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Therefore, the section B.4.12. (1) b and B.4.12.(1) c of the RSRM will be re-write to read as follows:

***b) The user will contact the RSO or his/her designee once the container is full. The container will be transferred to the Central Radioactive Waste Storage and the RSO or her/his designee will keep the record of transferred containers and will analyze an aliquot of the container in order to determine the activity.***

***c) The radioactive liquid waste with half-lives of less than or equal to 120 days will be held for decay-in-storage for a period of time less than 10 half-lives as long as the survey performed at the end of the holding period shows radiation levels indistinguishable from background. Waste with radiation levels equal to background levels will be considered and treated as hazardous or non-hazardous waste. A record of the disposal will be held by the RSO.***

The section B.4.12. (2) e and B.4.12 (2) f of the RSRM will be re-write to read as follows:

***e) The radioactive solid waste with half-lives of less than or equal to 120 days will be held for decay-in-storage for a period of time less than 10 half-lives as long as the survey performed at the end of the holding period shows radiation levels indistinguishable from background.***

***f) Solid waste of radioactive materials with half-life of more than 120 days will be disposed through the services of a radioactive waste management company.***

**6. Section 9, Item 2 of your application states that "Dosimetry will be required whenever the RSO deems it necessary." Please provide a response to NUREG-1556, Volume 7, Section 8.10.4, "Occupational Dose," which states that the applicant must provide either:**

**a. A statement that: "We have done a prospective evaluation and determined that unmonitored individuals are not likely to receive, in 1 year, a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20," or "We will monitor individuals in accordance with the criteria in the section, 'Radiation Safety Program—Occupational Dose' in NUREG-1556, Volume 7, Revision 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Academic, Research and Development and Other Licenses of Limited Scope;" or**

**b. A description of an alternate method for demonstrating compliance with the referenced regulations.**

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Answer to item 6:

In order to keep occupational radiation exposure *As Low As Reasonably Achievable* (ALARA) and comply with the Annual Radiation Dose Limits, the UPRM will continue to monitor occupational radiation exposure for those workers who use radiation sources under certain conditions, in accordance with the criteria in the section, 'Radiation Safety Program-Occupational Dose' in NUREG-1556, Volume 7, Revision 1, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Academic, Research and Development and Other Licenses of Limited Scope'.

The RSRM does not provide specific guidelines for the monitoring program, thus the RSO Office and the Radiation Safety Committee will be working to include a section in the RSRM with specific guidelines in accordance with the above criteria.

**7. If licensed materials are to be used in animals, please submit:**

- a. a description of the animal housing facilities,**
- b. a description of the training that will be provided to individuals caring for animals containing licensed materials, and**
- c. a copy of the instructions provided to animal caretakers for handling of animals, animal waste carcasses, and cleaning and decontamination of animal cages.**

**Appendix H of NUREG-1556, Volume 7 addresses considerations for laboratory animal uses and may be helpful to you in developing a response.**

Answer to item 7:

Licensed materials are not used for animal studies in our facilities. Any future use of licensed materials in animals, if so, must be first evaluated by the Radiation Safety Committee and must comply with all NRC requirements and its approval.

**8. 10 CFR 20.2003(a)(1) requires that a licensee may discharge licensed material into sanitary sewerage if the material is readily soluble (or is readily dispersible biological material). Information Notice 94-07 (enclosed) provides methods for determining compliance with this requirement which are acceptable to the U.S. Nuclear Regulatory Commission.**

**Please review Information Notice 94-07 and provide specific information as to how you will assure that your releases to the sanitary sewerage system will meet the solubility criteria in 10 CFR 20.2003(a)(1). If you wish, you may indicate**

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**that you will use one of the methods described in Information Notice 94-07 (web-link below). Otherwise, describe your alternative methodology including the models, calculations, analytical techniques, and quality control measurements as well as the records that will be maintained. In addition, provide calculations to show compliance with 10 CFR 20.2003(a)(2)(3)(4) and confirm that records will be maintained of all disposals made into the sanitary sewage system.**

Answer to item 8:

The UPRM policy establishes that radioactive waste is not allowed to be discharged into the sewage system under any circumstances. All the radiation waste is accumulated and transferred to the Central Radioactive Waste Storage. Thus, the Appendix B.4.1 of the RSRM will be re-written as follows:

***No person shall discharge any radioactive waste into the city sewage system without the approval of the RSO.***

**9. Section B.3.2 of the University's "Radiation Safety Regulations Manual" provided with your application states that the RSO will perform an inventory at least once per year. Condition 16 of your license requires an inventory of sources every six months. Confirm that you will perform an inventory every six months and describe how you will ensure that you will not exceed your possession limits if you are conducting an inventory of unsealed material only once a year.**

Answer to item 9:

Although our RSRM states that the RSO will perform an inventory at least once per year, the RSO is performing the inventory of sources and unsealed materials every six months.

In order to be consistent with the condition 16 of the material license, the RSRM at Section B.3.2 will be re-write as follows:

***The RSO will make inventory checks at least every six months in order to determine the quantities and conditions of sealed sources, isotopes in stock, and the activities remaining...***