



December 14, 2009

Docket No. 030-38182
Control No. 144281

License No. 47-23035-03

Christopher Colenda, M.D.
Chancellor
West Virginia University
P.O. Box 9006
Morgantown, WV 26506

SUBJECT: WEST VIRGINIA UNIVERSITY, REQUEST FOR ADDITIONAL INFORMATION
CONCERNING APPLICATION FOR NEW LICENSE, CONTROL NO. 144281

Dear Dr. Colenda:

This is in reference to your application dated November 2, 2009 applying for a Nuclear Regulatory Commission license. In order to continue our review, we need the following additional information:

1. The requirement in 10 CFR 30.35(b)(1) requires you to provide financial assurance and a decommissioning funding plan (DFP) for the quantities of unsealed byproduct materials with half-lives greater than 120 days that you are authorized to possess. Your DFP must include a decommissioning cost estimate and financial assurance for the estimated amount. The NUREG-1757, Volume 3, "Consolidated NMSS Decommissioning Guidance; Financial Assurance, Recordkeeping, and Timeliness" (NUREG-1757, Volume 3) provides guidance in Chapter 4. The current NUREG-1757, Volume 3 guidance can be found on the NRC website using the following URL:
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757/v3/>

You may wish to avoid providing a DFP by requesting a license amendment which will reduce your possession limits for unsealed byproduct material of half-life greater than 120 days in the following or similar manner: If only one such isotope is possessed, the quantity possessed will be maintained at a quantity less than or equal to 10^5 times the applicable quantity in Appendix B of Part 30. For a combination of such isotopes, where R is defined as the sum of ratios of the quantity of each isotope to 10^5 times the applicable quantities in Appendix B, R shall not exceed 1 (unity rule). This would limit your requirement for financial assurance to \$1,125,000 in accordance with 10 CFR 30.35(d). However, because the possession limits of your license are over this limit, you must justify why the reduced amounts are sufficient for your activities.

2. The description of the training and experience for Makary Denjen and Jon Lint includes only those activities involving operation of the cyclotron, which is outside of NRC's jurisdiction. In accordance with Section 8.7.2 of NUREG-1556, Vol. 21, provide details of the pertinent training and experience Makary Denjen and Jon Lint have received with respect to the handling of accelerator-produced materials. The description of the use of

licensed materials, including the activated targets and activated products, should include the specific radionuclides handled, the maximum quantities of materials handled, where the experience was gained, the duration of the experience, and the types of uses.

3. In accordance with NUREG-1556, Volume 21, Section 8.9. "Facilities and Equipment," provide diagram(s) and a description of the areas assigned for the production of radioactive materials, which includes transfer, storage, preparation, shipping, security, and measurements.
4. In accordance with NUREG-1556, Volume 21, Section 8.9. "Facilities and Equipment," provide diagrams of your facility that show the locations of delivery lines, shielded areas and equipment (hot cells, waste storage bunkers, materials storage vaults, etc), the proximity of radiation sources to unrestricted areas, and other items related to radiation safety (target transfer lines, radiation monitors, restricted areas, etc).
5. In accordance with NUREG-1556, Volume 21, Section 8.9, "Facilities and Equipment," provide a diagram of the ventilation system, including ventilation for equipment such as hot cells, glove boxes or fume hoods; air supply and exhaust lines; and filtration and monitoring systems. Describe pertinent air flow rates, differential pressures, and/or performance to be achieved. In addition, verify that the ventilation systems ensure that effluents are ALARA, that effluents are within the limits of 10 CFR 20.1301, and that effluents are in accordance with within the ALARA constraints for air emissions established in 10 CFR 20.1101(d).
6. Item 8.10.6 of your application describes your emergency procedures. In accordance with NUREG-1556, Volume 21, Section 8.10.6, confirm that you will develop written emergency procedures to use for accelerator-specific emergencies, such as target failures, malfunctions of transfer lines, malfunctions of air supply or exhaust systems, or alarms or other identification of high radiation levels in exhaust monitors or systems.

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 **Regulations, Guidance, and Communications**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 7:00 a.m. to 6:30 p.m. EST, Monday through Friday (except Federal holidays).

We will continue our review upon receipt of this information. Please reply to me at the Region I Office and refer to Mail Control No. 144281. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5040.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we will assume that you do not wish to pursue your application.

C. Colenda

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Sincerely,

Original signed by Elizabeth Ullrich

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

cc:
Nasser Razmianfar, Radiation Safety Officer

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