UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

December 16, 2020

Scott Strobel, Provost
Yale University Radiation Safety Section - OEHS
135 College Street,
First Floor Suite 100
New Haven, CT 06510-2411

SUBJECT: YALE UNIVERSITY RADIATION SAFETY SECTION – OEHS, REQUEST FOR ADDITIONAL INFORMATION, MAIL CONTROL NO. 623549

Dear Mr. Strobel:

This request for additional information is in reference to your letter dated October 26, 2020, requesting to amend NRC License No. 06-00183-03. In order to continue our review, we need the following additional information:

1. Your amendment request sought to simplify the wording of your possession limits by replacing specified radionuclides with a generic authorization of "Any byproduct material with atomic numbers 84-96" (Request 1). However, the list of radionuclides being replaced under Request 2 included both byproduct and the following source material: Th-228, -229, -230, 232 and U-232, 234, 236 and DU. 10 CFR 40 defines source material as "(1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material." Special nuclear material is defined as "(1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material; or (2) any material artificially enriched by any of the foregoing." As such, please confirm either of the following:

    a. Confirm that you are seeking to remove all source material authorization from the license and condense the specified list of authorized materials to only include byproduct material with atomic numbers 84-96; **OR**

    b. Confirm that you are seeking to retain the authorization to use and possess the previously approved source material and simply remove the byproduct material contained in the list of specified isotopes; **OR**

    c. Confirm you are seeking to increase both the byproduct and source materials with atomic numbers 84-96. Please note that if you are seeking to increase the possession limits of the source material to 20 mCi per radionuclide and 200 mCi total, you would cross the threshold for requiring financial assurance for source material as well. Please refer to 10 CFR Part 40.36 concerning financial

assurance and record keeping for decommissioning for source material.

2. Your amendment request included a request to significantly increase the authorized possession limits for the impacted radionuclides and expand these higher limits to any byproduct material with atomic numbers 84-96. This action would include significant increases on both on the individual radionuclide level and the total authorization across the entire group. Please provide an explanation for the requested increase in unsealed material possession limits for byproduct materials with atomic numbers 84-96.

3. In conjunction with evaluating your amendment request expanding possession limits and authorized radionuclides, your financial assurance which is currently detailed and approved under the cover letter dated August 31, 2020 (ML20254A308) will need to be reevaluated. For example, your certification of financial assurance lists the specific radionuclides covered by the financial assurance under the broad scope license. Your financial assurance must be bound by the most limiting cases that would be authorized under the proposed wording. This applies not only to determining whether a site-specific decommissioning funding plan is required but also in meeting the criteria which permit licensees to demonstrate compliance with the unrestricted release dose criterion for license termination (ML082460902). The screening values for decommissioning release for unrestricted use under the proposed expansion of authorized radionuclides and increased possession limits may be far more restrictive than your current requirements, such as with Np+ daughters, Am radionuclides, and Cm radionuclides, all of which have screening values with total residual contamination levels ranging from 20-30 disintegrations per minute per 100 square centimeters area. This may result in significant changes in the assumptions of your decommissioning funding plan (as well as action levels during use).

4. With respect to your request to alter Condition 10 of your license to better signify the intended and approved locations of use and storage, please note that a single location must be contiguous. As such, please confirm the following:

    a. Confirm that your intent was to list your approved locations of use and storage as Yale University's Main Campus, Yale University's Medical School Campus, and Yale University's West Campus; **AND**
    b. Confirm that you are seeking no changes concerning the Connecticut Mental Health Center, 34 Park Street New Haven, CT under Condition 10.A or the William Wirt Winchester Building, 25 York Street, New Haven, Connecticut under Condition 10.B.

We will continue our review upon receipt of this information. Please reply to the attention of Jonathan Pfingsten at Jonathan.Pfingsten@nrc.gov referencing Mail Control No. 623549.

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

An electronic version of the NRC's regulations is available on the NRC Web Site at: www.nrc.gov. Additional information regarding use of radioactive materials may be obtained on the NRC Web Site at: http://www.nrc.gov/materials/miau/mat-toolkits.html. This site also provides the link to the toolbox for updated information on the revised regulations for naturally-occurring and accelerator-produced radioactive materials (NARM).

NRC's Regulatory Issue Summary (RIS) 2005-31 provides criteria to identify security-related sensitive information and guidance for handling and marking of such documents. This ensures that potentially sensitive information is not made publicly available through ADAMS, the NRC's electronic document system. Pursuant to NRC's RIS 2005-31, and in accordance with 10 CFR 2.390, this letter is exempt from public disclosure because its disclosure to unauthorized individuals could present a security vulnerability. The RIS may be located on the NRC Web Site at: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2005/ri200531.pdf and the link for frequently asked questions regarding protection of security-related sensitive information may be located at: http://www.nrc.gov/reading-rm/sensitive-info/faq.html.

If you have any questions regarding this request for additional information, please contact me at 610-337-5040 or via electronic mail at Elizabeth.Ullrich@nrc.gov.

Thank you for your cooperation.

Sincerely,

Elizabeth Ullrich Digitally signed by Elizabeth Ullrich
Date: 2020.12.16 06:36:43 -05'00'

Betsy Ullrich, Senior Health Physicist
Commercial, Industrial, R&D
and Academic Branch
Division of Nuclear Materials Safety
Region I

License No. 06-00183-03
Docket No. 030-00582
Mail Control No. 623549

cc: Tammy J. Stemen, Radiation Safety Officer

YALE UNIVERSITY RADIATION SAFETY SECTION – OEHS, REQUEST FOR ADDITIONAL INFORMATION, MAIL CONTROL NO. 623549 DATED DECEMBER 16, 2020

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