

**From:** [Lawyer, Dennis](#)  
**To:** [Simpson, Paul D. \(CDC/OCOO/OSSAM\) \(pds1@cdc.gov\)](mailto:pds1@cdc.gov)  
**Subject:** U.S. Department of Health & Human Services, Request for Additional Information Concerning Application for a License Amendment, Control 588982  
**Date:** Thursday, November 05, 2015 1:41:00 PM

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Dear Mr. Simpson,

This is in reference to your letter dated September 24, 2015, requesting for amendment to Nuclear Regulatory Commission License No. 10-06772-01, Docket No. 03004001. In order to continue our review, we need the following additional information:

1. In section 2.1 you stated that the quantities of natural thorium and natural uranium you possessed were exempted from specific licensing during 2001-2007 and therefore they are considered not relevant to this decommissioning. This material was generally licensed under Part 40. 10 CFR 40.22(d) states "Any person who receives, possesses, uses, or transfers source material in accordance with the general license granted in paragraph (a) of this section is exempt from the provisions of parts 19, 20, and 21 of this chapter to the extent that such receipt, possession, use, and transfer are within the terms of this general license, except that such person shall comply with the provisions of §§ 20.1402 and 20.2001 of this chapter to the extent necessary to meet the provisions of paragraphs (b)(2) and (c) of this section. However, this exemption does not apply to any person who also holds a specific license issued under this chapter." Note that your license is a specific license issued under Part 40. Please note that the isotopes of concern associated with natural uranium and thorium were placed in the calculation and so we do not expect any response from this item.
2. Please confirm that carbon 14 is not a nuclide of concern. This commonly used isotope was used at the facility but seems to be missing from your list of nuclides of concern.
3. Table 5-1 does not list the Equivalent Surface Contamination Limit as described in your letter.
4. Table 5-3 does not include isotopes Ce-139 and Eu-152 which were isotopes of concern listed in Table 5-1. Please perform the calculations and give the Table 5-3 information.
5. There are several questions associated with Section 8, Survey Instrumentation:
  - A. Not enough specific information is given to verify estimated MDC and determine proper alpha scan rate. Please submit the variables and inputs associated with total efficiency with beta and alpha counts.
  - B. Specifically for alpha scans rates, please give the determination of detector efficiency, surface efficiency with consideration of self-shielding, dimensions of the detectors, and if the detector is not square, the dimension that the

probe transverses.

- C. For alpha, how is the geometry of the source to the detector, when efficiency is determined during calibration, as compare to the geometry in the field? If there is a difference, how is this variation (if any) compensated?
  - D. It appears that the total surface activity for alpha does not appear to include a self-shielding factor. The surface efficiency appears to be 0.5. Please discuss the basis for this surface efficiency for alpha contamination.
  - E. The alpha counting MDC shown is not less than 50% of the alpha DCGL as stated in the DQO of section 17.2. Please state how the alpha DCGL MDC will be obtained.
  - F. Table 8-2 appears to show an alpha scan MDC of 10 dpm/100 cm<sup>2</sup> which is below the MDC of a fixed one minute count and thus does not appear to be accurate. Please provide the additional information and explanation or correction of the tables.
  - G. Table 8-2 uses scan rates of 0.5 inches per second and 2.5 inches per second. Section 17.0 states the scan rates are 1 centimeter per second and 5 centimeter per second. Please provide the table with the calculation using the scan rate that are planned to be performed.
6. Section 17.2 Data Quality Objectives states that the MDC static of less than 50% of the DCGL. This is normally acceptable, however the three DCGL calculations need to be combined as stated in section 5.3.2.3. With the given unity calculation and the stated MDC, there is potential that 10 CFR 20 subpart E release criteria could be exceeded without the survey plan identifying the condition. Please adjust the Data Quality Objective to compensate for this condition.
  7. Please provide a simple diagram of the different survey units and building structures for clarity of the area.
  8. Section 17.8.4 Determination of Number of Data Points states how to determine the number of data points but does not provide the number of points you intend to use nor does is give the specific variable values used in the calculation. Please provide the inputs to the calculation and the number of points for each survey unit that will be performed.
  9. Section 17,8.4 states that the contamination is not present in background at significant levels. It then further states that material specific background is ignored and the Sign Test was chosen. (Also see question 12.) However section 17.6, Background Determination, goes into length about how material specific backgrounds are determined. Please clarify which method is needed for this survey as the scoping survey should have determined which condition existed.
  10. Section 17.10 describes survey investigative levels. Please provide the survey scan

steps in performing alpha scan surveys and what a surveyor's actions is to perform if two alpha counts are obtained over the same approximate area.

11. Section 17.11 Unity calculations did not include the gamma DCGL as show in section 5.3.2.3 section of your application. Please confirm that section 5.3.2.3 unity calculation will be used.
12. Section 18.3 states that the Sign Test is unnecessary thus it is unclear why it is discussed in earlier sections. Please confirm if the sign test will be used or not.
13. Section 18.4 states, "If any measurement exceeds the applicable DCGL, then the survey unit does not meet the release criterion and is considered contaminated." It is unclear how (section 18.5) a given survey unit satisfies the  $DCGL_w$  and the elevated measurement comparison if any sample points exceeded the  $DCGL_w$  could exist.
14. Please provide a copy of all the input parameters, the output files, and the sensitivity analysis performed of the limiting radionuclides from RESRAD-BUILD.

Please reply to my attention at the Region 1 Office (Address below) and refer to Mail Control No. 588982. If you have technical questions regarding this letter, please call me at (610) 337-5366.

*Please note that you may not reply to this letter by return e-mail. Your reply must be in writing by letter, facsimile (610-337-5269), or signed letter attached to an email. If we do not receive a reply from you within 30 calendar days from the date of this e-mail, we will assume that you do not wish to pursue your application.*

Region 1 Office Mailing Address: Licensing Assistance Team, US Nuclear Regulatory Commission Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406-2713.

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