

From: [Poston-Brown, Martha](#)
To: jcruz@usgs.gov
Cc: [Torres, Roberto](#)
Subject: Request for additional information - Building 21 at Denver Federal Center
Date: Tuesday, June 30, 2020 3:58:00 PM

ML20182A901

Mr. Cruz –

Good afternoon. I have been reviewing the information submitted for the release of Building 21 at the Denver Federal Center and need to request some additional information to allow me to complete my review. The details of each request for information (RAI) and its basis are provided below.

RAI - 1

Description of Deficiency

The April 29, 2020 submittal (ADAMS Accession No. ML20120A612) failed to provide information on the alpha survey meter used to complete the most recent survey of Building 21. Specifically, the submittal did not have the following information: calibration certificate for the alpha meter, documentation establishing the efficiency of the alpha meter, and information providing and supporting the minimum detectable concentration for the alpha meter.

Basis for Request

Title 10 Code of Federal Regulations (CFR) 30.36 (j) states in part “the licensee shall... specify the survey instrument used and certify that each instrument is properly calibrated and tested”.

The missing information must be provided to allow for NRC technical staff to review the survey results for accuracy and to ensure that the minimum detectable activity for the instrument used is not greater than the release criteria established for the facility being surveyed for removal from the license. The calibration data and efficiency documentation are required to support the use of the instrument.

RAI – 2

Description of Deficiency

The documents submitted for the release of building 21 are not consistent on the alpha release criteria. The application for the amendment submitted January 27, 2015, (ADAMS Accession No. ML15041A768) requested use of 1000 dpm/100 cm² for beta and 200 dpm/100 cm² for alpha. The addendum to the application dated November 30, 2018 (ADAMS Accession No. ML19077A357) requested to change the values to those in Appendix B in NUREG-1757 Volume 1, Revision 2. Appendix B to NUREG-1757 refers the user to NUREG 5512, Volume 3 Table 5.19 for contaminants of concern (CoC) (such as U-235 (SNM) +C) which do not have values in Appendix B of NUREG 1757 Volume 1. The alpha release criteria under this scenario for U-235 (SNM) + C is 1.48 dpm/100 cm². Your email dated April 22, 2020 (ADAMS Accession No. ML20120A612) indicated you wanted to use the value for natural uranium (U_{nat}) established for Building 20 of 83.6 dpm/100 cm². However, U_{nat} was not listed as a CoC in the licensee’s March 3, 2019 submittal.

Basis for Request

Title 10 CFR 30.36(j) requires, in part, that “a license shall conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey.” Furthermore, this part requires that licensees “report levels of radioactivity, including alpha and beta in units of MBq (dpm or μCi) per 100 cm^2 – removable and fixed.”

Please specify the alpha release criteria to be used. If you intend to use the $83.6\text{ dpm}/100\text{ cm}^2$ value modeled for Building 20 as stated in your April 22, 2020 email, please provide a justification for the use of a U_{nat} value, as U_{nat} was not identified as a CoC for Building 21 in the original submission dated March 3, 2019 (ADAMS Accession No. ML19077A357). The justification should include details on why the values from NUREG-5512 Volume 3 Table 5.19 should not be used.

RAI-3

Description of Deficiency

Surveys of the alpha contamination in Building 21 submitted on January 6, 2020 and April 22, 2020 in response to NRC’s rejection of the release for Building 21 only include 25 static samples.

Basis for Request

The survey submittal dated November 30, 2018 (ADAMS Accession No. ML19077A357) provided conflicting information associated with the number of static measurements that would be collected. Using ML19077A357 as your reference: 1) page 326, Section titled “Introduction”, 2nd paragraph states – “static measurements were taken of each floor at 15 specific locations within each of the B-wing and A-wing laboratories.” Since, there are 9 laboratories being released that would be 135 static measurements; 2) page 332 Section 2.2.7 third paragraph, second sentence indicated that the “number of static samples was set at 15 for each survey unit.” The survey units contained multiple labs but there were only 5 survey units – that would be 75 static measurements.; and, 3) The survey information submitted was 105 static measurements. These 105 static measurements consisted of two 15 static samples for each survey , except the Class 3 hallway survey unit which was one unit of 15 for the walls and a second unit of 15 for the floors. The reduction from 105 static survey units to 25 static survey units resulted in no alpha information being provided for the following labs and sample locations: 1) B1101; 2) B1102/1106; B1103; 4) B1105; 5) B1107; 6) B1108; 7) The background labs B1116 and B1117 and 8) The hallways along the B-wing labs (represented by sample locations H6-H15). These areas not sampled represent approximately half of the survey units.

Please explain how the alpha resurvey was reduced to 25 static measurements and why there was not a need to do all 105 measurements as conducted previously. Please also explain why new background locations were selected and used in the alpha surveys rather than the original B1116 and B1117 background locations. The justification for the use of these new background location is of particular importance as the new background locations appear to be elevated, especially for painted drywall.

Please respond to this email requesting additional information within 15 days of receipt of this email. Due to COVID-19, the NRC is on maximum telework, therefore your response should be submitted via email. My email is provided below in the signature block. Please also let me know if you have any questions or require clarification of my request. Thank you.

Marti

Martha (Marti) Poston-Brown

Health Physicist

Materials Licensing and Decommissioning Branch

Division of Nuclear Materials Safety

USNRC Region IV

Martha.Poston-Brown@nrc.gov