

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Wednesday, June 07, 2017 12:58 PM
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Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Burkhart, Lawrence; Markley, Anthony; Lavera, Ronald
Subject: Request for Additional Information No. 55, RAI 8860
Attachments: Request for Additional Information No. 55 (eRAI No. 8860).pdf

Attached please find NRC staff's request for additional information concerning review of the NuScale Design Certification Application.

Please submit your response within 60 days of the date of this RAI to the NRC Document Control Desk.

If you have any questions, please contact me.

Thank you.

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Request for Additional Information No. 55 (eRAI No. 8860)

Issue Date: 06/07/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 12.02 - Radiation Sources

Application Section: 12.2

QUESTIONS

12.02-2

10 CFR 52.47(a)(5) requires applicants to identify the kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radiation exposures. 10 CFR 20.1101(b) and 10 CFR 20.1003, require the use of engineering controls to maintain exposures to radiation as far below the dose limits in this part as is practical. 10 CFR Part 50 Appendix A, criterion 4 requires applicants to identify the environmental conditions, including radiation, associated with normal operation. The DSRS Acceptance Criteria section of NuScale DSRS section 12.2 "Radiation Sources," states that the applications should contain the methods, models and assumptions used as the bases for all sources described in DCD Section 12.2.

NuScale DCD Tier 2, Revision 0 Figure 12.3-2a, "Radioactive Waste Building Radiation Zone Map - 71' Elevation," shows that the "Class A/B/C HICS Storage Area," (Room 030-034 per DCD Figure 1.2-28, "Radioactive Waste Building 71'-0" Elevation",) as a Radiation Zone VII. DCD Tier 2 Revision 0 Table 12.3-1, "Normal Operation Radiation Zone Designations," shows that areas designated as radiation zone VII have dose rates ≥ 500 Rad/hr, with no upper limit specified.

DCD Tier 2, Revision 0 subsection 12.2.1.7, "Solid Radioactive Waste System," states that the assumed values used to develop the solid radioactive waste system (SRWS) source terms are listed in Table 12.2-18. DCD subsection 12.2.1.7 also states that Table 12.2-19, "Solid Radioactive Waste System Component Source Terms – Radionuclide Content," lists the radionuclide inventory of the major SRWS components and Table 12.2-20, "Solid Radioactive Waste System Component Source Terms – Source Strengths" lists the SRWS component source strengths. However, there is no mention of the "Class A/B/C HICS Storage Area," in DCD Table 12.2-18, Table 12.2-19 or Table 12.2-20.

The radionuclide concentrations listed in DCD subsection 12.2 are the basis of the information used to establish plant source terms, consistent with NuScale DSRS 12.2 Acceptance Criteria, which states that all of the sources of radiation exposure to workers and members of the public (from contained sources) are identified, characterized, and considered in the design and operation of the facility. This section of the DSRS also states that unless described within other sections of the FSAR, source descriptions should include the methods, models, and assumptions used as the bases for all values provided in FSAR Section 12.2. These acceptance criteria are consistent with the relevant requirements of 10 CFR Part 20 and 10 CFR Part 50 and 10 CFR Part 52. Therefore, the staff is requesting the applicant to revise and update section 12.2 of the NuScale DCD to:

- Provide the radionuclide content of the material used to classify the "Class A/B/C HICS Storage Area," (Room 030-034) as a radiation zone VII,
- Provide the methods, models and assumptions, used to develop the assumed radionuclide concentrations, and associated basis
- Provide the dimensions and configuration (e.g., single layer of storage) of packages stored within the room,
- Identify whether drums from the drum dryer facility are allowed to be stored within this area,
OR
- Provide the specific alternative approaches used and the associated justification.