NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, February 02, 2018 9:28 AM
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Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Hansing, Nicholas; Lupold, Timothy; Bavol, Bruce
Subject: Request for Additional Information No. 358 RAI No. 9335 (5.2.1.1)
Attachments: Request for Additional Information No. 358 (eRAI No. 9335).pdf

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

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

The NRC Staff recognizes that NuScale has preliminarily identified that the response to one or more questions in this RAI is likely to require greater than 60 days. NuScale is expected to provide a schedule for the RAI response by email within 14 days.

If you have any questions, please contact me.

Thank you.

Gregory Cranston, Senior Project Manager
Licensing Branch 1 (NuScale)
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
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Request for Additional Information No. 358 (eRAI No. 9335)

Issue Date: 02/02/2018
Application Title: NuScale Standard Design Certification - 52-048
Operating Company: NuScale Power, LLC
Docket No. 52-048
Review Section: 05.02.01.01 - Compliance With the Codes and Standards Rule, 10 CFR 50.55a
Application Section: 5.2.1.1

QUESTIONS

05.02.01.01-7

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a, certain systems and components of the NuScale Small Modular Reactor (SMR) design are to meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) as well as additional conditions promulgated in 10 CFR 50.55a. These requirements help ensure that facilities will also meet the requirements of 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 1 such that structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety function to be performed.

During a clarification call on September 15, 2017, NuScale and the NRC staff discussed the information requests in RAIs 8914 and 8917, which involved compliance with the Codes and Standards Rule and the use of ASME Code Cases. Part of this discussion pertained to the need for NuScale to provide sufficient information to make the necessary safety findings for all components within the scope of SRP 5.2.1.1.

At this time, the NRC staff has not received adequate information to address the full scope of components subject to the Codes and Standards Rule, 10 CFR 50.55a. Specifically, NuScale has discussed the components of the reactor coolant pressure boundary in their responses to RAI 8914, but has not adequately described the requirements for non-RCPB components, which is necessary to make the necessary safety findings for SRP 5.2.1.1. This follow-up RAI is issued to request a supplement to certain topics discussed in RAI 8914 that require additional information to fully address the scope of components subject to the Codes and Standards Rule, 10 CFR 50.55a.

The response to Question 30096 (05.02.01.01-5) requires additional information, as there is no statement in the DCD indicating that Quality Group B and C components meet the applicable conditions promulgated in 10 CFR 50.55a(b). Section 3.2.2.2 and 3.2.2.3 of the DCD indicate that Quality Group B and C SSCs meet the requirements for Class 2 and Class 3 components in Section III, Division 1 of the ASME B&PV Code, respectively, but is silent on meeting the applicable conditions promulgated in 10 CFR 50.55a(b), which is a regulatory requirement. The applicant is requested to confirm within the DCD that Quality Group B and C components are designed, fabricated, constructed, tested, and inspected as Class 2 and 3 (respectively) in accordance with Section III, of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) and meet the applicable conditions promulgated in 10 CFR 50.55a(b).

The response to Question 30098 (05.02.01.01-6) requires additional information, as there is no affirmative confirmation that there are no proposed alternatives to compliance with 10 CFR 50.55a with regards to Quality Group B and C components. NuScale's RAI response only discussed RCPB components. Staff must confirm that there are no proposed alternatives to 10 CFR 50.55a for Quality Group B and C components in order to make a finding regarding the acceptability of proposed alternatives to compliance with 10 CFR 50.55a. The applicant is requested to confirm within the DCD that there are no proposed alternatives to compliance with 10 CFR 50.55a for Quality Group B and C components in the NuScale design.

The RAI response for RAI 8914, Question 30093 (05.02.01.01-2) indicated that adding statements regarding compliance of ASME Code Section II, Section V, and Section IX to 10 CFR 50.55a is not appropriate because 10 CFR 50.55a does not address these ASME Code Sections. Staff agrees that 10 CFR 50.55a does not directly mention these sections. However, GDC 1 requires structures, systems, and components important to safety to be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. Furthermore, the ASME Code is an integrated set of requirements, with references to other sections interwoven into each section. These references are not incorporated by reference in 10 CFR 50.55a. Therefore, to make a safety finding under 10 CFR 50 Appendix A, GDC 1, the standards used for material selection, examination, and welding need to be established within the DCD. The applicant is requested to identify within the DCD what Codes will be used for construction base materials and welding materials, inspection of structures, systems, and components constructed in accordance with ASME Code Section III, and qualification of welding procedures and welding operators (such as ASME Code Section II, V, and IX, respectively). Staff notes that the response to RAI 8914, Question 30093 (05.02.01.01-2) identified that 'qualification of welding procedures and welding operators to be in accordance with ASME BPVC Code Section IX, "Welding and Brazing Qualifications."' and "the materials selected for fabrication of the RCPB comply with the requirements of ASME BPVC, Section II," so identification of these Codes in the DCD maintains consistency with the original RAI response, but properly expands them to also include non-RCPB components still subject to ASME Code requirements.