

## NuScaleDCRaisPEm Resource

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**Sent:** Friday, August 18, 2017 8:24 AM  
**To:** RAI@nuscalepower.com  
**Cc:** NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Lupold, Timothy; Le, Tuan; Vera Amadiz, Marieliz  
**Subject:** RE: Request for Additional Information No. 184, RAI 8948 (3.2.2)  
**Attachments:** Request for Additional Information No. 184 (eRAI No. 8948).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.

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  
301-415-0546

**Hearing Identifier:** NuScale\_SMR\_DC\_RAI\_Public  
**Email Number:** 207

**Mail Envelope Properties** (263f4a36edaf4e69bb9b312cf70d140a)

**Subject:** RE: Request for Additional Information No. 184, RAI 8948 (3.2.2)  
**Sent Date:** 8/18/2017 8:23:46 AM  
**Received Date:** 8/18/2017 8:23:54 AM  
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**Post Office:** HQPWMSMRS08.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	560	8/18/2017 8:23:54 AM
Request for Additional Information No. 184 (eRAI No. 8948).pdf		99863

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

## **Request for Additional Information No. 184 (eRAI No. 8948)**

Issue Date: 08/18/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 03.02.02 - System Quality Group Classification

Application Section: Section 3.2.2

### QUESTIONS

#### 03.02.02-1

During the review of DCD Tier 2 chapter 19, RAI 8809 Question 19-9 was posed in regard to the regulatory treatment of non-safety systems (RTNSS) process. In this question, the applicant was asked to assess the risk significance of structures, systems, and components with respect to initiating frequencies as stipulated in SRP Section 19.3. As a result of RAI 8809 Question 29743, update DCD Tier 2 Table 3.2-1 to include the classification information of RTNSS components, as applicable.

#### 03.02.02-2

10 CFR 52.47 states the application must contain a level of design information sufficient to enable to the Commission to judge the applicant's proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The staff noted that DCD Tier 2 Table 3.2-1 Column "Augmented Design Requirements" does not completely specify codes and standards for all components. (e.g. the codes and standards to be used for the design, fabrication, erection, and testing of components such as for the Auxiliary Boiler System, Quality Group D, and the reactor vessel internals are not clearly presented in DCD Tier 2 Table 3.2-1.). Include missing codes and standards and clarify which code editions apply to the NuScale design.

#### 03.02.02-3

10 CFR 50.55a and 10 CFR Part 50, Appendix A, General Design Criteria 1 (GDC 1) states that SSCs important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. Where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function. The staff notes that the treatments and design requirements of component supports (i.e. SG tube supports with quality group A, "none" in the Augmented Design Requirements column, RPV Support Stand with quality group C, "none" in the Augmented Design Requirements column) are not completely defined in DCD Tier 2 Table 3.2-1 column of "Augmented Design Requirements". Provide the following:

- The augmented design requirements of SSC quality group classification A, B, C, and D supports to be included in DCD Tier 2 Table 3.2-1.

- Note 4 of DCD Tier 2 Section 3.2, Table 3.2-1 states that “Quality classification per RG 1.26 is not applied to supports or instrumentation.” The staff requests the applicant provide a discussion of why RG 1.26 is not applied to supports or instrumentation and make the correction throughout DCD Tier 2 Table 3.2-1, as appropriate.

#### 03.02.02-4

10 CFR 52.47 states the application must contain a level of design information sufficient to enable the Commission to judge the applicant’s proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The staff notices that Section 5.2.4.1 states that, “The RCPB components subject to inspection are summarized in Sections 3.2 and Section 5.2.1.” However, neither section discusses threaded fasteners that are part of the RCPB. Include a discussion of the classifications of quality group A, B, C, and D fasteners in DCD Tier 2 Sections 3.2 and 5.2.1, as appropriate.

#### 03.02.02-5

10 CFR Part 50, Appendix A, “General Design Criteria for Nuclear Power Plants,” General Design Criterion (GDC) 1, “Quality Standards and Records”; and 10 CFR Part 50.55a, “Codes and Standards,” states that SSCs important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety function to be performed. The staff notices that DCD Tier 2 Section 10.3.6.2 states that Section 3.2 provides the material specification, grade, and classification for piping, valves, fittings, and weld filler material used in the Main Steam System (MSS) and Condensate and Feedwater System (CFWS). The staff finds none of this information is presented in DCD Tier 2 DCD Tier 2 Table 3.2-1. The DCD Tier 2 Section 10.3.6.2 also states that the MSS and CFWS conform to ASME Code B31.1 and are consistent with the quality group and seismic design classifications provided in DCD Tier 2 Table 3.2-1. Include the above information and the design codes into DCD Tier 2 Section 3.2, as appropriate.

#### 03.02.02-6

10 CFR 52.47 states the application must contain a level of design information sufficient to enable to the Commission to judge the applicant’s proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The staff notices that the DCD Tier 2 Table 3.2-1 does not completely provide the classification information of piping systems of SGS, DHRS, ABS, CFWS and UHS. Include the classification information for piping systems of SGS, DHRS, ABS, CFWS and UHS in DCD Tier 2 Table 3.2-1.