

## NuScaleDCRaisPEm Resource

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**From:** Cranston, Gregory  
**Sent:** Tuesday, December 05, 2017 2:18 PM  
**To:** RAI@nuscalepower.com  
**Cc:** NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Mitchell, Matthew; Yeshnik, Andrew; Baval, Bruce  
**Subject:** Request for Additional Information No. 291 RAI No. 9233 (5.2.3)  
**Attachments:** Request for Additional Information No. 291 (eRAI No. 9233).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 this question in this RAI is likely to require greater than 60 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  
301-415-0546

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**Options**

**Priority:** Standard  
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**Expiration Date:**  
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## Request for Additional Information No. 291 (eRAI No. 9233)

Issue Date: 12/05/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 05.02.03 - Reactor Coolant Pressure Boundary Materials

Application Section: 5.2.3.2.1, Reactor Coolant Chemistry

### QUESTIONS

05.02.03-17

On August 3, 2017, the applicant docketed a supplement to the design certification document (Accession No. ML17215A977 in the U.S. Nuclear Regulatory Commission's Agencywide Documents Access and Management System), which included changes to Section 5.2.3.2.1 in Tier 2 of the FSAR, "Reactor Coolant Chemistry." The revised FSAR text was reviewed by the staff and found to be vague. The applicant shall address the following items and provide sufficient justification or sufficient revisions to the FSAR to provide the staff with a licensing basis that the requirements of GDC 4 are met.

- a. In the docketed supplement the applicant added a statement to Section 5.2.3.2.1 that the water chemistry program is "based on" industry guidelines. In this case, the industry guidelines are the Electric Power Research Institute (EPRI) Pressurized Water Reactor Primary Water Chemistry Guidelines (EPRI Guidelines). The applicant does not use consistent terminology regarding the applicability of the EPRI Guidelines. If the applicant's use of the EPRI Guidelines is uniform across systems than, for consistency with other statements in the FSAR, this statement should be revised to make it clear that the water chemistry program is "in accordance with" the EPRI Guidelines. The term "based on" implies that there may be exceptions or alternatives. If there are exceptions or alternatives to the EPRI Guidelines, then they should be identified and justified.
- b. In the docketed supplement the applicant added the following statement to Section 5.2.3.2.1: "The frequency of sampling water chemistry varies (e.g., continuous, daily, weekly, or as needed) based on plant operating conditions and the EPRI water chemistry guidelines." This statement could be interpreted to imply that the frequency of sampling may deviate from the EPRI Guidelines. A different interpretation is that the applicant will follow the EPRI Guidelines which includes guidance on adjusting the sampling frequency based upon the operating mode. Revise the FSAR to clarify the intent of term "based on" in the cited sentence. The applicant may revise this statement to state, for example, "The frequency of sampling water chemistry varies (e.g., continuous, daily, weekly, or as needed) in accordance with the EPRI Guidelines which specify different water chemistry sampling frequencies based on plant operating conditions."