



May 14, 2018

Docket No. 52-048

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

**SUBJECT:** NuScale Power, LLC Response to NRC Request for Additional Information No. 467 (eRAI No. 9382) on the NuScale Design Certification Application

**REFERENCE:** U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 467 (eRAI No. 9382)," dated May 07, 2018

The purpose of this letter is to provide the NuScale Power, LLC (NuScale) response to the referenced NRC Request for Additional Information (RAI).

The Enclosure to this letter contains NuScale's response to the following RAI Question from NRC eRAI No. 9382:

- 10.04.06-7

This letter and the enclosed response make no new regulatory commitments and no revisions to any existing regulatory commitments.

If you have any questions on this response, please contact Carrie Fosaaen at 541-452-7126 or at [cfosaaen@nuscalepower.com](mailto:cfosaaen@nuscalepower.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Zackary W. Rad".

Zackary W. Rad  
Director, Regulatory Affairs  
NuScale Power, LLC

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Enclosure 1: NuScale Response to NRC Request for Additional Information eRAI No. 9382



**Enclosure 1:**

NuScale Response to NRC Request for Additional Information eRAI No. 9382

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## Response to Request for Additional Information Docket No. 52-048

**eRAI No.:** 9382

**Date of RAI Issue:** 05/07/2018

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**NRC Question No.:** 10.04.06-7

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, General Design Criteria (GDC) 14 requires assurance that the reactor coolant pressure boundary (RCPB) have an extremely low probability of abnormal leakage, rapidly propagating failure, and of gross rupture. 10 CFR Part 52.47 requires that a standard design certification submitted for approval under 10 CFR Part 52 shall, “contain a level of design information sufficient to enable the Commission ... to reach a final conclusion on all safety questions associated with the design.” As described below the staff finds that the NuScale application does not include necessary information for the staff to reach a safety finding.

By letter dated October 17, 2017 (ADAMS Accession No. ML17290B235), the NRC issued request for additional information (RAI) Number 9117, Question 10.04.06-1. This question requested that the applicant provide the Action Level limits for control parameters listed in Final Safety Analysis Report (FSAR) Tables 10.3-3a through d (now includes added Table 10.3-3e). The Action Level limits were requested so that the NRC staff could have reasonable assurance that the water chemistry parameters used to control corrosion and demonstrate compliance with GDC 14, will be followed.

In its response dated December 15, 2017 (ADAMS Accession No. ML17349A838), the applicant stated that, “The site specific chemistry program will contain site operating procedures that will define the parameters, frequencies, limits, Action Levels and responses consistent with the current EPRI [Electric Power Research Institute] PWR [Pressurized Water Reactor] Secondary Water Chemistry Guidelines.”

While the staff finds NuScale’s response to defer the specification of Action Levels consistent with the EPRI PWR Secondary Water Chemistry Guidelines to the COL applicant to be generally acceptable, the existing combined license (COL) Item 10.3-1 that requires a COL applicant to develop a site- specific water chemistry program does not explicitly include a requirement to institute Action Levels and the associated required actions. In order for the NRC staff to have reasonable assurance that GDC 14 will be met, the staff requires the COL applicant’s site-specific water chemistry programs to include the Action Levels and associated required actions. The staff requires this information at the time of the COL application in order to make a safety determination regarding secondary water chemistry and GDC 14. Therefore, the staff requests that COL Item 10.3-1 be revised to explicitly include the specification of Action

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Levels and the associated required actions, or that a new COL Item be added to address this issue. The staff notes that the wording of COL Item 10.3-1 should not imply that the Action Levels and required actions are the only elements that need to be included in the site-specific chemistry program.

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**NuScale Response:**

COL Item 10.3-1 states, "A COL applicant that references the NuScale Power Plant design certification will provide a site-specific chemistry control program based on the latest revision of the Electric Power Research Institute (EPRI) Pressurized Water Reactor Secondary Water Chemistry Guidelines and Nuclear Energy Institute (NEI) 97-06 at the time of the COL application."

The staff requested that the COL Item be revised to explicitly include the specification of Action Levels and the associated required actions, but cautioned NuScale that the wording of the COL Item should not imply that the Action Levels and required actions are the only elements that need to be included.

After giving consideration to the staff's request, NuScale determined that it would need to add the bulk of the content from the EPRI document (e.g. Revision 7 consisted of 358 pages) to the COL Item to avoid inadvertently excluding important aspects of the site-specific chemistry program and to avoid implying that the Action Levels and required actions would be the only elements included in the program. NuScale has determined that, with respect to the staff's caution, the COL Item, as written, avoids any adverse implication regarding what aspect of the document NuScale is committing to.

NuScale also considered the staff's request that the COL Item be revised to explicitly include the specification of Action Levels and the associated required actions, or that a new COL Item be added. Section 6.3 of the EPRI document explicitly specifies three Action Levels along with their associated, "shall," required actions. NuScale believes that revising the current commitment as requested does not make it more of a commitment.

In summary, NuScale believes COL Item 10.3-1 is sufficient and adequately commits to EPRI requirements as written.

**Impact on DCA:**

There are no impacts to the DCA as a result of this response.

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