



April 25, 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. 388 (eRAI No. 9220) on the NuScale Design Certification Application

**REFERENCE:** U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 388 (eRAI No. 9220)," dated March 19, 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. 9220:

- 18-22

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 Steven Mirsky at 240-833-3001 or at [smirsky@nuscalepower.com](mailto:smirsky@nuscalepower.com).

Sincerely,

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

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

Distribution: Samuel Lee, NRC, OWFN-8G9A  
Prosanta Chowdhury NRC, OWFN-8G9A  
Demetrius Murray, NRC, OWFN-8G9A

Enclosure 1: NuScale Response to NRC Request for Additional Information eRAI No. 9220



**Enclosure 1:**

NuScale Response to NRC Request for Additional Information eRAI No. 9220

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

**eRAI No.:** 9220

**Date of RAI Issue:** 03/19/2018

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### **NRC Question No.:** 18-22

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 52.47(a)(8) requires an applicant for a design certification to provide an FSAR [Final Safety Analysis Report] which includes the information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), with certain exceptions. Section 10 CFR 50.34(f)(2)(ii) requires an applicant to "Establish a program, to begin during construction and follow into operation, for integrating and expanding current efforts to improve plant procedures. The scope of the program shall include.....human factors engineering..." The current NRC guidance for developing a human factors engineering (HFE) program is NUREG-0711, Rev 3, "Human Factors Engineering Program Review Model."

NUREG-0711 Criterion 4.4(2) indicates that the functional requirements analysis/function allocation Functional Requirements Analysis/Function Allocation (FRA/FA) should be performed iteratively starting during the design phase and kept current through the decommissioning of the plant.

Section 18.3.2 of the Tier 2 document and Section 2.1 of the FRA/FA results summary report both make statements that the processes are performed iteratively throughout the life cycle of the plant, but it is unclear how this responsibility is communicated to a combined operating license (COL) holder and how the FRA/FA analyses will be shared with the COL.

Describe the controls used to ensure that COLs maintain the FRA/FA iteratively throughout the lifecycle of the plant. Clarify how this is possible while using the strategy described in the results summary report (RSR) and no COL items. Additionally, please identify the frequency by which iterations are expected to occur.

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### **NuScale Response:**

Future COL applicants referencing the NuScale design certification will maintain the Functional Requirements Analysis and Functional Allocation (FRA/FA) current in accordance with Regulatory Guide (RG) 1.206, Combined License Applications for Nuclear Power Plants (LWR

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Edition), Part 1, Section C.I.18.3.2.1 "Methodology for Functional Requirements Analysis."

This guidance states:

"The FSAR should describe how the functional requirements analysis will be kept current over the plant's life cycle from design development through decommissioning, so that it can be used as a design basis when modifications are considered."

Updates to the FRA/FA are expected to occur when the NuScale plant design is modified, on an "as needed" basis, and consistent with the annual FSAR update in accordance with 10 CFR 50.71(e). Any future COL holder will use a similar process for its FSAR update, which includes changes to the FRA/FA. Specific plans to accomplish this will be provided in the COL holder's FSAR, in accordance with the guidance in RG 1.206.

**Impact on DCA:**

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