



February 15, 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. 336 (eRAI No. 9289) on the NuScale Design Certification Application

REFERENCE: U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 336 (eRAI No. 9289)," dated January 12, 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. 9289:

- 12.03-10

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.

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. 9289



Enclosure 1:

NuScale Response to NRC Request for Additional Information eRAI No. 9289

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

eRAI No.: 9289

Date of RAI Issue: 01/12/2018

NRC Question No.: 12.03-10

Regulatory Basis

10 CFR Part 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” Section VI.2(a)(i), requires radiation monitoring systems for reactor coolant radioactivity, containment radiation level, condenser air removal radiation level, and process radiation monitor levels. This regulation states that the Emergency Response Data System (ERDS) is a direct near real-time electronic data link between the licensee's onsite computer system and the NRC Operations Center that provides for the automated transmission of a limited data set of selected parameters.

The acceptance criteria of NuScale DSRS Section 12.3-12.4, “Radiation Protection Design Features,” state that compliance with the requirements of 10 CFR Part 50, Appendix E, Section VI.2(a)(i), ensures the provision of accurate and timely data needed to determine core and coolant system conditions well enough to assess the extent or likelihood of core damage and to determine the conditions inside the containment vessel well enough to assess the likelihood and consequence of its failure. The area radiation monitoring system should meet the criteria of 10 CFR 50.34(f)(2)(xvii), 10 CFR Part 50 Appendix E VI.2(a)(i), Item II.F.1(3) of NUREG-0737, RG 1.97 using the NuScale-specific source term.

Background

DCD Tier 2 12.3.4.1, “Design Bases,” states that the radiological monitoring equipment is designed to provide monitoring of plant area and airborne radiation levels for use in the emergency response data system (ERDS), conforming to 10 CFR Part 50, Appendix E, VI.2(a). DCD Section 12.3.4.2, “Fixed Area Radiation Monitoring Instrumentation,” states that fixed area radiation monitoring data is capable of being supplied to the NRC Operations Center through the ERDS via a secure direct electronic data link in the event of an emergency. The ERDS connection is discussed in DCD Section 7.2. DCD Section 12.3.4.3, “Airborne Radioactivity Monitoring Instrumentation,” states that fixed Continuous Airborne Monitors (CAM) data are capable of being supplied to the NRC Operations Center through the ERDS via a secure direct electronic data link in the event of an emergency. The ERDS connection is discussed in DCD Section 7.2.

DCD Section 12.3.4.3 states that Table 12.3-10, “Fixed Area and Airborne Radiation Monitors



Post-Accident Monitoring Variables,” provides information about selected fixed CAMs support accident condition response and are Post-accident monitoring (PAM) system variables. DCD Section 12.3.4.2 Table 12.3-12, “Fixed Area Radiation Monitors,” provides information about the area radiation monitors used including the location and design features and the type of radiation monitored and the associated principle isotope(s), instrument ranges, and the identification of monitors that serve a PAM function.

DCD Tier 2 Revision 0, Section 7.2.13.7, “Other Information Systems,” states that there is a link from the plant network to the NRC emergency response data system via dedicated communication servers that connect to the plant network and provide data communication of required plant data to offsite emergency response facilities. The staff review of DCD Tier 2 Revision 0 Section 7.2 indicated that this section of the application only stated that an ERDS connection would be provided, and it did not provide any information about which specific devices would be used to provide data to ERDS.

Key Issue

While DCD Section 12.3.4, “Area Radiation and Airborne Radioactivity Monitoring Instrumentation,” states that area and airborne radiation monitors can provide information to the ERDS, and DCD Section 7.2 states that the ERDS system will provide the interconnection to the NRC emergency data system, neither DCD Section 12.3 nor DCD Section 7.2 state which specific instruments will be used to satisfy the requirements of 10 CFR Part 50, Appendix E, Section VI.2(a)(i).

Question

To facilitate staff understanding of the application information sufficient to make appropriate regulatory conclusions with respect to radiation monitoring requirements in 10 CFR Part 50, Appendix E, Section VI.2(a)(i), the staff requests that the applicant:

- Describe which radiation monitor(s) are provided for meeting the radiation monitor requirements of 10 CFR Part 50, Appendix E, Section VI.2(a)(i),
- As necessary, revise section DCD Section 12.3, to reflect any changes to the DCD needed to identify the radiation monitors satisfying 10 CFR Part 50, Appendix E, Section VI.2(a)(i) requirements,

OR

Provide the specific alternative approaches used and the associated justification.

NuScale Response:

The specific instruments, including radiation monitors, used to satisfy the requirements of 10 CFR 50, Appendix E, Section VI.2(a)(i) will be identified and described in the emergency plan.



The emergency plan will be developed as part of COL Item 13.3-3. As indicated in FSAR Table 1.9-3, the recommendations of NUREG-0800, Section 13.3, Acceptance Criterion 12 are applicable to the COL applicant (including NUREG-1394). NUREG-1394 provides the minimum standards and acceptable methods used to implement and comply with the emergency response data system (ERDS) requirements. Also, as stated in FSAR Sections 11.5.2, 11.6, and 12.3.4.1, various radiation monitors will supply information to the NRC via the ERDS, however the specific instruments will be identified as part of COL Item 13.3-3.

Impact on DCA:

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