

June 29, 2017

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. 43 (eRAI No. 8753) on the NuScale Design Certification Application

REFERENCE: U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 43 (eRAI No. 8753)," dated June 02, 2017

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. 8753:

- 11.03-1

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,



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

Distribution:

Gregory Cranston, NRC, TWFN-6E55
Samuel Lee, NRC, TWFN-6C20
Anthony Markley, NRC, TWFN-6E55

Enclosure 1: NuScale Response to NRC Request for Additional Information eRAI No. 8753

Enclosure 1:

NuScale Response to NRC Request for Additional Information eRAI No. 8753

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

eRAI No.: 8753

Date of RAI Issue: 06/02/2017

NRC Question No.: 11.03-1

For the purpose of accessing the performance or the GWMS the following regulatory bases apply: 10 CFR 20.1101(b), as it relates to the use of procedures and engineering controls in maintaining doses to members of the public as low as is reasonably achievable (ALARA), 10 CFR 20.1301, 10 CFR 20.1302, as they relate to radioactivity in gaseous effluents released to unrestricted areas and doses to offsite receptors located in unrestricted areas, Appendix A to 10 CFR Part 50, GDC 60, as it relates to the ability of the GWMS design to control releases of radioactive materials to the environment, 10 CFR 50.36a(b), as it relates to experience with the design, construction, and operations of nuclear power reactors in complying with 10 CFR 20.1301 and in maintaining doses to members of the public ALARA. Section II.D of Appendix I to 10 CFR 50 also requires that Gaseous radwaste systems for light water cooled nuclear power reactors include all items of reasonably demonstrated technology that when added to the system sequentially and in order of diminishing cost-benefit return can for a favorable cost benefit ratio effect reductions in dose to populations reasonably expected to be within a 50 mile radius of the reactor.

The GWMS should have the capability to meet the dose design objectives and should include provisions to treat gaseous radioactive wastes such that the following is true: the GWMS should include all items of reasonably demonstrated technology that, when added to the system sequentially and in order of diminishing cost-benefit return, for a favorable cost-benefit ratio, can effect reductions in dose to the population reasonably expected to be within 80 km (50 miles) of the reactor. RG 1.110 provides an acceptable method for performing this analysis. RG 1.110, provides guidance relating to performing a cost benefit analysis for reducing cumulative dose to the population by using available effluent treatment technologies. RG 1.110 provides an acceptable method of performing cost-benefit analysis to demonstrate that the GWMS design includes all items of reasonably demonstrated technology for reducing cumulative population doses from releases of radioactive materials from each reactor to ALARA levels.

Compliance with the acceptance criterion given in DSRS 11.3, Section II, Acceptance Criteria, Subsection 1.E concerning the cost-benefit analysis will be determined based on confirmation analyses performed by NRC staff, including population cumulative dose (person-Sv (person-



rem)) calculations and cost-benefit analyses. RG 1.110 describes methods for performing such cost-benefit analyses.

DCD Chapter 11, Section 11.3.2.5 provides COL Item 11.3-1, but does not provide a cost benefit analyses in using RG 1.110 nor does the DCD provide an alternative method for this analyses. This information is needed to allow the staff to make its required regulatory findings.

Please provide the additional information addressing the guidance discussed above and provide a markup for any proposed DCD changes.

NuScale Response:

Given the site-specific nature of this analysis, it would be necessary for a COL applicant to conduct such an analysis in accordance with RG 1.110, therefore COL items are included in FSAR Sections 11.2.3.4 (COL Item 11.2-5) and 11.3.2.5 (COL Item 11.3-1). Upon review of previous DC applications, including those that have been granted certification, this approach is consistent with what has been acceptable to the NRC for 10 CFR 52 design certification applications.

Impact on DCA:

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