

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, June 02, 2017 4:03 PM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Burkhart, Lawrence; Markley, Anthony; Williams, Stephen
Subject: Request for Additional Information No. 43, RAI 8753
Attachments: Request for Additional Information No. 43 (eRAI No. 8753).pdf

Attached please find NRC staff's request for additional information concerning review of the NuScale Design Certification Application.

Please submit your response within 60 days of the date of this RAI to the NRC Document Control Desk.

If you have any questions, please contact me.

Thank you.

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Licensing Branch 1 (NuScale)
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0546

Hearing Identifier: NuScale_SMR_DC_RAI_Public
Email Number: 56

Mail Envelope Properties (7bea6d3998494ff689821bea27bbffa2)

Subject: Request for Additional Information No. 43, RAI 8753
Sent Date: 6/2/2017 4:03:21 PM
Received Date: 6/2/2017 4:03:22 PM
From: Cranston, Gregory

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Files	Size	Date & Time
MESSAGE	527	6/2/2017 4:03:22 PM
Request for Additional Information No. 43 (eRAI No. 8753).pdf		33062

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information No. 43 (eRAI No. 8753)

Issue Date: 06/02/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 11.03 - Gaseous Waste Management System

Application Section:

QUESTIONS

11.03-1

For the purpose of accessing the performance of 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.