

NuScaleDCRaisPEm Resource

From: Chowdhury, Prosanta
Sent: Saturday, March 10, 2018 10:32 PM
To: Request for Additional Information
Cc: Lee, Samuel; Cranston, Gregory; Baval, Bruce; Dias, Antonio; Li, Chang; NuScaleDCRaisPEm Resource
Subject: Request for Additional Information No. 384 eRAI No. 9391 (05.02.05)
Attachments: Request for Additional Information No. 384 (eRAI No. 9391).pdf

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

Please submit your technically correct and complete 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.

Prosanta Chowdhury, Project Manager
Licensing Branch 1 (NuScale)
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-1647

Hearing Identifier: NuScale_SMR_DC_RAI_Public
Email Number: 414

Mail Envelope Properties (BN7PR09MB2609D03E552190E77B13D3669EDC0)

Subject: Request for Additional Information No. 384 eRAI No. 9391 (05.02.05)
Sent Date: 3/10/2018 10:32:07 PM
Received Date: 3/10/2018 10:32:13 PM
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Post Office: BN7PR09MB2609.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	556	3/10/2018 10:32:13 PM
Request for Additional Information No. 384 (eRAI No. 9391).pdf		75405

Options

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

Request for Additional Information No. 384 (eRAI No. 9391)

Issue Date: 03/10/2018

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 05.02.05 - Reactor Coolant Pressure Boundary Leakage Detection

Application Section:

QUESTIONS

05.02.05-8

10 CFR 52.47(a)(2) requires that a standard design certification applicant provide a description and analysis of the structures, systems, and components (SSCs) of the facility, with emphasis upon performance requirements, the bases, with technical justification therefor, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished. Furthermore, 10 CFR 52.47(a)(3)(i) requires that an application for design certification include principal design criteria for the facility and states that Appendix A to 10 CFR Part 50, general design criteria (GDC), establishes the minimum requirements for principal design criteria.

GDC 30, "Quality of reactor coolant pressure boundary," states, in part, "Means shall be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage."

RG 1.45, "Guidance on Monitoring and Responding to Reactor Coolant System Leakage," Revision 1, Regulatory Positions C.1.1 and C.2.3 provide guidance on leakage detection systems and the use of supplemental instruments/methods for identifying and locating source of leakage.

The NRC staff reviewed the response to RAI 8915 regarding supplemental methods for reactor coolant pressure boundary leakage detection and identified the need for the following additional information for completing the safety evaluation.

1. In the RAI response, NuScale identified several additional methods that can be used for identifying the source of leakage. This information is necessary to support a staff conclusion that the leakage detection system can be used to identify the leakage source consistent with DSRS Section 5.2.5. Because the current FSAR does not have sufficient details for the methods used to identify the source of leakage, the applicant is requested to provide such information in FSAR Tier, 2 Section 5.2.5, "Reactor Coolant Pressure Boundary Leakage Detection."
2. In the RAI response, NuScale stated that "there is no method within the NuScale design to identify the exact location of the leakage during power operation." The applicant is requested to expand its initial response to RAI 8915 by clearly providing the bases/justification for not having the capability to locate the source of leakage without introducing any adverse safety concerns to the operation of a NuScale module. Such information will better clarify the extent of the NuScale leakage detection design and conformance with GDC 30. The applicant may also wish to assess the wording of COL

Item 5.2-7 which indicates “a COL applicant ... will establish ... procedures that specify operator actions for ... locating reactor coolant system leakage ...” and appears to be inconsistent with the response to RAI 8915.