NuScaleDCRaisPEm Resource

From: Chowdhury, Prosanta
Sent: Thursday, April 26, 2018 10:48 AM
To: Request for Additional Information
Cc: Lee, Samuel; Cranston, Gregory; Franovich, Rani; Karas, Rebecca; Skarda, Raymond; NuScaleDCRaisPEm Resource
Subject: Request for Additional Information No. 439 eRAI No. 9510 (15.09)
Attachments: Request for Additional Information No. 439 (eRAI No. 9510).pdf

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

You stated in an April 18, 2018, email (from Paul Infanger to the NRC staff) that your response to this RAI will be submitted by September 4, 2018, which is beyond the usual 60 days. Please submit your technically correct and complete response by this date 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: 468

Mail Envelope Properties (BN7PR09MB2609E93578548FCCB7D926B09E8E0)

Subject: Request for Additional Information No. 439 eRAI No. 9510 (15.09)
Sent Date: 4/26/2018 10:48:08 AM
Received Date: 4/26/2018 10:48:11 AM
From: Chowdhury, Prosanta

Created By: Prosanta.Chowdhury@nrc.gov

Recipients:
"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"Cranston, Gregory" <Gregory.Cranston@nrc.gov>
Tracking Status: None
"Franovich, Rani" <Rani.Franovich@nrc.gov>
Tracking Status: None
"Karas, Rebecca" <Rebecca.Karas@nrc.gov>
Tracking Status: None
"Skarda, Raymond" <Raymond.Skarda@nrc.gov>
Tracking Status: None
"NuScaleDCRaisPEm Resource" <NuScaleDCRaisPEm.Resource@nrc.gov>
Tracking Status: None
"Request for Additional Information" <RAI@nuscalepower.com>
Tracking Status: None

Post Office: BN7PR09MB2609.namprd09.prod.outlook.com

Files	**Size**	**Date & Time**
MESSAGE	713	4/26/2018 10:48:11 AM
Request for Additional Information No. 439 (eRAI No. 9510).pdf	38656	

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

Request for Additional Information No. 439 (eRAI No. 9510)

Issue Date: 04/26/2018
Application Title: NuScale Standard Design Certification - 52-048
Operating Company: NuScale Power, LLC
Docket No. 52-048
Review Section: 15.09 - A.DSRS NuScale Thermal Hydraulic Stability
Application Section:

QUESTIONS

15.09-3

Title 10, the *Code of Federal Regulations* (10 CFR), Part 50, Appendix A, General Design Criterion (GDC) 12- Suppression of reactor power oscillations, requires that oscillations be either not possible or reliably detected and suppressed. The Design-Specific Review Standard (DSRS), 15.9.A, "Design-Specific Review Standard for NuScale SMR Design, Thermal Hydraulic Stability Review Responsibilities," indicates that the applicant's analyses should correctly and accurately identify all factors that could potentially cause instabilities and their consequences. The analyses should also demonstrate that design features that are implemented prevent unacceptable consequences to the fuel.

The applicant describes a gradual shutdown event of the NuScale power module in their FSAR Tier 2, Section 15.9.3.8, and concludes that it is highly stable. However key parameter values, initial conditions, and results sufficient for staff to evaluate, are not provided to support this conclusion.

In order to make an affirmative finding associated with the above regulatory requirement important to safety, NRC staff requests NuScale to:

1. Provide key parameters and initial conditions for the gradual cool shutdown event described in section 15.9.3.8 of the FSAR.

2. Provide analysis results, such as time histories of core power, primary coolant flow rate, and feedwater flow rate, that support the applicant's conclusion stated in section 15.9.3.8 of the FSAR.

    - Directly incorporating the requested information into the FSAR, or incorporating by reference is acceptable to staff.