

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Tuesday, June 06, 2017 12:27 PM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Jackson, Diane; Tabatabai, Omid; Travis, Boyce
Subject: Request for Additional Information No. 53, RAI 8806
Attachments: Request for Additional Information No. 53 (eRAI No. 8806).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.

Gregory Cranston, Senior Project Manager
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: 67

Mail Envelope Properties (a91f55fabeb14efea9e62ff1bca597ca)

Subject: Request for Additional Information No. 53, RAI 8806
Sent Date: 6/6/2017 12:26:45 PM
Received Date: 6/6/2017 12:26:46 PM
From: Cranston, Gregory

Created By: Gregory.Cranston@nrc.gov

Recipients:

"NuScaleDCRaisPEm Resource" <NuScaleDCRaisPEm.Resource@nrc.gov>
Tracking Status: None
"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"Chowdhury, Prosanta" <Prosanta.Chowdhury@nrc.gov>
Tracking Status: None
"Jackson, Diane" <Diane.Jackson@nrc.gov>
Tracking Status: None
"Tabatabai, Omid" <Omid.Tabatabai-Yazdi@nrc.gov>
Tracking Status: None
"Travis, Boyce" <Boyce.Travis@nrc.gov>
Tracking Status: None
"RAI@nuscalepower.com" <RAI@nuscalepower.com>
Tracking Status: None

Post Office: HQPWMSMRS08.nrc.gov

Files	Size	Date & Time
MESSAGE	522	6/6/2017 12:26:46 PM
Request for Additional Information No. 53 (eRAI No. 8806).pdf		88810

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Sensitivity: Normal
Expiration Date:
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Request for Additional Information No. 53 (eRAI No. 8806)

Issue Date: 06/06/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 06.02.02 - Containment Heat Removal Systems

Application Section: 6.2.2, 6.3

QUESTIONS

06.02.02-1

10 CFR 50.46(b)(5) requires, in part, that following operation of the ECCS systems, the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for an extended period of time. Inherent in this requirement is that the core maintain adequate cooling flow in the presence of the limiting debris loading.

For the NuScale design, the limiting debris loading appears to be defined in FSAR Section 6.3.3.1 "Debris Generation and Impact Evaluation". Limits of 0.46 lbm for fiber, 2.72 lbm for particulate, and 27.1 lbm for chemicals are stated. The FSAR then states that adequate core cooling remains ensured at higher debris levels. Analyses (including ER-B020-4364, "GSI-191, Assessment of Debris Accumulation of PWR Sump Performance – Evaluation of Ex-vessel and In-vessel Effects") audited by the staff indicate that the second set of values appeared to be assumed as the limiting debris loading. Update the FSAR to clearly identify the limiting debris loading assumed for ECCS analyses, and provide acceptance criteria (or similar criteria) as part of COL Item 6.3-1 to limit debris in the design under the specified limit under the foreign material exclusion program.