NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Wednesday, June 28, 2017 4:13 PM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Dias, Antonio; Li, Chang; Markley, Anthony
Subject: Request for Additional Information No. 77, RAI 8895
Attachments: Request for Additional Information No. 77 (eRAI No. 8895).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: 94

Mail Envelope Properties (f89e2841b2b748faa50ccd555da4acb4)

Subject: Request for Additional Information No. 77, RAI 8895
Sent Date: 6/28/2017 4:13:20 PM
Received Date: 6/28/2017 4:13:21 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
"Dias, Antonio" <Antonio.Dias@nrc.gov>
Tracking Status: None
"Li, Chang" <Chang.Li@nrc.gov>
Tracking Status: None
"Markley, Anthony" <Anthony.Markley@nrc.gov>
Tracking Status: None
"RAI@nuscalepower.com" <RAI@nuscalepower.com>
Tracking Status: None

Post Office: HQPWMSMRS08.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	527	6/28/2017 4:13:21 PM
Request for Additional Information No. 77 (eRAI No. 8895).pdf	102493	

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

Request for Additional Information No. 77 (eRAI No. 8895)

Issue Date: 06/28/2017
Application Title: NuScale Standard Design Certification - 52-048
Operating Company: NuScale Power, LLC
Docket No. 52-048
Review Section: 09.02.05 - Ultimate Heat Sink
Application Section: 9.2

QUESTIONS

09.02.05-2

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.

The staff reviewed FSAR Tier 2, Section 9.2.5, on the ultimate heat sink (UHS) design capacity for abnormal and accident conditions including the size and heat loads of the UHS to verify the adequacy of the long term UHS capacity. The heat loads identified in FSAR Table 9.2.5-2, "Ultimate Heat Sink Heat Loads: Boil off Event," as indicated in footnote 3, account for decay heat only. Table 9.2.5-2 does not indicate the inclusion of the sensible heat nor the heat loads from the stored spent fuels, which are discussed in FSAR Tier 2, Sections 9.2.5.2.3 and 9.2.5.4.

In order to better describe the UHS design capacity calculation, the applicant is requested to:

- clarify FSAR Tier 2, Table 9.2.5-2, on the heat loads used for the UHS design.
- provide in FSAR Tier 2, Section 9.2.5, "Ultimate Heat Sink," the amount of water in the UHS relating to the UHS design capacity.
- provide the thermal analysis for the UHS under the limiting case, including the methodology, and all the assumptions (e.g., the initial pool temperature, water level, etc.).

The FSAR should be modified accordingly.