

NuScaleTRRaisPEm Resource

From: Cranston, Gregory
Sent: Sunday, July 30, 2017 12:47 PM
To: RAI@nuscalepower.com
Cc: NuScaleTRRaisPEm Resource; Lee, Samuel; Skarda, Raymond; Karas, Rebecca; Schmidt, Jeffrey; Chowdhury, Prosanta; Bovol, Bruce
Subject: RE: Topical Report Thermal Hydraulic Stability - Request for Additional Information Letter No. 8937 (eRAI No. 8937)
Attachments: Request for Additional Information No. 8937 (eRAI) No. 8937.pdf

Attached please find NRC staff's request for additional information concerning review of the NuScale Topical Report.

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.

Hearing Identifier: NuScale_SMR_DC_TR_Public
Email Number: 40

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Subject: RE: Topical Report Thermal Hydraulic Stability - Request for Additional Information Letter No. 8937 (eRAI No. 8937)
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Recipients:

"NuScaleTRRaisPEM Resource" <NuScaleTRRaisPEM.Resource@nrc.gov>

Tracking Status: None

"Lee, Samuel" <Samuel.Lee@nrc.gov>

Tracking Status: None

"Skarda, Raymond" <Raymond.Skarda@nrc.gov>

Tracking Status: None

"Karas, Rebecca" <Rebecca.Karas@nrc.gov>

Tracking Status: None

"Schmidt, Jeffrey" <Jeffrey.Schmidt2@nrc.gov>

Tracking Status: None

"Chowdhury, Prosanta" <Prosanta.Chowdhury@nrc.gov>

Tracking Status: None

"Bavol, Bruce" <Bruce.Bavol@nrc.gov>

Tracking Status: None

"RAI@nuscalepower.com" <RAI@nuscalepower.com>

Tracking Status: None

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Options

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Request for Additional Information No. 8937 (eRAI) No. 8937

Issue Date: 07/30/2017
Application Title: NuScale Topical Report
Operating Company: NuScale
Docket No. PROJ0769
Review Section: 01 - Introduction and Interfaces
Application Section: 1

QUESTIONS

01-24

In accordance with 10 CFR 50 Appendix A GDC 10, "Reactor design," the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. The SRP 15.0.2 acceptance criteria with respect to evaluation models specifies that the chosen mathematical models and the numerical solution of those models must be able to predict the important physical phenomena reasonably well from both qualitative and quantitative points of view.

Equations for computing a decay ratio, DR, are given in Section 6.2, "Testing Techniques and Results," and Section 7.1.1, "Decay Ratio Estimate and Proof of Unconditional Stability of the Riser Mode," of the topical report, TR-0516-49417-P. However, the approach for calculating decay ratios from PIM results does not appear to be described in Section 5.8, "Numerical Solution," and the method used to compute the decay ratios from results shown in Section 8 of the TR is not clear.

In order to make an affirmative finding, NRC staff requests NuScale describe the method for deriving the decay ratio from PIM output. This description should address considerations of early versus late transient response in the time-domain.