

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, June 09, 2017 3:58 PM
To: RAI@nuscaldpower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Hayes, Michelle; Franovich, Rani; Caruso, Mark
Subject: RE: Request for Additional Information No. 60, RAI 8861
Attachments: Request for Additional Information No. 60 (eRAI No. 8861).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.

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Licensing Branch 1 (NuScale)
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0546

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Request for Additional Information No. 60 (eRAI No. 8861)

Issue Date: 06/09/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

Application Section:

QUESTIONS

19-6

Review procedure III.6 in Standard Review Plan (SRP) Section 19.3, "Regulatory Treatment of Nonsafety Systems in Passive Advanced Light Water Reactor Designs", Revision 0, states that:

"The Staff responsible for review of the applicant's PRA reviews the applicant's evaluation of potential uncertainties associated with assumptions made in the PRA regarding passive systems and verifies that the applicant has included nonsafety-related SSCs in the scope of the RTNSS program to compensate for the uncertainties in the PRA and in the modeling of severe accident phenomenology, or provided a reasonable justification for not doing so (RTNSS "C")."

The staff has reviewed section 19.3 of the Final Safety Analysis Report (FSAR) and could not find an evaluation of potential uncertainties associated with assumptions made in the PRA regarding passive systems. Passive system thermal-hydraulic uncertainties manifest themselves in the PRA model within failure probabilities and success criteria. Some passive functions in the NuScale design are based on new engineering design, with limited operating experience to establish confidence in the failure rate estimates. Therefore, please describe in Section 19.3 of the FSAR:

1. Those non-safety active systems that have been included in the scope of the RTNSS program to compensate for the uncertainties in the PRA and in the modeling of severe accident phenomenology, or a reasonable justification for including such systems in the scope of the RTNSS program. Such systems could include, for example, those which can perform the same key safety function a passive safety system performs, such as core cooling or reactor coolant inventory control.
2. The reliability and availability missions as defined in SRP Section 19.3 for those systems described in item 1 above, and the proposed regulatory treatment of those systems that provide assurance the RTNSS reliability and availability missions can be accomplished.