

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, July 07, 2017 8:37 AM
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Subject: Request for Additional Information No. 81, RAI 8877
Attachments: Request for Additional Information No. 81 (eRAI No. 8877).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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Request for Additional Information No. 81 (eRAI No. 8877)

Issue Date: 07/07/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 19.05 Aircraft Impact Assessment (APR1400)

Application Section: 19.5

QUESTIONS

19.05 Aircraft Impact Assessment (APR1400)-1

Fire Protection

10 CFR 50.150 requires the applicant to perform a design-specific assessment of the effects on the facility of the impact of a large, commercial aircraft. Using realistic analyses, the applicant is required to identify and incorporate into the design those design features and functional capabilities that show that, with reduced use of operator actions, the reactor core remains cooled, or the containment remains intact; and the spent fuel cooling or spent fuel pool integrity is maintained. Also required is for the FSAR to include a description of the design features and functional capabilities identified in the design-specific assessment and how these features and capabilities meet the requirements identified in the design-specific assessment.

FSAR Tier 2, Subsection 19.5.4.3 states that "additional details for the site fire protection system are provided in Section 9.5.1."

The staff does not understand the purpose of the above statement, why the fire protection systems are referenced, and in what capacity they play a role in the aircraft impact assessment (AIA). Fire protection systems usually only include suppression and detection systems; besides, the NRC-endorsed guidance NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," does not allow crediting of suppression systems. And yet, FSAR Tier 2, Subsection 19.5.1 indicates that the AIA follows the NEI 07-13 guidance without deviation.

The application also misses the requirements of 10 CFR 50.150 when it comes to clearly identifying all design features, their capabilities and roles in response to the consequences of an aircraft impact. For example:

- FSAR Tier 2, Subsection 19.5.4.3 does not clearly identify which fire barriers are credited as key design features. Note that when crediting 5-psid features, the entire barrier, not just the openings and penetrations, must be credited as a 5-psid barrier.
- FSAR Tier 2, Subsection 19.5.4.3 does not mention any role for floor/ceiling assemblies. If indeed floor/ceiling assemblies do have a role in response to the consequences of an aircraft impact, these features must be credited and indicated in the application.
- FSAR Tier 2, Subsection 19.5.4.3 mentions that the design restricts fire propagation to the vestibules and stairwells ... and yet it does not mention these interior walls are credited key design features.

The applicant is requested to clearly identify and describe all the key design features credited in the applicant's AIA as well as these features' role in helping mitigate the consequences of the aircraft impact. Figures and drawings would be helpful to clarify the requested information." The FSAR should be modified accordingly.