

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, May 26, 2017 4:24 PM
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Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Dias, Antonio; Li, Chang
Subject: RE: Request for Additional Information No. 37, RAI 8832
Attachments: Request for Additional Information No. 37 (eRAI No. 8832).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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Office of New Reactors
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301-415-0546

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Request for Additional Information No. 37 (eRAI No. 8832)

Issue Date: 05/26/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 05.02.05 - Reactor Coolant Pressure Boundary Leakage Detection

Application Section: 5.2

QUESTIONS

05.02.05-1

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.

Regulatory Guide (RG) 1.45 Position C.2.4 indicates that "at least one of the leakage monitoring systems required by the plant technical specifications ... should be capable of performing its function(s) following any seismic event that does not require plant shutdown.

In reviewing the reactor coolant pressure boundary (RCPB) leakage detection with respect to RG 1.45 Position C.2.4, the staff noticed the information in FSAR Tier 2, Section 5.2.1, which states the following:

"The containment evacuation system (CES) inlet pressure instrumentation is designed to Seismic Category I and ensures that these components maintain the capability to perform their safety leak monitoring function during and after a safe shutdown earthquake. Therefore, the CES inlet pressure instrumentation is also capable of detecting changes in the containment atmospheric conditions, including leakage from the RCPB, during a seismic event that does not result in an NPM shutdown."

However, FSAR Tier 2, Table 3.2-1 indicates that for the CES being used for RCPB leakage detection, other than the pressure indicator, the rest of the system is Seismic Category III, which is not expected to survive in a seismic event.

The applicant is requested to provide the following information to demonstrate how RG 1.45 Position C.2.4 is satisfied:

- 1) Clarify how the pressure instrument can "maintain the capability to perform its leak monitoring function" if the non-seismic portions of the CES fail following a safe shutdown earthquake.
- 2) In the CES diagram, identify the location of the pressure instrument and the piping seismic classification associated with the pressure instrument.