

NuScaleDCRaisPEm Resource

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Subject: Request for Additional Information No. 57, RAI 8865
Attachments: Request for Additional Information No. 57 (eRAI No. 8865).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)
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Office of New Reactors
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301-415-0546

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Request for Additional Information No. 57 (eRAI No. 8865)

Issue Date: 06/08/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 16 - Technical Specifications

Application Section: DCA Part 04 Technical Specifications

QUESTIONS

16-1

NuScale FSAR Tier 2, Section 6.2.4.2.2, "Component Description," describes the actuation system of the containment isolation valves (CIVs) as a gas-hydraulic system:

"Hydraulic actuators are used for both PSCIV and SSCIV designs....Maintaining the hydraulic system pressure supplies the force to keep the valve in the open position. Pre-charged, nitrogen-filled cylinders are mounted on the "closed" side of each actuator. The gases in the cylinders are compressed as part of the valve opening action. Compression of the gas in each cylinder provides the passive stored energy used for valve closure."

Containment isolation is a function relied upon to mitigate a design basis accident. Knowing the pressure in each actuator is a means to determine that the passive stored energy used for valve closure is adequate. RG 1.206 Section 6.2.4, "Containment Isolation System," states that an applicant should discuss the assurance of operability of valves and valve operators. However, the NuScale FSAR does not describe the operator's ability to monitor (e.g., indication and alarm) each containment isolation valve's gas pressure to ensure the valve is operable.

10 CFR 50.36, "Technical Specifications," requires, in part, that a technical specification limiting condition for operation be established (e.g., for a system that is part of the primary success path and which functions or actuates to mitigate a design basis accident) and will include surveillance requirements, in part, to ensure the limiting conditions of operation will be met. The NuScale Technical Specifications describe CIV limiting conditions for operation but do not discuss surveillance requirements related to isolation valve gas pressure.

Therefore, based on the regulation and guidance cited above, the NRC staff requests that the NuScale design certification applicant provide information in the FSAR on the assurance of operability of CIV valves and valve operators, and in the FSAR and Technical Specifications for how the operator can assure that the isolation valve can perform its safety function (e.g., gas-spring is sufficiently charged and available to support valve closure). **The information is needed in order for the staff to make a regulatory decision regarding the adequacy of assuring that the CIVs are able to perform their safety functions.**