NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Tuesday, August 7, 2018 4:49 PM
To: NuScaleDCRaisPEm Resource
Subject: Request for Additional Information No. 431 eRAI No. 9412 (14.3.9)
Attachments: Request for Additional Information No. 431 (eRAI No. 9412).pdf

Attached please find NRC staff's request for additional information (RAI) concerning review of the NuScale Design Certification Application.

Please submit your technically correct and complete 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. 431 (eRAI No. 9412)

Issue Date: 04/23/2018
Application Title: NuScale Standard Design Certification - 52-048
Operating Company: NuScale Power, LLC
Docket No. 52-048
Review Section: 14.03.09 - Human Factors Engineering - Inspections, Tests, Analyses, and Acceptance Criteria
Application Section: 14.3.9

QUESTIONS

14.03.09-4

10 CFR 52.47(a)(2) requires that a standard design certification application include a final safety analysis report (FSAR) that describes the design of the facility including the principal design criteria for the facility, for which NuScale used the 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants." General Design Criterion (GDC) 19 requires, in part, that equipment is provided at appropriate locations outside the control room (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

NuScale DCD Tier 2, Section 1.2.2.1, “Main Control Room,” states that in the event that the Main Control Room (MCR) becomes uninhabitable, a remote shutdown station in the Reactor Building provides a secondary location for safe shutdown of the reactors.

10 CFR 52.47(b)(1) requires a design certification application to contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and should operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations.

The letter from the NRC to NuScale dated April 8, 2016 (ML16096A121), contained a set of draft standard ITAAC that could be used in the NuScale Design Certification Application. Standard ITAAC No. I-22 pertains to the Main Control Room (MCR) and Remote Shutdown Station (RSS) displays and alarms for various systems. Standard ITAAC No. I-23 pertains to plant system controls at the operator workstation in the MCR and RSS. The standard ITAAC do not specify which displays, alarms, and controls that should be verified by ITAAC No. I-22 and I-23.

NuScale DCD Tier 1, Table 2.5-7, “Module Protection System and Safety Display and Indication System ITAAC,” identifies the displays, alarms, and controls that NuScale has selected to be verified by ITAAC. The staff would like to understand the basis for selecting ITAAC to verify the displays, alarms and controls listed in DCD Tier 1, Table 2.5-7, and why there are no ITAAC to verify any displays, controls or alarms in the RSS.

Please explain the basis for selecting ITAAC to verify the displays, alarms, and controls listed in DCD Tier 1, Table 2.5-7, and also why the ITAAC does not verify any displays, controls and alarms at the RSS.