

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Friday, August 04, 2017 5:09 PM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Dias, Antonio; Vettori, Robert; Markley, Anthony
Subject: RE: Request for Additional Information No. 125, RAI 8911 (9.5.1)
Attachments: Request for Additional Information No. 125 (eRAI No. 8811).pdf

Attached please find NRC staff's request for additional information 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. 125 (eRAI No. 8811)

Issue Date: 08/04/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 09.05.01 - Fire Protection Program

Application Section:

QUESTIONS

09.05.01-1

10 CFR 50, Appendix A, General Design Criteria 3 (GDC 3), "Fire Protection," states, in part, that "[f]ire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.

Regulatory Guide (RG) 1.189, "Fire Protection For Nuclear Power Plants," Regulatory Position 3.2.1, "Fire Protection Water Supply," states in part:

"Provisions should be made to supply water to at least two standpipes and hose connections for manual firefighting in areas containing equipment required for safe plant shutdown in the event of a safe-shutdown earthquake. The piping system serving such hose stations should be analyzed for safe-shutdown earthquake loading and should be provided with supports to ensure system pressure integrity. The piping and valves for the portion of the hose standpipe system affected by this functional requirement should, at a minimum, satisfy ASME B31.1, "Power Piping." The water supply for this condition may be obtained by manual operator actuation of valves in a connection to the hose standpipe header from a normal seismic Category I water system, such as the essential service water system. The cross-connection should be (1) capable of providing flow to at least two hose stations (approximately 284 L/min (75 gal/min) per hose station), and (2) designed to the same standards as the seismic Category I water system (i.e., it should not degrade the performance of the seismic Category I water system)."

In FSAR Tier 2, Section 9.5.1, "Fire Protection Program," the applicant states:

"At least two standpipes and hose connections are provided for manual firefighting in areas containing equipment required for safe plant shutdown in the event of a safe shutdown earthquake (SSE). The piping is analyzed for SSE loading and provided with supports to ensure system pressure integrity. The piping and valves for these seismically analyzed standpipes satisfy ASME B31.1."

The staff finds that information identified in RG 1.189 is missing in the NuScale application. The applicant is requested to:

1. Identify the seismic Category I water source that will be used to supply these standpipes and hose connections in the event of a safe shutdown earthquake.
2. State that the seismic Category I water supply will be able to supply at least two hose stations with approximately 284 L/min (75 gal/min) per hose station.