

## NuScaleDCRaisPEm Resource

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**From:** Cranston, Gregory  
**Sent:** Tuesday, December 19, 2017 1:07 PM  
**To:** RAI@nuscalepower.com  
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**Subject:** Request for Additional Information No. 307 RAI No. 9226 (9.5.1)  
**Attachments:** Request for Additional Information No. 307 (eRAI No. 9226).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. The NRC Staff recognizes that NuScale has preliminarily identified that the response to this question in this RAI is likely to require greater than 60 days.

If you have any questions, please contact me.

Thank you.

Gregory Cranston, Senior Project Manager  
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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**Options**

**Priority:** Standard

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**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

## Request for Additional Information No. 307 (eRAI No. 9226)

Issue Date: 12/19/2017

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: 9.5.1

### QUESTIONS

#### 09.05.01-7

10 CFR 50, Appendix A, GDC 3, "Fire protection," states in part:

"Fire 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."

Due to a formatting error in Regulatory Guide 1.189, "Fire Protection for Power Plants," Revision 2, Section 3.2.1, "Fire Protection Water Supply," guidance concerning the ability 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 only applies when the fire protection system and the ultimate heat sink share a common water supply.

Since the NuScale fire protection system and ultimate heat sink do not share a common water supply, the applicant is requested to:

1. indicate if, in the event of a safe shutdown earthquake, the fire protection system is capable of providing flow to at least two standpipes and hose connections for manual firefighting in areas containing equipment required for safe plant shutdown.
2. describe in the FSAR how item (1) above is accomplished.

#### 09.05.01-8

10 CFR 50, Appendix A, GDC 3 – Fire protection states in part:

"Fire 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."

In DCD Tier 2, Section 9.5.1.1, "Design Basis," the applicant states:

"The hardware associated with the FPP is not safety-related. Consistent with GDC 2, however, the capability for manual fire fighting of safe shutdown equipment following a seismic event is provided in the reactor building and the control building via seismically analyzed hose standpipes."

The staff reviewed DCD Tier 2, Appendix 9A, "Fire Hazards Analysis," and noted that only the reactor building has standpipes listed as "SSE fire hose installation conforming to NFPA 14." The hose standpipes in the control building are not indicated to be SSE compliant.

The applicant is requested to reconcile this discrepancy.