

NuScaleDCRaisPEm Resource

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Sent: Saturday, August 05, 2017 12:33 PM
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Subject: Request for Additional Information No. 141, RAI 8924 (9.5.1)
Attachments: Request for Additional Information No. 141 (eRAI No. 8924).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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Request for Additional Information No. 141 (eRAI No. 8924)

Issue Date: 08/05/2017

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

09.05.01-6

10 CFR 52.47, "Contents of applications; technical information," Item (b)(1) requires that a design certification application contain the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that, if inspections, tests, and analyses are performed and acceptance criteria are met, a facility that incorporates the design certification has been constructed and will be operated in accordance with the design certification, the provisions of the AEA and NRC regulations.

In DCD Tier 1, Table 3.7-1, "Fire Protection System Inspection, Tests, Analyses, and Acceptance Criteria," Item 2 currently states the following:

No.	Design Commitment	Inspection, Tests, Analysis	Acceptance Criteria
2	The FPS has a sufficient number of fire pumps to satisfy the flow demand for any FPS connected to the pumps.	i. An analysis will be performed of the as-built fire pumps. ii. A test will be performed of the fire pumps.	i. A report exists and concludes that the fire pumps for fire protection are selected so that the greatest single demand for any FPS connected to the pump is less than or equal to 150 percent of the rated capacity (flow) of the pump. ii. Each fire pump delivers the design flow to the FPS, while operating in the fire-fighting alignment.

The staff notices that the applicant is not following the guidance in NEI 15-02, "Industry Guideline for the Development of Tier 1 and ITAAC Under 10 CFR Part 52," for the use of standard ITAAC no. F04 on "Fire Protection System Pump Capacity, and Regulatory Guide 1.189, Regulatory Position 3.2.1, "Fire Protection Water Supply," on the expected fire pumps flow demand.

Also noticed by the staff is an inconsistency between FSAR Tier 1, Table 3.7-1, Item 2 (as shown above) and FSAR Tier 2, Section 9.5.1, "Fire Protection Program," which states:

Consistent with NFPA 13, each pump is capable of delivering the demand from the largest sprinkler or deluge system plus an additional 500 gpm for fire hoses.

The applicant is requested to follow NEI 15-02 and correct the inconsistency identified above by revising the ITAAC to read as follows:

No.	Design Commitment	Inspection, Tests, Analysis	Acceptance Criteria
2	The FPS has a sufficient number of fire pumps to satisfy the flow demand for the largest sprinkler or deluge system plus an additional 500 gpm for fire hoses assuming failure of the largest fire pump or loss of off-site power.	<ul style="list-style-type: none"> i. An analysis will be performed of the as-built fire pumps. ii. A test will be performed of the fire pumps. 	<ul style="list-style-type: none"> i. A report exists and concludes that the fire pumps can provide the flow demand for the largest sprinkler or deluge system plus an additional 500 gpm for fire hoses assuming failure of the largest fire pump or loss of off-site power. ii. Each fire pump delivers the design flow to the [Fire Water Distribution System], while operating in the fire-fighting alignment.

If there is a reason for not following existing guidance, the applicant is requested to fully justify such departure. The FSAR is to be modified accordingly.