

September 25, 2017

Docket No. 52-048

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: NuScale Power, LLC Response to NRC Request for Additional Information No. 105 (eRAI No. 8920) on the NuScale Design Certification Application

REFERENCE: U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 105 (eRAI No. 8920)," dated July 25, 2017

The purpose of this letter is to provide the NuScale Power, LLC (NuScale) response to the referenced NRC Request for Additional Information (RAI).


The Enclosure to this letter contains NuScale's response to the following RAI Question from NRC eRAI No. 8920:

- 09.02.07-2

This letter and the enclosed response make no new regulatory commitments and no revisions to any existing regulatory commitments.

If you have any questions on this response, please contact Marty Bryan at 541-452-7172 or at mbryan@nuscalepower.com.

Sincerely,



Zackary W. Rad
Director, Regulatory Affairs
NuScale Power, LLC

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Enclosure 1: NuScale Response to NRC Request for Additional Information eRAI No. 8920

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NuScale Response to NRC Request for Additional Information eRAI No. 8920

Response to Request for Additional Information Docket No. 52-048

eRAI No.: 8920

Date of RAI Issue: 07/25/2017

NRC Question No.: 09.02.07-2

10 CFR 52.47(a)(2) requires that a standard design certification applicant provide a description and analysis of the structures, systems, and components (SSCs) of the facility, with emphasis upon performance requirements, the bases, with technical justification therefor, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished.

10 CFR 52.47(c)(2) requires that a standard design certification of “a nuclear power reactor design that ... uses simplified, inherent, passive, or other innovative means to accomplish its safety functions must provide an essentially complete nuclear power reactor design except for site-specific elements such as the service water intake structure and the ultimate heat sink, and must meet the requirements of 10 CFR 50.43(e).”

FSAR Tier 2, Section 9.2.7.2.1 states that the SCWS provides cooling water to the following plant auxiliary systems:

- condenser air removal system,
- chilled water system,
- reactor component cooling water system,
- reactor pool cooling system,
- spent fuel pool cooling system,
- auxiliary boiler blowdown cooler,
- process sampling system chillers,
- condensate and feedwater sample coolers,
- main steam sample coolers,
- turbine generator heat exchangers, lube oil, and governor, and
- instrument air compressors and coolers.

To clarify the above statement, the applicant is requested to:

- provide the heat loads of all the above systems,
- demonstrate that the cooling tower has sufficient heat removal capability, and
- discuss how the operators could know that there is insufficient heat removal capability in the SCWS and what procedures would be required for the operators to take.

NuScale Response:

The SCWS provides cooling water to transfer heat from a number of non-safety auxiliary systems to the SCWS cooling towers, which is the normal heat sink. The SCWS is analogous to the service water systems of some plant designs. However, in most nuclear power plant designs, the service water system removes heat from safety-related systems, whereas the NuScale SCWS serves only non-safety systems.

As noted in the RAI, FSAR Tier 2, Section 9.2.7.2.1 lists the systems for which the SCWS provides cooling, but does not quantify the individual or aggregate heat loads. These values are not known at this time, as they are dependent upon the exact equipment choices and site-specific conditions. These design features support normal power generation operations, and are not relied upon for any safety related or risk significant plant functions.

Impact on DCA:

There are no impacts to the DCA as a result of this response.