



November 29, 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. 269 (eRAI No. 9159) on the NuScale Design Certification Application

REFERENCE: U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 269 (eRAI No. 9159)," dated October 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. 9159:

- 14.02-4

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 Steven Mirsky at 240-833-3001 or at smirsky@nuscalepower.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Zackary W. Rad".

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. 9159



Enclosure 1:

NuScale Response to NRC Request for Additional Information eRAI No. 9159

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

eRAI No.: 9159

Date of RAI Issue: 10/25/2017

NRC Question No.: 14.02-4

Pursuant to the requirements of 10 CFR 52.47(b), Inspections, Tests, Analyses and Acceptance Criteria (ITAAC), SRP 14.2 describes how the staff reviews an applicant's initial test program.

Section IV, "Evaluation Findings," states in part that "the staff has reviewed the information provided in the FSAR on the applicant's test program in accordance with SRP Section 14.2. In reviewing the pre-operational testing provided under FSAR Section 14.2, the staff noticed that in Table 14.2-22, "Turbine Building Ventilation Test #22," Component Level Test #vi appears to incorrectly reference the Balance-of-Plant Drain System (BPDS) in its descriptions rather than the TBVS. It thus does not match with the language in Component level tests i to v. Instead, it matches the language for Component Level Test #vi in Table 14.2-24 "Balance-of-Plant Drains Test #24," which correctly references the BPDS. Clarify why Component Level Test #vi in Table 14.2-22 references the BPDS, or whether this was in error. The applicant is requested to update the FSAR with the above clarification information.

NuScale Response:

Tier 2 Table 14.2-22, Turbine Building Ventilation Test #22, Component Level Test #vi, incorrectly references the Balance-of-Plant Drain System (BPDS). Table 14.2-22, Component Level Test #vi, has been changed to identify the "turbine building ventilation system (TBVS)" in the Test Objective and "TBVS" in the Test Method, rather than the BPDS.

Impact on DCA:

Tier 2 Table 14.2-22 has been revised as described in the response above and as shown in the markup provided in this response.

Table 14.2-22: Turbine Building Ventilation Test # 22

Preoperational test is required to be performed once.		
The Turbine Building HVAC system (TBVS) is described in Section 9.4.4 and the function verified by this test is:		
System Function	System Function Categorization	Function Verified by Test #
The TBVS supports the systems located in the Turbine Generator Building (TGB) by providing cooling, heating and humidity control to maintain a suitable environment for the operation of system components.	non-safety related	Test #22-1
Prerequisites		
Verify an instrument calibration has been completed, with approved records and within all calibration due dates, for all instruments required to perform this test.		
Component Level Tests		
Test Objective	Test Method	Acceptance Criteria
i. Verify each TBVS remotely-operated damper can be operated remotely.	Operate each damper from the MCR and local control panel (if design has local damper control).	MCR display and local, visual observation indicate each damper fully opens and fully closes.
ii. Verify TBVS dampers automatically close on associated smoke or fire signals.	Open each damper actuated by a smoke or fire signal. Initiate an alarm signal for each damper.	MCR display and local, visual observation indicate each damper closes.
iii. Verify each required TBVS fan stops on actuation of its associated fire or smoke alarm.	Initiate an alarm signal for each fan.	MCR display and local, visual observation indicate each fan stops.
iv. Verify the fan speed of each TBVS variable-speed fan can be manually controlled.	Vary the speed of each fan from the MCR and local control panel (if design has local fan control).	MCR display indicates the speed of each fan varies from minimum to maximum speed.
v. Verify each TBVS instrument is monitored in the MCR and the RSS, if the signal is designed to be displayed in the RSS. (Test not required if the instrument calibration verified the MCR and RSS display)	Initiate a single real or simulated instrument signal from each TBVS transmitter.	i. The instrument signal is displayed on an MCR workstation or recorded by the applicable control system historian. ii. The instrument signal is displayed on an RSS workstation or recorded by the applicable control system historian if the instrument signal is designed to be displayed in the RSS. iii. The instrument signal is displayed on an MCR module-specific safety display instrument monitor or an MCR common safety display instrument monitor if the instrument signal is designed to be displayed on a safety display instrument monitor.

Table 14.2-22: Turbine Building Ventilation Test # 22 (Continued)

<p>vi. Verify each balance-of-plant drain system (BPDS) <u>turbine building ventilation system (TBVS)</u> instrument is monitored in the MCR and the RSS, if the signal is designed to be displayed in the RSS. (Test not required if the instrument calibration verified the MCR and RSS display.)</p>	<p>Initiate a single real or simulated instrument signal from each BPDS <u>TBVS</u> transmitter.</p>	<p>i. The instrument signal is displayed on an MCR workstation or recorded by the applicable control system historian. ii. The instrument signal is displayed on an RSS workstation or recorded by the applicable control system historian if the instrument signal is designed to be displayed in the RSS. iii. The instrument signal is displayed on an MCR module-specific safety display instrument monitor or an MCR common safety display instrument monitor if the instrument signal is designed to be displayed on a safety display instrument monitor.</p>
<p>System Level Test #22-1</p>		
<p>Test Objective</p>	<p>Test Method</p>	<p>Acceptance Criteria</p>
<p>Verify the Turbine Building battery and battery charger room design temperatures are maintained at design temperature and humidity conditions during normal operation.</p>	<p>Place the turbine bypass system battery and battery charger room ventilation units in automatic operation.</p>	<p>The temperature and humidity of Turbine Building battery and battery charger rooms satisfy the temperature and humidity requirements.</p>