

September 19, 2019

Docket No. 52-048

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

SUBJECT: NuScale Power, LLC Submittal of Changes to Final Safety Analysis Report, Section 14.2, "Initial Plant Test Program," Table 14.2-2, "Pool Cleanup Systems Test #2," and Table 14.2-50, "Module Assembly Equipment Test #50"

REFERENCES: Letter from NuScale Power, LLC to Nuclear Regulatory Commission, "NuScale Power, LLC Submittal of the NuScale Standard Plant Design Certification Application, Revision 3," dated August 22, 2019 (ML19241A315)

During an August 27, 2019 public teleconference with NRC Project Manager and NRC reviewers, NuScale Power, LLC (NuScale) discussed potential updates to Final Safety Analysis Report (FSAR), Section 14.2 "Initial Plant Test Program." As a result of this discussion, NuScale changed the Section 14.2. The Enclosure to this letter provides a mark-up of the FSAR pages incorporating revisions to Section 14.2, in redline/strikeout format. NuScale will include this change as part of a future revision to the NuScale Design Certification Application.

The enclosure to this letter is the nonproprietary version of the changes to NuScale Final Safety Analysis Report, Section 14.2, "Initial Plant Test Program," Table 14.2-2, "Pool Cleanup Systems Test #2," and Table 14.2-50, "Module Assembly Equipment Test #50."

This letter makes no regulatory commitments or revisions to any existing regulatory commitments.

If you have any questions, please feel free to contact Nadja Joergensen at 541-452-7338 or at njoergensen@nuscleasepower.com.

Sincerely,



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Enclosure: Changes to NuScale Final Safety Analysis Report Section 14.2, "Initial Plant Test Program," Table 14.2-2, "Pool Cleanup Systems Test #2," and Table 14.2-50, "Module Assembly Equipment Test #50"

Enclosure:

Changes to NuScale Final Safety Analysis Report Section 14.2, "Initial Plant Test Program," Table 14.2-2, "Pool Cleanup Systems Test #2," and Table 14.2-50, "Module Assembly Equipment Test #50"

is applicable to the system) unless the preoperational test verifies an ITAAC. The component tests are standardized to provide the same level of test detail across all systems. This graded approach does not affect system-level tests which require integrated system operation. The standardized component tests are:

- Remote operation of equipment.
- Manual control of variable-speed pump or fan.
- Automatic start of standby pump or fan.
- Automatic operation of pump recirculation valve.
- Pump start does not create a water hammer.
- Remote operation of valve or damper.
- Valve or damper fails to its safe position on loss of air.
- Valve or damper fails to its safe position on loss of electrical power to its solenoid.
- Damper or fan responds to fire or smoke alarm.
- Equipment response to automatic signals to protect plant equipment.
- Automatic operation of tank or basin level control valve.
- Local grab sample can be obtained from a system grab sample device.
- Automatic bus transfer via bus tie breaker.
- System instrument calibration.
- Each instrument is monitored in the MCR and the remote shutdown station (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.)

14.2.3.3 Testing of First-of-a-Kind Design Features

RAI 03.09.02-10, RAI 14.02-1

First-of-a-kind (FOAK) tests are new, unique, or special tests used to verify design features that are being reviewed for the first time by the NRC. The NuScale Power Plant contains design features which are new and unique and have not been tested previously; therefore, testing of these design features is treated as FOAK. For the FOAK tests, the testing frequency is specified in the test abstract. The NuScale comprehensive vibration assessment program (CVAP) is a FOAK program. The program is implemented consistent with the requirements of the "NuScale Comprehensive Vibration Assessment Program Technical Report", TR-0716-50439, and the "NuScale Comprehensive Vibration Assessment Program Measurement and Inspection Plan Technical Report," TR-0918-60894. The CVAP is addressed in Section 3.9.2.

RAI 03.09.02-10, RAI 14.02-1, RAI 14.03-3

The following ITP test abstracts describe the on-site CVAP testing of FOAK design features:

- [Table 14.2-72](#)~~Table 14.2-75~~: Steam Generator Flow-Induced Vibration Test #72.
- Table 14.2-108: NuScale Power Module Vibration Test #108

Table 14.2-2: Pool Cleanup System Test # 2

Preoperational test is required to be performed once.		
The pool cleanup system (PCUS) is described in Section 9.1.3.2.3 and the functions verified by this test are:		
System Function	System Function Categorization	Function Verified by Test #
1. The spent fuel pool cooling system (SFPCS) supports the PCUS by providing spent fuel pool water for purification of the ultimate heat sink (UHS).	nonsafety-related	Test #2-1
2. The reactor pool cooling system (RPCS) supports the PCUS by providing reactor pool water for purification of the UHS.	nonsafety-related	Test #2-1
3. The pool surge control system (PSCS) supports the PCUS by providing water from the dry dock for UHS inventory control.	nonsafety-related	Component level tests Pool Surge Control System Test #4-1
4. The PCUS supports the PSCS, RPCS, and SFPCS by providing a flowpath to cross-connect the PSCS, RPCS, and SFPCS.	nonsafety-related	Component level tests
Prerequisites		
i. Verify an instrument calibration has been completed, with approved records and within all calibration due dates, for all instruments required to perform this test.		
ii. Verify a pump curve test has been completed and approved for the RPCS pumps.		
iii. Verify a pump curve test has been completed and approved for the SFPCS pumps.		
iv. <u>Verify a UHS leakage test has been performed.</u>		
Component Level Tests		
Test Objective	Test Method	Acceptance Criteria
i. Verify each PCUS remotely-operated valve can be operated remotely.	Operate each valve from the main control room (MCR) and local control panel (if design has local valve control).	MCR display and local, visual observation indicate each valve fully opens and fully closes.
ii. Verify each PCUS air-operated valve fails to its safe position on loss of air.	Place each valve in its non-safe position. Isolate and vent air to the valve.	MCR display and local, visual observation indicate each valve fails to its safe position.
iii. Verify each PCUS air-operated valve fails to its safe position on loss of electrical power to its solenoid.	Place each valve in its non-safe position. Isolate electrical power to each air-operated valve.	MCR display and local, visual observation indicate each valve fails to its safe position.
iv. Verify a local grab sample can be obtained from a PCUS grab sample device.	Place the system in service to allow flow through the grab sampling device.	A local grab sample is successfully obtained.
v. Verify each PCUS instrument is available on a module control system (MCS) or plant control system (PCS) display. (Test not required if the instrument calibration verified the MCS or PCS display.)	Initiate a single real or simulated instrument signal from each PCUS transmitter.	The instrument signal is displayed on an MCS or PCS display, or is recorded by the applicable control system historian.

RAI 14.03-3

Table 14.2-50: Module Assembly Equipment Test # 50

There are no preoperational tests for module assembly equipment (MAE).		
The MAE consists of module import trolley, the upender, and the inspection rack.		
System Function	System Function Categorization	Function Verified by Test #
None MAE supports the NuScale Power Module actively by providing material handling to allow its transport in the horizontal orientation to travel from outside the Reactor Building to its interior and to rotate it to operational orientation.	None nonsafety-related	None component-level tests
Prerequisites		
N/A An MAE factory acceptance test has been successfully completed and approved, if required.		
Component Level Tests		
Test Objective	Test Method	Acceptance Criteria
i. None Verify the operation of MAE controls that limit motion and speed. (This test may be performed as part of site acceptance testing.)	Actuate or simulate actuation of the interlocks.	The MAE equipment controls limit motion and speed per design.
System-Level Tests		
None		