



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 4, 2019

MEMORANDUM TO: Samuel S. Lee, Chief
Licensing Branch 1
Division of Licensing, Siting,
and Environmental Analysis
Office of New Reactors

FROM: Cayetano Santos Jr., Project Manager */RA/*
Licensing Branch 1
Division of Licensing, Siting,
and Environmental Analysis
Office of New Reactors

SUBJECT: SUMMARY OF PUBLIC MEETINGS HELD DECEMBER 19,
2018, AND JANUARY 9, 2019, REGARDING THE
INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE
CRITERIA IN NUSCALE POWER LLC'S DESIGN
CERTIFICATION APPLICATION

On December 19, 2018, and January 9, 2019, two Category 1 public teleconferences were held between the U.S. Nuclear Regulatory Commission (NRC) staff and NuScale Power, LLC (NuScale). The purpose of these meetings was to discuss inspections, tests, analyses, and acceptance criteria (ITAAC) related to electrical penetration assemblies in NuScale's design certification application. The meeting notice was posted on the NRC website and is also in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession Numbers ML18309A213 and ML18323A468. Enclosure 1 captures the summary of topics discussed during this meeting and Enclosure 2 contains the meeting handout. The meeting agenda and list of attendees are included in Enclosures 3 and 4, respectively.

Docket No. 52-048

Enclosures:
As stated

cc w/encl.: DC NuScale Power, LLC Listserv

CONTACT: Cayetano Santos Jr., NRO/DLSE
301-415-7270

SUBJECT: SUMMARY OF PUBLIC MEETINGS HELD DECEMBER 19, 2018 AND JANUARY 9, 2019 REGARDING THE INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA IN NUSCALE POWER LLC'S DESIGN CERTIFICATION APPLICATION
DATED: February 4, 2019

DISTRIBUTION:

PUBLIC
LB1 R/F
RidsNroDnrl
SLee, NRO
CSantos, NRO
CSmith, NRO
NKhan, NRR
TMartinez-Navedo, NRR
RidsOgcMailCenter
RidsRgn2MailCenter
RidsAcrcAcnwMailCenter
DC NuScale Power LLC Listserv

ADAMS Accession No.:ML19010A093 *By email **NRO-002**

OFFICE	DLSE/LB1:PM	DLSE/LB1:LA	DLSE/LB1:PM
NAME	CSantos	CSmith*	CSantos (signed)
DATE	1/10/2019	1/31/2019	2/4/2019

OFFICIAL RECORD COPY

December 19, 2018 Meeting Summary

The focus of this meeting was to discuss inspections, tests, analyses, and acceptance criteria (ITAAC) associated with electrical penetration assemblies (EPAs). On December 13, 2018, the staff provided NuScale with a list of four topics to discuss during this call (Enclosure 2).

During the meeting each of the four topics was discussed:

- 1) NuScale commented that the reference to Section 8.1.5.3 is incorrect and will be revised.
- 2) NuScale commented that ITAAC number 22 in Table 2.1-4 contains two options depending upon the rating of the EPA compared to the circuits within it. NuScale provided a reference in Tier 2, Chapter 8 of its design certification application that discusses this ITAAC. NuScale also noted that the phrase "overload current" used in Chapter 8 is the same as "maximum fault current" in the ITAAC. The staff asked if similar language could be used in Chapter 8 and the associated ITAAC to avoid confusion. NuScale agreed to consider this.
- 3) NuScale commented that EPAs are listed in Table 2.1-2 as ASME Code Section III Class 1 components covered under ITAAC number 2 in Table 2.1-4. In addition, NuScale commented that ITAAC number 1 in Table 2.8-2, does verify each EPA can withstand the seismic design basis loads without loss of safety function.
- 4) NuScale commented that some EPAs do contain Class 1E cables for instrumentation and control. ITAAC that verify the separation of Class 1E cables are ITAAC number 3 in Table 2.5-7 and ITAAC number 2 in Table 2.6-1. NuScale commented that there are separate penetrations provided for low voltage cables and will let the staff know if there is an existing ITAAC to verify this. The NuScale design does not include any medium voltage cables.

The staff and NuScale agreed to continue this discussion during another public meeting the week of January 7, 2019.

There was an opportunity for members of the public to provide comments and ask questions. No comments or questions were received.

January 9, 2019 Meeting Summary

This meeting was a continuation of discussions held on December 19, 2018. During the meeting the following topics described in Enclosure 2 were discussed:

- 1) The staff had no additional questions on this topic.
- 2) NuScale commented that ITAAC number 22 in Table 2.1-4 will be revised to add the words “and overload.” The revised sentences in the ITAAC would state:

“A CNTS containment electrical penetration assembly is rated to withstand fault and overload currents for the time required to clear the fault from its power source.”

and

“A CNTS containment electrical penetration assembly is rated to withstand the maximum fault and overload current for its circuits without a circuit interrupting device.”

- 3) The staff had no additional questions on this topic.
- 4) NuScale commented that the NuScale design does not include any medium voltage cables. NuScale also confirmed that separation of Class 1E low voltage cables is verified by ITAAC number 3 in Table 2.5-7 and ITAAC number 2 in Table 2.6-1.

There was an opportunity for members of the public to provide comments and ask questions. No comments or questions were received.

Discussion Topics: ITAAC Related to Electrical Penetration Assemblies

1. DCA Tier 2, Section 14.3, Table 14.3-1, ITAAC No. 02.01.10, states "Section 8.1.5.3 General Design Criteria."

There is no Section 8.1.5.3 in Chapter 8. Should it be stated "Section 8.1.4.3" in DCA Tier 2, Section 14.3, Table 14.3-1, ITAAC No. 02.01.10?

2. DCA Tier 2, Section 8.3.1.2.5, "Containment Electrical Penetration Assemblies (EPA)," states that EPAs are designed to withstand the maximum available fault and overload currents for the time sufficient for operation of backup devices in case of failure of the primary protection devices.

Table 2.1-4, ITAAC No. 22, states in the Design Commitment:

- i. A CNTS containment electrical penetration assembly is rated to withstand fault currents for the time required to clear the fault from its power source.

OR

- ii. A CNTS containment electrical penetration assembly is rated to withstand the maximum fault current for its circuits without a circuit interrupting device.

Does ITAAC No. 22 in Table 2.1-4, verify that the EPAs are able to withstand overload currents when it say "to withstand the maximum fault current for its circuits without a circuit interrupting device?"

3. DCA Tier 1, Section 2.8, "EQ", Table 2.8-1, shows that the EPAs are seismic Category I.

DCA Tier 2, Section 3.2.1.1, "Seismic Category I," states that seismic Category I SSC are designed to withstand the seismic loads associated with the SSE, in combination with other designated loads, without loss of function or pressure integrity.

Table 2.8-2, ITAAC No. 1, states in the Design Commitment:

The module-specific Seismic Category I equipment, including its associated supports and anchorages, withstands design basis seismic loads without loss of its function(s) during and after an SSE.

Does ITAAC No. 1 in Table 2.8-2, verify each EPAs can withstand the seismic design basis loads without loss of safety function or is there another ITAAC that verifies this?

4. Is there Class 1E cables in the EPA? If so,
 - a. Is there physical separation between trains of EPAs and between EPAs containing Class 1E cables and EPAs containing non-Class 1E cables? Would you need an ITAAC for this?
 - b. Is there separate penetration provided for medium voltage and low voltage power, control, and instrumentation circuits? Would you need an ITAAC for this?

AGENDA FOR PUBLIC MEETING

U.S. NUCLEAR REGULATORY COMMISSION (NRC)

DECEMBER 19, 2018

12:30 p.m. – 1:30 p.m.

The purpose of this teleconference was for the U.S. Nuclear Regulatory Commission (NRC) staff to discuss technical issues regarding NuScale's inspections, tests, analyses, and acceptance criteria (ITAAC).

Time	Topic	Speaker
12:30 p.m. – 12:35 p.m.	Introductions	All
12:35 p.m. – 1:15 p.m.	Inspections, Tests, Analyses, and Acceptance Criteria	NRC/NuScale
1:15 p.m. – 1:30 p.m.	Public Comments	Public
1:30 p.m.	Adjourn	All

AGENDA FOR PUBLIC MEETING

U.S. NUCLEAR REGULATORY COMMISSION (NRC)

JANUARY 9, 2019

1:00 p.m. – 2:00 p.m.

The purpose of this teleconference was for the U.S. Nuclear Regulatory Commission (NRC) staff to discuss technical issues regarding NuScale's inspections, tests, analyses, and acceptance criteria (ITAAC).

Time	Topic	Speaker
1:00 p.m. – 1:05 p.m.	Introductions	All
1:05 p.m. – 1:45 p.m.	Inspections, Tests, Analyses, and Acceptance Criteria	NRC / NuScale
1:45 p.m. – 2:00 p.m.	Public Comments	Public
2:00 p.m.	Adjourn	All

PUBLIC MEETING WITH NUSCALE POWER, LLC

DECEMBER 19, 2018

12:30 p.m. – 1:30 p.m.

LIST OF ATTENDEES AND PARTICIPANTS

<u>Name</u>	<u>Organization</u>
Cayetano Santos	NRC
Nadim Khan	NRC
Nadja Joergensen	NuScale
Chris Maxwell	NuScale
Edan Engstrom	NuScale
Brian Gardes	NuScale
Carrie Fosaaen	NuScale

PUBLIC MEETING WITH NUSCALE POWER, LLC

JANUARY 9, 2019

1:00 p.m. – 2:00 p.m.

LIST OF ATTENDEES AND PARTICIPANTS

<u>Name</u>	<u>Organization</u>
Cayetano Santos	NRC
Nadim Khan	NRC
Nadja Joergensen	NuScale
Chris Maxwell	NuScale
Edan Engstrom	NuScale
Spain Abney	NuScale
Steve Pope	NuScale
Brian Gardes	NuScale
Carrie Fosaaen	NuScale