



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

April 17, 2019

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

FROM: Marieliz Vera, Project Manager */RA/*
Licensing Branch 1
Division of Licensing, Sitting,
and Environmental Analysis
Office of New Reactors

SUBJECT: SUMMARY OF THE OCTOBER 30, 2018, CATEGORY 1 PUBLIC
TELECONFERENCE WITH NUSCALE POWER, LLC., DESIGN
CERTIFICATION APPLICATION SECTION 3.7, "SEISMIC
DESIGN," AND SECTION 3.8, "DESIGN OF CATEGORY I
STRUCTURES"

The U.S. Nuclear Regulatory Commission (NRC) held a Category 1 public teleconference on October 30, 2018, to discuss Final Safety Analysis Report (FSAR) Tier 2, Chapter 3, "Design of Structures, Systems, Components and Equipment," Section 3.7, "Seismic Design" and Section 3.8, "Designs of Category I Structures," of the NuScale Power, LLC., (NuScale) Design Certification. Participants included personnel from NuScale and members of the public.

The public meeting notice can be found in the Agencywide Documents Access and Management Systems under Accession Number ML18298A258. This meeting notice was also posted on the NRC public Website.

The Meeting Agenda and List of Attendees can be found in Enclosures 1 and 2, respectively. The RAI Technical Issues Summary are included in Enclosure 3.

CONTACT: Marieliz Vera, NRO/DLSE
301-415-5861

Summary:

The purpose of this meeting was to discuss the responses for Request for Additional Information (RAI) 8974, Question 03.08.04-23 (ML18260A105) and "NuScale Power, LLC - Submittal of Response to Request for Additional Information (RAIs) on NuScale Closure Plan for Final Safety Analysis Report, Tier 2, Sections 3.7 and 3.8" (ML18302A408).

For RAI 8974, the applicant will provide a supplement to the RAI response reflecting the NRC staff's feedback (Enclosure 3).

From the Closure Plan, the following are items that were discussed. In RAI 9225 (#15), the NRC staff asked NuScale to clarify whether the April 26, 2019, planned RAI response submittal, considers the ongoing evaluation described in the plan and, whether the April 26, 2019, date considers the scenario that the core plate motions, either from the NPM at the bay location or the lower RPV at the RFT location, are not bounded by the current fuel seismic analysis of record. NuScale clarified that the April 26, 2019, date was considering the above scenario. Another item discussed from the Closure Plan is RAI 8911 (#13), last bi-weekly meeting October 16, 2018, NuScale asked for a written feedback regarding to the structural aspect of the RAI, the feedback was provided to NuScale (Enclosure 3).

Docket No. 52-048

Enclosures:
As stated

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

SUBJECT: SUMMARY OF THE OCTOBER 30, 2018, CATEGORY 1 PUBLIC
 TELECONFERENCE WITH NUSCALE POWER, LLC DESIGN CERTIFICATION
 APPLICATION SECTION 3.7 "SEISMIC DESIGN," AND 3.8, "DESIGN OF
 CATEGORY I STRUCTURES"
 DATED: April 17, 2019

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U.S. NUCLEAR REGULATORY COMMISSION

CATEGORY 1 PUBLIC TELECONFERENCE WITH NUSCALE POWER, LLC

DESIGN CERTIFICATION APPLICATION SECTION 3.7, "SEISMIC DESIGN," AND 3.8,

"DESIGN OF CATEGORY I STRUCTURES"

October 30, 2018

10:30 a.m. – 12:00 p.m.

AGENDA

Public Meeting	
10:30 a.m. - 10:35 a.m.	Welcome and Introductions
10:35 a.m. - 11:55 a.m.	Discussion of the Requests for Additional Information
11:55 a.m. - 12:00 p.m.	Public - Questions and Comments
12:00 p.m.	Adjourn

U.S. NUCLEAR REGULATORY COMMISSION

CATEGORY 1 PUBLIC TELECONFERENCE WITH NUSCALE POWER, LLC

DESIGN CERTIFICATION APPLICATION SECTION 3.7, "SEISMIC DESIGN," AND 3.8,

"DESIGN OF CATEGORY I STRUCTURES"

LIST OF ATTENDEES

October 30, 2018

<u>NAME</u>	<u>AFFILIATION</u>
Marieliz Vera	U.S. Nuclear regulatory Commission (NRC)
Manas Chakravorty	NRC
Sunwoo Park	NRC
Robert Roche	NRC
Pravin Patel	NRC
Jonathan Ortega-Luciano	NRC
Marty Bryan	NuScale Power, LLC (NuScale)
Josh Parker	NuScale
Wayne Massie	NuScale
John Conly	NuScale
Kirsten McKay	NuScale
Evren Ulku	NuScale
Hadi Razavi	NuScale
Mohsin Khan	NuScale
Kyra Perkins	NuScale
Sarah Fields	Public

U.S. NUCLEAR REGULATORY COMMISSION

CATEGORY 1 PUBLIC TELECONFERENCE WITH NUSCALE POWER, LLC.

DESIGN CERTIFICATION APPLICATION SECTION 3.7, "SEISMIC DESIGN," AND 3.8,

"DESIGN OF CATEGORY I STRUCTURES"

The Staff's Feedback on Request Additional for Information 8974

Question 03.08.04-23

1. Consistent with the information provided for other in-structure response spectra (ISRS) locations, please provide Final Safety Analysis Report (FSAR) markups to identify the nodes and respective location (e.g. tables and or figures) related to the ISRS in the following Figures:
 - Figure 3.7.2-114: ISRS at Reactor Building Crane Wheels at El. 145' 6"
 - Figure 3.7.2-119: Control Building ISRS at Floor at El. 76' 6"
 - Figure 3.7.2-120: Control Building ISRS at Floor at El. 100' 0"
 - Figure 3.7.2-121: Control Building ISRS at Floor at El. 120' 0"
2. Clarify if the node numbers in Table 3.7.2-55 are also applicable to the ISRS in Figure 3.7.2-116. If not, please provide FSAR markups to identify the nodes and respective location (e.g. tables and or figures) for the ISRS in Table 3.7.2-116. Further, please provide the coordinates and or figures showing the location for the nodes listed in Tables 3.7.2-54 and 3.7.2-55.
3. Additionally, please provide FSAR markups to include an ISRS at the reactor flange tool (RFT) location that is consistent with the input used for the seismic analysis of the lower RPV at the RFT location. Also please, provide markups to identify the nodes and respective location (e.g. tables and or figures).
4. For item 2 in COL Item 3.7-10, clarify whether the max forces in the NuScale Power Module lug restrains and skirts, refers to the standard design basis seismic demands and clarify whether the markups identifying the Tables and or FSAR Section(s) containing the magnitude of such standard design basis demands will be provided in the response to Question 03.07.02-25 or in a supplemental response to Q 03.08.04-23. The staff's expectation is that the site-specific verification is to be made against the standard design basis seismic demands. If the max forces indicated in COL Item 3.7-10 refer to forces other than the standard design basis seismic demands, please provide FSAR markups to identify the Table(s) and or FSAR Section(s) containing the magnitude for both the max forces and the standard design basis seismic demands and clarify the use of the max forces.
5. For item 4 in COL Item 3.7-10, clarify whether the forces and moments in Table 3.7.2-32 are the standard design basis demands for the east and west wing walls and pool walls. If so, please identify the specific case that constitutes the standard design basis seismic demands. If not the standard design basis seismic demands, please provide FSAR

markups to identify the standard basis seismic demands for those locations and respective FSAR Table(s) or Section(s).

6. Consistent with the site-specific approach for the seismic analysis and design of the fuel rack, please remove item 5 from COL Item 3.7-10.

The Staff's Feedback on Request Additional for Information 8911

Question 03.09.02- 43

Based on the review of NuScale's Closure Plan for RAI 8911, Question 03.09.02-43, the staff in Structural Engineering Branch (SEB) requests the applicant to update its Closure Plan to address the following concerns associated with FSAR Sections 3.7 and 3.8:

1. Listing the six SASSI analysis cases that are used in the NuScale Power Module (NPM) seismic analysis.
2. Description of the enhanced method of modeling the hydrodynamic mass and determining the hydrodynamic load for bay walls, walls in the refueling area, pool walls and floor.
3. Comparison of the NPM support loads obtained from the new analyses (SASSI and ANSYS 3D NPM) with the corresponding support loads used for the design of the NPM supports.
4. Comparison of the RFT support loads obtained from the new analyses (SASSI and ANSYS 3D NPM) with the corresponding support loads used for the design of the RFT supports.
5. Comparison of the hydrodynamic pressures obtained from the new analyses (SASSI and ANSYS 3D NPM) with the corresponding pressure loads used for the design of the pool walls and floor.
6. The final response spectra corresponding to the seismic input for the NPM seismic analysis (including the case when the lower reactor pressure vessel (RPV) is in the RFT).
7. Updating FSAR markups pertaining to Sections 3.7 and 3.8 that are impacted by new or re-analyses performed under this Closure Plan.