



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

November 7, 2018

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

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

SUBJECT: SUMMARY OF THE OCTOBER 2, 2018, CATEGORY 1 PUBLIC
TELECONFERENCE WITH NUSCALE POWER, LLC DESIGN
CERTIFICATION APPLICATION SECTIONS 3.7, "SEISMIC
DESIGN," AND 3.8, "DESIGN OF CATEGORY I STRUCTURES"

The U.S. Nuclear Regulatory Commission (NRC) held a Category 1 public teleconference on October 26, 2018, to discuss Final Safety Analysis Report Tier 2, Chapter 3, "Design of Structures, Systems, Components and Equipment," Sections 3.7, "Seismic Design," and 3.8, "Designs of Category I Structures," of the NuScale Power, LLC (NuScale) Design Certification Application. 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 No. ML18271A136. This meeting notice was also posted on the NRC public Website.

The meeting agenda and list of participants can be found in Enclosures 1 and 2, respectively. The technical issues discussed 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) No. 8932, Question 03.07.02-6 (ML18236A573), RAI No. 8936, Question 03.07.02-10 (ML18249A413) and RAI No. 8934, Question 03.07.02-15 (ML18239A307, ML18240A436).

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

Docket No. 52-048

Enclosures:

1. Meeting Agenda
2. List of Attendees
3. RAI Technical Issues Summary

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

SUBJECT: SUMMARY OF THE OCTOBER 2, 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"
 DATE: NOVEMBER 7, 2018

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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 2, 2018

10:30 p.m. – 12:00 p.m.

AGENDA

Public Meeting	
10:30-10:35am	Welcome and Introductions
10:35-11:55am	Discussion of the Request for Additional Information
11:55-12:00pm	Public - Questions and Comments

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 2, 2018

NAME	AFFILIATION
Marieliz Vera	U.S. Nuclear regulatory Commission (NRC)
Manas Chakravorty	NRC
Sunwoo Park	NRC
Robert Roche	NRC
Marty Bryan	NuScale Power, LLC (NuScale)
Josh Parker	NuScale
J.J. Arthur	NuScale
John Conly	NuScale
Tom Ryan	NuScale
Evren Ulku	NuScale
Hadi Razavi	NuScale
Steven Shaw	NuScale
Daniel Diefendorf	NuScale
Kyra Perkins	NuScale
Marvin Lewis	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"

Staff Feedback on Request Additional for Information No. 8932

Question 03.07.02-6 (Supplemental Response dated August 24, 2018)

1. NuScale Power, LLC (NuScale) proposed to add a new Combined License (COL) Item to the final safety analysis report (FSAR) to require the COL applicant to perform a site-specific evaluation of the effects of soil separation. However, the U.S. Nuclear Regulatory Commission (NRC) staff believes that a statement located immediately above the proposed COL Item 3.7-11 (see FSAR markup, Page 3.7-116, Draft Revision 2) which reads, "Based on the results of these studies, it is concluded that modeling the structures as fully embedded is an acceptable design approach," should be augmented with a qualifying statement that such a conclusion should be confirmed or established through a site-specific evaluation of the effects of soil separation on site-specific seismic demands, or to that effect.
2. In the proposed COL Item 3.7-11 statement, the NRC staff notes that a qualifying phrase "if applicable" is included. Please explain why this phrase is needed and what it implies.

Staff Feedback on Request Additional for Information No. 8936

Question 03.07.02-10 (Supplemental Response dated September 6, 2018)

1. In its proposed markup for FSAR Table 3.7.2-34, the applicant added items that account for NuScale Power Module (NPM) lug support and NPM skirt support. The NRC staff believes that both lug and skirt supports should include the seismic analysis Identification Codes, 1, 2, and 5, because the lug and skirt reaction forces from the SASSI RXB model (1, 2) and ANSYS 3D NPM model (5) are considered in the design process of these supports.
2. In its proposed markup for FSAR Section 3.7.2.1.2.2 (see the last paragraph on Page 3.7-122, Draft Revision 2), the applicant states that, "The lug supports are designed for a generic capacity in a detailed submodel and checked against the design loads from the SASSI2010 building model and 3-D model." The NRC staff believes that "design loads" in this statement is not a correct term; rather "reaction forces," as used in another markup paragraph (Page 3B-30), should be used. Note that these enveloped lug reaction forces are not used as the design loads but are shown to be bounded by the lug capacity. Also, consider referencing Table 3B-28 at the end of the quoted sentence above.

3. Clarify whether the 10 percent damping mentioned in item 5 of the RAI response is meant to indicate, “10% for reinforced concrete,” rather than, “10% for prestressed concrete.”

Staff Feedback on Request Additional for Information No. 8934

Question 03.07.02-15 (Supplemental Response dated August 27, 2018)

1. The NRC staff notes that the development of fluid-structure interaction (FSI) correction factor for the Reactor Building (RXB) pool is based on SASSI analyses using Soil Types 7, 8 and 11 and ANSYS analyses of a fixed-base model. For a design certification application, NuScale obtained a bounding correction pressure of 4.2 pounds per square inch (psi) (and the corresponding 0.28 g gravity loading) added to the SAP2000 RXB model to account for the FSI effects. For a future COL application that references the NuScale design control document (DCD), the FSI correction value will depend on the site-specific design parameters. Therefore, the NRC staff believes that the NuScale DCD should include a COL Item that requires the COL applicant to perform a site-specific evaluation of the FSI effects using the site-specific design ground motions and soil conditions.