



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

August 8, 2018

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

FROM: Getachew Tesfaye, Senior Project Manager /RA/  
Licensing Branch 1  
Division of Licensing, Siting,  
and Environmental Analysis  
Office of New Reactors

SUBJECT: SUMMARY OF THE JULY 19, 2018, CATEGORY 1 PUBLIC  
TELECONFERENCE TO DISCUSS NUSCALE POWER, LLC  
RESPONSES TO REQUESTS FOR ADDITIONAL  
INFORMATION ASSOCIATED WITH THE NUSCALE DESIGN  
CERTIFICATION APPLICATION

The U.S. Nuclear Regulatory Commission (NRC) held a Category 1 public teleconference on July 19, 2018, to discuss responses to the NRC staff requests for additional information associated with the NuScale Power, LLC (NuScale) design certification application. Participants included personnel from NuScale and a member of the general public.

The public meeting notice dated July 19, 2018, can be found in the NRC's Agencywide Documents Access and Management Systems under Accession No. ML18199A651. This meeting notice was also posted on the NRC public website.

Enclosed is the meeting agenda (Enclosure 1), list of participants (Enclosure 2), and overview (Enclosure 3).

Docket No. 52-048

Enclosures:

1. Meeting Agenda
2. List of Attendees
3. Meeting Overview

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

CONTACT: Getachew Tesfaye NRO/DLSE  
301-415-8013

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TO DISCUSS NUSCALE POWER, LLC RESPONSES TO REQUESTS FOR  
ADDITIONAL INFORMATION ASSOCIATED WITH THE NUSCALE DESIGN  
CERTIFICATION APPLICATION  
DATED: AUGUST 8, 2018

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**ADAMS Accession No.: ML18212A081****NRO-002**

OFFICE	DLSE/LB1:PM	DLSE /LB1:LA	DLSE/PPAC	DNRL/LB1:PM
NAME	GTesfaye	MMoore	RLavera*	GTesfaye (signed)
DATE	7/31/2018	8/01/2018	8/07/2018	8/08/2018

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**CATEGORY 1 PUBLIC TELECONFERENCE TO DISCUSS NUSCALE POWER, LLC**  
**RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION ASSOCIATED WITH THE**  
**NUSCALE DESIGN CERTIFICATION APPLICATION**

**MEETING AGENDA**

**July 19, 2018**

**1:00 – 1:15 PM**

Introductions and Identification of topics

**1:15 – 2:30 PM**

Discussion of U.S. Nuclear Regulatory Commission Staff's Questions regarding NuScale Power LLC's Responses to Requests Additional Information 9263, 9296, 9293, and 9286.

**2:30 – 2:45 PM**

Public Comments/Questions

**2:45**

Meeting Closure

**U.S. NUCLEAR REGULATORY COMMISSION**

**CATEGORY 1 PUBLIC TELECONFERENCE TO DISCUSS NUSCALE POWER, LLC**  
**RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION ASSOCIATED WITH THE**  
**NUSCALE DESIGN CERTIFICATION APPLICATION**

**LIST OF ATTENDEES**

**July 19, 2018**

<b>Name</b>	<b>Organization</b>
Getachew Tesfaye	U.S. Nuclear Regulatory Commission (NRC)
Sean Meighan	NRC
Edward Stutzcage	NRC
Ronald LaVera	NRC
Michael Dudek	NRC
Andy Campbell	NRC
Carrie Fosaaen	NuScale Power, LLC (NuScale)
Jon Bristol	NuScale
HQ Xu	NuScale
Jim Osborn	NuScale
Mark Shaver	NuScale
Sara Fields	Member of the public

**U.S. NUCLEAR REGULATORY COMMISSION**

**OVERVIEW OF THE JULY 19, 2018, TELECONFERENCE TO DISCUSS THE NUSCALE**

**POWER, LLC RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION**

**ASSOCIATED WITH THE NUSCALE DESIGN CERTIFICATION APPLICATION**

The purpose of this teleconference was to discuss the results of the U.S. Nuclear Regulatory Commission (NRC) staff's review of NuScale Power LLC's (NuScale) Responses to Requests for Additional Information (RAI) 9263, 9296, 9293, and 9286.

The following is the summary of the NRC staff's feedback and agreed upon next steps for the resolution of the remaining issues.

1. RAI No. 9263, Question 12.02-06, Low Reactor Coolant System (RCS) flow rate:
  - a. NRC Feedback: In RAI 9263 dated January 8, 2018, the NRC staff looked to understand how the design control document (DCD) will address the potential radiological impacts during crud burst of low flow RCS, specifically:
    - Provide information on how the application factored in and addressed the aspects of design as it related to mitigation of larger than expected crud bursts due to low flow RCS during crud burst clean up.
    - Provide information related to the radiological conditions of the refueling pool area (including refueling bridge) shortly after disassembly of the NuScale Power Modules (NPM) and throughout the refueling activities.
    - Provide information related to NuScale's ability to meet the Electric Power Research Institute, "Pressurized Water Reactor Primary Water Chemistry Guidelines," guideline of  $\leq 5\text{mr/hr}$  @ 1m above pool (refueling pool area) shortly after disassembly of the NPM, prior to adequate mixing of refueling pool area.
    - If the pool dose rates were higher than expected and would significantly impact outage occupational radiation exposure (ORE), would the refueling bridge be able to structurally support addition of temporary shielding?
  - b. Next Step: NuScale understood the NRC staff's question and provided clarification.
    - NuScale indicated that they had thought that there were interlocks provided in DCD Chapter 9, associated with restricting the movement of the refueling bridge when dose rates were high.

- NuScale also stated that they would just clean up longer and that the operators would have to wait to initiate fuel movement, until the pool clean up obtained the target dose rate.
- The staff asked if there was anywhere in the DCD that discussed the limitation of 5 mR/h @ 1 meter and 2.5 mR/h on the refueling bridge. NuScale pointed to ANSI/ANS-57.2.
- NuScale stated that they did not have the right people on the call to discuss the adequacy of the reactor coolant system mixing for taking sample to project the dose rate above the pool in accordance with DCD section 12.2.1.8.
- The NRC staff found the clarification helpful and took action to review interlocks associated with the refueling bridge movement and direct dose measurement. The staff will discuss this issue further with NuScale in a future meeting.

2. RAI No. 9296, Question 12.03-60, Reactor Building Pool Rad Zone:

- a. NRC Staff Feedback: In RAI 9296 dated January 8, 2018, the NRC staff looked to understand how the DCD obtained dose rates to support radiation zoning assignment. The response to RAI 9296, Question 12.03-60, dated June 11, 2018 (Agencywide Documents Access and Management Systems Accession No. ML18162A353), stated that an analysis was performed for an operator standing on the refueling bridge that determined that the operator would be exposed to a dose rate less than 2.5 mrem/hr, specifically:
  - Provide input variables and assumptions for the Monte Carlo Neutron Particle (MCNP) analysis used to obtain dose rate above pool.
- b. Next Step: NuScale understood the NRC staff's question and provided clarification. The NRC staff found the clarification acceptable and took action to continue its evaluation of the RAI response.

3. RAI No. 9293, Question 12.03-16, Dose Assessment:

- a. NRC Staff Feedback: In RAI 9293 dated January 8, 2018 the NRC staff looked to understand how NuScale is addressing ORE reduction in the design phase. Explain any design features that were initially incorporated or subsequently made as a result of dose analysis, specifically:
  - Describe any design features to be utilized in the drydock area to reduce outage ORE during high dose activities such as Control Rod Drive Mechanisms (CRDM) work, in-Core instrumentation, and steam generator work activities.
  - If component dose rates were higher than expected and would significantly impact outage ORE, is there adequate space in the drydock area to support the installation of temporary shielding around the disassembled NPM, or other components?

- Some of the activities time estimates appear to be significantly different than expected (such as time associated with activities on refueling bridge). Do any of the activity time estimates need to be reviewed?
- b. Next Step: NuScale understood the NRC staff's question and provided further clarification. The NRC staff found the clarification acceptable and took action to continue its evaluation of the RAI response.
4. RAI No. 9286, Question 12.03-12, Cobalt Reduction:
- a. NRC Staff Feedback: In RAI 9286, dated January 8, 2018, the NRC staff looked to understand how NuScale is addressing cobalt reduction, specifically:
- Explain/justify the difference between the NuScale stated goal of minimizing cobalt concentrations in materials with proposed 0.15 w/o values specified in Design Certification Application, Table 12.3-4, with is a factor of 7.5 higher than established industry goals, and 3 times higher than the user requirement(s) document (URD) standard.
- b. Next Step: NuScale understood the NRC staff's question and will submit a supplemental response to address the NRC staff's question.