

May 12, 2015

MEMORANDUM TO: Mark Tonacci, Chief
Small Modular Reactor Licensing Branch
Division of Advanced Reactors and Rulemaking
Office of New Reactors

FROM: Omid Tabatabai, Senior Project Manager /RA/
Small Modular Reactor Licensing Branch
Division of Advanced Reactors and Rulemaking
Office of New Reactors

SUBJECT: SUMMARY OF APRIL 23, 2015, PUBLIC MEETING WITH THE
U.S. NUCLEAR REGULATORY COMMISSION STAFF AND
NUSCALE POWER, LLC, TO DISCUSS NUSCALE'S PIPING
DESIGN (TAC No. RN6110)

On April 23, 2015, the staff from the U.S. Nuclear Regulatory Commission (NRC) and representatives from NuScale Power, LLC (NuScale) held a Category 1 public meeting at the NuScale Rockville office, located at 11333 Woodglen Dr., Suite 205, Rockville, MD 20852.

During the meeting, NuScale personnel responded to the NRC staff's questions on: (1) NuScale schedule for completion of piping systems, including piping design and pipe break hazards analysis; (2) NuScale's analysis methodology associated with the application of leak before break (LBB) for small size piping; and (3) assurance that space limitations inside the containment will not compromise the design of protective features for potential postulated pipe ruptures, in-service inspections, and in-service testing.

On April 27, 2015, NuScale also provided its responses to the staff questions in writing via an email. NRC staff questions and NuScale responses are available in the NRC Agencywide Documents Access and Management System (ADAMS) with accession number ML15118A602.

Related to the first item, NuScale stated its intent to complete piping and pipe rupture hazards analyses to a level of detail that may preclude the need for design acceptance criteria (DAC). The NRC staff clarified for NuScale that the staff's March 4, 2014, paper entitled, "Piping Level of Detail for Design Certification" (ADAMS Accession No. ML14065A067) provides guidance on a graded approach to the level of detail in piping analyses that would be necessary to certify a

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design without DAC. The preliminary analyses described in the table are meant as design-stage analyses that would be further refined and reconciled using as-procured, as-built information before completion of associated inspections, tests, analyses, and acceptance criteria (ITAAC) for the as-built plant. The table in the paper is not intended to provide prescriptive requirements for piping analysis. The NRC staff expressed an interest to hear future presentations from NuScale on the specific analyses to be completed.

In addition, specific to the pipe rupture hazards analyses, the NRC staff informed NuScale of its plans to revise Section 3.6.2 of the Standard Review Plan (SRP), NUREG-0800, and its associated Branch Technical Position 3-4, in lieu of creating a Design-Specific Review Standard (DSRS) for NuScale. The NRC staff clarified that the content of this update is essentially the same as the guidance in draft mPower DSRS versions of Section 3.6.2 and BTP 3-4. Therefore, NuScale can use this guidance for reference until the SRP update is available.

Related to the second item, NuScale described its plans to apply the LBB methodology for the feedwater piping and larger pipes. The nominal pipe size for the feedwater piping is smaller than any pipe for which the NRC staff has previously approved LBB, so the NRC staff described certain phenomena that should be addressed in an analysis for such small piping. NuScale provided additional clarification in the meeting and the written response referenced above. NuScale also clarified that it does not expect to submit a topical report on its LBB methodology or analysis results.

Related to the third item, NuScale stated that their reactor module was being designed with accessibility in mind, and that a mockup would be available both for the designers and the NRC staff to visualize the accessibility.

At the conclusion of the meeting, the NRC staff identified the following three areas where detailed presentations from NuScale would be beneficial to further mitigate the potential schedule risks associated with the technical items discussed in the meeting.

1. Pipe rupture hazards analysis, design completion with a level of detail consistent with the high-level guidance in the white paper
2. LBB methodology for small pipes, specifically, on the analysis approach
3. Jet impingement analysis methodology—particularly the potential non-conservatism in the associated standard that are described in mPower DSRS Section 3.6.2 Appendix A

The meeting agenda and meeting attendees list are included in Enclosure 1. The public meeting notice is available in ADAMS with accession number ML15097A050. No presentation slides were used during the meeting. Please direct any inquiries to Omid Tabatabai at (301) 415-6616, or email at omid.tabatabai@nrc.gov.

ADAMS is the system that provides text and image files of NRC's public documents and can be accessed at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. If you do not have access to ADAMS or have problems accessing the documents located in ADAMS, contact the NRC Public Document Room staff at (800) 397-4209, (301) 415-4737, or pdrr@nrc.gov.

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Project No.: PROJ0769

Enclosure:
Agendas and Lists of Attendees

cc: DC NuScale Power LLC Mailing ListServ

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ADAMS ACCESSION No.: ML15132A270

NRC-001

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DATE	05/12/2015	05/12/2015

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NuScale Power and NRC Public Meeting on Piping Design
 April 23, 2015
 1:00 pm – 2:30 pm

AGENDA

Time	Topic
1:00 - 1:10 pm	Introduction and Safety Message
1:10 - 1:30 pm	NuScale Piping Design, DAC and mockup visit
1:30 - 1:50 pm	Leak-before-break Methodology
1:50 - 2:10 pm	ISI/IST
2:10 - 2:30 pm	Public Questions and Comments

ATTENDANCE LIST

NAME	AFFILIATION	NAME	AFFILIATION
Matthew Mitchell	NRC	Gary Becker	NuScale Power
Omid Tabatabai	NRC	Steve Mirsky	NuScale Power
Mike Jones	NRC	Steve Pope	NuScale Power
Alexander Tsirigotis	NRC	Cyrus Afshar	NuScale Power
Theresa Clark	NRC	John Price	NuScale Power
Eric Reichelt	NRC	Randy Morrill	NuScale Power
Y.C. (Renee) Li	NRC	Tamas Liszkai	NuScale Power
Jennie Wike	NuScale Power	Heqin Xu	NuScale Power
Steve Strout	NuScale Power	Richard Rennie	Public
Mark Peres	NuScale Power		