March 7, 2016

MEMORANDUM TO: Mark Tonacci, Chief
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

FROM: Demetrius Murray, Project Manager ***/RA/***
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SUMMARY OF FEBRUARY 18, 2016, CLOSED PUBLIC MEETING WITH NUSCALE POWER, LLC TO DISCUSS THE CONTENT AND PURPOSE OF THE NUCLEAR ANALYSIS CODES AND METHODOLOGY TOPICAL REPORT (PROJ0769)

On February 18, 2015, the U.S. Nuclear Regulatory Commission (NRC) staff and representatives from NuScale Power, LLC (NuScale) held a meeting at the NuScale Rockville office located at 11333 Woodglen Drive, Suite 205, Rockville, MD

The purpose of this meeting was for NuScale to discuss the content and purpose of the Nuclear Analysis Codes and Methodology Licensing Topical Report (TR) and discuss technical details that could help inform NRC's alignment of review resources to support a timely and efficient review.

NuScale began the meeting with a brief background summary focusing on their small modular reactor design features, nuclear analysis codes, the underlying methodology, regulatory requirements, code qualification, benchmarking results, code bias and bias uncertainty determination, and codes applicable for NuScale.

NuScale staff discussed the Core Management Software (CMS) that will be utilized with the proposed qualification topical report to simulate various plant conditions ranging from startup testing to reactor engineering support. NuScale proposed CMS empirical data benchmarking to show CMS ability to accurately predict reactor physics parameters for experimental reactors most similar to the NuScale design. Although larger than the NuScale core, NuScale also purposed benchmarking commercial reactors to demonstrate the ability to correctly predict important physics parameters; NuScale presented various examples of data benchmarking to support their assessments.

CONTACT: Demetrius Murray, NRO/DNRL
(301) 415-7646

The NuScale CMS core suite will be utilized for nuclear design and analysis. The CMS qualification is supported by benchmarking comprising suitable critical experiments, experimental reactors, commercial reactors, and code-to-code comparisons. NuScale plans on using the discussed nuclear analysis codes suite for startup test predictions, core nuclear design and verifying the core design specific inputs to the Chapter 15 safety analyses are bounding. NuScale's goal is to submit a TR to the NRC staff for review with an estimated submittal date by the middle of 2016. NRC questions focused on how the code bias and uncertainties would be determined for a core design which has no directly applicable plant or experimental data. The NRC staff noted potential issues related to the proposed code to code comparison method presented by the applicant.

The meeting agenda and meeting attendees are included in Enclosures 1 and 2. The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) with Accession No. ML15307A564. The presentation slides are available in ADAMS with Accession No. ML16039A038. Please direct any inquiries to Demetrius Murray at (301) 415-7646, or email at Demetrius.Murray@nrc.gov.

The ADAMS system provides text and image files of NRC public documents and can be accessed through the NRC 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 pdr@nrc.gov.

Project No.: PROJ0769

Enclosures:
1. Meeting Agenda
2. Meeting Attendees

cc: NuScale Power LLC Listserv

The NuScale CMS core suite will be utilized for nuclear design and analysis. The CMS qualification is supported by benchmarking comprising suitable critical experiments, experimental reactors, commercial reactors, and code-to-code comparisons. NuScale plans on using the discussed nuclear analysis codes suite for startup test predictions, core nuclear design and verifying the core design specific inputs to the Chapter 15 safety analyses are bounding. NuScale's goal is to submit a TR to the NRC staff for review with an estimated submittal date by the middle of 2016. NRC questions focused on how the code bias and uncertainties would be determined for a core design which has no directly applicable plant or experimental data. The NRC staff noted potential issues related to the proposed code to code comparison method presented by the applicant.

The meeting agenda and meeting attendees are included in Enclosures 1 and 2. The meeting notice is available in the NRC's Agencywide Documents Access and Management System (ADAMS) with Accession No. ML15307A564. The presentation slides are available in ADAMS with Accession No. ML16039A038. Please direct any inquiries to Demetrius Murray at (301) 415-7646, or email at Demetrius.Murray@nrc.gov.

The ADAMS system provides text and image files of NRC public documents and can be accessed through the NRC 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 pdr@nrc.gov.

Project No.: PROJ0769

Enclosures:
3. Meeting Agenda
4. Meeting Attendees

cc: NuScale Power LLC Listserv

DISTRIBUTION:
PUBLIC
MTonacci, NRO
DMurray, NRO
GCranston, NRO
RidsOgcMailCenter
RidsAcrsAcnwMailCenter

ADAMS ACCESSION No.: ML16053A174 ***via email** **NRC002**

OFFICE	NRO/DNRL/LB1:PM	NRO/DNRL/LB1:LA	NRO/DNRL/LB1:LPM
NAME	DMurray*	MBrown*	GCranston
DATE	2/19/2016	2/24/2016	3/07/2016

OFFICIAL RECORD COPY

TOPICS NUCLEAR ANALYSIS CODES AND METHODOLOGY TOPICAL REPORT

MEETING AGENDA

FEBRUARY 18, 2016

TIME	TOPIC	LEAD
1:00 p.m. - 1:15 p.m.	Welcome and introductions	All
1:15 p.m. - 3:15 p.m.	Nuclear Analysis Codes and Methods Topical Presentation and Discussions	NuScale
3:15 p.m. - 3:30 p.m.	Discussion and Conclusion	All

Enclosure 1

MEETING ATTENDEES

NAME	AFFILIATION
Demetrius Murray	NRC
Mark Tonacci	NRC
Jeffrey Schmidt	NRC
Timothy Drzewiecki	NRC
Andrew Bielen	NRC
Peter Yarsky	NRC
Steven Pope	NuScale
Steven Unikewicz	NuScale
Guy Rhoden	NuScale
Laurence Losh	NuScale
Chris Kirby	NuScale
Renae Lenhof	NuScale
Guy Martin	NuScale
Archie Monoharan	NuScale
Larry Lanik	NuScale
Stephanie Seely	NuScale
Vick Nazareth	NuScale
Allyson Kitto	NuScale