January 28, 2016 Docket: PROJ0769

U.S. Nuclear Regulatory Commission
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SUBJECT: NuScale Power, LLC Final Schedule for Topical Report Submittals (NRC Project No. 0769)

REFERENCE: Letter from NuScale Power, LLC to U.S. Nuclear Regulatory Commission, "Projected Schedule For Topical Report Submittals in Advance of Design Certification Application," LO-1014-9056, dated October 20, 2014 (ML14293A862)

In the referenced letter dated October 20, 2014, NuScale Power, LLC (NuScale) provided a schedule for topical report submittals to the NRC to support NRC's resource planning efforts and to aid in the timely review of the NuScale Design Certification Application (DCA). The letter also indicated NuScale's intention to provide periodic updates to the schedule as further information became available. The purpose of this letter is to provide the final plan for topical report submittals. This final plan continues to support the NuScale DCA submittal schedule.

Attachment 1 provides the list of topical reports, an abstract, the specific approval being sought, and the submittal date. The schedule reflects insights gained from pre-application meetings and constructive feedback and input provided to NuScale by the NRC staff. The schedule also facilitates the incorporation of additional supporting information, such as test data, and more comprehensive design and analysis content for several of the listed reports.

As discussed with NRC staff in early December 2015, NuScale has modified its approach for advanced sensors. NuScale has determined that a topical report is unnecessary as uncertainty around the sensors has been reduced. In lieu of a topical report, NuScale plans to present the approach and status of sensor development, qualification method, and proof of concept testing results in multiple pre-application engagements. The required content will be included as part of the NuScale DCA.

Consistent with the discussions during the April 21, 2015 public meeting between the NRC and NuScale, NuScale is planning for a nominal response time of 60 days for NRC requests for additional information (RAI) for the reports in Attachment 1, as well as for RAIs associated with the DCA. As development and review of topical reports requires significant NRC and NuScale resources, NuScale requests feedback regarding availability of NRC staff resources for review of these topical reports in accordance with the submittal dates provided in the attachment.

This letter contains no regulatory commitments or changes to any existing commitments.

Please contact Jennie Wike at 541-360-0539 or at jwike@nuscalepower.com if you have any questions.

Sincerely,

Thomas A. Bergman
Vice President, Regulatory Affairs
NuScale Power, LLC

Attachment 1: "Final Schedule for Topical Report Submittals"

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Attachment 1
Final Schedule for Topical Report Submittals

The purpose of Attachment 1 is to provide NuScale's planned topical report submittals along with the approval being sought for each report. NuScale believes the NRC's normal process for reviewing topical reports meets NuScale's needs, and none of the topical reports need formal NRC approval in advance of the DCA.

No.	Report Title	Abstract	Specific Approval Being Sought	NRC Submittal Date
1	Containment Integrated Leak Rate Test (CILRT)	This topical report describes an alternative approach to 10 CFR 50, Appendix J, Type A containment integrated leakage rate testing (CILRT) that addresses the NuScale's unique design features. The approach quantifies leakage through all realistic leak pathways by means of local leakage rate testing (LLRT) and confirms absence of additional unidentified leakage by pressurizing the entire containment.	The methodology provides an acceptable alternative to CILRT requirements as defined in 10 CFR 50 Appendix J.	March 2016
2	AREVA Topical Report Applicability to NuScale Design	This topical report demonstrates the applicability of AREVA methods and associated codes for the NuScale fuel design and reload analyses. Specifically, six previously NRC approved topical reports and associated safety evaluation reports (SERs) are analyzed for technical and regulatory applicability to the NuScale small modular reactor (SMR). With the exception of three minor modifications necessary to accommodate unique features of the NuScale design, this report shows that the six AREVA topical reports and associated methods and codes are directly applicable to the NuScale SMR.	The six AREVA topical reports and three minor modifications for use in the design of fuel and performance of reload analysis.	March 2016
3	Nuclear Analysis Codes and Methodologies	This topical report describes and discusses application of nuclear analysis codes and methodologies to determine code biases and bias uncertainty. Details of the benchmarking performed, implementation of the codes and methodologies and the biases and bias uncertainty for the NuScale design will be provided in this report.	The nuclear analysis codes and methodologies for the calculations that assess safety of the nuclear design and analysis of the core.	June 2016
4	Steady State Core Thermal-Hydraulics and Primary System Stability	This topical report presents a comprehensive study of the thermal hydraulic stability of the NuScale reactor as a basis for licensing and compliance with the applicable regulations. Stability phenomena are considered from a fundamental level without assumptions pertaining to similarities or differences from other nuclear systems, yet with full cognizance of the rich historical background and licensing experience particularly with BWRs. Computational methods were developed for the analysis of the limiting instability modes for the NuScale reactor design during steady state normal operation and anticipated transients. The methodology selected for stability protection that resulted from the study is the region exclusion type rather than the detect and suppress type. The operational domain identified with potential instability is characterized with riser boiling, which is already excluded by the reactor protection system for considerations other than stability.	The methods applied for NuScale's analysis of module stability, NuScale's conclusion that the NuScale module is stable in the region identified with single phase flow in the riser, and the methodology of stability protection by regional exclusion.	July 2016
5	LOCA Evaluation Model	This topical report describes the LOCA Evaluation Model (EM), LOCA methodology, and will describe the NRELAP5 code modifications specific to NuScale. The EM will be developed following the Evaluation Model Development and Assessment Process (EMDAP) of Regulatory Guide (RG) 1.203. The process of assessing and validating the NRELAP5 code for LOCA will be described, from the development of an independent PIRT through code assessment and validation. The topical report will describe the LOCA methodology and will include a sample calculation that shows the application of the LOCA methodology to the NuScale Plant Module and will demonstrate that analyses performed with the EM for the NuScale SMR satisfy the requirements of 10 CFR 50, Appendix K, "ECCS Evaluation Models".	The methodologies and description of the specific models and codes to analyze LOCA accidents.	July 2016
6	Subchannel Methodology	This topical report describes the steady state and transient subchannel analysis of local fluid conditions in the reactor core, solving mass, momentum and energy conservation equations. The report will provide a detailed description of the methodology to perform subchannel analysis and an applicability assessment of the models, correlations and features in the VIPRE-01 code for the NuScale reactor design. Validation of the VIPRE-01 code against applicable test data and code-to-code benchmarking will be provided.	The thermal-hydraulic methodologies, including the applicability of the codes and correlations used and implemented.	September 2016
7	Non-LOCA Methodologies	This topical report will describe the codes and methods used for NuScale non-LOCA transient analysis of DCD Chapter 15 design basis events. The report will describe design basis events for which the codes and methods are applied, the computer codes used and their validation bases, the non-LOCA transient analysis process, event-specific methodology, and example representative transient analysis results.	The codes and associated analysis methodologies for transient analysis of NuScale non-LOCA DCD Chapter 15 design basis events.	September 2016
8	Critical Heat Flux Correlation	This topical report describes the development of a critical heat flux correlation for analyzing the thermal performance of the NuScale Power Module (NPM).	Application of NuScale's NSP CHF correlation to non-LOCA subchannel thermal-hydraulic safety calculations for the NuScale fuel design that incorporates AREVA's proven HMP/HTP technology. These safety calculations are performed using VIPRE-01.	September 2016