

August 19, 2016

Mr. Thomas Bergman  
Vice President, Regulatory Affairs  
NuScale Power, LLC  
1100 NE Circle Boulevard, Suite 200  
Corvallis, OR 97330

SUBJECT: PRE-APPLICATION READINESS ASSESSMENT PLAN OF THE NUSCALE  
POWER, LLC DESIGN CERTIFICATION DRAFT APPLICATION (PROJ0769)

Dear Mr. Bergman:

On June 17, 2015, NuScale Power, LLC (NuScale) submitted a letter notifying the U.S. Nuclear Regulatory Commission (NRC) that the application submittal date for the NuScale Design Certification (DC) is no later than December 31, 2016. Pre-application readiness assessments (hereinafter "readiness assessments") are typically completed 6 months prior to application submittal. The NRC, through discussions with NuScale, has determined that September 19, 2016, through September 29, 2016, is an appropriate period to conduct the readiness assessment based on when NuScale will have all chapters of the application ready.

The readiness assessment is not part of the NRC's official acceptance review process. The readiness assessment of the NuScale draft DC application will allow the NRC staff to understand the level of detail and identify any major issues or information gaps between the draft application and the technical content expected to be included in the final application submitted to the NRC staff. Therefore, the observations from the readiness assessment do not predetermine whether the application will be docketed.

The enclosed readiness assessment plan provides the details and logistics of the readiness assessment activities.

T. Bergman

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If you have any questions or concerns, please contact Mr. Gregory Cranston at 301-415-0546 or [Gregory.Cranston@nrc.gov](mailto:Gregory.Cranston@nrc.gov).

Sincerely,  
*/RA/*

Frank M. Akstulewicz, Director  
Division of New Reactor Licensing  
Office of New Reactors

Project No. PROJ0769

Enclosure:  
Readiness Assessment Plan

cc: NuScale listserv

T. Bergman

-2-

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**ADAMS Accession No.: ML16229A232**

**\*via email**

**NRO-002**

<b>OFFICE</b>	DNRL/LB1: PM*	DNRL/LB1: LA*	DNRL/LB1: BC	DNRL: D
<b>NAME</b>	GCranston	RButler	MTonacci	FAkstulewicz (SLee for)
<b>DATE</b>	08/16/2016	08/18/2016	08/18/2016	08/19/2016

**OFFICIAL RECORD COPY**

**PRE-APPLICATION READINESS ASSESSMENT PLAN OF THE NUSCALE POWER, LLC  
DESIGN CERTIFICATION DRAFT APPLICATION**

**September 19–29, 2016**

**Design Certification  
NuScale Power, LLC  
Project No. PROJ0769**

**LOCATION: NuScale Power, LLC  
11333 Woodglen Avenue  
Suite 205  
Rockville, Maryland 20852**

**PURPOSE**

The pre-application readiness assessment (hereinafter “readiness assessment”) of the NuScale Power, LLC (NuScale) draft Design Certification (DC) application prior to being submitted for a formal U.S. Nuclear Regulatory Commission (NRC) review will allow the NRC staff to (1) identify any information gaps between the draft application and the technical content expected to be included in the final application submitted to the NRC staff; (2) identify any major technical or policy issues that may adversely impact the docketing or technical review of the application; and (3) become familiar with the application, particularly in areas where NuScale is proposing new concepts or novel design features. The observations from the readiness assessment will inform NuScale in finalizing its application and also assist the NRC staff in the planning of NRC resources in preparation for the review once the application is formally submitted.

**BACKGROUND**

Following the issuance of combined licenses for Vogtle Electric Generating Plant Units 3 and 4, and Virgil C. Summer Nuclear Station Units 2 and 3, the NRC staff initiated a lessons-learned review to identify potential enhancements to the licensing process under Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” that could contribute to more effective and efficient reviews of future applications. After extensive outreach to external and internal stakeholders, in April 2013, the NRC staff issued the “New Reactor Licensing Process Lessons Learned Report,” (hereinafter “Lessons Learned Report”) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13059A239). In the Lessons Learned Report, the NRC staff identified the quality of applications as a significant contributor to overall project performance. The report identified readiness assessments as one of the means to ensure the appropriate quality of applications.

In a letter dated June 17, 2015 (ADAMS Accession No. ML15170A296), NuScale stated that the DC application submittal date is no later than December 31, 2016. In agreement with NuScale, the NRC staff has scheduled a readiness assessment of the DC draft application on September 19, 2016 at the NuScale offices in Rockville, Maryland.

Enclosure

**INFORMATION AND OTHER MATERIAL NECESSARY FOR THE READINESS ASSESSMENT**

As previously discussed with NuScale, the following should be available to support the readiness assessment: Full copies of the draft application, all supporting topical reports, all major supporting technical reports, examples of important calculations, and the NuScale staff that can answer questions related to these documents.

**READINESS ASSESSMENT SCOPE AND TEAM**

The following table shows the technical review areas and the responsible technical staff.

<b>Review Area</b>	<b>Chapter / Section</b>	<b>Reviewer(s)</b>
Seismic Analysis, American Society of Mechanical Engineers (ASME) Code, Mechanical Equipment Qualification	Chapter 3	Istar, G. Wang, Nie, Park, Thomas, Wong, Huang, Hansing, Le, Strnisha, Scarbrough, Law, Wu, Li, Tsirigotis, W. Wang, Graizer
Turbine Missiles & Leak-Before-Break Procedures	Chapter 3	Honcharik, Reichelt
Equipment Qualification	Section 3.11	LaVera
Reactor	Sections 4.2, 4.3, 4.4, 4.5.1, and 4.6	Van Wert, Drzewiecki, Skarda, Widrevitz, Burja
Reactor Coolant System	Sections 5.2.2, 5.2.5, 5.4.7, 5.4.10, 5.4.12	Li, Budzynski, Travis, Schmidt
Reactor Coolant System - Inservice Inspection, Vessel Integrity, Steam Generator Materials, and Steam Generator Program	Sections 5.2.4, 5.3.3, 5.4.2.1, and 5.4.2.2	Downey, Makar
Engineered Safety Features, including Containment Systems, Containment Fracture Prevention, Long-term Cooling and GSI 191	Chapter 6	Ashley, Chien, Goel, Grady, Haider, Travis, Wagage, Lu, Thurston, Widrevitz
Instrumentation and Controls	Chapter 7	Betancourt, Taneja, Truong, Ashcraft
Electrical System Design	Chapter 8	Som, Ray, Fitzpatrick, Goel, Sacko, Cintron
Auxiliary Systems – New and spent fuel storage and overhead heavy load handling systems	Sections 9.1.1, 9.1.2 and 9.1.5	Van Wert, Burja, Hernandez, Le
Auxiliary Systems – Process and Post Accident Sampling and Communication	Sections 9.3.2 and 9.5.2	Wong, Marshall, Robinson

Auxiliary Systems – Fire Protection Program	Section 9.5.1.1	Vettori
Auxiliary Systems – CVCS	Section 9.3.4	Schmidt
Steam and Power Conversion	Sections 10.3 and 10.4.7	Nolan, Stubbs
Radioactive Effluents, Radiation Protection	Chapters 11 and 12	Williams, Clement, LaVera, Quinlan, Harvey, White, Marshall, Robinson
Emergency Planning	Section 13.3	Marshall, Robinson
Physical Security	Sections 13.6, 13.6.2, and 14.3.12	Lee
Initial Test Program	Section 14.2	Kendzia, Budzynski, Drzewiecki
Transient and Accident Analysis, Severe Accident Analysis and Probabilistic Risk Analysis	Chapters 15 and 19	Schmidt, Burja, Thurston, Travis, Skarda, Van Wert, Drzewiecki, Gilmer, Lu, Caruso, Nakanishi, Schaperow, Budzynski
Safety Analysis – Siting	Chapter 15	Hart, Quinlan, Harvey, White
Human Factors Engineering	Chapter 18	Kent, Pieringer, Marshall, Robinson
Severe Accident Mitigation Design Alternatives	Environmental Report	Palmrose
Aircraft Impact Assessment	Section 19.5	Nolan, Andrukat
Mitigation of Beyond-Design-Basis Events	Chapter 20	W. Wang, Grazier, Marshall, Thomas, Scarbrough, Ashley, Chien, Budzynski, Burja
Multi-Module Design Features and Safety Basis Summary	Chapter 21	Nakanishi, Hart

## **LOGISTICS**

The readiness assessment will take place at the NuScale offices located in Rockville, Maryland and at NRC Headquarters via the NuScale Electronic Reading Room. It is scheduled to begin with an entrance meeting upon the arrival of the team on September 19, 2016 and end with an exit meeting on September 29, 2016. Daily debriefings will be performed as needed.

A detailed daily agenda will be developed with NuScale.

The NRC technical staff will charge time to the fee-billable CAC Number: RT3300

## **SPECIAL REQUESTS**

Request NuScale coordinate with NRC staff to transmit physical security safeguards information (SGI) for review at NRC Headquarters. Appropriate handling and protection of SGI and proprietary information shall be acknowledged and observed throughout the readiness assessment.

## **READINESS ASSESSMENT OBSERVATIONS**

The readiness assessment observations, including any identified technical concerns or major information gaps, will be presented during the exit meeting and will be sent to NuScale in a publically-available report that will also summarize the scope of the readiness assessment. The NRC staff's expectation is that NuScale will consider the observations from the readiness assessment while finalizing the application and re-evaluate the application submission date based on their evaluation of the time to address the readiness assessment observations.

## **REFERENCES**

1. NRC, "Design Specific Review Standard (DSRS) for NuScale Design (ADAMS Accession No. ML15355A295).
2. NRC, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800.
3. NRC, "Combined License Applications for Nuclear Power Plants (LWR Edition)," Regulatory Guide 1.206.
4. 10 CFR, Part 50, "Domestic Licensing of Production and Utilization Facilities."
5. 10 CFR, Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."