



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

July 18, 2022

Ms. Carrie A. Fosaaen
Director, Regulatory Affairs
NuScale Power, LLC
1100 Circle Boulevard, Suite 200
Corvallis, OR 97330

SUBJECT: PREAPPLICATION READINESS ASSESSMENT PLAN OF THE NUSCALE
STANDARD DESIGN APPROVAL DRAFT APPLICATION

Dear Ms. Fosaaen:

In NuScale Power, LLC's (NuScale's) standard design approval application (SDAA) Regulatory Engagement Plan, Revision 2, dated February 16, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21047A476), NuScale stated its plan to submit the SDAA for its small modular reactor design in the form of a Final Safety Analysis Report (FSAR) for the entire facility per 10 CFR 52.135. By letter dated May 25, 2022 (ML22145A460), NuScale requested the NRC staff to conduct a pre-application readiness assessment of the draft SDAA prior to its planned submittal in December 2022.

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

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

C. Fosaaen

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If you have any questions regarding this matter, please contact Mr. Getachew Tesfaye, Senior Project Manager, at (301) 415-8013 or Getachew.Tesfaye@nrc.gov.

Sincerely,

/RA/

Brian Smith, Division Director
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

Docket No.: 99902078

Enclosure: Readiness Assessment Plan

cc: NuScale DC ListServ

SUBJECT: PREAPPLICATION READINESS ASSESSMENT PLAN OF THE NUSCALE
STANDARD DESIGN APPROVAL DRAFT APPLICATION,
Dated: July 18, 2022

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NRR-106

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**PREAPPLICATION READINESS ASSESSMENT PLAN OF THE NUSCALE
STANDARD DESIGN APPROVAL DRAFT APPLICATION**

July 2022

Docket No. 99902078

LOCATION

NuScale Electronic Reading Room (eRR)

PURPOSE

NuScale Power, LLC (NuScale) has voluntarily agreed to engage with the NRC staff in a preapplication readiness assessment (hereinafter “readiness assessment”) of the draft NuScale Standard Design Approval Application (SDAA) before the application is submitted for a formal U.S. Nuclear Regulatory Commission (NRC) review.

The readiness assessment will allow the NRC staff to:

- identify information gaps between the draft application and the technical content required in the application submitted to the NRC,
- identify major technical or policy issues that may adversely impact the docketing or technical review of the application, and
- 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 the application and assist the NRC staff in planning NRC resources in preparation for the formal application.

BACKGROUND

In NuScale’s SDAA Regulatory Engagement Plan, Revision 2, dated February 16, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21047A476), NuScale stated its plan to submit the SDAA for its small modular reactor design in the form of a Final Safety Analysis Report (FSAR) for the entire facility per 10 CFR 52.135. By letter dated May 25, 2022 (ML22145A460), NuScale requested the NRC staff to conduct a pre-application readiness assessment of the draft SDAA prior to its planned submittal in December 2022.

The NRC will conduct the readiness assessment of the draft SDAA using NuScale’s Electronic eRR in August and September 2022.

SCOPE OF THE READINESS ASSESSMENT

The readiness assessment of NuScale’s draft application will cover the draft FSAR Chapters 2 through 19. Chapter 1 will not be included. NuScale has eliminated Chapters 20 and 21 by incorporating the contents into Chapters 15 and 19.

INFORMATION AND OTHER MATERIAL NECESSARY FOR THE READINESS ASSESSMENT

The staff discussed with NuScale what is needed for the readiness assessment. The following is needed to support the readiness assessment: FSAR Chapters 2 through 19 of the draft application, all available supporting topical reports, all major supporting technical reports, examples of important calculations, and staff who can answer questions related to these documents.

READINESS ASSESSMENT TEAM

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

Review Area	Reviewer(s)
Chapter 2, Site Characteristics and Site Parameters Chapter 3, Design of Structures, Systems, Components and Equipment Chapter 16, Technical Specifications Chapter 17, Quality Assurance and Reliability Assurance	David Drucker, supported by technical staff
Chapter 4, Reactor Chapter 5, Reactor Coolant System and Connecting Systems Chapter 15, Transient and Accident Analyses	Bruce Bavol, supported by technical staff
Chapter 6, Engineered Safety Features Chapter 18, Human Factors Engineering	Getachew Tesfaye, supported by technical staff
Chapter 7, Instrumentation and Controls Chapter 8, Electric Power Chapter 13, Conduct of Operations Chapter 14, Initial Test Program and Inspections, Tests, Analysis, and Acceptance Criteria	Ricky Vivanco, supported by technical staff
Chapter 9, Auxiliary Systems Chapter 10, Steam and Power Conversion System Chapter 11, Radioactive Waste Management Chapter 12, Radiation Protection Chapter 19, Probabilistic Risk Assessment and Severe Accident Evaluation	Alina Schiller, supported by technical staff

LOGISTICS

The readiness assessment will employ NuScale's eRR and will be conducted in phases. It is scheduled to begin on July 26, 2022, with a virtual entrance meeting, following the posting of the Chapters for the first phase in the eRR and will end with a virtual exit meeting at the conclusion of the last phase. The staff will have two weeks to complete its assessment for each phase/chapter grouping. NuScale will be briefed on the observations of the phase of the assessment upon completion of each phase. Daily debriefings with NuScale will be scheduled as needed. Below are the proposed readiness assessment chapter groupings by phase.

Chapter Grouping and Schedule for Each Phase	
Dates for posting chapters in eRR	SDAA Material Included
7/25/2022	Chapters: 3.2, 17
8/1/2022	Chapters: 2, 10
8/8/2022	Chapters: 7, 8
8/15/2022	Chapters: 6.4, 9.2-9.4, 11, 12, 13
8/29/22	Chapters: 4, 5, 9.1, 9.5, 9A
9/12/22	Chapters: 3.3-3.5, 3.7-3.13, 3A-C, 14, 16
9/26/22	Chapters: 3.6, 6 (except 6.4), 15, 19, 18

Review Approach

The NuScale SDAA review and the readiness assessment will be a hybrid to the traditional DCA review approach (i.e., a scaled down number of reviewers from the DCA review who will: (1) have knowledge of the prior review, (2) focus primarily on the changes proposed in the SDAA design, and (3) will be guided/advised by an Interdisciplinary Review Team (IRT).

The Project Team will conduct a streamlined readiness assessment that includes the following aspects:

- NuScale has voluntarily requested a readiness assessment be performed by the NRC staff in a targeted and streamlined manner,

- NRC will control phase and session attendance and will specify charging codes for technical reviewers,
- NuScale has requested targeted engagement with NRC technical reviewers on changes proposed in the SDAA,
- NRC will implement the assessment in two-week phases on specified technical engagements (i.e., on chapters and/or topics),
- NuScale will provide tailored presentations and discussions to technical staff,
- NRC will implement real-time problem/issue identification and documentation via SharePoint,
- NRC will integrate the IRT concept into assessment activities (i.e., IRT staff engages in each technical phase and will meet periodically to advise on needed adjustments),
- NRC will provide daily hotwashes and immediate feedback to NuScale,
- NRC will facilitate weekly management discussions on the assessment's progress (NRC to NRC, and NRC to NuScale),
- NRC will facilitate the IRT holistic learning of the US460 design in order to aid in their independent actions (risk assessment, assessment of issues, etc.) needed during each review phase,
- NRC will streamline PM/technical staff evaluation of NuScale's proposed design changes.

NRC will target to complete the readiness assessment in 12 weeks. The technical reviewers will perform the review consistent with LIC-116. In conducting this readiness assessment, the staff will deviate from LIC 116 in the following ways:

- As the technical staff perform their review during the phase, they will discuss their observations with their branch chief prior to entry into SharePoint. As these observations are discussed with NuScale during the phase, they will be considered draft.
- By the end of the phase, all input into SharePoint will be considered final and will be discussed with NuScale at the exit briefing for that phase. No formal memo from the technical staff's branch chiefs will be provided.

READINESS ASSESSMENT OBSERVATIONS

The NRC will send the readiness assessment observations, including any identified technical concerns or major information gaps, to NuScale in a publicly available report that will also summarize the scope of the readiness assessment. NRC Office Instructions LIC-116 (ML20104B698) delineates the timeline for the final report to be completed within 45 calendar days of completion of the readiness assessment. The Readiness Assessment Team will endeavor to complete the final report as quickly as possible in less than 45 days using the streamlined process described above. To protect the applicant's proprietary information, if needed, the staff will issue a proprietary version of the readiness assessment report. The staff's expectation is that NuScale will consider the observations from the readiness assessment while finalizing the application and will reevaluate the application submission date based on its evaluation of the time to address the readiness assessment observations.