



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

May 16, 2019

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

SUBJECT: NUSCALE POWER, LLC, DESIGN CERTIFICATION APPLICATION  
PHASE 2 REVIEW STATUS

Dear Mr. Bergman:

The purpose of this letter is to communicate the status of the U.S. Nuclear Regulatory Commission (NRC) staff's Phase 2 review of the NuScale Design Certification Application (DCA). This letter is a follow up to the status letter we provided you on January 17, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19008A270). Through sustained effort by NuScale and the NRC, the NRC staff has met the Phase 2 public milestone for most of the 21 DCA chapters through the completion and issuance of Safety Evaluations (SEs) with Open Items (OIs). In addition, the NRC has completed Phase 3 actions for many of these chapters with presentations made to the Advisory Committee on Reactor Safeguards (ACRS). Recognizing the substantial progress that has been made and the continued engagement on the remaining unresolved issues, the NRC staff remains confident that, if timely resolution of the issues described in this letter and the OIs identified in the Phase 2 SEs is achieved, the overall 42-month schedule can be met.

Although the NRC staff has completed the Phase 2 SEs with OIs for most of the DCA chapters, the NRC staff cannot declare it has met the Phase 2 milestone of May 16, 2019. Given the remaining unresolved issues without a mutually understood and clearly defined path toward resolution, the NRC staff could not issue SEs with OIs for Chapters 15 and 20. However, the NRC staff issued a preliminary draft SE with OIs for Chapter 15 to support a special meeting with the ACRS to discuss key issues related to this chapter and its associated topical reports scheduled for June 19-20, 2019. The NRC expects to issue the SE with OIs for Chapter 20 before the tentative July 9, 2019, ACRS meeting. In addition, even though the NRC issued SEs with OIs for Chapters 3 and 6, each of these chapters has a few remaining unresolved issues that do not have a mutually understood and clearly defined path toward resolution at this time.

For Chapter 3, the NRC staff completed the Phase 2 SE for all sections except 3.11, "Environmental Qualification of Mechanical and Electrical Equipment," which is related to the revised accident source term methodology. NuScale submitted Revision 3 of TR-0915-17565, "Accident Source Term Methodology," on April 21, 2019 (ADAMS Accession No. ML19112A172), which revises NuScale's design approach related to the environmental qualification for equipment. This methodology change was modeled on the concept outlined in the NuScale white paper on the same subject dated January 31, 2019 (ADAMS Accession No. ML19032A146). The NRC staff is conducting an acceptance review of this topical report and developing an information paper to the Commission documenting its perspectives on the

white paper and the planned approach for reviewing the revised methodology. The NRC staff anticipates further discussion with NuScale to support the review of the accident source term methodology.

For Chapter 6, the NRC staff has completed the Phase 2 SE for all sections except those related to the containment margins analysis, which NuScale is presently revising. The NRC staff anticipates additional discussions with NuScale related to the revisions and the effects on the NRC staff's review.

For Chapter 15, there are numerous unresolved issues without a mutually understood and clearly defined path toward resolution at this time. These issues are related to the underlying methodologies used in the NuScale design basis accident analyses, the thermal-hydraulic and neutronic phenomena modeled in the analyses for long-term cooling and post-shutdown return to power, and recent changes to the NRELAP5 design basis accident analysis tool and supporting input models. Related to Chapters 3 and 15, NuScale submitted a letter dated December 14, 2018 (ADAMS Accession No. ML18351A145), discussing the application of the single failure criterion to the inadvertent actuation block valve. On April 11, 2019, the NRC staff issued SECY-19-0036, "Application of the Single Failure Criterion to NuScale Power, LLC's Inadvertent Actuation Block Valves" (ADAMS Accession No. ML19060A162), requesting Commission direction. Once the Commission provides direction on this policy matter, or sooner, NuScale and the staff will need to act promptly to bring the issue to closure. For each of these issues, the NRC staff and NuScale continue to engage to reach alignment on a clear path toward resolution. The NRC staff expects NuScale to submit its responses by mid-June to support resolution of the Chapter 15 issues.

In DCA Chapter 20, NuScale requested finality on its approach to meet the draft rule on the mitigation of beyond-design-basis events (MBDBE) that the NRC published in the *Federal Register* on November 13, 2015 (80 FR 70609). NuScale and the NRC staff continue to discuss the applicability of the final MBDBE rule (ADAMS Accession No. ML19023A038), which the Commission affirmed on January 24, 2019, to the NuScale design. The NRC staff is developing an information paper to the Commission documenting its perspective and planned approach for applying certain aspects of the MBDBE final rule to the NuScale design. The NRC staff anticipates further discussion with NuScale to support the closure of this issue.

To meet the overall 42-month schedule, NuScale and the NRC staff must resolve the issues discussed above and the OIs identified in the completed Phase 2 SEs to meet the December 12, 2019, Phase 4 milestone for completion of an Advanced Safety Evaluation Report with no Open Items. If you have any questions, please contact me at (301) 415-1634 or via e-mail at [robert.taylor@nrc.gov](mailto:robert.taylor@nrc.gov).

Sincerely,

/RA/

Robert M. Taylor, Director  
Division of Licensing, Siting,  
and Environmental Analysis  
Office of New Reactors

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 PHASE 2 REVIEW STATUS DATED: May 16, 2019

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**ADAMS Accession No.: ML19122A050**                      **\*via email**                      **NRO-002**

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