



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

MEMORANDUM TO: Walter Kirchner, Lead  
NuScale Subcommittee  
Advisory Committee on Reactor Safeguards

FROM: Matthew Sunseri, Member  
Advisory Committee on Reactor Safeguards

SUBJECT: INPUT FOR ACRS REVIEW OF THE NUSCALE STANDARD  
DESIGN APPROVAL (SDA) APPLICATION – SAFETY  
EVALUATION REPORT FOR CHAPTER 17, “QUALITY  
ASSURANCE AND RELIABILITY ASSURANCE”

This memorandum covers NuScale Chapter 17 without section 17.4 regarding quality assurance (QA) and reliability assurance. Section 17.4 will be addressed in a separate memorandum. In response to the Subcommittee’s request, I have reviewed the NRC staff’s safety evaluation report (SER) provided to support ACRS review of the standard design approval (SDA) application, and the associated section of the applicant’s submittal for Chapter 17, “Quality Assurance and Reliability Assurance.” The following is my recommended course of action concerning further review of this chapter and the staff’s associated SER.

### **Background**

Chapter 17 of the SER documents the staff’s review of the QA program for NuScale designs. Chapter 17 discusses QA during the design phase, QA during the construction and operations phases, the reliability assurance program, and the QA program description (QAPD) for the NuScale Power Plant US460 standard design. It also discusses a program for implementing Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65, “Requirements for monitoring the effectiveness of maintenance at nuclear power plants.” The reliability assurance program described in Section 17.4 applies to those systems, structures, and components identified as being risk significant or important contributors to plant safety.

### **SER Summary**

The SER documents the staff’s evaluation of the applicant’s design for compliance with applicable regulations and standards, including 10 CFR Part 52, Subpart E, “Standard Design Approvals.” The NRC staff evaluated the descriptions and discussions of NuScale’s design phase QA program and other related proposed QA programs. Based on the above determinations, the NRC staff found that the descriptions and discussions of NuScale’s QA programs are sufficient and meet the applicable regulatory requirements and guidance, and acceptance criteria, for the issuance of an SDA.

### **Concerns**

I did not identify any specific deficiencies or concerns in my review.

### **Recommendation**

As lead reviewer for NuScale SDA application, Chapter 17 (not including 17.4), I recommend that no additional committee review is necessary.

### **References**

1. U. S. Nuclear Regulatory Commission, "Safety Evaluation of NuScale SDAA Chapter 17, 'Quality Assurance and Reliability Assurance'," February 13, 2024 (ML23346A042).
2. NuScale Power, LLC, "Standard Design Approval Application, Part 2, Chapter 17, "Quality Assurance and Reliability Assurance'," Revision 1, October 31, 2023 (ML23304A371).
3. U. S. Nuclear Regulatory Commission, "Safety Evaluation of Licensing Topical Report MN-122626-A, "NuScale Power, LLC Quality Assurance Program Description," Revision 1, December 28, 2023 (ML23361A122).
4. NuScale Power, LLC, "Licensing Topical Report MN-122626-A, 'NuScale Power, LLC Quality Assurance Program Description'," Revision 1, February 2, 2024 (ML24033A318).

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