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

May 29, 2025

Ms. Carrie A. Fosaaen
Vice President, Regulatory Affairs and Services
NuScale Power, LLC.
1100 NE Circle Boulevard, Suite 200
Corvallis, OR 97330

SUBJECT: STANDARD DESIGN APPROVAL FOR THE NUSCALE POWER COMPANY, LLC US460 POWER PLANT DESIGN

Dear Ms. Fosaaen:

This letter provides the U.S. Nuclear Regulatory Commission (NRC) staff's approval of the NuScale Power Company, LLC (NuScale) US460 standard design approval (SDA) application.

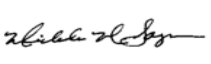
The SDA allows the NuScale design to be referenced in an application for a construction permit or operating license under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," or an application for a combined license or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." However, the issuance of this SDA does not constitute a commitment to issue a permit, design certification (DC) or license, or in any way affect the authority of the Commission, the Atomic Safety and Licensing Board, or other presiding officers in any proceeding on an application for a construction permit, operating license, combined license, or manufacturing license that references the SDA, conducted under 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders."

Issuance of the enclosed SDA signifies the completion of the NRC staff's technical review of the NuScale US460 design. The NRC staff performed its technical review of the NuScale US460 SDA application in accordance with the standards for review of SDA applications set forth in 10 CFR Part 52, Subpart E, "Standard Design Approvals." Additionally, the Advisory Committee on Reactor Safeguards reviewed and reported on the NRC staff's safety evaluation report (SER) with no open items for the NuScale application in its letter dated May 21, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25136A329).

On the basis of its evaluation and independent analyses, as described in the NRC staff's final safety evaluation report (ML25086A073), the staff has concluded that NuScale's application for standard design approval meets the applicable portions of 10 CFR Part 52, Subpart E, including 10 CFR 52.137, "Contents of applications; technical information," and the review standards in 10 CFR 52.139, "Standards for review of applications." In accordance with 10 CFR 52.147, "Duration of design approval," this SDA is valid for 15 years from the date of issuance; and the design approval continues to be valid beyond the date of expiration in any proceeding on an application that references this SDA and is docketed before the date of expiration of the design approval.

If you have questions about this approval, please contact Getachew Tesfaye at (301) 415-8013, or via e-mail at Getachew.Tesfaye@nrc.gov.

Sincerely,



Signed by Sampson, Michele
on 05/29/25

Michele Sampson, Director
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

Docket No.:052-50
and Proj. No.: 99902078

Enclosure: NuScale US460 Standard
Design Approval

cc w/encl: NuScale US460 Standard
Design Approval GovDelivery

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DATED: MAY 29, 2025

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ADAMS Accession No(s): ML25129A004 ***via e-concurrence** **NRR-106**

OFFICE	BC: DNRL: NRLB	LA: DNRL: NRLB	PM: DNRL: NRLB	PM: DNRL: NRLB
NAME	MJardaneh	SGreen	PChowdhury	GTesfaye
DATE	5/8/2025	5/09/2025	5/09/2025	5/9/2025
OFFICE	BC: DNRL: NRLB	DD: NRR	D: NRR/DNRL	
NAME	MJardaneh	GBowman	MSampson	
DATE	5/21/2025	5/26/2025	5/29/25	

OFFICIAL RECORD COPY

DOCKET NO. 52-050

NUSCALE POWER STANDARD DESIGN

US460 STANDARD DESIGN APPROVAL

PURSUANT TO SUBPART E OF 10 CFR PART 52

(1) On November 21, 2022, NuScale Power, LLC (NuScale) informed the U.S. Nuclear Regulatory Commission (NRC) of its intent to submit a standard design approval (SDA) application for its US460 design in stages, along with supporting technical reports, by December 31, 2022 (NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML22325A349). By letter dated November 23, 2022, NuScale submitted the first part of its application (non-public, withheld pursuant to 10 CFR 2.390) for a standard design approval of the NuScale US460 SMR design, pursuant to Section 103 of the Atomic Energy Act of 1954, as amended, and part 52, subpart E, of title 10 of the *Code of Federal Regulations* (10 CFR), "Licenses, Certifications, and Approvals for Nuclear Power Plants." Subsequently, NuScale submitted the remaining portions of its application in stages, between November 29, 2022, and December 31, 2022. The documents that were submitted as part of NuScale's SDA application can be found in ADAMS under ML22339A066. Following the submission of supplemental information requested by the NRC staff (ML23058A157), the SDA application was accepted for docketing on July 31, 2023 (ML23198A163). On April 9, 2025, NuScale submitted Revision 2 of the SDA application for the NuScale US460 standard plant design (ML25099A236).

(2) The SDA application and its references contain design information that Subpart E, "Standard Design Approvals," of 10 CFR Part 52, require for a standard plant design. The NuScale standard design is a nuclear power facility with a rated reactor core power level of 250 megawatts thermal (MWt) or 77 megawatts electrical (MWe), per module with a capability for up to 6 modules. Therefore, the overall power output for a 6-module plant is 1,500 MWt (462 MWe). Chapter 1 of the SDA application's final safety analysis report describes the scope of this design.

(3) The NRC staff reviewed the NuScale US460 standard design application and concluded that the NuScale design is acceptable. The NRC staff's final safety evaluation report (FSER) dated May 22, 2025, presents the findings of the NRC staff's evaluation of the NuScale US460 standard design application (ML25086A073).

(4) The Advisory Committee on Reactor Safeguards reviewed and reported on the NRC staff's safety evaluation report with no open items for the NuScale US460 standard design application in a letter dated May 21, 2025 (ML25136A329).

(5) On the basis of its review and the findings reported in the FSER, the NRC staff concludes that the information in the SDA application regarding the NuScale US460 design, described in item (2) above, complies with the requirements in Subpart E of 10 CFR Part 52, including 10 CFR 52.137, "Contents of applications; technical information," and 10 CFR 52.139, "Standards for review of applications."

(6) The NRC staff finds that the NuScale US460 standard design is acceptable for use as a reference design for a construction permit, operating license, manufacturing license, or combined license application for a facility that is located at a site whose characteristics fall within the site parameters specified in the SDA application, provided that portions of the facility that are outside the scope of the approved standard design and interface with the approved standard design conform to the interface requirements given in the SDA application.

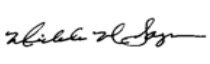
(7) This SDA and all applications that reference it are subject to all applicable provisions of the Atomic Energy Act of 1954, as amended, and to the rules, regulations, and orders of the Commission now or hereafter in effect. In addition, an applicant who references this SDA shall incorporate into its application the operational requirements specified in the SDA application, including the technical specifications.

(8) This SDA does not constitute a commitment to issue a permit, design certification, or license or in any way affect the authority of the Commission, the Atomic Safety and Licensing Board, or other presiding officers to consider any application for a permit, design certification, or license in any proceeding under 10 CFR Part 2, “Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders.”

(9) This SDA is effective on May 29, 2025, and will expire on May 28, 2040. The expiration of the SDA shall not affect its use in an application that references this SDA and is docketed before the date of expiration.

Dated in Rockville, Maryland, this 29th day of May, 2025.

FOR THE NUCLEAR REGULATORY COMMISSION


Signed by Sampson, Michele
on 05/29/25

Michele Sampson, Director
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation