



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

November 07, 2024

MEMORANDUM TO: Mahmoud Jardaneh, Chief
New Reactor Licensing Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

FROM: Getachew Tesfaye, Senior Project Manager **/RA/**
New Reactor Licensing Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

SUBJECT: AUDIT PLAN FOR THE STAFF REVIEW OF THE NUSCALE
POWER, LLC STANDARD DESIGN APPROVAL APPLICATION –
NUSCALE US460 DESIGN – RELATED TO DOCUMENTS THAT
SUPPORT CONFIRMATORY REVIEWS AND REQUEST FOR
ADDITIONAL INFORMATION RESPONSES

By letter dated October 31, 2023, NuScale Power, LLC (NuScale) submitted Standard Design Approval Application (SDAA), Revision 1 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23306A033). The associated topical reports (TRs) that are being reviewed with the SDAA are: TR-0516-49422, "Loss of Coolant Accident (LOCA) Evaluation Model," Revision 3 (ML23008A002); TR-0516-49416, "Non-LOCA Transient Analysis Methodology," Revision 4 (ML23005A305); TR-124587, "Extended Passive Cooling and Reactivity Control Methodology," Revision 0 (ML23005A308); and TR-131981, "Methodology for the Determination of the Onset of Density Wave Oscillations (DWO)," Revision 1 (ML23212B224). The purpose of this audit is to review documents that support confirmatory evaluations and request for additional information responses.

The audit will begin on September 18, 2024, with an Entrance meeting. The audit is being conducted primarily via the established NuScale Electronic Reading Room and at NuScale's offices in Rockville, Maryland and Corvallis, Oregon. The U.S. Nuclear Regulatory Commission (NRC) headquarters offices can also be used for hybrid (virtual/in-person) audit meetings, as appropriate. The contents of the audit plan are provided as an enclosure to this memorandum.

Docket No. 05200050

Enclosure:
Audit Plan

cc w/encl: NuScale Power, LLC Listserv

CONTACT: Getachew Tesfaye, NRR/DNRL
301-415-8013

SUBJECT: AUDIT PLAN FOR THE STAFF REVIEW OF THE NUSCALE POWER, LLC
 STANDARD DESIGN APPROVAL APPLICATION – NUSCALE US460 DESIGN –
 RELATED TO DOCUMENTS THAT SUPPORT CONFIRMATORY REVIEWS
 AND REQUEST FOR ADDITIONAL INFORMATION RESPONSES
 DATED: NOVEMBER 07, 2024

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ADAMS Accession No: ML24311A005***via email****NRR-106**

OFFICE	DNRL/NRLB: PM	DNRL/NLIB: LA	DNRL/NRLB: BC	DNRL/NRLB: PM
NAME	GTesfaye	SGreen*	MJardaneh *	GTesfaye
DATE	11/06/2024	11/07/2024	11/07/2024	11/07/2024

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UNITED STATES NUCLEAR REGULATORY COMMISSION
AUDIT PLAN FOR THE STAFF REVIEW OF THE NUSCALE POWER, LLC STANDARD
DESIGN APPROVAL APPLICATION – NUSCALE US460 DESIGN – RELATED TO
DOCUMENTS THAT SUPPORT CONFIRMATORY REVIEWS AND REQUEST FOR
ADDITIONAL INFORMATION RESPONSES
DOCKET NO. 05200050

AUDIT PLAN

APPLICANT:

NuScale Power, LLC (NuScale)

CONTACTS:

Licensing Manager: Thomas Griffith

Licensing Supervisors: Jim Osborn, Wren Fowler, Elisa Fairbanks, Amanda Bode

DURATION:

September 18, 2024 – February 28, 2025

LOCATION:

**U.S. Nuclear Regulatory Commission (NRC) Headquarters
(via NuScale Electronic Reading Room (eRR) and hybrid
(virtual/in-person))**

One White Flint North
11545 Rockville Pike
Rockville, Maryland 20852-2738

NuScale

11333 Woodglen Drive, Suite 205
Rockville, Maryland 20852

NuScale

1100 NE Circle Blvd
Corvallis, Oregon 97330

AUDIT TEAM (Project Managers):

Mahmoud Jardaneh (Branch Chief)	Ricky Vivanco	David Drucker
Getachew Tesfaye (Project Lead)	Thomas Hayden	Dennis Galvin
Stacy Joseph	Prosanta Chowdhury	
Alina Schiller	River Rohrman	

AUDIT TEAM (Technical Branch Chiefs):

Branch Chief	Branch	Branch Chief	Branch
Wendell Morton	DEX/EEEB	Milton Valentin	DSS/SCPB
Stewart Bailey	DEX/EMIB	Shivani Mehta	DSS/STSB
Jason Paige	DEX/ELTB	Angie Buford	DNRL/NVIB
Fanta Sacko	DEX/EICB	Matthew Mitchell	DNRL/NPHP
Ian Tseng	DEX/ESEB	Steven Bloom	DNRL/NCSG
Barbara Hayes	DEX/EXHB	James Anderson	DRO/IOLB
Evan Davidson	DRA/APLB	Kerri Kavanagh	DRO/IQVB
Shilp Vasavada	DRA/APLC	Kenneth Erwin	NMSS/REFS/ERNRB
Kevin Hsueh	DRA/ARCB	Jessie Quichocho	NSIR/DPR/RLB
Rebecca Patton	DSS/SNRB	Mario Fernandez	NSIR/DPCP/CSB
Phillip Sahd	DSS/SNSB	Amanda Marshall	NSIR/DPCP/RSB
Scott Krepel	DSS/SFNB		

I. BACKGROUND AND OBJECTIVES

By letter dated October 31, 2023, NuScale Power, LLC (NuScale) submitted Standard Design Approval Application (SDAA), Revision 1 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23306A033). The associated topical reports (TRs) that are being reviewed with the SDAA are: TR-0516-49422, "Loss of Coolant Accident (LOCA) Evaluation Model," Revision 3 (ML23008A002); TR-0516-49416, "Non-LOCA Transient Analysis Methodology," Revision 4 (ML23005A305); TR-124587, "Extended Passive Cooling and Reactivity Control Methodology," Revision 0 (ML23005A308); and TR-131981, "Methodology for the Determination of the Onset of Density Wave Oscillations (DWO)," Revision 1 (ML23212B224). The purpose of this audit is to review documents that support confirmatory evaluations and request for additional information (RAI) responses. The staff audits material that may be needed to make a reasonable assurance finding that the design protects public health and safety. If the U.S. Nuclear Regulatory Commission (NRC) staff identifies information that is needed to support a finding, NuScale submits that information on the application docket.

II. REGULATORY AUDIT BASIS

This regulatory audit is primarily based on Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

- 10 CFR Subpart E - Standard Design Approvals
 - § 52.131 Scope of subpart.
 - § 52.133 Relationship to other subparts.
 - § 52.135 Filing of applications.
 - § 52.136 Contents of applications; general information.
 - § 52.137 Contents of applications; technical information.
 - § 52.139 Standards for review of applications.
 - § 52.141 Referral to the Advisory Committee on Reactor Safeguards.
 - § 52.143 Staff approval of design.
 - § 52.145 Finality of standard design approvals; information requests.
 - § 52.147 Duration of design approval.

III. REGULATORY AUDIT SCOPE

The audit covers all parts of the NuScale SDA application (ML23306A033) and all parts of the following four TRs: (1) TR-0516-49422, "Loss-of-Coolant Accident [LOCA] Evaluation Model," Revision 3 (ML23008A002); (2) TR-0516-49416, "Non-Loss-of-Coolant Accident Analysis Methodology," Revision 4 (ML23005A305); (3) TR-124587, "Extended Passive Cooling and Reactivity Control Methodology," Revision 0 (ML23005A308); and (4) TR-131981, "Methodology for the Determination of the Onset of Density Wave Oscillations (DWO)," Revision 1 (ML23212B224).

IV. INFORMATION AND OTHER MATERIAL NECCSSARY FOR THE REGULATORY AUDIT

NuScale should be prepared to provide documents, reports, calculations, computer code verification, and other material, as applicable, supporting the analyses documented in the respective chapters of NuScale SDAA Final Safety Analysis Report, and technical and TRs. The NRC staff may request that NuScale make these additional materials available in the eRR and/or as a computer disc to be submitted on the docket.

V SPECIAL REQUESTS

NuScale and NRC have discussed and agreed upon the following audit logistics:

- NuScale creates Certrec eRR portal for document viewing.
 - NuScale to set up access for NRC participants once the staff emails are communicated.
- Weekly schedule for audit activities
 - Tuesday/Wednesday/Thursday – standing audit meetings
- During the standing audit meetings NuScale and NRC staff will:
 - Clarify audit issues
 - Discuss audit issue resolutions
 - Discuss additional document needs
 - Determine if a docketed response is required.
- The RAI process will be used when:
 - NRC requires formal docketing of a response
 - completion of the response will extend past the audit close date
 - requested by NuScale or NRC
- NRC will send formal RAI to NuScale via email
- RAI clock starts on the day the question is sent
- NuScale will respond to RAI questions:
 - Does the RAI contain proprietary, export control, or security related information?
 - Is clarification needed?
 - Is the 30-day response timeline achievable?

NuScale responses to RAIs will be submitted electronically to the NRC docket.

VI DELIVERABLES

The NRC audit team is expected to be composed of the above listed project managers along with a multi-faceted group of NRC technical reviewers and contractors. The NRC staff acknowledges the proprietary nature of the information requested and will handle it in accordance with agency policies and procedures throughout the audit. While the NRC staff will take notes, the NRC staff will not remove hard copies or electronic files from the audit site(s).

The audit started on September 18, 2024, and will end on February 28, 2025.

The NRC will inform NuScale of emerging information needs as well as documents that can be removed from eRR.

The NRC will generate an audit report at the completion of the audit. The audit report will include a link for all docketed materials requested by the staff during the audit.

The NRC point of contact for communicating questions or comments related to the conduct of the audit is Mr. Getachew Tesfaye, who can be reached at 301-415-8013 or via email at Getachew.tesfaye@nrc.gov.