



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

March 22, 2023

MEMORANDUM TO: Michael I. Dudek, 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

By letter dated December 31, 2022 (electronically submitted on January 1, 2023), NuScale Power, LLC (NuScale) transmitted the last part of the required staged submittal of the Standard Design Approval (SDA) application. The submitted documents can be found at Agencywide Documents Access and Management System (ADAMS) Accession No. ML22339A066. The purpose of this audit is for the U.S. Nuclear Regulatory Commission (NRC) staff to conduct the staff's safety review of the NuScale SDA application in such a manner that identified issues can readily and easily be discussed and closed-out in order to provide a more predictable review schedule. The audit also achieves a more effective and efficient review by allowing the staff to review and discuss supporting material with the objective of improving communication and eliminating unnecessary requests for additional information. The staff plans to audit material which may be needed to make a reasonable assurance finding that the design protects public health and safety. If the NRC staff identifies information that is needed to support a finding, NuScale will need to submit that information on the application docket.

The audit will start on March 20, 2023, with an Entrance meeting. The audit has three different end dates based on staff predetermined level of effort for chapters/sections (low, medium, and high). The audit will be conducted primarily via the established NuScale Electronic Reading Room and/or at NuScale's offices in either Rockville, Maryland or Corvallis, Oregon. The contents of the audit plan are provided as an enclosure.

Docket No. 05200050

Enclosure:
Audit Plan

cc w/enclosure: 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.
 DATED: MARCH 22, 2023

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ADAMS Accession No: ML23067A300 *via email NRR-106

OFFICE	DNRL/NRLB:PM	DNRL/NLIB:LA	DNRL/NRLB:PM	DNRL/NRLB:BC	DNRL/NRLB:PM
NAME	BBavol	SGreen*	Gtesfaye	MDudek*	Gtesfaye
DATE	3/02/2023	03/16/2023	03/16/2023	03/22/2023	03/22/2023

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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
DOCKET NO. 05200050

AUDIT PLAN

APPLICANT:

NuScale Power, LLC (NuScale)

CONTACTS:

Manager: Thomas Griffith

Supervisors: Thomas Griffith, Jim Osborn, Stephanie Terwilliger, Shane Scanlon,
Wren Fowler

DURATION:

Phase A: **High** Effort Chapters (1, 3.7, 3.8, 6*, 4*, 5*, 8.3, 15*, 16, 17.4, 19.0*- 19.3*) and applicable Technical and Topical Reports – (7 months)
March 27, 2023, through October 27, 2023

Phase A: **Medium** Effort Chapters (3 except 3.7 and 3.8, 7, 8 except 8.3, 9, 11, 12) and applicable Technical Reports – (5 months) March 27, 2023, through August 27, 2023

Phase A: **Low** Effort Chapters (2, 10, 13, 14, 17 except 17.4, 18, 19.4-19.X) and applicable Technical Reports – (3 months) March 27, 2023, through June 27, 2023

* Parts of these chapters are covered by the audit plan (ML23067A298) for the request for supplemental information (RSI) [Agencywide Documents Access and Management System (ADAMS) Accession No. ML23058A160]. Phase A duration maybe longer than 7 months for these parts.

LOCATION:

**U.S. Nuclear Regulatory Commission (NRC) Headquarters
(via NuScale) Electronic Reading Room (eRR)**

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, OR 97330

Enclosure

AUDIT TEAM (Project Managers):

Getachew Tesfaye (Project Lead)	Thomas Hayden
David Drucker	Taylor Lamb
Stacy Joseph	Alina Schiller
Ricky Vivanco	Bruce Bavol

AUDIT TEAM (Technical Branch Chiefs):

Branch Chief	Branch	Branch Chief	Branch
Wendell Morton	DEX/EEEE	Scott Krepel	DSS/SFNB
Stewart Bailey	DEX/EMIB	Brian Wittick	DSS/SCPB
Jason Paige	DEX/ELTB	Vic Cusumano	DSS/STSB
Michael Waters	DEX/EICB	Dan Widrevitz (A)	DNRL/NVIB
Joseph Colaccino	DEX/ESEB	Matthew Mitchell	DNRL/NPHP
Ian Tseng	DEX/ESEB	Steven Bloom	DNRL/NCSG
Barbara Hayes	DEX/EXHB	Lauren Nist (She)	DRO/IOLB
Jay Robinson	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	Brian Yip	NSIR/DPCP/CSB
Phillip Sahd	DSS/SNSB	Amanda Marshall	NSIR/DPCP/RSB
Diana Woodyatt	DSS/SNSB		

I. BACKGROUND AND OBJECTIVES

By letter dated December 31, 2022 (electronically submitted on January 1, 2023), NuScale transmitted the last part of the required staged submittal of the Standard Design Approval (SDA) application. The submitted documents can be found at under ML22339A066. The purpose of this audit is for the NRC staff to conduct the staff's safety review of the NuScale SDA application in such a manner that identified issues can readily and easily be discussed and closed-out in order to provide a more predictable review schedule. The audit also achieves a more effective and efficient review by allowing the staff to review and discuss supporting material with the objective of improving communication and eliminating unnecessary requests for additional information. The staff plans to audit material which may be needed to make a reasonable assurance finding that the design protects public health and safety. If the NRC staff identifies information that is needed to support a finding, NuScale will need to submit that information on the application docket.

II. REGULATORY AUDIT BASIS

This regulatory audit is based on the submittal of the final safety analysis report (FSAR) documents for its SDA application of the NuScale design (ML22339A066). The bases for the submittal follow the regulations in 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 (ACRS).
 - § 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 (ML22339A066), except parts of the FSAR covered by the RSI audit plan (ML23067A298); and All parts of the following four topical reports not covered by RSI audit: (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 0 (ML22364A332).

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 FSAR chapters and technical and topical reports. 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 locations for document viewing.
 - NuScale to set up access for NRC participants once the staff emails are communicated.
- Weekly schedule for audit activities
 - Friday – NRC PMs submits audit issues (via email)
 - Monday – NuScale addresses issues
 - Tuesday/Wednesday/Thursday – standing audit meetings
 - Thursday/Friday – NuScale posts issue responses in eRR
- During the standing audit meetings NuScale and NRC staff will:
 - Clarify audit issues
 - Discuss audit issue resolutions
 - Discuss additional document needs
 - Discuss and decide on timeframe for issue resolution
 - Expectation is < 30 days for response to be posted to eRR.
 - Other timelines to be developed if necessary for a complete resolution.
 - Determine if a docketed response is required.
- NRC to track status of audit issues (internal spreadsheet).
 - NRC to provide NuScale a copy of the current tracker on Fridays.
 - Ensure mutual alignment during weekly standing meetings.
- NuScale to develop issue responses to audit questions.
- Written responses will be uploaded to Certrec eRR on Thursdays/Fridays.
 - NRC PMs will be notified via email when responses are available.
 - Associated NuScale documents requested in the audit will be available in eRR for viewing.
- NRC to review audit issue responses and documentation in eRR.
- Feedback on audit issue responses and discussion to be held in weekly standing meetings.

- NRC approval or rejection of audit issue responses communicated verbally.
 - If issue response is approved, the NRC staff determines if the response needs to be submitted on the docket.
 - NRC will periodically issue an administrative request for additional information (RAI) for issues resolved in eRR and submittal on the docket is needed.
 - If response is rejected, NuScale returns to internal response development steps.
- Responses will be posted twice before moving questions to formal RAI process.
 - This is a guideline that can be adjusted if necessary to cycle minor changes.
 - Once original response and one revised response are posted, further cycles will be moved to RAI process.
- NuScale to request NRC elevation audit issue to RAI process via email.
- 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
 - < 30 days from receipt to response posted in eRR
- NuScale will respond to RAI questions:
 - Does the RAI contain proprietary, ECI, SRI information?
 - Is clarification needed?
 - Is the 30-day timeline achievable?

NuScale responses to RAIs will be submitted to NRC EIE formally

VI DELIVERABLES

The NRC audit team is expected to consist 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 appropriately 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 will start on March 27, 2023, and end based on a chapters'/sections' "level of effort" designation of Low, Medium, or High.

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

An audit report will be generated at the completion of the audit. If necessary, any circumstances related to the conductance of the audit will be communicated to, Getachew Tesfaye, at 301-415-8013 or Getachew.tesfaye@nrc.gov.