



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

December 12, 2022

MEMORANDUM TO: Michael I. Dudek, Chief
New Reactor Licensing Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

FROM: Bruce M. Baval, Project Manager */BMB/*
New Reactor Licensing Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

SUBJECT: AUDIT PLAN FOR THE REGULATORY AUDIT OF NUSCALE
TOPICAL REPORT-107522, REVISION 1, "APPLICABILITY
RANGE EXTENSION OF NSP4 CRITICAL HEAT FLUX
CORRELATION"

By letter dated November 5, 2021, NuScale Power, LLC submitted Topical Report supplement (TR)-107522, Revision 0, "Applicability Range Extension of NSP4 Critical Heat Flux Correlation: Supplement 1 to TR-0116-21012-P-A, Revision 1," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21309A753 - package). Additional supplemental data tables were sent by letter dated January 14, 2022, (ADAMS Accession No. ML22014A248) - which will be included as Appendix A to the referenced TR. By letter dated October 27, 2022, (ADAMS Accession Nos. ML22300A244 and ML22300A243), NuScale submitted TR-107522, Revision 1, to the U.S. Nuclear Regulatory Commission (NRC) which updated the TR supplement text to include the latest information. The TR supplement seeks to provide the bases for an approval of an extension to the range of applicability for the NSP4 critical heat flux (CHF) correlation. The original NSP4 range of applicability was approved in TR-0116-21012-P-A, Revision 1, "NuScale Power Critical Heat Flux Correlations."

On Tuesday, November 15, 2022, NuScale requested via email (ADAMS Accession No. ML22326A016) that the NRC prepare and execute a limited scope audit on new supporting information for the TR supplement. The purpose of the audit is to understand the details and bases for the new information that supports the NSP4 correlation applicability range extension, without penalties on the correlation limit, requested in the TR supplement.

CONTACT: Bruce Baval, NRR/DNRL
301-415-6715

The audit will take place at NRC headquarters via use of the NuScale electronic reading room. The audit entrance will be held on December 12, 2022, as mutually agreed. The audit exit will be held approximately four weeks after the entrance meeting, based on the availability of NuScale and NRC staff. The contents of the audit plan are provided as an enclosure.

Docket No. 99902078

Enclosure:
Audit Plan

SUBJECT: AUDIT PLAN FOR THE REGULATORY AUDIT OF NUSCALE TOPICAL
REPORT-107522, REVISION 1, "APPLICABILITY RANGE EXTENSION OF
NSP4 CRITICAL HEAT FLUX CORRELATION." DATED: DECEMBER 12, 2022

DISTRIBUTION:

PUBLIC

BBavol, NRR

MDudek, NRR

SGreen, NRR

JKaizer, NRR

RPatton, NRR

ABarrett, NRR

RSugrue, NRR

RidsNrrDnrl

RidsNrrDnrlNrlb

RidsNrrDss

RidsEdoMailCenter

RidsAcrcMailCenter

RidsOgcMailCenter

ADAMS Accession No: ML22341A005 *via email**NRR-106**

OFFICE	DNRL/NRLB:PM	DNRL/NRLB:LA	DNRL/NRLB: BC	DNRL/NRLB:PM
NAME	BBavol	SGreen*	MDudek* DDrucker for	BBavol
DATE	12/06/2022	12/08/2022	12/12/2022	12/12/2022

OFFICIAL RECORD COPY

UNITED STATES NUCLEAR REGULATORY COMMISSION

**Audit Plan for The Regulatory Audit of NUSCALE TOPICAL REPORT-107522,
REVISION 1, "APPLICABILITY RANGE EXTENSION OF NSP4 CRITICAL HEAT FLUX
CORRELATION"**

Docket No. 99902078

AUDIT PLAN

APPLICANT: NuScale Power, LLC (NuScale)

CONTACTS: Thomas Griffith

DURATION: December 12, 2022 – January 6, 2023 (Approximate Audit Exit)

LOCATION: **U.S. Nuclear Regulatory Commission (NRC) Headquarters
(via NuScale's 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

AUDIT TEAM: Josh Kaizer, (Technical Reviewer) Office of Nuclear Reactor Regulation (NRR)
Bruce Bovol, (Project Manager) (NRR)
Antonio Barrett, (Technical Reviewer) (NRR)
Rosie Sugrue, (Technical Reviewer) (NRR)

Enclosure

I. BACKGROUND AND OBJECTIVES

By letter dated November 5, 2021, NuScale Power, LLC submitted Topical Report supplement (TR)-107522, Revision 0, "Applicability Range Extension of NSP4 Critical Heat Flux Correlation: Supplement 1 to TR-0116-21012-P-A, Revision 1," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21309A753 - package). Additional supplemental data tables were sent by letter dated January 14, 2022, (ADAMS Accession No. ML22014A248) - which will be included as Appendix A to the referenced TR. By letter dated October 27, 2022, (ADAMS Accession Nos. ML22300A244 and ML22300A243), NuScale submitted TR-107522, Revision 1, to the NRC, which updated the TR supplement text to include the latest information. The TR supplement seeks to provide the bases for an approval of an extension to the range of applicability for the NSP4 critical heat flux correlation. The original NSP4 range of applicability was approved in TR-0116-21012-P-A, Revision 1, "NuScale Power Critical Heat Flux Correlations."

On Tuesday, November 15, 2022, Nuscale requested via email (ADAMS Accession No. ML22326A016) that the U.S. Nuclear Regulatory Commission (NRC) prepare and execute a limited scope audit on new supporting information for the TR supplement. The purpose of the audit is to understand the details and bases for the new information that supports the NSP4 correlation applicability range extension, without penalties to the correlation limit, requested in the TR supplement.

II. REGULATORY AUDIT BASIS

This regulatory audit is based on the following:

This regulatory audit is based on Topical Report supplement TR-107522, Revision 1, "Applicability Range Extension of NSP4 Critical Heat Flux Correlation: Supplement 1 to TR-0116-21012-P-A, Revision 1," (ADAMS Accession Nos. ML22300A244 and ML22300A243).

III. REGULATORY AUDIT SCOPE

The audit team will examine supporting documentation and calculations associated with new information provided by NuScale in the eRR that supports the extension of the NSP4 correlation applicability range without penalties to the correlation limit. The audit team will also meet with subject matter expert(s) to discuss details of the information supporting TR-107522, Revision 1.

IV. INFORMATION AND OTHER MATERIAL NECCSSARY FOR THE REGULATORY AUDIT

The NRC staff requests that the following material and information be made available for audit for the new information supporting the TR supplement:

- Available plots and supporting calculations that support the NSP4 correlation applicability range extension without penalties to the correlation limit.

V. SPECIAL REQUESTS

The NRC staff requests that NuScale provide subject matter expert(s), if necessary, to discuss the details of the audit material requested in Section IV of this audit plan.

VI. DELIVERABLES

The NRC audit team is expected to consist of the above listed individuals who are or have been involved in reviewing Topical Report supplement TR-107522, Revision 1, "Applicability Range Extension of NSP4 Critical Heat Flux Correlation: Supplement 1 to TR-0116-21012-P-A, Revision 1". The NRC staff will conduct this audit in accordance with the guidance provided in LIC 111, "Regulatory Audits," (ADAMS Accession No. ML19226A274). The NRC staff acknowledges the proprietary nature of the information requested and will handle it appropriately throughout the audit.

The audit will initiate on December 12, 2022, and end after approximately four weeks.

The staff will hold audit calls and/or meetings with NuScale as necessary to understand audit material. The NRC will inform NuScale of emerging information needs as well as documents that can be removed from the eRR.

An audit report will be prepared and issued in accordance with NRR-LIC-111 within 90 days following the completion of the audit. If necessary, any circumstances related to the conduct of the audit will be communicated to, Bruce Baval, at 301-415-6715 or Bruce.Baval@nrc.gov.