

April 25, 2017

MEMORANDUM TO: Samuel Lee, Chief  
Licensing Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

FROM: Rocky D. Foster, Project Manager /RA/  
Licensing Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: AUDIT PLAN FOR THE REGULATORY AUDIT OF NUSCALE  
POWER, LLC DESIGN CERTIFICATION APPLICATION HUMAN  
FACTORS ENGINEERING TOPICS

NuScale Power, LLC (NuScale) submitted by letter dated December 31, 2016, to the U.S. Nuclear Regulatory Commission (NRC), a Design Control Document for its Design Certification Application of the NuScale design (Agencywide Documents Access and Management System Accession No. ML17013A229). The NRC staff started its detailed technical review of NuScale's design certification application on March 27, 2017.

The purpose of the NRC's regulatory audit, of NuScale Human Factors Engineering topics, is to: (1) review related documentation and non-docketed information to evaluate conformance with regulatory guidance; (2) verify information; (3) identify information that will require docketing to support the basis of the licensing or regulatory decision; and (4) gain a better understanding of the NuScale design.

The audit will take place at NuScale's offices, in Rockville, Maryland, and/or online via NuScale's electronic reading room. The audit is currently scheduled to start on May 9, 2017, and end on May 11, 2017. The audit plan is provided as an enclosure.

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Docket No.: 52-048

Enclosure:  
As stated

cc: DC NuScale Power LLC Listserv

SUBJECT: AUDIT PLAN FOR THE REGULATORY AUDIT OF NUSCALE POWER, LLC  
DESIGN CERTIFICATION APPLICATION HUMAN FACTORS ENGINEERING  
TOPICS

DATE : April 25, 2017

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**ADAMS Accession No: ML17110A254    \*via email    NRO-002**

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R. Foster

-2-

**NuScale Power, LLC  
Human Factors Engineering Submittals  
Design Certification Application  
"Human Factors Engineering Topics" Audit Plan**

APPLICANT: NuScale Power, LLC

APPLICANT CONTACT: Steve Mirsky  
Steve Pope  
Tim Tovar, et al.

DATE: May 9, 2017 to May 11, 2017

LOCATION: NuScale Power, LLC Office  
11333 Woodglen Avenue, Suite 205  
Rockville, MD 20852

REVIEWERS: Lauren Kent – Lead Reviewer (NRO/DCIP/HOIB)  
Amy D'Agostino (RES/DRA/HFRB)  
Brian Green (NRO/DCIP/HOIB)  
Maurin Scheetz (NRO/DCIP/HOIB)

PROJECT MANAGER: Demetrius Murray (NRO/DNRL/LB1)

AUDIT OBJECTIVE:

The objective of the audit is to review and verify the following:

1. The scenarios selected for verification and validation (V&V) activities conform to acceptance criteria in NUREG-0711, "Human Factors Engineering Program Review Model," Revision 3, Section 11.4.1, "Sampling of Operational Conditions."
2. The Integrated System Validation (ISV) methodology conforms to acceptance criteria in NUREG-0711, Section 11.4.3.1, "Sampling of Operational Conditions," and Section 11.4.3.6, "Test Design."
3. The results of the functional requirements analysis/function allocation (FA) described in Design Control Document (DCD) Tier 2, Section 18.3.3, "Results," were generated using a method that conforms to NUREG-0711, Section 4.4, "Functional Requirements Analysis and Function Allocation." The NRC staff plans to select a sample of function allocations and the technical bases for these allocations during the audit.
4. The results of the task analysis (TA) described in DCD Tier 2, 18.4.3, "Results," were generated using a method that conforms to NUREG-0711, Section 5.4, "Task Analysis, Review Criteria." The NRC staff plans to select a sample of tasks and review the analyses during the audit. Additionally, the NRC staff would like to gain an

Enclosure

understanding of the tasks allocated to the licensed operators during refueling operations when operations are performed outside of the main control room as described in DCD Tier 2, Section 18.4.1, "Objectives and Scope."

5. The results of the Operating Experience Review (OER) described in Section 18.2.3, "Results," were generated using a method that conforms to NUREG-0711, Section 3.4, "Operating Experience Review, Review Criteria." The NRC staff plans to select a sample of tasks and evaluate how relevant operating experience was evaluated and incorporated into the Human Factor Engineering design process.

REQUESTED MATERIAL FOR AUDIT:

1. Descriptions of the V&V scenarios.
2. The ISV Test Plan.
3. Access to the OER Database, the FRA/FA and TA Database, and NuScale staff who are knowledgeable about the results contained in these databases.