

May 26, 2016

MEMORANDUM TO: Mark Tonacci, Chief
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

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

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION AUDIT REPORT TO
REVIEW NUSCALE POWER, LLC, PRE-APPLICATION ACTIVITIES
HUMAN FACTORS ENGINEERING TOPICS (PROJ0769)

As part of its review of the NuScale Power, LLC (NuScale) pre-application activities human factors engineering (HFE) topics on March 29, 2016, through April 15, 2016, members of NuScale and the U.S. Nuclear Regulatory Commission (NRC) staff performed an audit. The first part of the audit was held at the NuScale Headquarters located in Corvallis, Oregon, and the second part of the audit was held at the NRC Headquarters located in Rockville, Maryland.

The purpose of the audit was to perform a review of supporting documents and observe simulator operations to aid in resolving technical issues concerning documents, mentioned below, submitted by NuScale to the NRC staff relating to pre-application activities for HFE topics, implementation plans, and the preliminary concept of operations summary.

The documents of interest for the audit are the following:

1. Letter dated May 6, 2015, Mr. Zackary Rad, Manager, Licensing Support, NuScale submitted to the NRC, titled, "NuScale Power, LLC Submittal of Human Factors Engineering (HFE) Implementation Plans" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15139A214);
2. Letter dated August 6, 2015, Mr. Steven Mirsky, Manager, Licensing Washington, D.C., NuScale, submitted to the NRC, titled, "NuScale Power, LLC Submittal of a Second Set of Human Factors Engineering (HFE) Implementation Plans" (ADAMS Accession No. ML15223A042);

CONTACT: Rocky Foster, NRO/DNRL/LB1
(301) 415-5787

3. Letter dated September 15, 2015, Mr. Steven Mirsky, Manager, Licensing Washington, D.C., NuScale, submitted to the NRC staff, titled, "NuScale Power, LLC Submittal of NuScale Preliminary Concept of Operations Summary and Response to NRC Questions on Control Room Activities" (ADAMS Accession No. ML15258A846); and
4. Letter dated November 19, 2015, Mr. Steven Mirsky, Manager, Licensing Washington, D.C., NuScale, submitted to the NRC staff titled, "NuScale Power, LLC Submittal of Human Factors Engineering Verification and Validation Implementation Plans, Revision 0" (ADAMS Accession No. ML15323A504).

The audit plan, dated March 17, 2016, can be found in ADAMS under Accession No. ML16068A437. The results of the audit are documented in Enclosure 1 (ADAMS Accession No. ML16137A257). The list of attendees is documented in Enclosure 2 (ADAMS Accession No. ML16137A518). The list of documents available to the NRC staff is documented in Enclosure 3 (ADAMS Accession No. ML16137A529).

The NRC staff concluded, by observation of the NuScale control room simulator demonstration and reviewing the Workload Analysis and Scenario Overview with NuScale staff, the audit objectives had been completed. The NRC staff acknowledges that aspects of the concept of operations and the Human-Systems Interface design are still evolving at the time of this audit. During the audit period, the NRC staff provided written comments to the NuScale staff on topics that should be clarified in the design certification application to ensure that the acceptance criteria as listed in NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)," and NUREG-0711, "Human Factors Engineering Program Review Model," are addressed.

Project No.: PROJ0769

Enclosures:
As stated

cc w/ enclosures: NuScale DC ListServ

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Enclosures:
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cc w/ enclosures: NuScale DC ListServ

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ADAMS Accession Nos.:

ML16137A552 – Pkg

ML16137A129 – Memo

ML16137A257 – Audit Summary Report

ML16137A518 – Attendee List

ML16137A529 – Audit List of Documents

via email*

NRO-002

OFFICE	DNRL/LB1: PM*	DNRL/LB1: LA*	DCIP/HOIB: BC*	DNRL/LB1: PM
NAME	RFoster	MBrown*	PAP for MJunge	GCranston
DATE	05/17/2016	05/18/2016	05/23/2016	05/26/2016

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