

October 8, 2015

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

FROM: Gregory V. Cranston, Senior Project Manager */RA/*
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: NRC PRE-APPLICATION AUDIT OF THE NUSCALE
ROCKVILLE OFFICE DOCUMENTS

As part of its pre-application activities pertaining to the development of the Design Specific Review Standard (DSRS) that assists the U.S. Nuclear Regulatory Commission (NRC) staff in reviewing the NuScale Power, LLC (NuScale) design certification authorization when submitted and to prepare for interactions with NuScale on other pre-application activities, members of the NRC staff performed audits of the draft sets of systems descriptions, functional diagrams for selected systems of their small modular reactor, and other documents and assessed progress of pre-application activities at the NuScale office in Rockville, MD during the period from July 1, 2015, to September 30, 2015.

In a June 3, 2013, letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13149A455), NuScale was informed of the NRC staff's plans to periodically review documents located at the NuScale office located at 11333 Woodglen Drive, Rockville, MD, 20852, for the period discussed above. In addition, the June 3, 2013, letter stated that the NRC staff would generate an audit summary that identified the documents audited by the staff. This letter is that audit summary.

Below are the dates of the Rockville, MD office audits, individuals who participated in the audits, and the associated documents that were reviewed:

Date: 08/04/2015 and 08/06/2015

The purpose of the audit was the NRC staff review of documents in the NuScale Rockville office associated with the NuScale Integrated System Test (NIST) facility testing and data gathering plans to determine if information to be gathered by NuScale during the testing at NIST in Corvallis, OR, could provide data that would assist the NRC staff in the development of the MELCOR model, which is a fully integrated, engineering-level computer code whose primary purpose is to model the progression of postulated accidents in light water reactors. NuScale testing at NIST is currently in progress.

Documents reviewed:

- NIST testing plans and testing procedures binder

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Attendees:

- NRO staff: Sergio Gonzalez and Alfred Hathaway
- NRO staff consultants (from ERI): Mohsen Khatib-Rahbar, Zhe Yuan, and Alfred H Krall
- NuScale personnel: Steve Mirsky and Steve Pope

Date: 08/19/2015 to 08/25/2015

The purpose of the pre-application audit was to examine internal NuScale documents related to the design and architecture of its small modular reactor (SMR) digital instrumentation and control systems.

Documents reviewed:

- PL-0302-973-Digital I&C, "Software and Quality Assurance Plan"
- PL-0302-10247, "Critical Digital System Secure Development and Operational Environment Plan"
- PL-0302-11000-Digital I&C, "Software Requirements Management Plan"
- PL-0302-11000-Digital I&C, "Software Verification and Validation Plan"
- PL-0302-11000-Digital I&C, "Software Configuration Management Plan"
- PL-0302-11000-Digital I&C, "Software Safety Plan"
- NP-ER-E011-2069, Revision A, "Module Protection System Single Failure Assessment"
- NP-ER-E011-2067, Revision A, "Module Protection System Common Cause Failure Analysis"
- NP-ER-E011-2227, Revision A, "Failure Modes and Effects Analysis for the Module Protection System"
- NP-ER-E011-2149, Revision A; IEEE Std. 603, "Assessment of the Module Protection System"
- ED-E011-2607, Revision A, "Module Protection System Functional Logic Diagrams" (24 sheets)
- NP-ER-E011-2228, Revision B; ISG-04. "Assessment of the Module Protection System"
- NP-ER-E011-2178, Revision B; IEEE Std. 7-4.3.2, "Assessment of the Module Protection System"
- ER-E011-2477, Revision B, "Module Protection System Hazard Analysis"
- ED-E011-3111, Revision A, "Module Protection System Block Diagrams" (24 sheets)
- NP-FS-E011-1563, Revision 1, "Module Protection System Functional Specifications"
- NP-SD-E011-1563 Revision A, "System Design Description of the Module Protection System"

Attendees:

NRO staff: Dinesh Taneja, Terry Jackson, Joseph Ashcraft, Luis Betancourt, Tung Truong, Omid Tabatabai

NuScale personnel: Steve Mirsky, Steve Pope

Project No.: 0769

cc: Distribution via NuScale Listserv

