

May 11, 2020

Project No. 99902078

U.S. Nuclear Regulatory Commission
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SUBJECT: NuScale Power, LLC Submittal of Presentation Materials Entitled "SDA Pre-Application: NuScale SDA Control Room Staffing Topical Report," PM-0520-69851, Revision 0

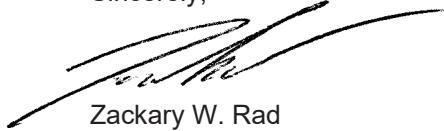
The purpose of this submittal is to provide presentation materials to the NRC for use during the Standard Design Approval (SDA) pre-application meeting on May 28, 2020.

The enclosure to this letter is the nonproprietary presentation entitled "SDA Pre-Application: NuScale SDA Control Room Staffing Topical Report."

This letter makes no regulatory commitments and no revisions to any existing regulatory commitments.

If you have any questions, please contact Michael Melton at 240-833-3007 or at mmelton@nuscalepower.com.

Sincerely,



Zackary W. Rad
Director, Regulatory Affairs
NuScale Power, LLC

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Enclosure: "SDA Pre-Application: NuScale SDA Control Room Staffing Topical Report," PM-0520-69851, Revision 0

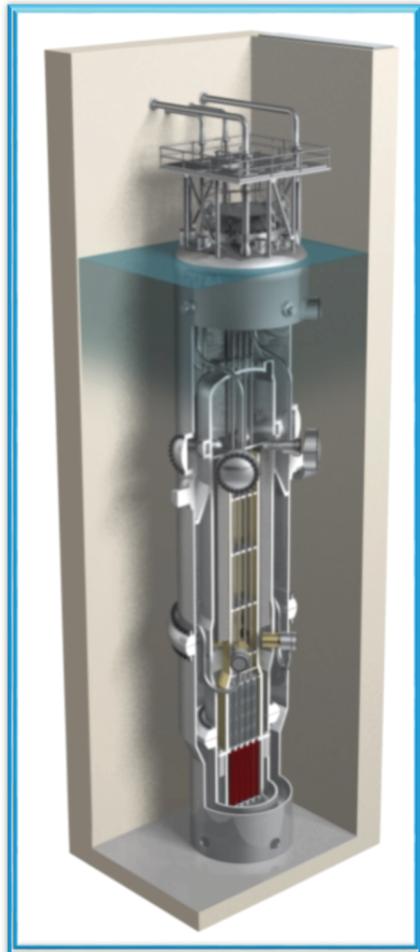
Enclosure:

“SDA Pre-Application: NuScale SDA Control Room Staffing Topical Report,” PM-0520-69851, Revision 0

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SDA Pre-Application Presentation



NuScale SDA Control Room Staffing Topical Report

May 28, 2020

Presenters

Jim Osborn
Licensing Project Manager

Doug Bowman
Plant Operations Supervisor

Patrick Leary
Senior Reactor Operator 5

Agenda

- Regulatory requirements
- Regulatory context
- Topical Report overview
- DCA control room staffing
- Revised control room staffing
- Schedule
- Questions

Regulatory Requirements

- NUREG-0800
 - Chapter 18, Appendix B Methodology
- 10 CFR 50.54(m)
 - Minimum staffing requirements
- 10 CFR 50.120(b)(2)(iii)
 - Shift Technical Advisor training program

Regulatory Context

- The topical report is intended to be used as an alternate method for a future licensee to establish minimum licensed operator control room staff.
- NuScale intends that a future license applicant will use the approved topical report as a technical basis to support an exemption request from:
 - 10 CFR 50.54(m), or
 - Other alternative control room staffing regulations (e.g., DC Rule)
 - And, 10 CFR 50.120
- This future licensee would adopt the staffing levels from the topical report as part of their Tech Specs

Topical Report and SDA

- Maintain the same NRC Staff to review the changes
 - NRC staff is familiar with the design and the human system interface
 - NRC staff participated in multiple audits and visited the simulator several times
- SDA to be submitted at a later date, and will incorporate by reference this topical report
- Provides pathway for future applicants to request exemptions and establish minimum staffing requirements

Contents of Topical Report

- Regulatory acceptance criteria and requirements
- Conditions of applicability
- Input to staffing plan from Human Factors Engineering Program
 - Task Analysis
 - Staffing and Qualification Analysis
- Analysis of the STA position
- Additional staffing considerations (RG 1.114 and SRO oversight of refueling)
- Staffing Plan Validation Trials
- Revised Staffing Plan Validation Trials

Key Referenced Documents

- Previously submitted documents
 - Human Factors Engineering Task Analysis Results Summary Report
 - Human Factors Engineering Staffing and Qualifications Results Summary Report
 - Control Room Staffing Plan Validation Methodology
 - Control Room Staffing Plan Validation Results
 - Concept of Operations
- New document for this topical report
 - Revised Staffing Plant Validation Test Report

DCA Control Room Staffing

- Staffing Plan Validation (SPV) completed using simulator
 - Performance-based evaluation of personnel using two crews of licensed operators
 - 3 SROs and 3 ROs
 - Verifies the crew size supports safe operation
 - NRC audited SPV activities, no significant open items
 - Demonstrates validity of the operator staffing validation methodology



DCA Control Room Staffing

- DCA control room staffing requirements
 - DCA Part 7 proposes an alternative to 10 CFR 50.54(m) Control Room Staffing
 - Alternative staffing requirements to be codified in the design certification rule, applicable to applicants referencing the NuScale DC
 - Requirements implemented in Tech Spec 5.2.2

| Number of units Operating | Reactor Operator | Senior Reactor Operator |
|------------------------------|---------------------|----------------------------|
| None | 2 | 1 |
| One to twelve | 3 | 3 |

- Allowances for temporary deviations provided in Tech Specs

Revised Control Room Staffing

- The same methodology was used for the original Staffing Plan Validation (SPV) and the Revised Staffing Plan Validation (RSPV)
- Minor differences between the SPV and RSPV are described in the RSPV Test Report



Revised Control Room Staffing

- Revised Staffing Plan Validation

- One (1) RO and two (2) SRO
- Implemented in Tech Spec 5.2.2

| | |
|------------------|-------------------------|
| Reactor Operator | Senior Reactor Operator |
| 1 | 2 |

- Allowances for temporary deviations provided in Tech Specs

Schedule

- NuScale is asking for an NRC review and approval of this topical report, reflecting reduced minimum staffing levels
- NuScale is seeking a 12-month review of this topical report.

Questions?

Acronyms

| | |
|------|----------------------------------|
| DCA | Design Certification Application |
| NRC | Nuclear Regulatory Committee |
| RO | Reactor Operator |
| RSPV | Revised Staffing Plan Validation |
| SDA | Standard Design Application |
| SPV | Staffing Plan Validation |
| SRO | Senior Reactor Operator |
| STA | Shift Technical Advisor |

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