

November 29, 2017

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

FROM: Prosanta Chowdhury, Project Manager /RA/  
Licensing Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: AUDIT PLAN FOR THE NUSCALE POWER, LLC DESIGN  
CERTIFICATION APPLICATION AUDIT OF PHYSICAL  
SECURITY

The U.S. Nuclear Regulatory Commission staff (the staff) plans to conduct an audit of the supporting design and analysis documentation not provided on the docket that supports the NuScale Power, LLC (NuScale) descriptions of the physical security systems described in Final Safety Analysis Report Tier 1 and Tier 2, and Technical Report (TR) 0416-48929, "NuScale Design of Physical Security Systems," which was submitted in conjunction with the design certification application.

The purpose of the audit is to review, verify, and identify information and documentation that are needed for establishing design and licensing bases in making regulatory findings.

The audit will be conducted on December 5 - 6, 2017, at NuScale Power located at 1100 NE Circle Blvd., Suite 200, Corvallis, Oregon 97330. The audit entrance will be held on December 5, 2017, at the audit location.

The staff's detailed Audit Plan (Enclosure 1) contains the audit purpose, location, background, regulatory basis, information and other materials necessary for the audit, and other necessary information. An audit agenda is included as an enclosure to this plan.

Docket No. 52-048

Enclosure:

1. Audit Plan
2. Agenda

cc: DC NuScale Power LLC Listserv

CONTACT: Prosanta Chowdhury, NRO/DNRL  
301-415-1647

Gregory V. Cranston, NRO/DNRL  
301-415-0546

SUBJECT: AUDIT PLAN FOR THE NUSCALE POWER, LLC DESIGN CERTIFICATION  
APPLICATION AUDIT OF PHYSICAL SECURITY DATED: 11/29/2017

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NRO-002

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DATE	11/13/2017	11/16/2017	11/16/2017	11/29/2017

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**UNITED STATES NUCLEAR REGULATORY COMMISSION**  
**AUDIT PLAN FOR THE REGULATORY AUDIT RELATED TO**  
**NUSCALE DESIGN CERTIFICATION PHYSICAL SECURITY**

**AUDIT PLAN**

**APPLICANT:** NuScale Power, LLC (NuScale)

**APPLICANT CONTACTS:** Kevin Deyette  
G. L. Plumlee  
Liz English  
Carrie Fossaen

**DURATION:** December 5 - 6, 2017

**LOCATION:** NuScale Headquarters Office  
1100 NE Circle Blvd., Suite 200  
Corvallis, OR 97330

**AUDIT TEAM:** Pete Lee, Senior Security Program Manager  
Office of Nuclear Security and Incident Response (NSIR)

Andrew Nelson, Structural Engineer  
U.S. Army Corps of Engineers (USACE)  
(U.S. Nuclear Regulatory Commission (NRC) Contractor)

Gregory V. Cranston, Project Manager,  
Office of New Reactors (NRO)

**PURPOSE**

The purpose of this regulatory audit is for the NRC staff (the staff) to review, verify, and identify information and documentation that are needed for establishing design and licensing bases in making regulatory findings. The staff will review supporting design and analysis documentation not provided on the docket that supports the NuScale descriptions of the physical security systems provided in Final Safety Analysis Report (FSAR) Tier 1, Tier 2, and Technical Report (TR) 0416-48929, "NuScale Design of Physical Security Systems," submitted to the NRC in conjunction with the request to certify the NuScale Power standard design. Also, the audit scope will include the supporting information for NuScale response to the staff's September 1, 2017, request for additional information (RAI) No. 8902, received on October 10, 2017 in the (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17283A273).

## **BACKGROUND**

The staff reviews the applicant's information on the docket to evaluate the adequate descriptions for the design of physical security systems. The applicant's supporting technical bases, assumptions, and design/performance requirements for the designs of physical security systems are subject area of the audit. The completeness of information on design and licensing bases for how an applicant meets regulatory requirements allows the staff to arrive at informed security findings for the standard design. The audit will assist the staff in preparation of RAIs determined to be necessary and sufficient for information on the docket for the regulatory findings.

## **REGULATORY AUDIT BASIS**

Subpart B of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "License, Certifications, and Approvals for Nuclear Power Plants," Section 52.47, "Contents of applications; technical information," requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and the procurement, construction and installation specifications by an applicant. The Commission will require, before the DC, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if the information is necessary for the Commission to make its safety determination.

A regulatory audit is performed to identify technical information needed on the docket to address sufficient and necessary descriptions of the design of physical security systems, hardware, and features and their design bases to provide direct evidence and establish the standard for the NuScale standard DC in accordance with 10 CFR Part 52. The safeguards and/or security-related information reviewed during the audit are protected and withheld from the public in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding."

## **REGULATORY AUDIT SCOPE**

The audit will focus on the supporting technical information establishing the design of, and design bases for, the physical security systems described in FSAR Tier 1, Section 3.16, "Physical Security System" and Section 3.16.2, "Inspections, Tests, Analyses, and Acceptance Criteria," FSAR Tier 2, Chapter 13.6, "Physical Security," and TR 0416-48929, Revision 0, incorporated by reference. The scope will include the review of design drawings and specifications, engineering evaluations, and analyses that establish the design bases for meeting performance and/or prescriptive requirements of 10 CFR Part 73, "Physical Protection of Plants and Materials," where the descriptions must be sufficient in detail to permit the procurement, construction and installation of systems, hardware, and features performing security functions.

The audit will include the following:

- Review design drawings, design bases and specification documents, and referenced standards, which establish the standard design for physical security systems. The supporting documents to be examined include engineering evaluations or analyses and documented conceptual design of physical security systems provided in TR 0416-48929 for the NuScale standard design.

- Review supporting analyses and engineering documentation that provide evaluations and the design bases for minimum required safe standoff distances required for the location of vehicle barrier systems to protect against the design basis threat land and waterborne vehicle bomb assaults. The review will include how a bounding safe standoff distance accounts for the nuclear island and structures physical configurations (e.g., hatches opened for refueling or maintenance activities), the design of blast resistant barriers, and the design for blast protection of openings in all modes of operations.

### **INFORMATION AND OTHER MATERIAL NECESSARY FOR THE AUDIT**

The staff requests that NuScale provide a brief overview of the design of a physical protection system described in TR 0416-48929 for the NuScale Power Plant standard design. The overview should address the level of detail of the completed design to date, and where the details for the design of dedicated security systems and plant structures, system, and components that are relied on to meet security functions can be found. The overview should include any engineering calculations, analyses, and documents that address how the design of physical security systems will meet applicable performance and/or prescriptive requirements of 10 CFR Part 73.

The following are requested for the audit:

- Design drawings (D-size, if available) showing plan and elevation views for the design of physical security systems and plant SSC relied on to meet intended security design functions. Conceptual design and engineering documents showing systems configurations and systems interfaces (e.g., block diagram, line diagram, detail and section view, etc.).
- Design drawings showing: bounding minimum safe stand-off distance for location of active and passive vehicle barrier systems; minimum safe stand-off distances associated for structures and buildings (Reactor, Control and Security Buildings); design and configurations of interior intrusion detection systems; interior assessment systems and components; configurations of alarm stations and controlled access portals within structures; configurations and locations of physical barriers credited for delay (e.g., interior or exterior walls, doors, hatches, etc.).
- All referenced documents that supports the summary of results provided in the NuScale TR 0416-48929, including methods or standards applied, on the design of physical security systems, hardware, and features for the NuScale standard design.

### **AUDIT TEAM**

Pete S. Lee, Senior Security Program Manager (NSIR/DPCP/RSB)  
Andrew Nelson, Structural Engineer, NRC Contractor (USACE)  
Gregory V. Cranston, Project Manager (NRO)

No quality assurance Division of Construction Inspection and Operational Programs support is required for this audit. Any materials deemed to be suitable for submittal or citation will be identified for future quality assurance program audit activities.

Other staff members may be added as the need arises.

**LOGISTICS**

The audit will be conducted at the NuScale Power, LLC, 1100 NE Circle Blvd., Suite 200, Corvallis, Oregon 97330.

The audit is scheduled to begin at 3:00 p.m. on December 5, 2017, and end at 6:00 p.m. on December 6, 2017.

**SPECIAL REQUESTS**

None

**DELIVERABLES**

The audit team will issue a regulatory audit summary report within 90 days after the completion of the audit that will be placed on the docket and in ADAMS. The audit outcome could also identify any additional information to be reviewed in a follow-up audit or submitted separately for making regulatory decisions.

**REFERENCES**

None

**U.S. NUCLEAR REGULATORY COMMISSION**  
**REGULATORY AUDIT RELATED TO THE**  
**NUSCALE POWER, LLC DESIGN CERTIFICATION PHYSICAL SECURITY**

**AGENDA**

The audit will take place at the NuScale Power, LLC, 1100 NE Circle Blvd., Suite 200, Corvallis, OR 97330. The audit is scheduled to begin on December 5, 2017, and conclude on December 6, 2017. All times are Pacific Standard.

**Tuesday, December 5, 2017**

3:00 PM	Audit Entrance meeting with NuScale	NRC/NuScale
5:00 PM	Debriefing with NuScale, as necessary	NRC/NuScale

**Wednesday, December 6, 2017**

8:00 AM	Audit continues	NRC/NuScale
5:00 PM	Audit Exit meeting with NuScale	NRC/NuScale
6:00 PM	Audit concludes	NRC/NuScale