September 24, 2020 Docket: 99902078

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: NuScale Power, LLC Submittal of Presentation Materials Entitled "SDA Pre-Application Presentation: Building Design and Analysis Methodology for Safety-Related Structures," PM-0920-71880, Revision 0

NuScale Power, LLC (NuScale) has requested a meeting with the NRC technical staff on October 6, 2020, to discuss the scope of NuScale's new topical report, "Building Design and Analysis Methodology for Safety-Related Structures." This topical report offers a methodology to implement developments in NuScale's design and evaluation of seismic category I and II structures. The purpose of this submittal is to provide presentation materials to the NRC for use during this meeting.

The enclosure to this letter is the nonproprietary presentation entitled "SDA Pre-Application Presentation: Building Design and Analysis Methodology for Safety-Related Structures," PM-0920-71880, Revision 0.

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

If you have any questions, please contact Kyra Perkins at 704-713-5220 or at kperkins@nuscalepower.com.

Sincerely,

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

Distribution: Michael Dudek, NRC
Getachew Tesfaye, NRC
Bruce Bavol, NRC

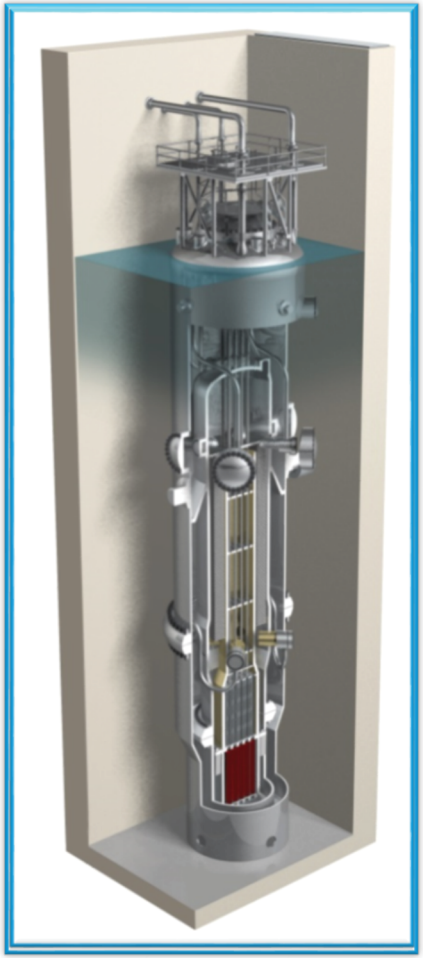
Enclosure: "SDA Pre-Application Presentation: Building Design and Analysis Methodology for Safety-Related Structures," PM-0920-71880, Revision 0

Enclosure:

"SDA Pre-Application Presentation: Building Design and Analysis Methodology for Safety-Related Structures," PM-0920-71880, Revision 0

NuScale Power, LLC
1100 NE Circle Blvd., Suite 200 Corvallis, Oregon 97330 Office 541.360-0500 Fax 541.207.3928
www.nuscalepower.com

SDA Pre-Application Presentation



Building Design and Analysis Methodology for Safety-Related Structures

October 6, 2020

PM-0920-71880
Revision: 0

Template #: 0000-21727-F01 R6

Presenters

Evren Ulku, Ph.D., P.E.
Supervisor, Civil/Structural Analysis

Giulio Leon Flores, P.E., S.E.
Civil/Structural Engineer

Matthew Snyder, Ph.D.
Mechanical Engineer

Kyra Perkins
Licensing Project Manager

Agenda

- Purpose
- Objective
- Regulatory Requirements
- Building Design
  - Steel-Plate Composite Walls
- Building Design and Analysis Methodology
  - Steel-Plate Composite Connections
  - Reinforced Concrete Slabs
  - In-Structure Response Spectra & Design Methodology
  - Effective Stiffness Modeling Approaches
- Summary

Purpose

- Present modifications to the reactor building (RXB), control building (CRB) and radioactive waste building (RWB) design
  - Buildings will be constructed using steel-plate composite (SC) wall panels in lieu of reinforced concrete walls
- Present scope of topical report on ‘Building Design and Analysis Methodology’ for the SDAA
  - Topical report submittal planned for January 2021
  - Offers a methodology implementing new developments in the design and evaluation of complex safety-related, seismic category I and seismic category II structures, for applicability to the new generation of small modular reactor designs
  - Methodology is intended to be used in conjunction with the Topical Report TR-0118-58005, Improvements in Frequency Domain Soil-Structure-Fluid Interaction Analysis

Objective

- To present the type of information that will be included in the topical report and FSAR of the SDAA such that the staff gains a general understanding of building design and analysis methodology
- Obtain NRC technical staff feedback on aspects of the topical report and the type of information that will be included in the FSAR of the SDAA

Regulatory Requirements

- **10 CFR 50 Appendix A GDC 50**
  - In accordance with General Design Criteria (GDC) 50, nuclear power unit structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions.

Acronyms

CRB	Control Building
FSAR	Final Safety Analysis Report
GDC	General Design Criteria
RC	Reinforced Concrete
RWB	Radioactive Waste Building
RXB	Reactor Building
SC	Steel-plate Composite
SDAA	Standard Design Approval Application

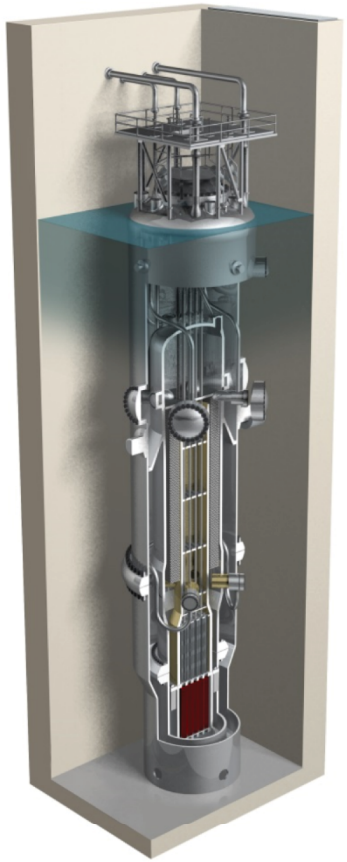
Portland Office
6650 SW Redwood Lane,
Suite 210
Portland, OR 97224
971.371.1592

Corvallis Office
1100 NE Circle Blvd., Suite 200
Corvallis, OR 97330
541.360.0500

Rockville Office
11333 Woodglen Ave., Suite 205
Rockville, MD 20852
301.770.0472

Richland Office
1933 Jadwin Ave., Suite 130
Richland, WA 99354
541.360.0500

Charlotte Office
2815 Coliseum Centre Drive,
Suite 230
Charlotte, NC 28217
980.349.4804



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Twitter: @NuScale_Power

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