

June 14, 2022

Docket No. 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 "ACRS Subcommittee Presentation: US460 Design and SDAA Overview," PM-119782, Revision 1 (Open Session)

The purpose of this submittal is to provide presentation materials to the NRC for use during the upcoming Advisory Committee on Reactor Safeguards (ACRS) NuScale Subcommittee Meeting on June 22, 2022. The materials support NuScale's "ACRS Subcommittee Presentation: US460 Design and SDAA Overview," of the NuScale Standard Design Approval Application.

The enclosure to this letter is the nonproprietary version of the presentation entitled "ACRS Subcommittee Presentation: US460 Design and SDAA Overview."

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

If you have any questions, please contact Mark W. Shaver at 541-360-0630 or at [mshaver@nuscalepower.com](mailto:mshaver@nuscalepower.com).

Sincerely,



Mark W. Shaver  
Manager, Licensing  
NuScale Power, LLC

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Mike Snodderly, NRC

Enclosure: "ACRS Subcommittee Presentation: US460 Design and SDAA Overview," PM-119782, Revision 1 (Open Session)

**Enclosure:**

“ACRS Subcommittee Presentation: US460 Design and SDAA Overview,” PM-119782, Revision 1 (Open Session)

NuScale Nonproprietary

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# ACRS Subcommittee Presentation

## US460 Design and SDAA Overview

(Open Session)

June 22, 2022

Mark W. Shaver  
Licensing Manager - SDA

Kristopher Cummings  
Licensing Engineer V

## Acknowledgement and Disclaimer

This material is based upon work supported by the Department of Energy under Award Number DE-NE0008928.

This presentation was prepared as an account of work sponsored by an agency of the United States (U.S.) Government. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the U.S. Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the U.S. Government or any agency thereof.



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## Agenda – Open Portion

- SDAA Content
- SDA Review

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## NuScale Nonproprietary

### Why we are here and how did we get here?

- The SDA submittal is an engineering optimization of the NuScale DCA to allow for better customer use and deployment. The SDA maintains the approved technical and licensing basis from the DCA while maintaining the overall safety and risk profile.

### High Level Design Changes

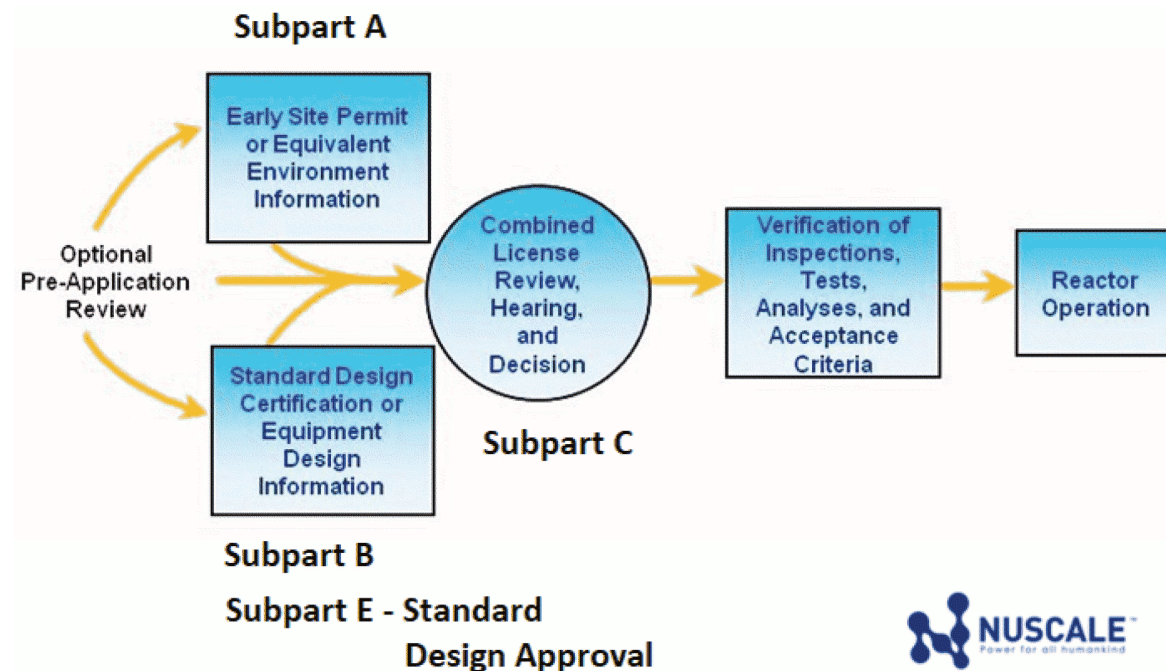
- Redesigned site layout to accommodate a 6 NPM configuration
- NPM optimized for increased power output; ease of maintenance, manufacturing and operation while maintaining safety margins:
  - Steam generator was over designed for 160MWth application (DCA) and allows for increased power output while maintaining design limits
  - Additional testing is being completed to validate performance of NPM engineered safety features at new power level
  - Additional engineered safety features added to eliminate certain events and simplify Chapter 15 analysis
- Current evaluation of SDA design changes does not significantly alter the DCA PRA risk insights.

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# Standard Design Approval (SDA) Application Content

## 10 CFR Part 52 Process and SDA Strategy

- For the VOYGR-6 product (US460 design), NuScale has chosen to pursue Part 52 through a complete, stand-alone Standard Design Approval Application (SDAA) followed by a Combined License Application (COLA).
- The SDAA will:
  - Utilize approved DCA Revision 5 Tier 2 FSAR information as foundation
  - Update content for design changes
  - Address DCA carve-outs
  - Optimize content, focusing on safety and risk-significance





## SDA Application Content

APPLICATION PART	DESIGN CERTIFICATION (10 CFR 52 subpart B)	SDAA – Required by Regulation (10 CFR 52 subpart E)	SDAA – Needed to Support COL	Include as Part of SDAA Submittal
Transmittal Letter	Yes	Yes	N/A	Yes
Part 1: General and Financial Information	(financial info. Not required)	(financial info. Not required)	N/A	Yes
Part 2: Safety Analysis Report – Tier 1	Yes	No	No	No
• Ch. 1 – Introduction	Yes	No	No	No
• Ch. 2 – Unit Specific SSCs Design Descriptions and ITAAC	Yes	No	ITAAC Only	ITAAC Only (see Part 08)
• Ch. 3 – Shared SSCs and Non-SSCs Design Descriptions and ITAAC	Yes	No	ITAAC Only	ITAAC Only (see Part 08)
• Ch. 4 – Interface Requirements	Yes	No	No	No
• Ch. 5 – Site Parameters	Yes	No	No	No (in FSAR Ch. 2)
Part 2: Safety Analysis Report – Tier 2	Yes	Yes	Yes	Yes
Part 3: Environmental Report	Yes	No	No	No
Part 4: Technical Specifications	Yes	No	Yes	Yes
Part 5: Emergency Plans	Optional (Limited Scope) Not in NuScale DCA	No	No	No
Part 6: Security Plans	Optional (Limited Scope) Not in NuScale DCA	No	No	No
Part 7: Exemptions, Departures, and Variances	Yes, if Applicable	Yes, if Applicable	N/A	Yes – Exemptions
Part 8: License Conditions; Inspections, Tests, Analyses and Acceptance Criteria	Yes, (ITAAC only) NuScale DCA references Part 2 Tier 1	No	Yes (only ITAAC)	Yes (only ITAAC)
Part 9: Withheld Information	Yes, NuScale DCA provides list of tables and figures	Yes	N/A	Yes
Part 10: Quality Assurance Program Description	Yes, NuScale DCA references separate topical report	Yes	Yes	Yes
Part 11: Supplemental Information (e.g., Limited Work Authorization)	Yes, if applicable None for NuScale DCA	No	No	No

## SDA Application Content (included for COLA)

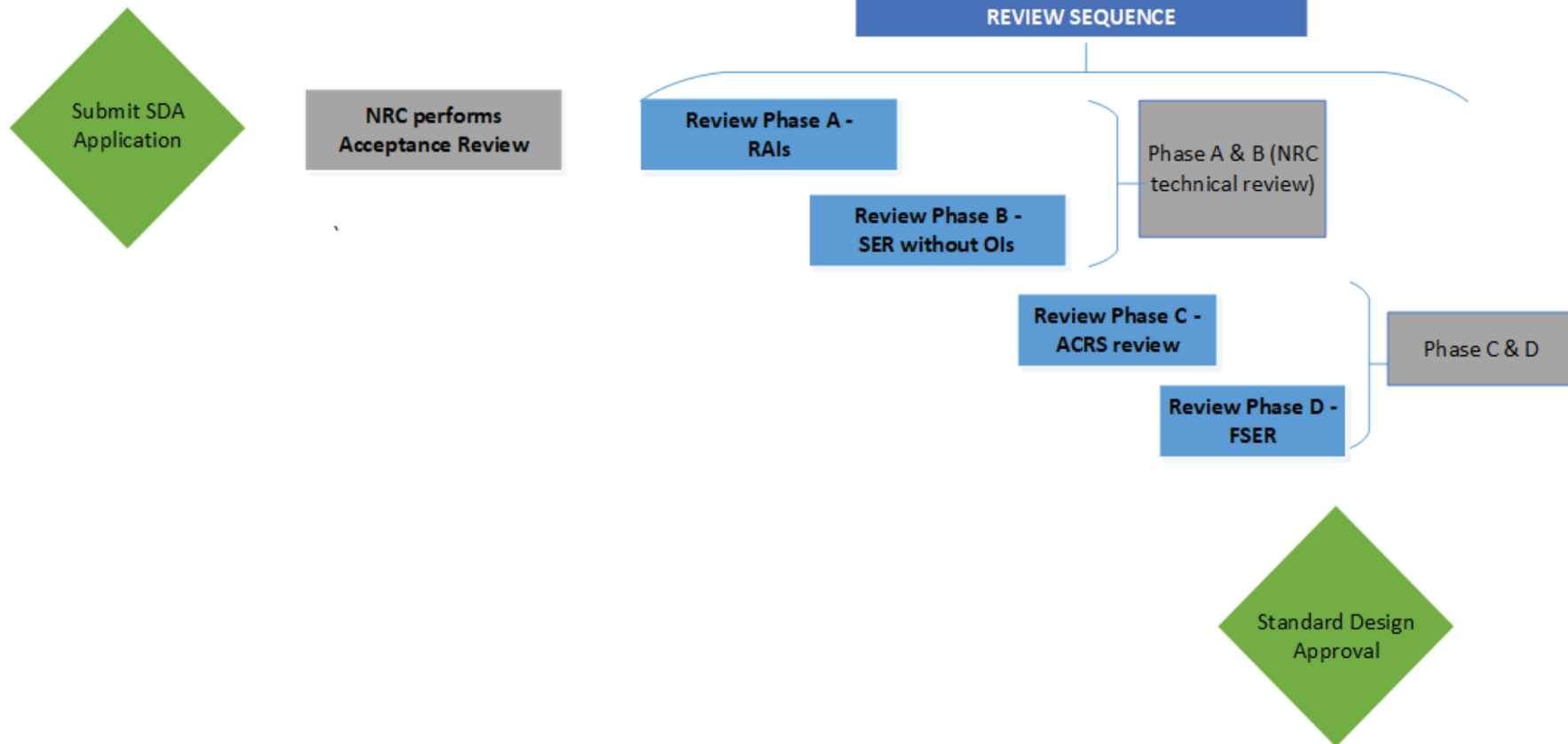
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Part 10: Quality Assurance Program Description	Yes, NuScale DCA references separate topical report	Yes	Yes	Yes
Part 11: Supplemental Information (e.g., Limited Work Authorization)	Yes, if applicable None for NuScale DCA	No	No	No

## SDA Application Content (differences from DCA)

APPLICATION PART	DESIGN CERTIFICATION (10 CFR 52 subpart B)	SDAA – Required by Regulation (10 CFR 52 subpart E)	SDAA – Needed to Support COL	Include as Part of SDAA Submittal
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Part 11: Supplemental Information (e.g., Limited Work Authorization)	Yes, if applicable None for NuScale DCA	No	No	No

# SDA Review

## SDA Review Path



Source: LO-100168 on 4/22/2021