NuScale Standard Design Approval Application for the US460

Quarterly NuScale-NRC Management

Public Meeting

October 2, 2024

U.S.NRC
United States Nuclear Regulatory Commission
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Opening Remarks

Agenda

❖ Opening Remarks

❖ NuScale US460 Standard Design Approval Application (SDAA) Review Overview

❖ Phase A Safety Review

❖ Requests for Additional Information (RAI)

❖ High Impact Technical Issues (HITIs)

❖ Topical Reports (TRs)

❖ Generic Licensing Activities (Non-SDAA)

❖ Closing remarks

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US460 SDAA Review Overview

❖ SDAA staged submittal was completed in January 2023

❖ The NRC staff issued the results of its acceptance review with a request for supplemental information (RSI) on March 17, 2023

❖ The staff began detailed safety evaluation of portions of the application not impacted by the RSI on March 20, 2023

❖ Following the receipt of the supplemental information on July 14 and 17, 2023, a docketing letter was issued on July 31, 2023, that included a four phase, 24-month review schedule

❖ The staff issued a resource estimate letter on September 22, 2023. The SDAA review will require approximately 50,000 staff hours and $650,000 for contractor support

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US460 SDAA Review Overview

Four Phase Review milestones

Phase	Phase Name	End date
Phase A	Advanced Safety Evaluation Report (ASER) without open items (draft completion date; internal NRC schedule)	November 2024
Phase B	ASER review (technical editing), Management concurrence	February 2025
Phase C	ACRS Review of ASER	May 2025
Phase D	Final Safety Evaluation Report (FSER) and SDA	July 2025

Phase A Safety Review

❖ Completed SDAA Phase reviews:

  ❑ Phase A - Chapters 2, 3 (Except 3.7, 3.8, 3.9.2), 7, 8, 9, 10, 11, 12,13, 14, 17 (except 17.4), 18, and 19 (19.4,19.5).

  ❑ Phase B - Chapters 2, 7, 9, 10, 11,12, 13, 17 (except 17.4), 18, and 19 (19.4,19.5)

  ❑ Phase C - Chapters 2, 7, 9, 10, 11, 12, 13, 17 (except 17.4), and 18

❖ The Phase A review audit that begun on March 17, 2023, ended on August 31, 2024.

❖ The staff is reviewing confirmatory items and RAI supporting documents under a separate audit.

❖ During the audit, the NRC staff presented 1202 document requests and items for explanation:

  ❑ 1048 items were resolved in the audit,

  ❑ The remaining open items were issued or are in the process to be issued as formal requests for additional information (RAIs).

Requests for Additional Information (RAI)

❖ The NRC staff has issued a total of 52 RAI questions, as of September 25, 2024

❖ NuScale responded to RAI questions on or about agreed upon schedule

❖ 34 RAI questions have been resolved closed

❖ 3 RAI responses are under NRC review

❖ 15 RAI are awaiting responses

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High Impact Technical Issues (HITIs)

1. Design and classification of EDAS - Resolved
2. LOCA break spectrum
3. Incorporated by Reference (IBR) - Resolved
4. CNV material change – Resolved
5. Lower RPV material change - Resolved
6. Secondary side controller design for DWO events - Resolved
7. DWO and steam generator inlet flow restrictor design changes
8. ASME qualification of the helical coil steam generator for the onset of DWO-induced loads
9. Upper-to-lower RPV flange bolted joint shear loading that results from differential thermal expansion – Resolved
10. LOCA Break at CVCS/CIV Connection (New)

Topical Reports (TRs)

❖ Eight TRs* submitted prior to the SDAA are completed.

❖ Four TRs submitted with SDAA are included in the SDAA Phase A audit

* Rod Ejection final SE contingent on Non-LOCA TR completion

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Generic Licensing Activities (non-SDAA)

❖ Generic TRs:
   ❑ Mitigation of Beyond-Design-Basis Events TR submitted on September 11, 2023. Advance SE with no open item was completed in August 2024. ACRS – October 2024
   ❑ Fuel Storage Rack Design TR submitted on October 9, 2023. The staff has accepted the TR for detailed review and plans a complete the Advance SE by May 2025.

❖ NuScale submitted a request for NRC Actions to "Promptly Enable Construction of ASME Code items without an Owner" – Code Case N-883. This is currently under review by the staff

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Closing Remarks

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Questions?