
NuScale Standard Design Approval Application for the US460

Quarterly NuScale-NRC Management
Public Meeting
January 22, 2025

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

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

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

*The ASER is substantively complete with a limited number of items remaining open. The review is on track for issuance of the SDAA's Final Safety Evaluation Report in 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, 16, 17 (except 17.4), 18, 19, and LOCA TR
 - ☐ Phase B - Chapters 2, 3 (Except 3.7, 3.8, 3.9.2), 7, 8, 9, 10, 11, 12,13, 14, 16, 17 (except 17.4), 18, 19, and LOCA TR
 - ☐ Phase C - Chapters 2, 3 (Except 3.7, 3.8, 3.9.2), 7, 8, 9, 10, 11, 12, 13, 14, 16, 17 (except 17.4), 18, and LOCA TR
- ❖ 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 Phase A audit, the NRC staff presented 1202 document requests and items for explanation:
 - ☐ 1069 items were resolved in the audit,
 - ☐ The remaining audit items were converted and issued as formal requests for additional information (RAIs) or were voided as they no longer support the SDAA review .

Requests for Additional Information (RAI)

- ❖ The NRC staff has issued a total of 85 RAI questions
- ❖ NuScale responded to RAI questions on or about agreed upon schedule
- ❖ 73 RAI questions have been resolved closed
- ❖ 7 RAI responses are under NRC review
- ❖ 5 RAI are awaiting responses

High Impact Technical Issues (HITIs)

1. Design and classification of EDAS - Resolved
2. LOCA break spectrum- Resolved
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 - Resolved
8. ASME qualification of the helical coil steam generator for the onset of DWO-induced loads - Resolved
9. Upper-to-lower RPV flange bolted joint shear loading that results from differential thermal expansion – Resolved
10. LOCA Break at CVCS/CIV Connection- Resolved

Topical Reports (TRs)

- ❖ Eight TRs submitted prior to the SDAA are completed*.
- ❖ Three TRs submitted with SDAA are included in the SDAA Phase A audit
- ❖ At the request of NuScale, TR-131981 “Methodology for the Determination of the Onset of Density Wave Oscillations” is put on hold and no longer tied to the scope of the US460 standard design approval application

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

Generic Licensing Activities (non-SDAA)

❖ Generic TRs:

- ❑ Mitigation of Beyond-Design-Basis Events TR submitted on 9/11/2023. Staff completed draft Safety Evaluation 8/30/24. ACRS meeting held on 10/1/24 found the SE is sufficiently complete to recommend its issuance. The SE is currently undergoing administrative and legal review for issuance
- ❑ Fuel Storage Rack Design TR submitted on 10/9/2023. The staff accepted the TR for detailed review and plans to complete the Advance SE by May 2025. Advance RAIs sent to NuScale on 1/16/2025. Response expected by 2/17/2025

❖ NuScale submitted a request for NRC Actions to “Promptly Enable Construction of ASME Code items without an Owner” – Code Case N-883

- ❑ NRC response issued on 11/1/2024 (ML24204A242)

Closing Remarks

Questions?

