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# NuScale Standard Design Approval Application for the US460

Quarterly NuScale-NRC Management  
Public Meeting  
April 11, 2024

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# Opening Remarks

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# 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)
- ❖ Focus Items Supporting Reliable Schedule Development (FISDs)
- ❖ 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

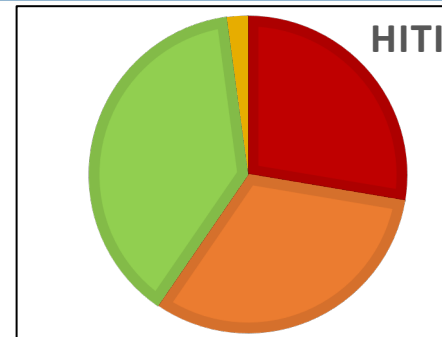
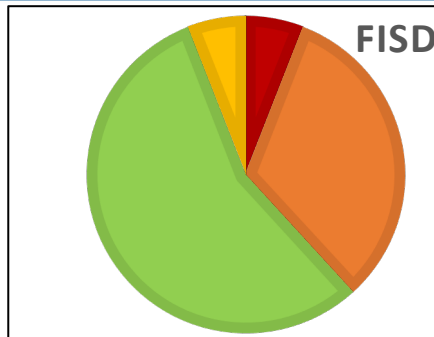
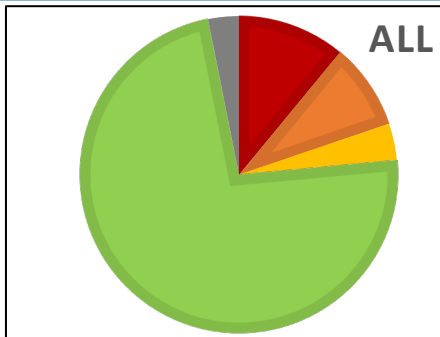
## Four Phase Review milestones

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

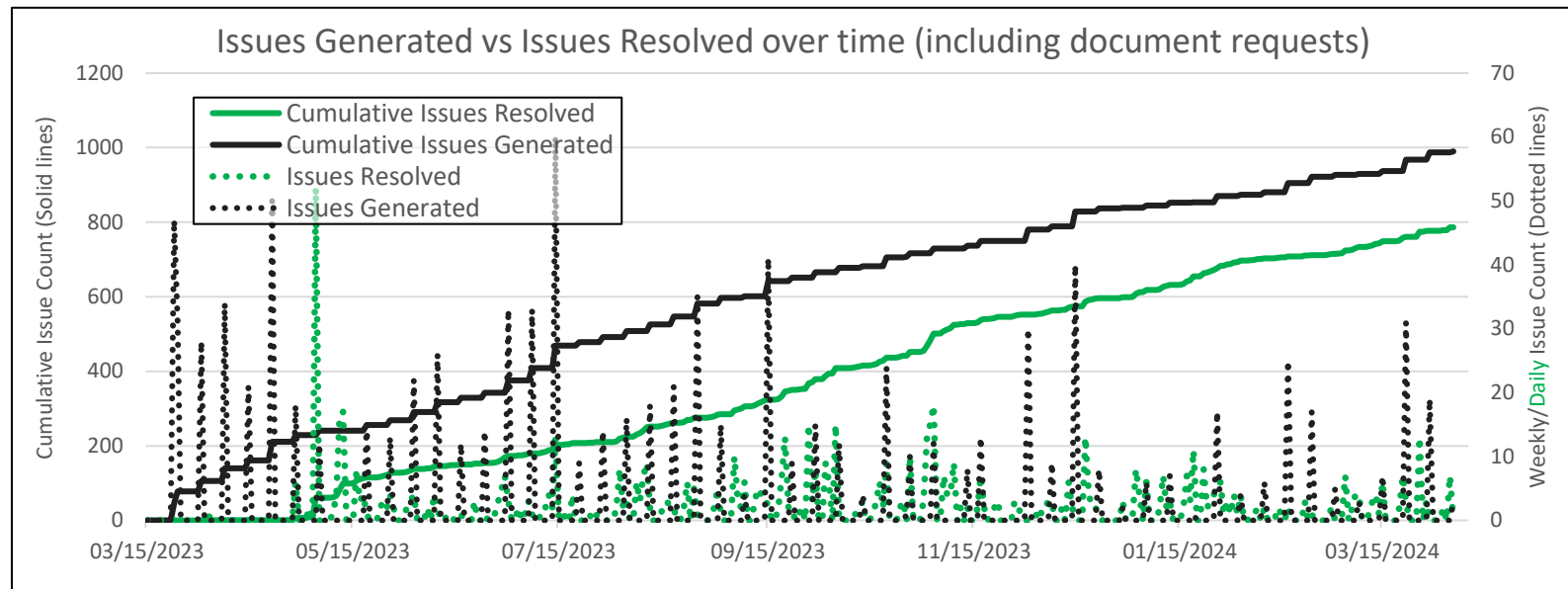
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# Phase A Safety Review

- ❖ Completed SDAA Phase reviews:
  - ❑ Phase A - Chapters 2, 7, 9, 10, 11, 12,13, 17 (except 17.4), and 18.
  - ❑ Phase B - Chapters 2, 10, 11, 13, and 17 (except 17.4)
  - ❑ Phase C - Chapters 2, 10, 11, 13, and 17 (except 17.4)
- ❖ As of April 9, 2024, the NRC staff has presented 983 document requests and items for explanations in the audit.
  - ❑ 726 items have been resolved in the audit,
  - ❑ 87 items provided by NuScale are under review by the staff, and
  - ❑ 101 items are waiting for NuScale to provide in the audit.
  - ❑ 37 items resulted in request for additional information



Issues by Category	Total	Awaiting Response	NRC Reviewing	Resolved in Audit	Sent to RAI process
ALL	983	101	87	726	37
FISD	34	2	11	19	2
HITI	47	13	15	18	1



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# Requests for Additional Information (RAI)

- ❖ The NRC staff has issued a total of 41 RAI questions, as of April 9, 2024
- ❖ NuScale responded to RAI questions on or about agreed upon schedule
- ❖ 22 RAI questions have been resolved closed
- ❖ 8 RAI responses are under NRC review
- ❖ 11 RAI are awaiting responses



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# High Impact Technical Issues (HITIs)

1. Design and classification of EDAS
2. LOCA break spectrum
3. Incorporated by Reference (IBR)
4. CNV material change – Resolved
5. Lower RPV material change - Resolved
6. Secondary side controller design for DWO events
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 - New

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## High Impact Technical Issues (HITIs) Audit Activities

- ❖ As of April 9, 2024, the staff has presented 47 HITI document requests and items for explanations in the audit.
  - ☐ 18 have been resolved in the audit,
  - ☐ 15 items provided by NuScale are under review by the staff,
  - ☐ 13 items are waiting for NuScale to provide in the audit, and
  - ☐ 1 item is sent to RAI process
- ❖ NRC-NuScale additional deep dives on DWO related HITIs scheduled for April.

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## Focus Items For Schedule Development (FISDs)

- ❖ As of April 9, 2024, the staff presented 34 FISD document requests and items for explanations in the audit.
  - ❑ 19 items have been resolved in the audit,
  - ❑ 11 items provided by NuScale are under review by the staff,
  - ❑ 2 items are waiting for NuScale to provide additional information or revised responses, and
  - ❑ 2 items sent to RAI process

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# 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. The staff accepted the TR for detailed review and plans to complete the Advance SE by August 2024.
- ❑ Fuel Storage Rack Design TR submitted on October 9, 2023. The staff has accepted the TR for detailed review and plans to complete the Advance SE by May 2025.
- ❑ Reactor Flange Tool Support Design TR's pre-application meeting was held on October 26, 2023. The planned TR submittal has been delayed until late 2024.
- ❑ Application-Specific Modifications to the Base HIPS Platform TR – Pre-application meeting held on November 20, 2023. The planned TR submittal has been delayed until late 2024.

## ❖ (NuScale DCA) Request for Exemption to the Reporting Requirements of 10 CFR 50.46(a)(3) [Changes to the approved LOCA methodology] – Staff has granted the requested exemption – FRN issued on April 5, 2024

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# Closing Remarks

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# Questions?

