

Public Meeting on EPRI TR 3002025288 Review Request for Additional Information

March 6, 2025

PURPOSE

Discuss status of the review and request for additional information (ADAMS Accession No. ML24352A469) associated with the NRC review of EPRI TR 3002025288, “Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.”

OUTLINE

- Status of the review
- High impact technical issues
- Discussion of RAI-01
- Discussion of RAI-02
- Discussion of RAI-06
- Discussion of RAI-09
- Conclusions

STATUS OF REVIEW

Staff audit was highly successful and answered many staff questions.

The staff understands that relative to the ANO precedent, the TR:

- Methodology designates more SSCs as LSS
- Methodology is easier and less resource dependent for licensees to implement

HIGH IMPACT TECHNICAL ISSUES

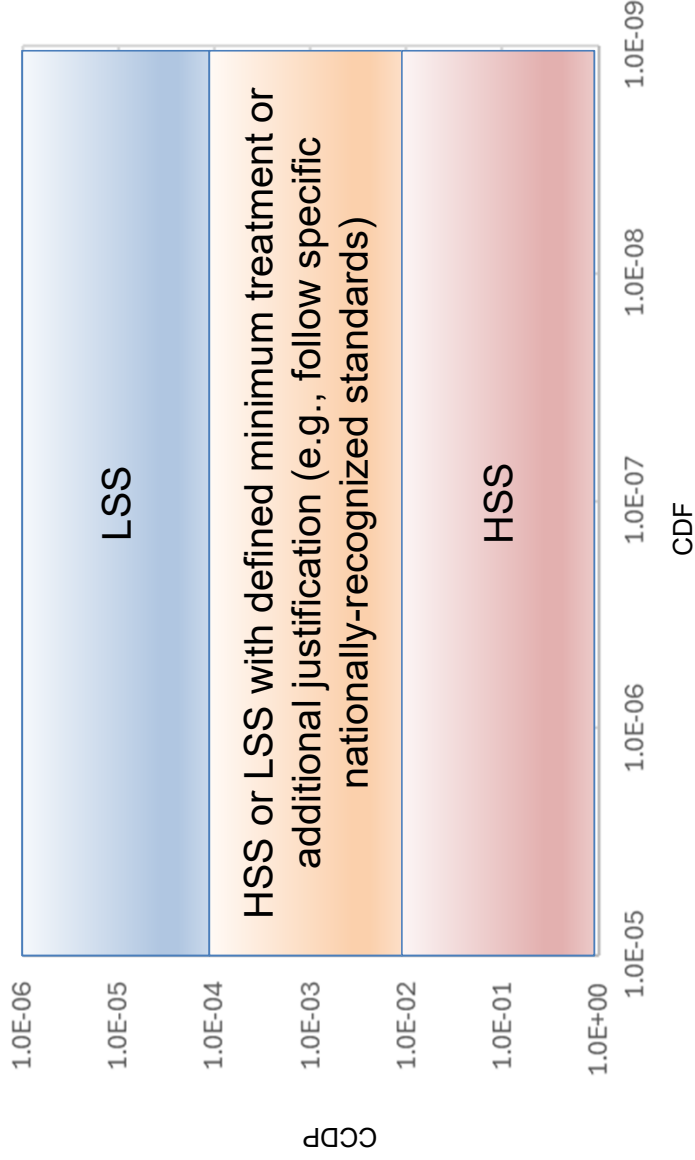
Methodology allows designation of a number of potentially high-consequence SSCs as LSS and there is a large degree of uncertainty associated with the failure rates of certain non-code repairs that could be implemented after categorization.

- Most RAls relate to this issue.

Methodology allows categorization of passive SSCs without categorization of active functions/SSCs dependent on passive integrity

RAI-1 Discussion

Figure 1 - CCDP Threshold Consequence Chart



The audit found many SSCs with internal flooding CCDPs $>1 \times 10^{-4}$ and $<1 \times 10^{-2}$

Using CCDP instead of CDF×CCDP has many advantages:

- No change expected due to treatment or operating experience
- Lower uncertainty

RAI-2 Discussion

By categorizing only passive components in each system, it could create a situation where the alternative treatment for a passive LSS SSC adversely affects an active function/SSC.

Potential impacts on active system categorization should be **explicitly addressed**:

- ✓ To maintain level of reliability of the entire SSC per 10 CFR 50.69(c)(1)(iv) and 50.69(e)(3).
- ✓ Reasonable confidence that RISC-3 SSCs remain capable to performing their safety-related function per 10 CFR 50.69(d)(2).
- ✓ Consistent with active system categorization process in NEI 00-04.

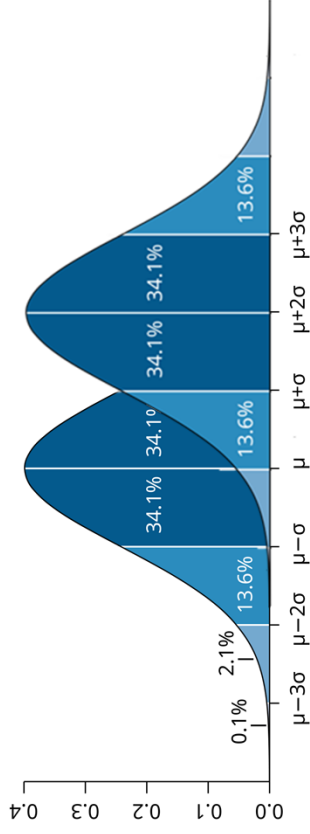
RAI-6 Discussion

- Methodology lists several degradations mechanisms for which robust programs must be implemented as prerequisites to the methodology.
- Methodology does not have actionable requirements concerning these programs (e.g., permissive language and no definition of “robust”). Applicant presented examples of robust programs during audit but did not propose revisions.

RAI-9 Discussion

- Methodology relies on an uncertainty factor without sufficient evidence that the uncertainty factor is appropriate.
- Uncertainty factor used is appropriate to address “tail uncertainty,” whereas in methodology “distribution uncertainty” is paramount.

UNCERTAINTY ANALYSIS (RAI-09)



Tail Uncertainty
(proposed factor)

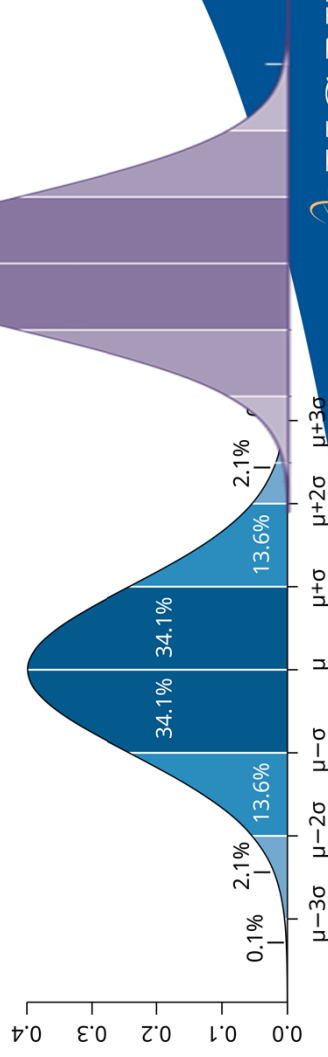


C&S compliant
pipe (Section III,
B31.1, etc.)



Component of
unknown reliability
and no minimum
treatment

Distribution Uncertainty
(proposal reality)



CONCLUSION

- Audit was a major success.
- Number of technical issues considerably reduced from acceptance review.
- Some high-impact technical issues remain to be managed.
- Staff is confident resolution could be achieved while retaining substantial value for methodology.

ADDITIONAL RAIS

RAI-03, -04, 05, -07, AND -08

SUMMARY OF RAI-3

- This RAI is related to the risk thresholds in Criteria 11-13 and how uncertainty is addressed. It also includes questions as to how the methodology preserves defense-in-depth, maintains safety margins, accounts for recovery actions (e.g., FLEX) and addresses seismic risk.
- Applicant proposed some draft revisions to TR as part of the audit. Additional justification/clarification is needed.

SUMMARY OF RAI-4

- It is unclear how the methodology, whether independently or in conjunction with the guidance in NEI 00-04, requires assessment of shutdown operations and external events, for potential impact on the categorization of passive components. If addressed by the IDP, explain how this is communicated and what guidance is available for the IDP.
- Applicant provided additional information in Attachment 2 of Supplement 2. This issue was discussed further during the audit and the applicant communicated that additional justification / references to guidance could be provided.

SUMMARY OF RAI-05

- Methodology does not limit applicability to designs for which it was verified. Applicant concurred with staff during audit that methodology is not appropriate for unverified designs (e.g., AP1000, NuScale US600).
- Applicant did not provide proposed revisions to TR.

SUMMARY OF RAI-07

- Methodology discusses relying on “industry guidance” in Section 4.2 under Criteria 11-13 but used permissive and unclear language. Applicant agreed during audit that this language could more clearly refer to prerequisite 4.1.1.
- Applicant did not provide proposed revisions to TR.

SUMMARY OF RAI-08

- Methodology criteria 1 lacked clarity concerning components that can be isolated from the RCS by two valves in series. Applicant agreed during audit that this could be more clearly worded.
- Applicant did not provide proposed revisions to TR.