Reactor Accident Analysis Modernization (RAAM)

August 14, 2024

Public Information Meeting

Public Information Meeting

This meeting is a public information meeting with a question-and-answer session; however, the NRC is not actively soliciting comments towards regulatory decisions at this meeting.

Agenda

Time*	Topic	Speaker
1:00pm – 1:15pm	Opening Remarks	NRC
1:15pm – 2:00pm	Presentation from the NRC	NRC
2:00pm – 2:30pm	Discussion	NRC/Stakeholders
2:30pm – 2:40pm	Break	
2:40pm – 3:50pm	Opportunity for Public Comment	NRC/Public
3:50pm – 4:00pm	Closing Remarks	NRC

**Times are approximate, and the meeting may end early depending on the amount of discussion.*

What is the RAAM Working Group?

- The RAAM Working Group is a team of seven senior technical experts and reviewers from multiple offices and divisions
- Members have extensive background in either accident analysis or risk analysis
- The RAAM Working Group was formed at the request of the NRR Executive Team to look for improvements in licensing related to reactor accident analysis

Goals of the RAAM Working Group

Review NUREG-0800 Ch. 15 methods and propose ways to modernize the approach

- Use a holistic approach
- Risk inform where possible
- Use insights from ongoing reviews and related efforts

Focus is on both operating and new light water reactors

Goals of the RAAM Working Group

Final goal is to produce a report for the NRR Executive Team summarizing the RAAM Working Group's conclusions

- Identifies ideas that could be further investigated
- Identifies options for implementation
- Estimates level of interest from both operating reactors licensees and new applicants
- Provides final recommendation for each idea

RAAM WG Identified Focus Areas

- Anticipated Operational Occurrence (AOO) Acceptance Limits (e.g., Specified Acceptable Fuel Design Limits (SAFDLs))
- Non Safety-Related Systems, Structures and Components (SCCs)
- Loss of Coolant Accidents
- Single Failure Criteria
- Environmental Qualification
- Design Basis Accidents
- Licensing Modernization Project (LMP) Applications

RAAM WG Conclusions

- The RAAM WG developed potential ideas for enhancements and evaluated potential options
- In several cases, significant past work has been done to develop potential enhancements – this past work can be leveraged as appropriate
- The WG considered several attributes
  - Resource Impact
  - Potential benefit to operating LWRs
  - Potential benefit to new LWR applicants
- Color coding
  - Green – low resource impact or high benefit
  - Orange – medium resource impact or medium benefit
  - Red – high resource impact or low benefit

RAAM WG Conclusions

Item	Report Section	Resource Impact	Potential Benefit		RAAM WG	Comment
			Operating Reactors	New Reactors		
Redefine Acceptable Fuel Design Limits (SARRDLs / SAFDLs)	2.1	High	Low	Medium	Additional Study Needed (e.g., Public Meeting). Potentially useful long term, but not near term.	Will require significant internal and external stakeholder engagement
Risk-Informed Guidance for Crediting Non-Safety-Related SSCs	2.2	Medium / High	Low	High	Pursue – High Priority	Will require significant internal and external stakeholder engagement

RAAM WG Conclusions (cont.)

Item	Report Section	Resource Impact	Potential Benefit		RAAM WG	Comment
			Operating Reactors	New Reactors		
Use of an Alternate Criteria to 95/95 for LOCA	2.3	Low	Medium	Medium	Pursue – High Priority	Could potentially be done quickly
Redefine Large Break LOCA to Beyond Design Basis Event	2.4	High	High	High	Pursue – Under Increased Enrichment Rulemaking	Consistent with IE Rulemaking Schedule
Reconsideration of LOCA Break Locations	2.5	Medium / High	Low	Low	Defer – limited interest from industry	-

RAAM WG Conclusions (cont.)

Item	Report Section	Resource Impact	Potential Benefit		RAAM WG	Comment
			Operating Reactors	New Reactors		
Risk-inform Single Failure Criteria	2.6	Medium	Low	High	Pursue	Will require significant internal and external stakeholder engagement
Define Single Passive Failures for Fluid Systems	2.7	Medium / High	Low	High	Pursue	Will require significant internal and external stakeholder engagement

RAAM WG Conclusions (cont.)

Item	Report Section	Resource Impact	Potential Benefit		RAAM WG	Comment
			Operating Reactors	New Reactors		
Risk-Inform EQ Radiological Requirements	2.8	Medium	Low	Low	Defer	Anticipate limited industry interest
Increase the Coherence and Consistency of DBA Radiological Consequence Analysis	2.9	-	-	-	Continue to pursue resolution of DPO 2020-002 (ML21067A645) and 2021-001 (ML23263A639) with high priority	-

RAAM WG Conclusions (cont.)

Item	Report Section	Resource Impact	Potential Benefit		RAAM WG	Comment
			Operating Reactors	New Reactors		
Use of LMP Results to Focus Staff Reviews	2.10	Low	Low	Medium	Pursue	Could be implemented similar to the Enhanced Safety Focused Review Approach (ESFRA).
Use of Event Sequence Frequencies to Risk-Inform Design Basis Event Categorization	2.11	Medium / High	Low	High	Pursue	Will likely require additional research effort

Next Steps

- Finalize RAAM Working Group report
- Develop path forward for endorsed items (if directed by Executive Team)

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Questions/Comments?