



U.S. Nuclear Regulatory Commission  
**34<sup>th</sup> ANNUAL REGULATORY  
INFORMATION CONFERENCE**

**MARCH 8-10, 2022**

**PREPARING FOR  
TOMORROW**

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# Leveraging Risk Insights in License Renewal

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# Risk Insights in License Renewal – Why?

U.S. Department of Energy, Light Water Reactor Sustainability Program

(<https://www.energy.gov/ne/nuclear-reactor-technologies/light-water-reactor-sustainability-lwrs-program>)

“Nuclear power has **reliably and economically** contributed approximately **20 percent** of electrical generation in the United States over the past two decades. It remains the **single largest contributor (approximately 56%) of non-greenhouse-gas-emitting electric power** generation in the United States.

Operation of the existing fleet of plants to 60 years, **extending the operating lifetimes** of those plants beyond 60 years and, where practical, making further improvements in their productivity are **essential** to support the nation’s energy needs: **supply, reliability, and diversity.**” (emphasis added)



# License Renewal Status

- Expected First License Renewal Applications

- Comanche Peak 1 & 2 - 2022
- Perry 1 – 2023
- Clinton 1 – 2024

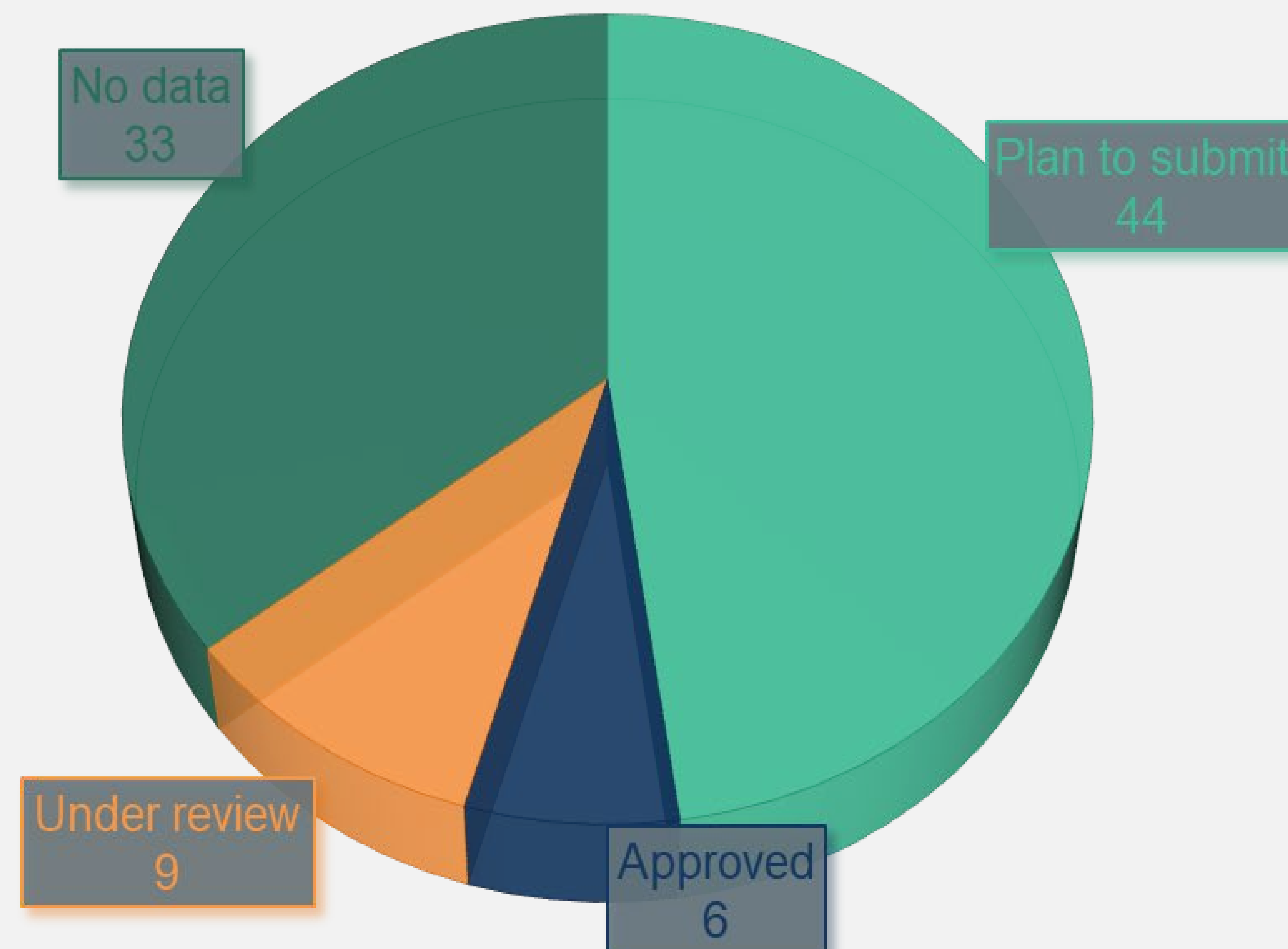
- Approved Second License Renewals

- Turkey Point 3 & 4 – December 2019
- Peach Bottom 2 & 3 – March 2020
- Surry 1 & 2 – May 2021

- Second License Renewals Under Review

- North Anna 1 & 2 - April 2022
- Point Beach 1 & 2 - July 2022
- Oconee 1 & 2 & 3 – January 2023
- St. Lucie 1 & 2 – July 2023

## OPERATING UNITS - 92

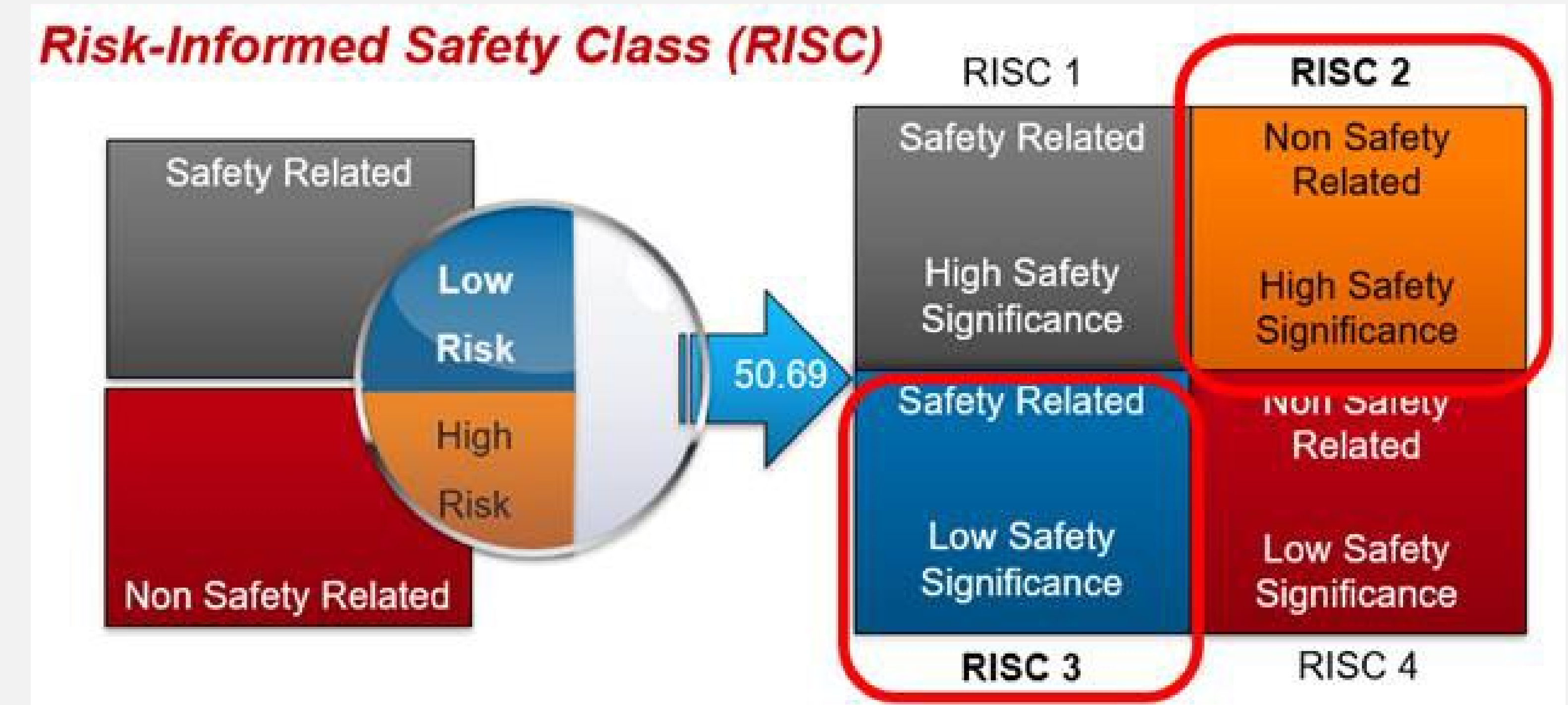




## Risk Insights in License Renewal – How?

- Since 1995, the NRC and industry have significantly expanded use of PRA & risk insights:

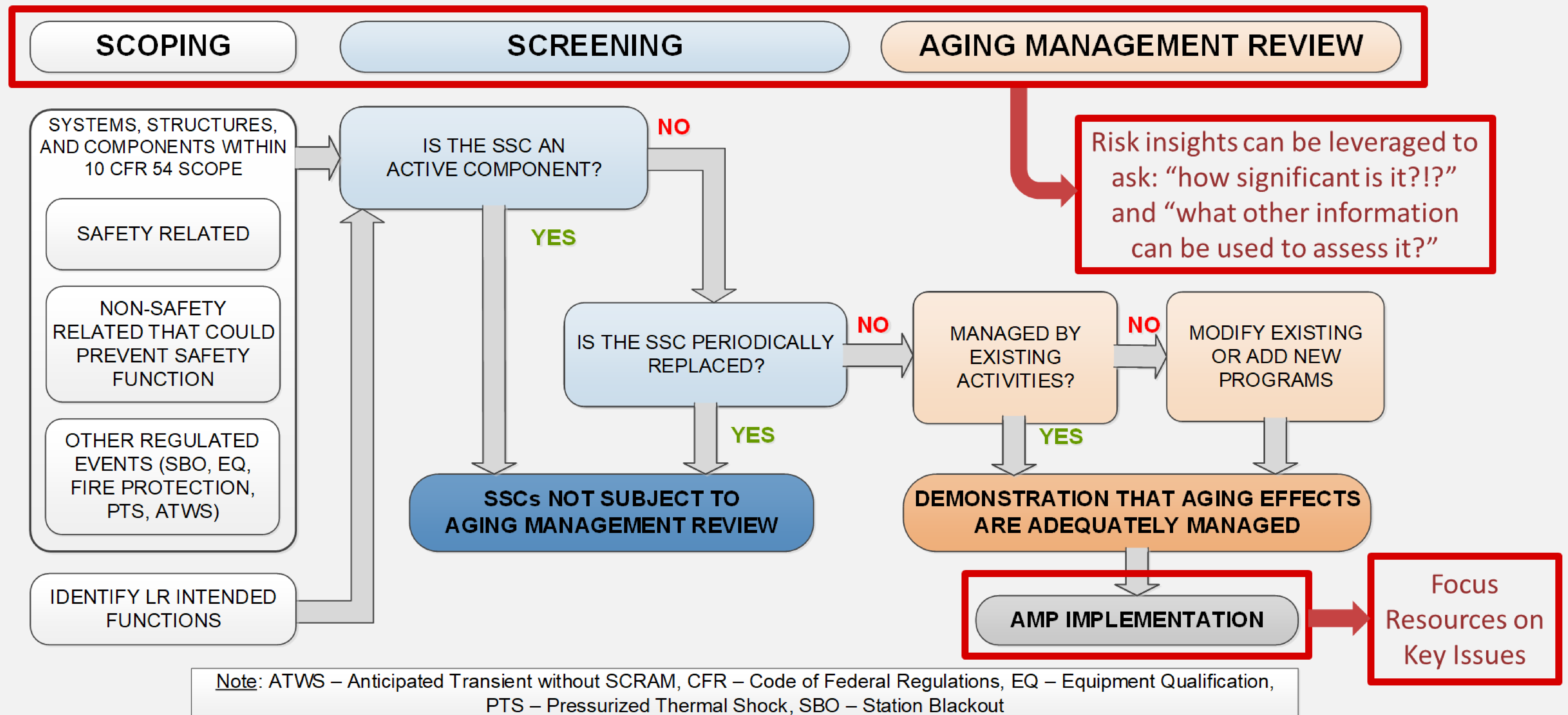
- Maintenance Rule
- Risk-informed Oversight
- Risk-Informed Plant Licensing Basis Changes
- Risk-Informed In-Service Inspection
- **Risk-Informed Categorization of SSCs (§50.69)**
- Risk-Informed Technical Specifications
- Risk-Informed Fire Protection



- All operating reactors have invested heavily on site-specific PRA models that added significant quality and level of detail since the 1990s
- While the focus of each risk-informed application may be different, they have direct or indirect links to managing aging effects; to the extent that revisiting the use of risk insights can be beneficial



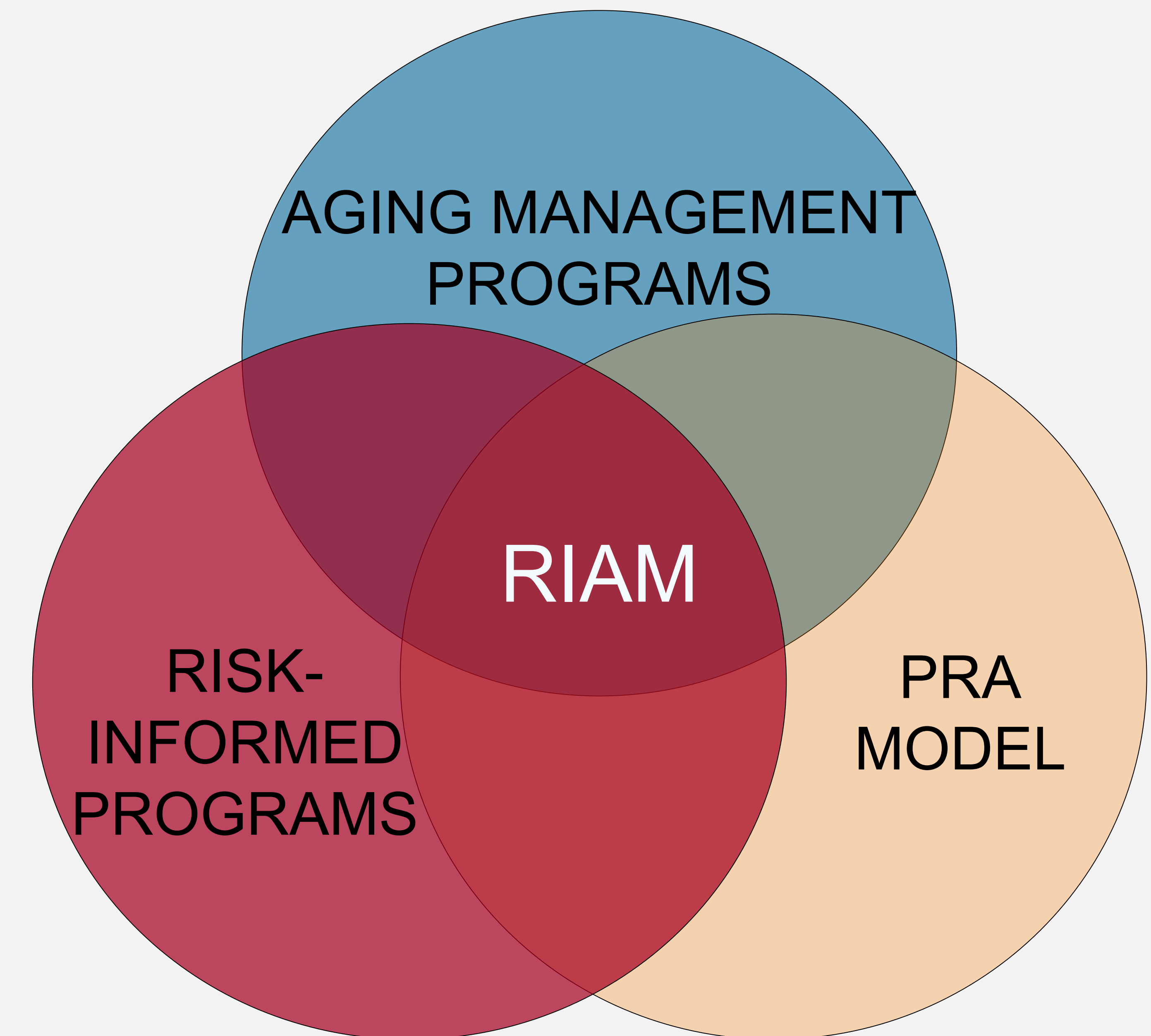
## Current License Renewal Aging Management Review (AMR) Process





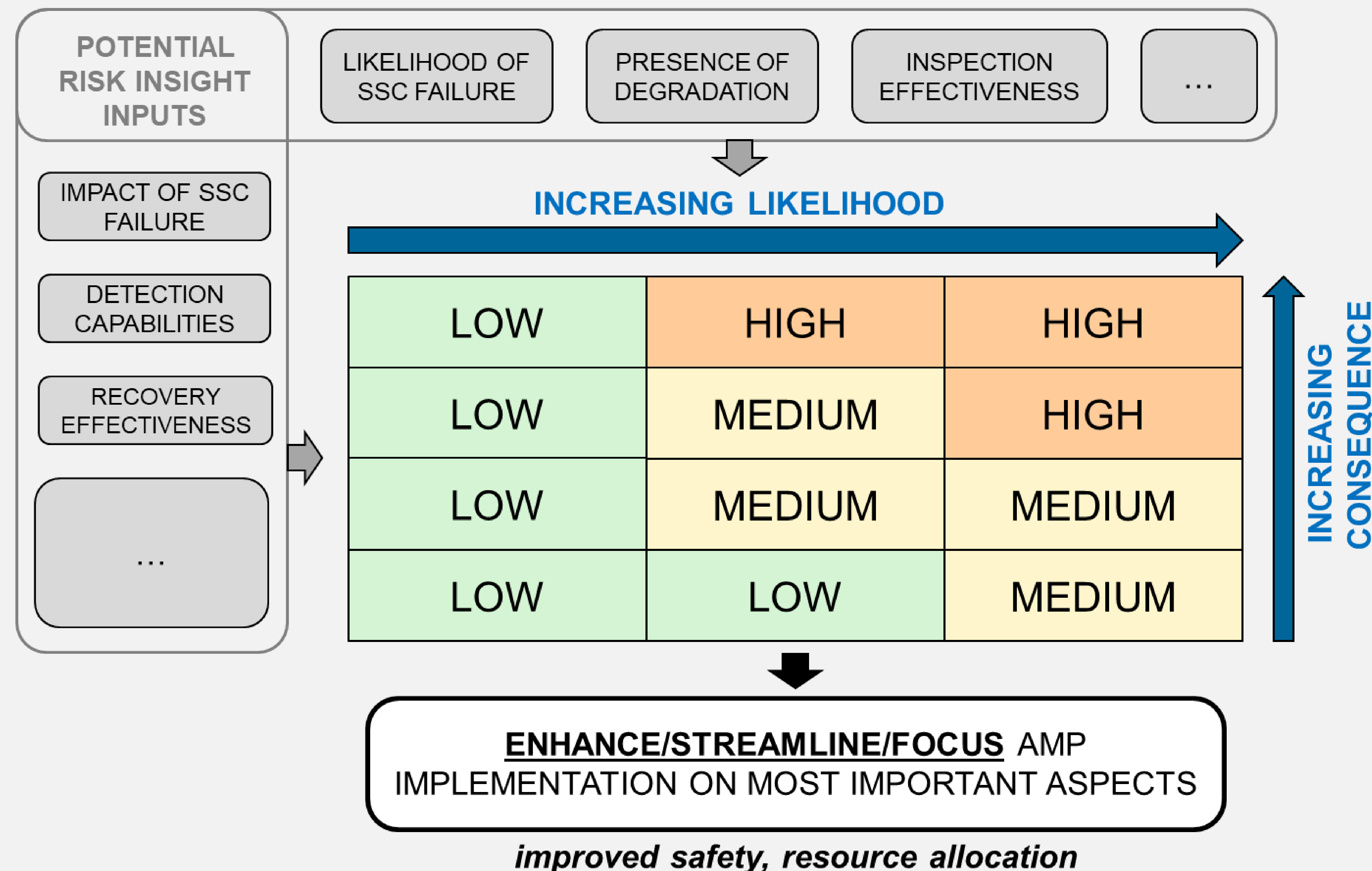
# Relationship Between Risk-Informed Programs/PRA/AMPs

- For individual AMPs, it is important to understand the role, scope, and overlap between the risk insight information that is available and that specific AMP
- The intent is not to plug PRA or RI-ISI directly into RIAM, but to adapt it where it can support risk-insights in a technically adequate manner





# Overall Approach to Decision-Making with Risk Insights





## **Risk Insights for Aging Management – Actions and Next Steps**

- Submitted Selective Leaching and Inaccessible Cable AMP mark-ups for incorporation into GALL-SLR and GALL
- Publication of final EPRI Report detailing framework
- Development of NEI Technical Report on application of Risk Insights for Aging Management
- Ongoing and future communications with NRC and industry





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