

Probabilistic Risk Assessment Applications

AREVA's Probabilistic Risk Assessment (PRA) professionals have extensive experience in PRA models development, maintenance and licensing, including internal and external hazards, and all modes of operation. AREVA has been an industry leader in PRA use and application development. AREVA's experts have participated with EPRI and NEI in development of the PRA-related methodologies and guidelines; they have also contributed to ASME/ANS PRA Standards, and supported or led PRA peer review processes and Findings and Observations resolutions.

AREVA's professionals also have extensive experience in risk-informed applications, and in risk evaluation of design or operational changes.

AREVA is taking a leading role in addressing recent, Fukushima-related regulatory issues such as seismic PRAs and external floods. AREVA's all-around knowledge, which includes plant design and systems, greatly supports risk-informed engineering and applications in a balanced manner. This synergy helps to ensure the most cost-effective and long-term solutions for our customers.

PRA Development Experience

The AREVA team has experience in PRA model development, updates and licensing, including:

- Development PRA Level 1, Level 2 and Level 3 (at power and shutdown)
- Internal Hazards PRA (flooding and fire)
- External Hazards PRA (seismic and external flooding)
- Spent Fuel Pool Risk Assessment

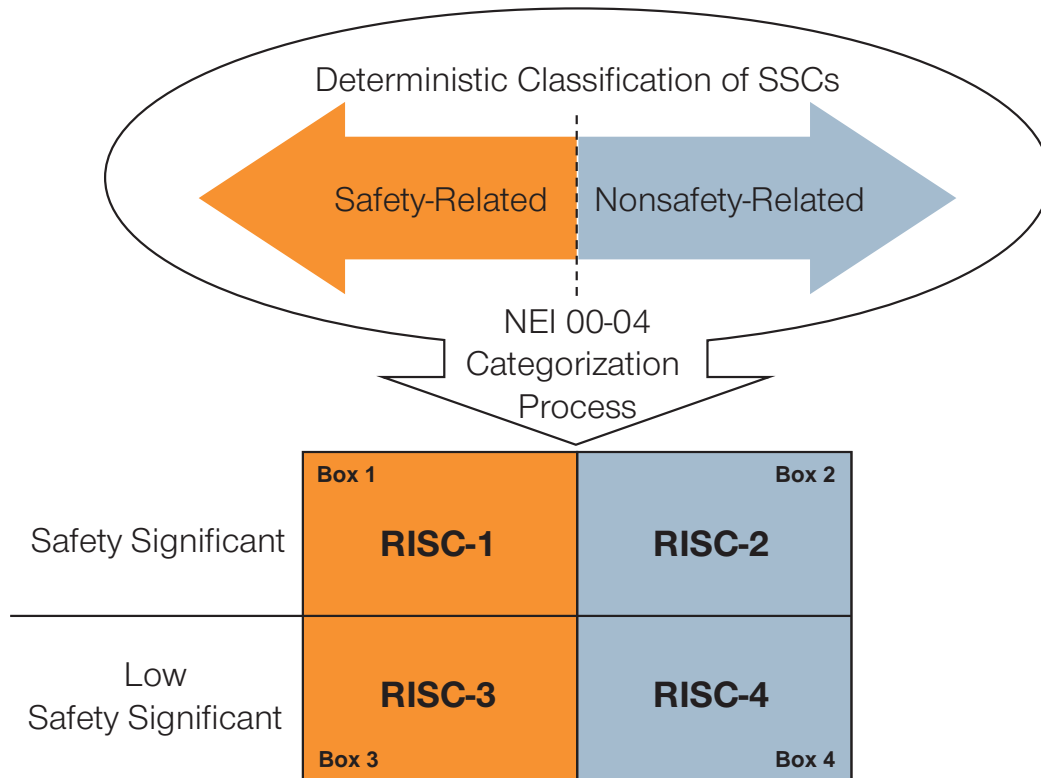
Regulatory Interaction

AREVA's PRA team is skilled in interacting with the NRC on numerous issues, such as PTS, SW heat exchangers plugging, risk-informed methodology development, risk-informed applications, design certification, COLA, and defining risk measures for Generation 3+ plants.



PRA Applications

- Support of Plant Design Changes: AREVA can support the design process in selecting design options and design changes with the use of PRA. Reliability analysis and PRA modeling can be provided to support implementation of design modifications identified in the frame of regulatory requirements or life extension such as digital I&C and passive shutdown seals.
- Support of Plant Operational Changes: AREVA can evaluate changes to plant operations (Technical Specification, In-service Inspections and In-service Testing programs).
- Operational Uses: AREVA can evaluate the risk impact of plant configuration changes due to on-line maintenance.
- Reactor Oversight Process: AREVA can address the red and yellow levels of significance associated with performance indicators and inspection findings.
- New Reactor Licensing: PRA experts provide support for Design Certification and COLA for new plants.
- Support for Risk-Informed Safety Categorization of Equipment (CFR 50.69 implementation)



Example of Benefits Through CFR 50.69 Implementation

- Reduction in the cost of repair & replacement parts
- Reduction in Maintenance Rule (MR) Scope
- Reduction in Equipment Qualification (EQ) Scope
- Reduction in test requirement in In-service Testing (IST)
- Reduction in test requirement in Local Leak-Rate Testing (LLRT)

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