



U.S. Department of Energy



Treatment of Passive Components in Design and Preclosure Safety Analysis

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Bases for Reliability of ITS Passive SSCs

- **Event sequences involving passive ITS SSCs may be categorized as Beyond Category 2 if:**
 - **Contributors to failure of passive SSCs are identified in the PCSA and addressed in design**
 - **Appropriate and conservative design bases are specified using accepted engineering practice for nuclear facilities of similar or higher risk**
 - **Appropriate consensus codes and standards are specified for design**
 - **Quality Assurance / Quality Control applied during design and construction to minimize variability and uncertainty**

ITS - Important to safety

SSCs - Structures, Systems and Components



Consensus Codes and Standards

- **Codes are developed by expert committees whose members apply their expertise to include margin and factors of safety, which they agree adequately account for uncertainty and variability in materials, construction and human error**
- **Comprehensive tests, inspections, controls and maintenance required by codes and standards provides confidence that design is properly implemented**
- **When subjected to loads within ITS design bases, probability of failure is very low**



Use of Accepted Engineering Practice

- **Based on structural design of safety-related features for similar or higher risk facilities**
 - Tornado and wind loading
 - Drops of casks and canisters
- **Potential in-package criticality**

