

**RIC 2005
SESSION A1
RISK-INFORMING ECCS (50.46) REQUIREMENTS**

Risk-Informing 50.46

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Objectives of Risk-informing 10 CFR 50.46

- Risk-informing 10 CFR 50.46 implements Commission's FY 2004-2009 Strategic Plan
 - “Develop and update risk-informed and performance-based . . . regulations to enable the safe use of radioactive materials, using ‘defense-in-depth’ principles and appropriately conservative and realistic practices that provide an acceptable margin of safety”
 - “Use sound science and state-of-the-art methods to establish risk-informed and, where appropriate, performance- based regulations”



Risk-informed Regulatory Framework

- Risk-informing 10 CFR 50.46 is part of a broader initiative to risk-inform the regulatory framework
 - License Amendments - RG 1.174
 - Inspections – Reactor Oversight Process
 - Regulations – 10 CFR 50
 - Special Treatment – 10 CFR 50.69
 - Hydrogen Control – 10 CFR 50.44

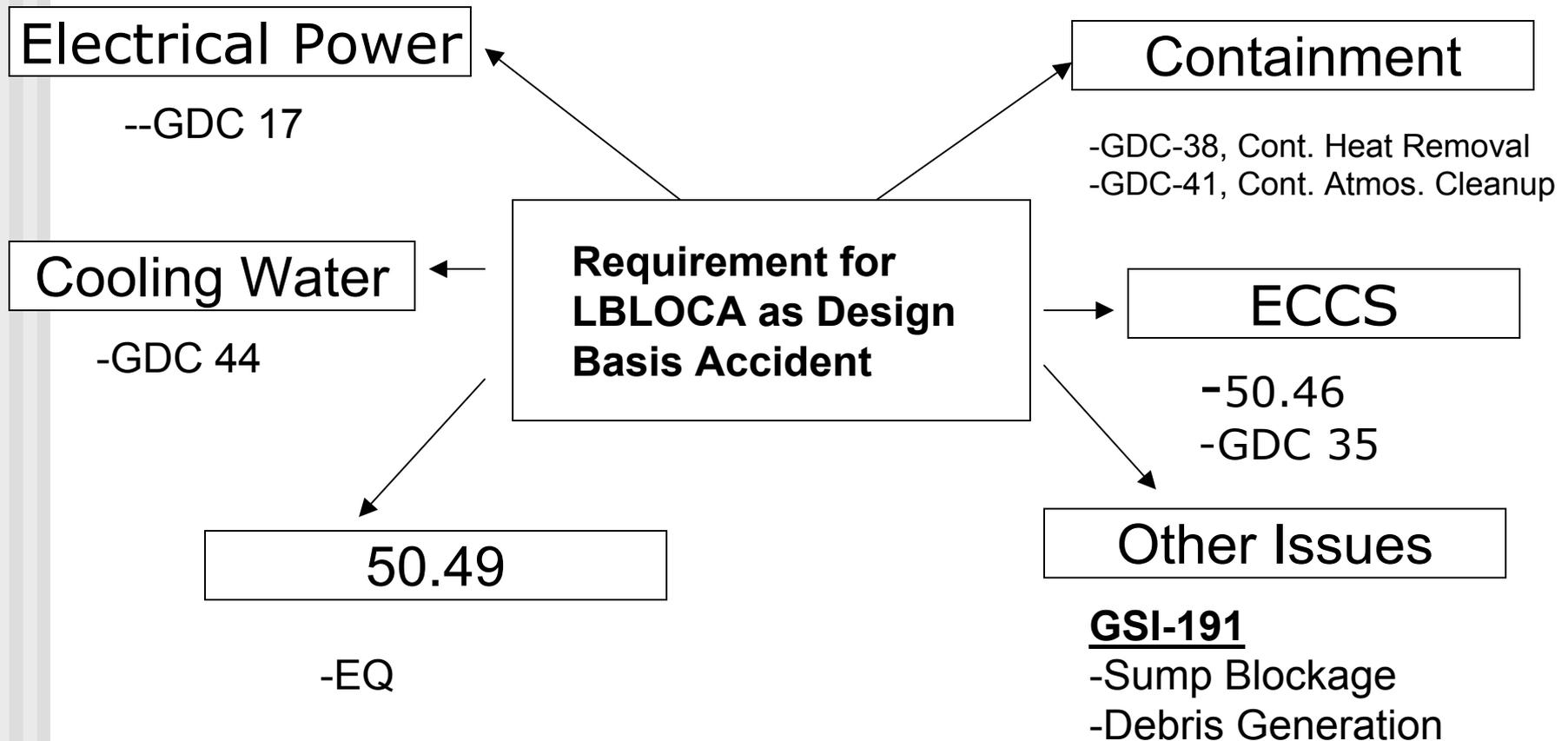


Risk-informed Changes to ECCS Requirements

- Redefinition of LBLOCA one of three initiatives to risk inform ECCS requirements (SECY-01-0133)
 - Redefinition of maximum design basis LOCA
 - Revise design basis LOCA-LOOP assumptions
 - Feasibility study to evaluate broader change to single failure criterion



Assumption of LBLOCA Has Guided Safety Design



Improved Understanding of LBLOCA Risk

- Opportunity to use over 30 years of reactor safety research and operating experience to improve regulatory requirements
 - Improved understanding of likelihood of LBLOCA (SECY-04-0060 – Expert Elicitation)
 - Improved understanding of risk (WASH-1400, NUREG-1150, IPEs, etc)

Potential Safety Improvements

- Optimization of safety systems
 - Timing and flow rate of containment spray
 - Improves RWST inventory utilization
 - Increases time available for switchover to recirculation
 - Reduces debris transport
 - Adjust accumulator setpoints
 - Better utilize inventory



Potential Safety Improvements (Cont)

- Improve reliability of EDGs
 - Delayed start time
 - Improved load sequencing
- Improved fuel utilization
 - Fewer assemblies to transport and store
 - Reduced vessel fluence
- Allows NRC and licensee resources to focus on more risk significant issues



Summary

- Improved knowledge of risk of LBLOCA warrants modification of 10 CFR 50.46
- Rule change required to:
 - Enable safety enhancements in plant design and operation beyond ECCS
 - Support coherence in regulations
 - Ensure consistency with other risk-informed initiatives
 - Help focus regulations on “right safety issues”

