

RIC 2005

Session A1

Risk Informing ECCS Requirements (50.46)

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Proposed LBLOCA Rule Changes: A PWR View

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Presentation Overview

- **Where We Are**
- **Benefits of LBLOCA Redefinition**
- **Transition Break Size**
- **Mitigation for Breaks Larger than the Transition Break Size**
- **Summary**

Where We Are

- **LBLOCA Redefinition is a key part of a vision for a consistent, risk-informed, performance-based regulatory structure for the long term**
- **Critical time for industry to be fully engaged with NRC**
 - **Need to define:**
 - Potential safety benefits
 - Analysis to demonstrate mitigation capability
 - Potential applications

Benefits of LBLOCA Redefinition

- **Improved safety focus**
 - Provides a means to place industry and regulatory attention, focus and resources directly on risk-significant events and scenarios while maintaining mitigation capability for full DEGB breaks
- **Provides a level of coherence with other industry and regulatory risk-informed activities**

Benefits of LBLOCA Redefinition

- **Safety benefits**
 - **More effective utilization of mitigation equipment such as diesel generators and containment spray**
- **Operational benefits**
 - **Potential for greater fuel utilization**
 - **Increased operating margin for Technical Specification equipment**

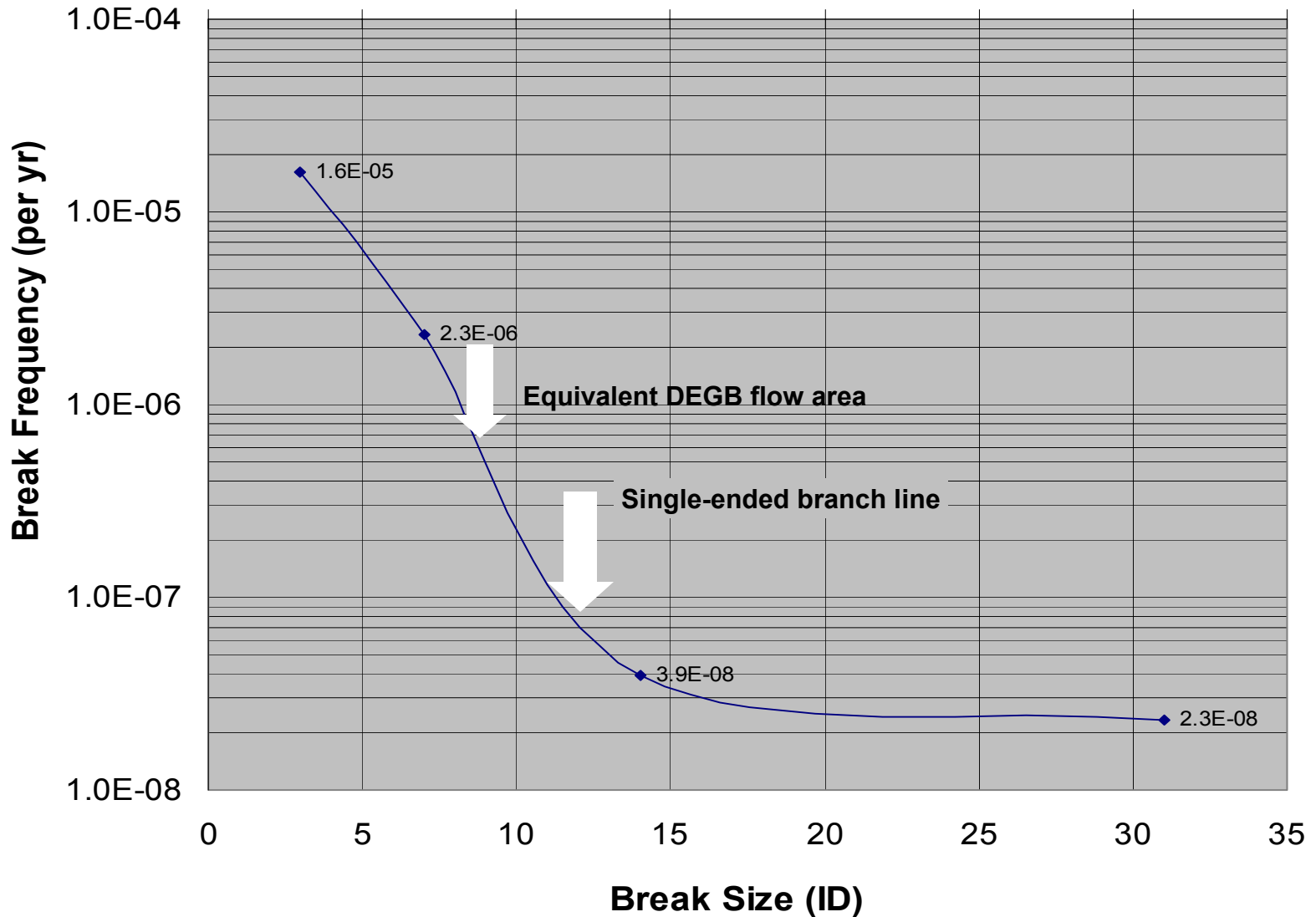
Example Safety Benefits – Better Utilization of Equipment

- **Relax Requirements for Containment Spray**
 - **Benefits to ECCS performance and available inventory for core cooling**
 - **Increase operator time to perform sump switch-over actions**
 - **Eliminate unnecessary containment spray actuation**
 - **Reduces amount debris to transport to containment sumps**
- **Diesel Generator Start Times can be extended**
 - **Directly benefits diesel generator reliability**

Transition Break Size

- **Transition Break Size expected to be based on size of piping attached to the RCS loop piping**
 - **Applies 1E-05/yr initiating event frequency from Expert Elicitation recommended in the Commission's direction**
 - Comparable to flow area from 8" pipe DEGB
 - Frequency is about 2E-06/yr
 - Addresses areas of uncertainty

PWR Mean Break Frequency



Support for Rule Making

- **Industry - NRC Meeting held in January identified safety benefit demonstrations:**
 - **Extend EDG start time**
 - **Delay Containment Spray actuation**
 - **PWR Reference Plant: 4-loop with large dry containment**
- **Active interaction with NRC to quantify the safety benefits in support of the NRC's rulemaking.**

Mitigation for Breaks Larger than the Transition Break

- **Plants will be required to be able to mitigate breaks larger than the TBS**
 - Requirement effectively addresses uncertainty in TBS selection
- **Effective and workable guidance is critical to successful implementation**
 - Analysis requirements need to be in-line with risk contribution

Summary

- **Most critical time since the initiation of the effort to revise the LBLOCA rule**
- **LBLOCA Redefinition is an important cornerstone in performance-based, risk-informed regulatory changes**
- **Proposed rule has safety and operational benefits**
- **Success path depends on effective implementation guidance**