

**Westinghouse Owners Group  
Large Break (LB) LOCA Redefinition Program**

**Bob Osterrieder  
Westinghouse Electric Company**

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# Westinghouse Owners Group LBLOCA Redefinition Program

## **Presentation Overview**

- Background
- Program Approach
- Safety Benefits
- Examples of Potential Benefits
- Program Plan
- Safety Margin
- Conclusions

# Westinghouse Owners Group LBLOCA Redefinition Program

## **Background**

- November 20, 1998 WOG Letter to Commissioner Diaz
  - Identified LBLOCA as Highest Priority Regulatory Issue
- January 12, 2000 NEI Letter to Chairman Meserve
  - Identified 10CFR50.46 and Appendix K to Part 50 as Prime Candidates for Assessment and Change
- WOG Considered Options and Concluded that LBLOCA Redefinition is Best Option to Pursue
- NRC Options Presented at February 2000 Option 3 Workshop

# Westinghouse Owners Group LBLOCA Redefinition Program

## **Program Approach**

- Licensing - Consistent with Risk-Informing Part 50
  - SECY-99-264 (Proposed Staff Plan for Risk-Informing Technical Requirements in 10 CFR Part 50)
- Risk-Informing the Technical Requirements Complements Risk-Informing the Special Treatment Requirements and Adds Clarity/Consistency to the Regulations
- Changes to 10 CFR Part 50
  - 50.46 Acceptance Criteria for ECCS
  - Appendix A GDC (LOCA definition)
  - Appendix K (I.C.1)

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## **Program Approach (continued)**

- Redefine the Design Basis LOCA
  - Size
  - Attendant Consequences
- Maintain an Acceptable Margin of Safety
- Technical Justification
  - Use Risk-Informed Technology to Show Low Risk of LBLOCA
    - Utilize the Framework Contained in Regulatory Guide 1.174
  - Use Leak Before Break Analysis to Justify Break Size
    - Define New Limiting Break Size & Reanalyze, as Necessary, to Obtain Benefits
    - Intent is to Reduce Break Size Down to SBLOCA Range

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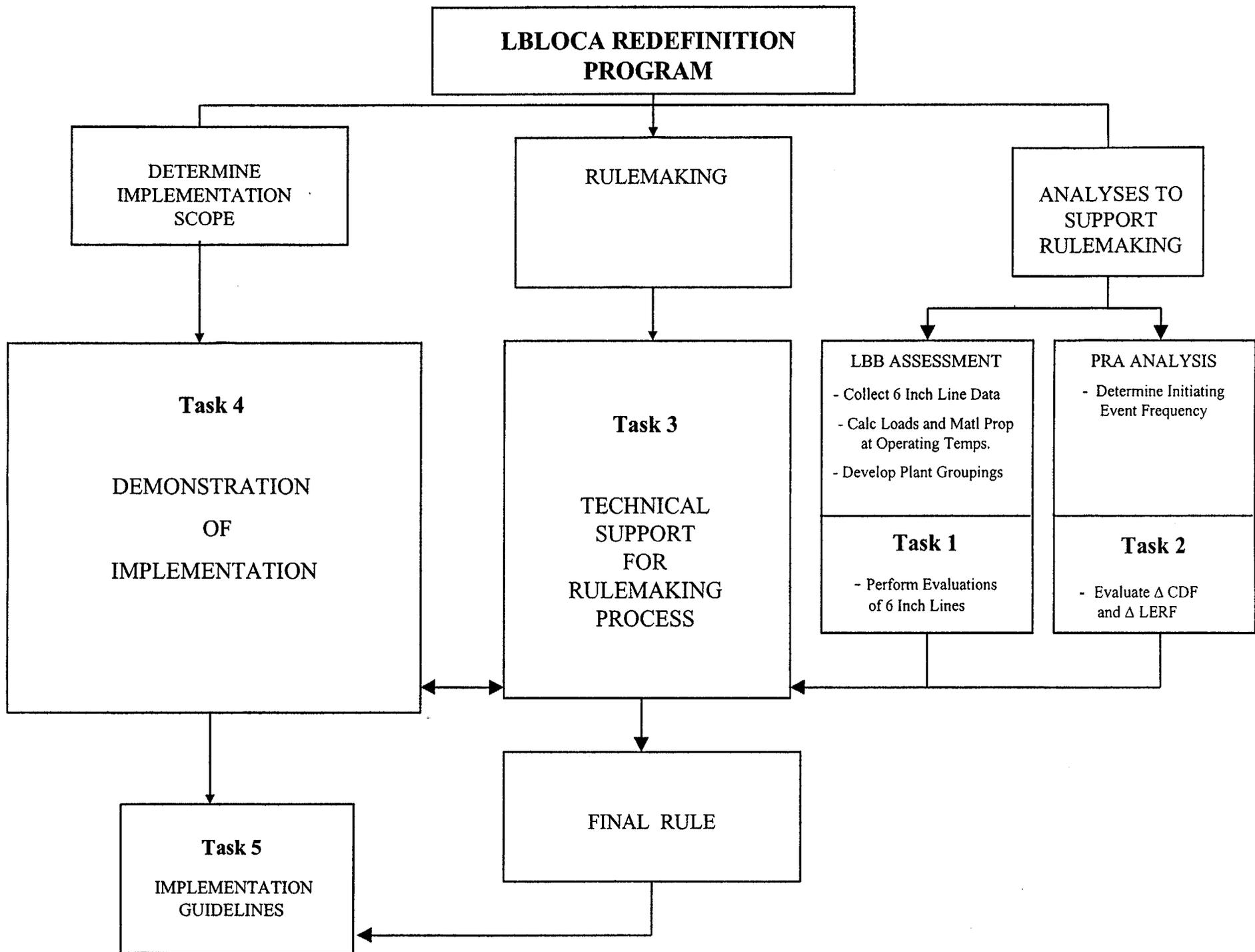
## **Safety Benefits**

- Focus Resources on Activities of Greater Risk Significance
- Reduce Burden of Revising and Maintaining LBLOCA Design/Licensing Basis
- Consistency within the Regulations
- Consistency in Various Individual Analytical Applications
- Provides a More Realistic Basis for Design Evaluations
- Promotes Realistic Equipment Testing Requirements

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## **Examples of Potential Benefits**

- Avoided LBLOCA-Related Regulatory Issues
  - Reduced Scope of Generic Issues
- Tech Spec Relaxations
  - Diesel Generator Start Time
  - Accumulators
- Reduced Analytical Cost/Maintenance
  - Post LOCA Issues
    - Control Rod Insertion
    - Hot Leg Switchover
- Peaking Factor Increases
- Power Uprates
- Reactor Vessel Internals
  - Barrel Baffle Bolts
- Support Resolution of PWR Sump Issues



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## **Demonstration of Implementation (Examples)**

- Decrease Number of Accumulators in Tech Specs (N-1) or Relax Accumulator Parameter Requirements (Boron, Pressure, Water Volume)
- Increase Diesel Generator Start Time
- Lower LOCA Peak Containment Pressure
- Relax Ultimate Heat Sink Requirements
- Relax Containment Fan Cooler Requirements
- Relax ECCS Flow Balancing Requirements

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## **Rule-making**

- Utilize Rule-Making Based on SECY-98-300 Option 3
- Rule-Making with Option of Retaining Current Licensing Basis
- Regulatory Impact
  - 10 CFR 50.46
  - 10 CFR 50 Appendix K
  - 10 CFR 50 Appendix A General Design Criteria
- Ideally, the Regulations Should Define what the Implementing Methodology must Achieve, Rather than how the Requirements must be Satisfied
- Provides Broadest Range of Benefits
- Minimizes Staff Resources versus Exemption Requests

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## **Safety Margin**

- Risk-Informed Approach Maintains the Defense-In-Depth Philosophy that Underlies the Safety Regulations (SECY-98-300)
- CDF and LERF Ensure Margins for Health and Safety of the Public
- Redefinition of LBLOCA, Retains LOCA as a DBE
- Other DBAs Continue to Maintain Adequate Margin
- Focus Resources on Activities of Greater Risk Significance

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## **Industry Support**

- Multiple Industry Meetings Held to Discuss LBLOCA Redefinition Program
- Most Recent Meeting was August 29, 2000 Coordinated by NEI
- All NSSS Owners Groups See Benefit in Coordination of OG Activities Associated with Risk Informing 10CFR50.46
- WOG to Continue as Lead Entity for LBLOCA Redefinition

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## Conclusions

- Maintains Acceptable Margin of Safety
- Key Part of Risk-Informing Part 50
- Consistent with Intent of Reactor Oversight Process
- Single Approach to Reduce Burdens Imposed by an Unrealistic Event
  - Complementary to the 1987 GDC-4 Rule Change
  - Integrates Pursuit of Individual Applications in a Cohesive One Time Rule Change
- Consistent with Technological Advances/Knowledge
- Reduces both Staff and Industry Resources Associated with LBLOCA
- Increases Efficiency and Effectiveness
- Industry Supports Program
- **LBLOCA Redefinition is Best Option to Pursue**