

# BWR Mark I/II Filtering Strategies Rulemaking

July 11, 2013



NUCLEAR ENERGY INSTITUTE

# Objectives

- Discuss filtering strategy alternatives
- Develop an appropriate base case scenario definition that accurately reflects plant procedures and guidance
- Discuss possible variations in the base case scenario based on uncertainties

Industry Proposed Goal, Objectives, Measures

# **ACCIDENT MANAGEMENT RULEMAKING BASIS**

# Performance Goal

- Implement strategies to protect public health and safety by minimizing potential release of significant amounts of radioactive material following the dominant severe accident sequences through filtering strategies

# Performance Objectives

- Reduce the conditional failure probability of Mark I and Mark II containments:
  - For containment failure from liner melt-through; and
  - For severe accident over-pressure/over-temperature conditions
- Use severe accident management to minimize the potential for controlled (venting) and uncontrolled (diffuse) fission product releases

# Performance Measures

- Adequate and reliable water injection into RPV and/or containment during severe accident conditions
- Reliable means to protect containment from severe accident sustained over-temperature conditions
- Reliable means to restore and maintain containment pressure (done via EA 13-109)
- Reliable means to capture radionuclides

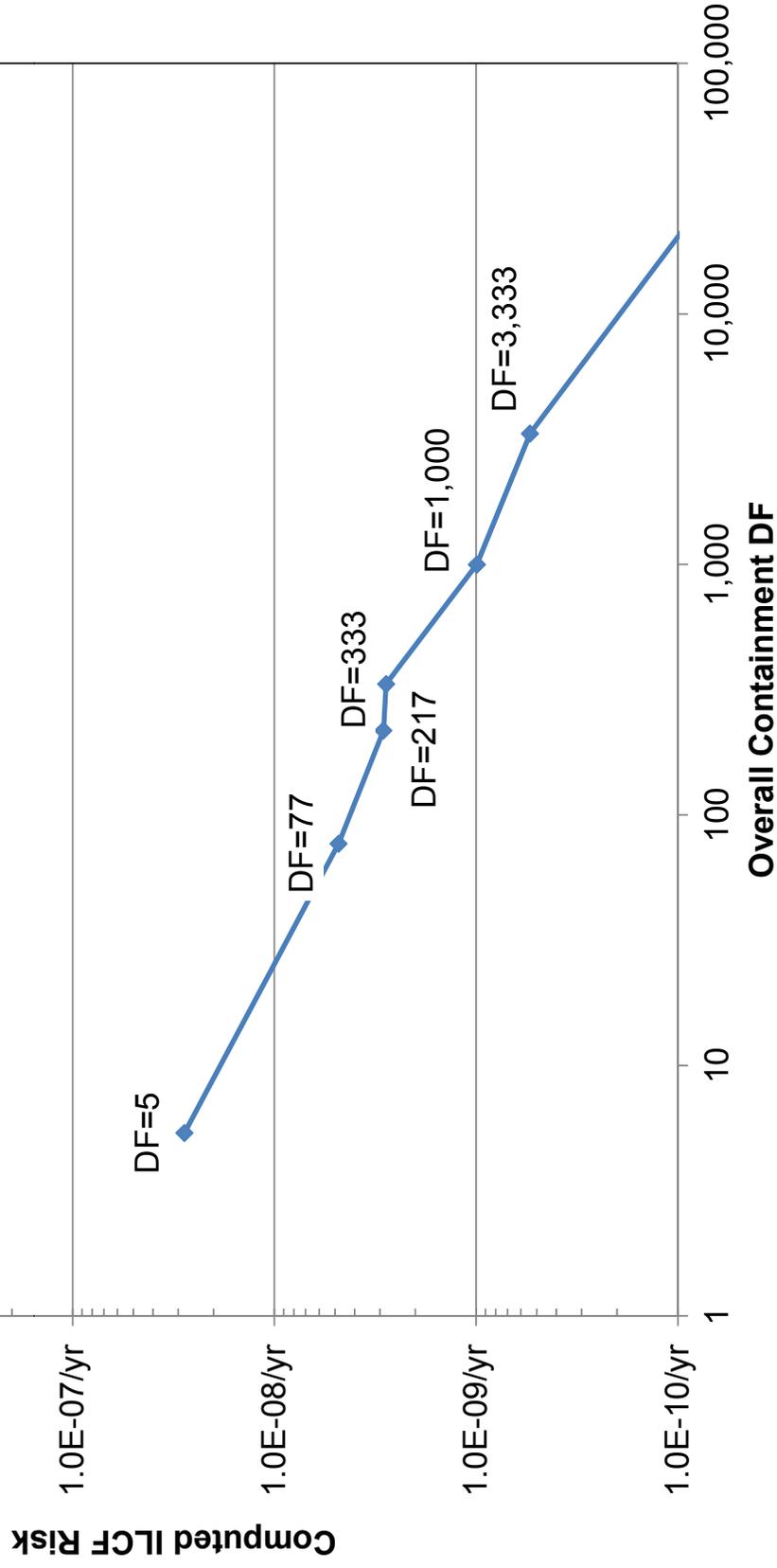
# Attributes of Reliable

- Engineering basis for capability for defined boundary conditions
- Required equipment procured, tested, and maintained in an appropriate manner
- Operator actions feasible in defined boundary conditions

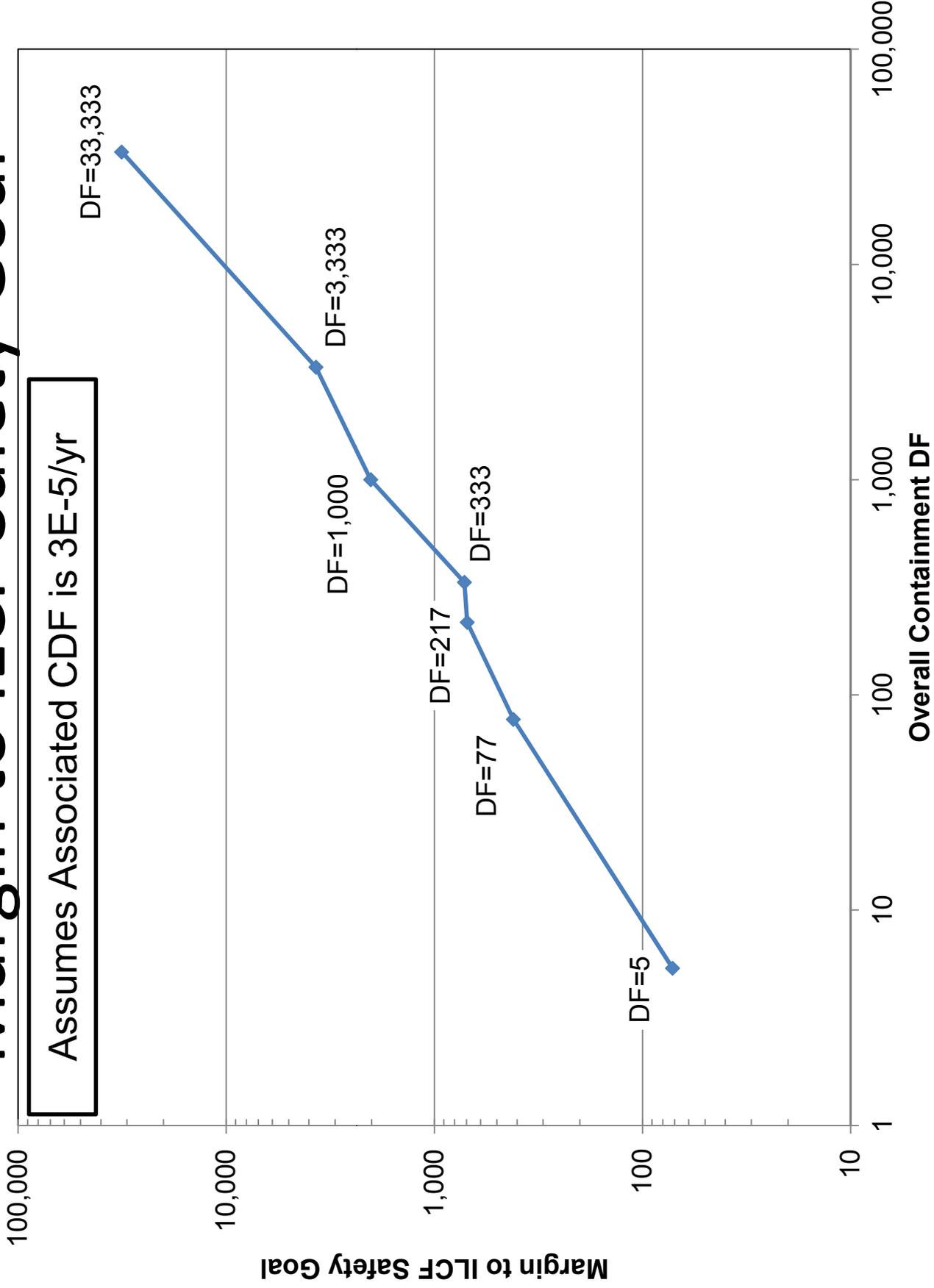
# ILCF Risk - SECY 12-0157

Assumes Associated CDF is 3E-5/yr

← Safety Goal



# Margin to ILCF Safety Goal



# Approach

- Industry recommends a functional approach
- Regulatory analysis will describe most effective strategies for the dominant scenarios
- Calculating a DF provides an indication of the relative effectiveness of filtering strategies
- Margin to the QHO provides confidence that uncertainties don't impact the overall success of filtering strategies