# **RISK-INFORMED 50.46** AND LARGE-BREAK LOCA DBA **PUBLIC MEETING** MAY 18, 2000

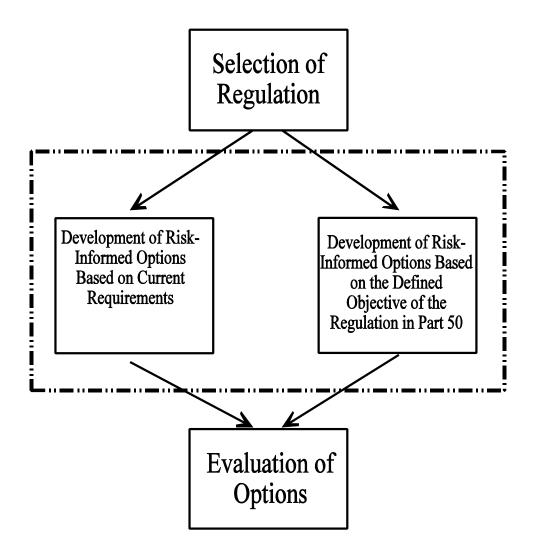
## AGENDA

9:00am-10:30am	NRC current status on risk- informing 10 CFR 50.46 and other regulatory requirements for design basis large-break LOCAs		
10:30am-10:40am	Break		
10:40am-11:40am	WOG current status on program for redefining the large-break LOCA licensing basis		
11:40am-12:00pm	Discussion of future activities and possible options for NRC/industry cooperation		

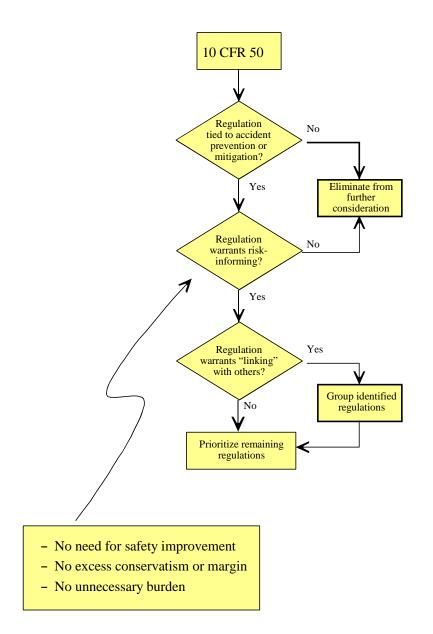
# NRC PRESENTATION -- OUTLINE

- Approach
- Current Status
- Schedule

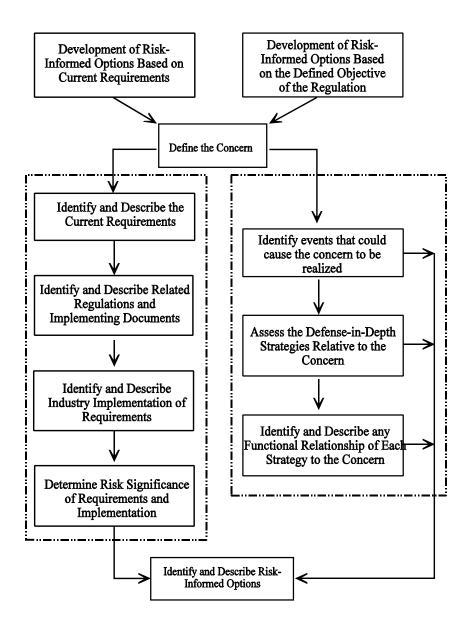
#### GENERAL APPROACH --THREE STEPS



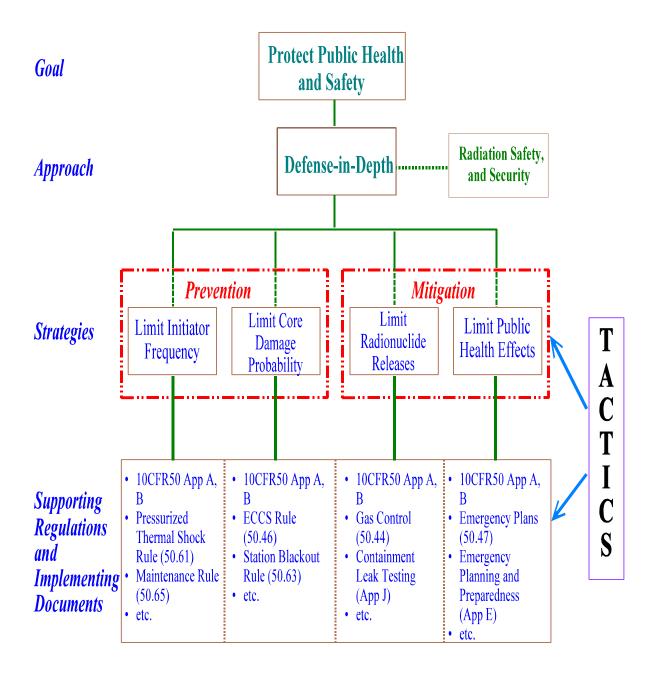
## APPROACH: SELECTION OF REGULATION



## APPROACH: DEVELOPMENT OF OPTIONS



## APPROACH: FRAMEWORK



# APPROACH: QUANTITATIVE GUIDELINES

	Prevent		Mitigate	
$ \longrightarrow $	Core Damage Frequency ≤10⁴/year		Conditional Prob. of Early Containment Failure <sup>*</sup> ≤10 <sup>-1</sup>	
uantitative Guideline	(2) Initiator-DefenseAss	essment: Consider the Stra	tegies Individually (Prefe	rred)
Objectives	Limit the Frequency of Accident Initiating Events (Initiators)	Limit the Probability of Core Damage Given Accident Initiation	Limit Radionuclide Release During Core Damage Accidents	Limit Public Health Effects Due to Core Damage Accidents
~	Initiator Frequency	Conditional Core Damage Probability	Conditional Early Containment Failure Probability**	Conditional Individual Fatality Probability
Anticipated Initiators	≤1/year	≤10 <sup>-4</sup>	≤ <b>10<sup>-1</sup></b>	*
nfrequent Initiators	≤10 <sup>-2</sup> /year	≤ <b>10<sup>-2</sup></b>	≤ <b>10<sup>-1</sup></b>	±
<b>Rare Initiators</b>	≤10 <sup>-5</sup> /year	≤1	≤1	*
en applying the qua No quantitative gui This strategy does and associated mee	ntitative guidelines in this fig ideline propose, using LERF not imply that risks associate	d with late containment failure noval prior to containment failu	itiator sequence should contri can or will be ignored. Poten	bute more than 10% of the va tial causes of late containment

Quantitative Health Objectives (QHOs)

#### DEVELOPMENT OF OPTIONS: REVISING CURRENT REQUIREMENTS

- (1) Identify and describe the current requirements
- (2) Identify and describe related regulations and implementing documents
- (3) Identify and describe industry implementation of the requirements
- (4) Determine risk significance of requirements and implementation
  - Assess against the four strategies and the quantitative guidelines
  - Assess for possible elimination
  - Consider other cornerstones
- (5) Identify and describe risk informed options:
  - Deletion of the current requirement
  - Keeping the current requirement as is
  - Revision and/or enhancement of the current requirement
    - risk insights from plant specific PRAs
    - industry experience
    - consistency with the quantitative guidelines
    - ► reasonable cost/burden
    - proven technology
    - suitability for performance-based compliance monitoring

## DEVELOPMENT OF OPTIONS: DEVELOPING ALTERNATIVE REQUIREMENTS

- 1. Identify events capable of causing the concern to be realized
- 2. Assess the defense-in-depth strategies relative to the concern
- 3. Identify the functional relationship of each strategy to the concern
- 4. Identify risk-informed options

## APPROACH: EVALUATION OF OPTIONS

- Eliminate options not meeting the CDF and LERF quantitative guidelines
- Comparable risk implications
  - Preferable option imposing least burden
- Differing risk implications
  - Preferable option offering most safety benefit per unit cost
- Safety benefit assessed in terms of incremental risk relative to the quantitative guidelines
- Cost both licensee and NRC, considers both implementation and maintenance (e.g., additional or savings)

#### **SCHEDULE**

May 18	Public meeting on 50.46 and LBLOCA DBA
Aug-Sep	Public meeting
Sep-Nov	ACRS sub-committee on 50.46 and LBLOCA DBA
Sep-Nov	ACRS full committee on 50.46 and LBLOCA DBA
Dec 28	Recommendations due to Commission

# NRC/INDUSTRY COOPERATION

- Periodic, regular meetings
- Exchange of data