BWR Owners' Group

Detect & Suppress Program Status

Presentation to USNRC

February 20, 2003

Agenda

• Program Overview and Status	Mike May
• Licensing Application Framework	Jens Andersen/ Charlie Heck
• SAFDL Selection	Charlie Heck
• Milestones / Schedule	Mike May

Purpose

- Discuss licensing application framework for BWROG Stability Limit approach
- Present program schedule
- Obtain NRC feedback

Detect & Suppress Program Phases

- ✓ Phase 1: Identify methodology success path
- ✓ Phase 2: Define new stability limit to show compliance to fuel design criteria
- Phase 3: Develop the technical bases for new stability limit and develop the framework for licensing submittal
- Phase 4: Perform all analyses, submit LTR, and obtain NRC approval

Currently in end of phase 3

BWROG Stability Limit

BWROG Requirements for Stability Limit

- Must satisfy regulatory requirements
- Must satisfy applicable fuel design limits for stability
- Must allow a return to operation immediately after a stability event (i.e., no additional evaluations necessary)
- Applicable to all BWR fuel vendors
- Compatible with existing stability based hardware/software
- Establish generic stability scram setpoint – main goal

BWROG Stability Limit Approach

- More realistic characterization of oscillation event
- Approach permits oscillations that take fuel into and out of boiling transition
- Evaluate fuel response relative to applicable fuel design limits appropriate for stability

↳ Define new stability limit to ensure negligible impact on fuel

Summary of Feasibility Study

- Results indicate that impact on stability fuel design limits is negligible
  - Limiting issue is annealing of irradiation hardening
  - Preliminary TRACG analysis shows acceptable temperature oscillation
  - Need to establish oscillation temperature limit that ensures negligible annealing (BWROG Stability Limit)

BWROG requirements can be met

Benefits of BWROG Stability Limit

- Ensure a more robust solution that is not susceptible to methodology issues in the future
- Expand solution applicability for current and future core and fuel designs (including all BWR fuel vendors) and operating domains
- Produce solution applicable to all plants
- Bring permanent closure to BWR D&S stability issues

Licensing Application Framework

Licensing Application Framework

- Developing licensing framework document
  - Defines all necessary licensing elements
  - Establishes work scope
  - Provides roadmap for NRC
- Draft framework document provided to NRC to facilitate feedback
- Final framework document transmitted after NRC comments addressed

Roadmap for process

Application Methodology for BWROG Stability Limit Analysis

Presentation by Jens Andersen / Charlie Heck

? still open Want feedback on draft LTR

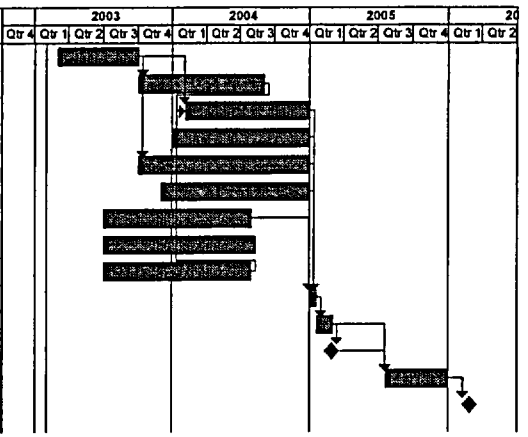
Milestones / Schedule

Major Milestones

- Analysis to Confirm Assumptions 3Q 2003
- Complete Engineering Analysis 4Q 2004
- Submit Licensing Topic Reports 1Q 2005
- Receive NRC Approval 1Q 2006

Proposed Phase 4 Schedule

ID	Task Name
1	Confirmation of assumptions
2	CSAU Analysis - TRACG
3	TRACG application analysis
4	TRACG analysis to support non-GE fuel applicability
5	CSAU Analysis - Thermal Mechanical for GE, Westinghouse, FRA-AI
6	Thermal Mechanical application analysis for GE, Westinghouse, FRA
7	Hot channel oscillation magnitude analysis for core-wide and regional
8	Reload applicability checklist development
9	Evaluate detection algorithm
10	Design review
11	Write LTR, review, incorporate comments, verification
12	Submittal to NRC
13	Respond to RAIs
14	NRC approval
15	



NRC Comments and Feedback