

10 CFR 50.46 ECCS Acceptance Criteria Rulemaking:

Background, Objectives, and Schedule

NRC Public Workshop, April 28-29, 2010

Why Rulemaking?

- The Commission directed the staff to develop a more performance-based rule that also enables licensees to use advanced cladding materials without needing an exemption. (Staff Requirements Memorandum-SECY-02-0057)
- The NRC's LOCA research program identified previously unknown embrittlement mechanisms which necessitate changes to ensure that the rule's basis of preserving cladding ductility is maintained. The research findings included:
 - Hydrogen absorption enhances cladding embrittlement
 - Cladding ID oxygen diffusion reduces allowable time-at-temperature
 - Degradation of protective oxide layer results in cladding embrittlement (breakaway oxidation)

*Note: As a nearer-term action separate from rulemaking, the NRC is pursuing an information request to have licensees assess the impact of these findings on a plant-specific basis to confirm plant operation is within the criteria established in the proposed rule. This topic will be addressed tomorrow.



10 CFR 50.46 Rulemaking History



- Technical Basis document (NUREG/CR-6967) published for public comment on July 31, 2008 (73 FR 44778)
- Public workshop to discuss stakeholder comments on the adequacy of the technical basis held on September 24, 2008
- Advisory Committee on Reactor Safeguards (ACRS) concluded that rulemaking should proceed (December 2008)
- Supplemental research completed in March 2009
- Advance Notice of Proposed Rulemaking (ANPR) published on August 13, 2009 (74 FR 40765)

Advance Notice of Proposed Rulemaking

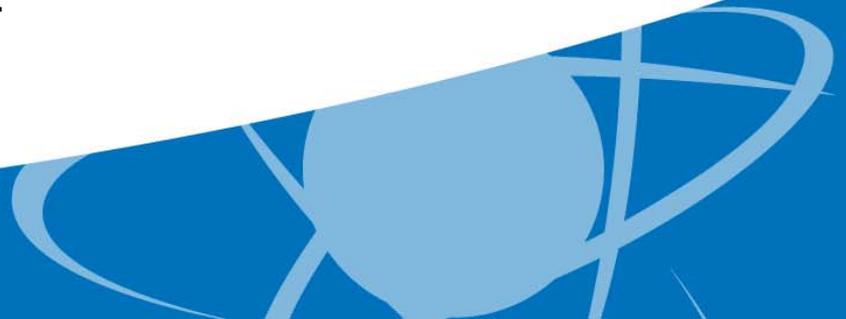
- Presented the NRC staff's conceptual approach to revising the rule
- Sought comment on specific questions and issues related to the staff's conceptual approach to revising 10 CFR 50.46
- Public comment period ended October 27, 2009
- 19 comment letters received from industry, foreign regulatory agencies, private citizens, vendors and interest groups



Rulemaking Objectives

- Expand applicability to encompass current and future fuel designs
- Replace prescriptive ECCS criteria with more performance-based requirements
- Account for the findings from NRC LOCA research program
- Address issues raised in a petition for rulemaking related to crud

*Note: the ANPR discussed another objective for revising the reporting requirements in § 50.46. At this time, the NRC staff does not intend to revise the requirements as described in the ANPR.



Rulemaking Plan/Schedule

- Conduct public workshop April 28-29, 2010
- Finalize proposed rule package and submit to Commission for review ~ September 2010 (estimated publication in *Federal Register* January 2011)
- Proposed rule will include a 75 day public comment period
- Public comments will be considered and addressed in the final rule's *Federal Register* Notice
- Final rule expected to be submitted for Commission review ~ 9 months after publication of proposed rule (estimated September 2011).



Questions?

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