

Industry Discussion on ANPR Comment Resolution

**Public Workshop - 10 CFR 50.46(b)
ECCS Performance Requirements**

April 28, 2010

Overview

- **Performance based rule promotes safety**
- **Details should be in lower tier documents**
- **Rulemaking for future cladding & fuel matrices is a needless burden for NRC, vendors, & licensees**
- **Implementation management is key to success**

Overview (cont)

- **Current data support only high-level rulemaking**
 - **Industry testing data will support performance based criteria**

- **Industry recommended implementation**
 - **High-level rule that is not fuel specific**
 - **Details in guidance (Reg Guide(s) , NuRegs, industry guidance, etc.)**

Topic 1- Adequacy/Completeness of Technical Basis

- **Technical basis not complete**
- **Additional testing is being done**
- **Excessive conservatisms being retained**

Topic 2 - Applicability Expansion (All fuel designs)

- **Current proposal is burdensome to everybody**
- **Rule should not limit fuel types**
- **Performance based requirements eliminate the need to specify the fuel type or cladding composition in the rule**

Topic 3 - Treatment of Uncertainty

- **Industry supports development of a Regulatory Guide for the treatment of uncertainty and variability**
- **Industry will actively participate in development of RG**
- **Recognition of existing conservatism**
- **Recognition of impact on plant operation due to uncertainty**

Topic 4 - Approach to Ductility/Analytical Limits

- **Discuss preservation of the 1973 policy and how it applies to a performance based rule**
- **Ring compression test is a conservative measure for ductility**
- **Guidance on “acceptable experimental technique” should provide sufficient flexibility for other experimental geometries**
- **International community has moved to strength-based which includes balloon region**
- **Discuss opening rule language to alternative non-ductility based criteria**

Topic 5 - Oxygen Diffusion from Inside Surfaces

- **Industry supports details on this issue being in either regulatory guides or approved evaluation models**
- **Analytical requirements should not be in the rule**

Topic 6 - Breakaway Oxidation Requirements

- **Breakaway oxidation not needed in rule**
- **Breakaway oxidation implicitly addressed by coolable geometry requirement**
- **Simple pass/fail test at time of material licensing is sufficient to demonstrate adequate time to onset of breakaway oxidation**
- **Details of how to comply and report need to be established with the vendors**

Topic 7 - Reporting Requirements

- **Industry accepts retaining current reporting requirements**
 - **Discuss relaxation of reporting requirements**
 - **Discuss benefit of new reporting requirement for breakaway oxidation**
 - **Discuss addition of reporting requirement for local oxidation if it is limiting**
 - **10 CFR 21 assures safety significant issues would be reported in a timely manner**
- **Burden of reporting**
- **Discuss value of reported data**

Topic 8 – Consideration of CRUD

- **CRUD can be accounted for in evaluation models**
- **Discuss proposed change to Appendix K**
- **Discuss reporting requirements in light of safety significance**
 - **Reporting of errors (vendors, models, operational, etc.)**

Topic 9 – Rule Implementation

- **Safety assessment**
- **Staged implementation**
- **Simple screening criteria that considers burden, benefit, cost**
- **Supporting regulatory documents needed**
- **Discuss break spectrum analysis relative to breakaway oxidation**
- **10 CFR 50.109 Backfit evaluation**

Topic 10 – Fuel Rod Ballooning, etc.

- **NRC proposal combines strength and ductility**
 - **Acknowledges strength is relevant in the burst region**
- **Discuss balloon region requirements**