



Path Forward on Issues of Spent Fuel Pool Neutron Absorbing Material Degradation

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Public Meeting on Neutron Absorbing Material Degradation

October 4, 2012



Overview

- NRC Questions
- Knowledge Base
- Surveillance Methodologies
- Surveillance Frequencies
- Criticality Aspects
- Current Actions
- Timeline
- Summary



NRC Questions



Knowledge Base

- Current NRC state of knowledge
- Issued public
 - Technical Letter Report: ML113550241
 - Spreadsheet: ML121090500
- Many gaps in information
 - Material and configuration in the SFP
 - Use in the criticality analysis of record



Surveillance Methodologies

- Visual inspection
- Coupon monitoring
 - Representative of the rack panel material
 - Test methods/procedures
- Predictive modeling methodology
 - RACKLIFE
- In-situ testing methodology
 - Blackness testing
 - BADGER testing
- Other methods



Surveillance Frequencies

- Material degradation mechanisms and rate
- Frequency acceleration/deceleration
- Indicators of degradation between surveillances



Criticality Aspects

- Degradation of the material's potential affect on the criticality analysis of record
 - Loss of material – neutron absorbing capability
 - Deformation – blistering, bulging, pitting, warping
 - Gaps, cracks, shrinkage, densification
 - Voids
 - Structural integrity
 - Wear/mechanical damage



NRC Actions

- Phenolic resins report
- Cermet research
- Metal matrix composite research
- Borated stainless steel research
- Coupon methodology
- Potential Generic Communication
 - Work in progress
 - May be used to gather information
 - Determine if any additional NRC actions necessary



Timeline

- RACKLIFE and BADGER TLRs released
- Public Meeting - October 4, 2012
- Phenolic Resin TLR – Early 2013
- RIC – March 2013
- NEI Used Fuel Management Conference - May 2013
- Public Comment period on potential generic communication - Mid-2013



Summary

- Gaps in information and questions
- Additional dialogue with industry
- Additional research underway
- Regulatory guidance, as necessary
- Other generic communications, as necessary



Questions