

U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Public Meeting

Generic Letter

**“Monitoring of Neutron-Absorbing Material
In Spent Fuel Pools”**

April 14, 2014



Public Meeting Agenda

- 1:30 pm** Welcome/Introductions
- 1:45 pm** Historical Context
- 2:15 pm** Generic Letter Summary/Purpose
- 2:45 pm** *Federal Register* Notice
- 3:00 pm** Public Discussion/Questions
- 3:55 pm** Closing



Regulatory Basis

- Regulatory criteria to prevent the occurrence of inadvertent criticality events in the SFP
 - 10 CFR 50.68
 - GDC 62
- Licensees submit nuclear criticality safety analyses to demonstrate that the criteria are met
- Analyses may use various geometry and material characteristics to control reactivity
 - In some cases, this includes neutron-absorbing panels



Neutron-Absorbing Material Degradation

- **Boraflex**
 - First neutron absorbing material to show significant degradation
- **Boral**
 - Blistering, bulging
- **Carborundum**
 - Recent testing shows degradation in some cases



Historical NRC Communications

- [Generic Letter \(GL\) 78-11](#)
 - Consolidated guidance on expectations for SFP licensing, including neutron absorbing material monitoring
- [Information Notices \(INs\) 87-43, 93-70, 95-38](#)
 - Identified findings at different facilities of significant Boraflex degradation
- [GL 96-04](#)
 - Requested information on current state of Boraflex and monitoring/corrective actions
- [IN 83-29](#)
 - Bulging of panels containing Boral



NRC-Industry Engagement

- Major NRC-Industry Interaction
- x Major NRC Document

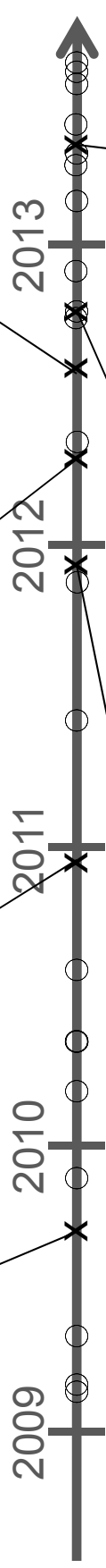
NRC Communications

Interim Staff Guidance
(ML100621321)

IN 09-26, Materials Degradation
(ML092440545)

Update to Generic Aging Lessons
Learned Report (ML103490041)

IN 12-13, Degradation
Surveillance (ML121660156)



Database Survey
(ML113550241)

Boraflex/RACKLIFE/BADGER
Methods & Uncertainties
(ML12216A307 & ML12254A064)

Technical Letter Reports

Phenolic Resins
(ML13141A182)

NRC Public Website Informational Summary:

<http://www.nrc.gov/waste/spent-fuel-storage/pools.html>



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- Gather information from operators of SFPs
 - Material properties and configuration
 - Surveillance program methodologies
 - Surveillance program frequencies
 - Criticality analysis modeling of the material and degraded material
 - Design basis event considerations
- *Federal Register* Notice Seeking Public Comment -
March 11, 2014
- Information request – no new analyses or research
being requested



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- Non-power reactors (research and test reactors) may credit neutron-absorbing materials in their criticality analyses, and are included in this GL
- New reactors are not included because the needed information has already been collected, or is not applicable.



NRC Staff Additional Discussion



Public Discussion

Any comments or concerns to be considered by NRC staff when developing a final Generic Letter must be submitted on docket ID NRC-2014-0040, in accordance with the instructions in Federal Register document number 2014-05236.