
United States Nuclear Regulatory Commission
Protecting People and the Environment

Regulatory Information Conference 2014
W20 Future Vision of Spent Fuel Storage Regulations


Spent Fuel Storage Renewal Strategy Development

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Background
Spent Fuel Storage Renewal Requirements


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- Renewal of Independent Spent Fuel Storage Installation (ISFSI) licenses and storage cask designs for a period not to exceed 40 years (10 CFR §72.42 and §72.240)
- Time-limited aging analyses
- Description of the Aging Management Program (AMP)
- Design bases information as documented in the most recently updated final safety analysis report

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Current Challenges
Current Renewals & Guidance



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- 2 ISFSI license and 1 storage cask design Certificate of Compliance (CoC) renewal applications currently under staff review
- Multiple year reviews & request for additional information cycles
- Experience indicates that guidance in NUREG-1927 (Standard Review Plan for renewal of ISFSI licenses and CoCs) may need enhancement in several areas

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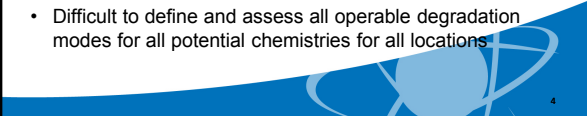
Current Challenges

Modes of Materials Degradation



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- Storage and reactor operating experience indicates potential degradation of structures, systems, and components
 - IN 2013-07: Premature degradation of cask structures and components from environmental moisture
 - IN 2012-20: Chloride-Induced Stress Corrosion Cracking (CISCC)
- Unanticipated known vs. unknown degradation mechanisms, besides CISCC
- Difficult to define and assess all operable degradation modes for all potential chemistries for all locations



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Path Forward

Storage Renewal Strategy Team



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- Established Storage Renewal Strategy Team with members from across NRC
 - Assess current storage renewal regulatory framework to determine if changes (e.g., guidance updates) are needed
 - Reflect on storage operating experience, staff's storage renewal review experience, and reactor renewal experience
 - Develop learning, proactive, and responsive regulatory approach to address current and future renewals



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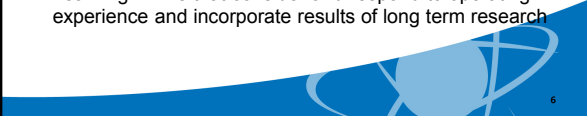
Path Forward

Operations-Focused Approach




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- Achievable operational methodologies
 - Condition based monitoring and/or in-service inspections based on technically defensible criteria, to be developed by industry
- Assessment of monitoring and in-service inspection findings and data
- Criteria for actions/decisions (e.g., prevention, repair, replacement, other mitigation measures)
- Learning AMPs that consider and respond to operating experience and incorporate results of long term research




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Path Forward
Storage Renewal Strategy Team Targets




- January 2014 – June 2014
 - Strategy Development
 - Engage Stakeholders and Consider Feedback
 - Public Meetings
 - Industry Research and Guidance Development
- June 2014 – May 2015
 - Engage Stakeholders on Guidance
 - Publish Draft Guidance for Public Comment
 - Publish Final Guidance




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References




- 10 CFR Part 72
<http://www.nrc.gov/reading-rm/doc-collections/cfr/part072/>
- NUREG-1927
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1927/>
- IN 2013-07
<http://pbadupws.nrc.gov/docs/ML1232/ML12320A697.pdf>
- IN 2012-20
<http://pbadupws.nrc.gov/docs/ML1231/ML12319A440.pdf>




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Acronyms



- AMP – Aging Management Program
- CFR – Code of Federal Regulations
- CISCC – Chloride-Induced Stress Corrosion Cracking
- CoC – Certificate of Compliance
- ISFSI – Independent Spent Fuel Storage Installation



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