

Materials Initiatives

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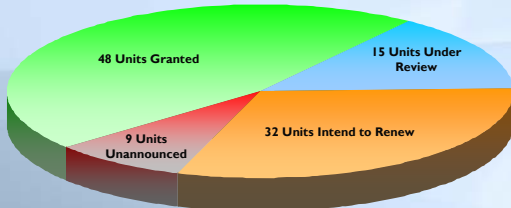
Materials Reliability

- Continues to be a priority for the US nuclear industry
- In May 2003 industry Chief Nuclear Officers unanimously approved the "Industry Initiative on Management of Materials Issues"
- NEI 03-08, "Guideline for the Management of Materials Issues", documents the Materials Initiative
 - Forward-looking and coordinated
 - Rapidly identify, react, and effectively respond to emerging materials issues
 - Emphasizes safety and operational risk significance
 - Appropriate balance of long-term aging management and cost



Looking Forward: Current Applications for License Renewal for 60 year License

Materials Management is a long term priority



Source: Nuclear Regulatory Commission
Updated: 3/08

Materials Initiative Philosophy

- Proactive in addressing current issues
- Prepare for the future
- Share operating experience
- Team with research facilities to improve fundamental understanding of
 - Corrosion mechanisms
 - Failure modes
 - Non-destructive examinations
- Apply improved knowledge to field applications



Issue Programs Addressing Materials Degradation Management

- Materials Reliability Project
- BWRVIP
- PWR Owners Group Materials Subcommittee
- Steam Generator Management Project
- Primary Water Chemistry Control
- EPRI Primary Corrosion Research
- EPRI NDE Center



Materials Strategic issues

- Strategic Plan Focus Areas
 - Nickel base alloy SCC
 - A600 hot leg butt weld applications
 - Boric acid corrosion studies
 - A690 corrosion research
 - Non destructive examination technology
 - High fluence issues
 - Reactor vessel internals
 - Reactor vessel integrity
 - Steam generator tubing integrity
 - Improved primary water chemistry



Materials Degradation Matrix

- Important tool used by industry to understand potential degradation mechanisms and materials susceptibility
- Identify materials used for major passive components/systems within primary system
- Obtain inputs from experts, laboratory R&D, industry operating experience
 - Identify potential degradation mechanisms
 - Determine material applicability
 - Define areas of uncertainty
- Identify and characterize issues that pose potential challenges to safety and reliability



Issue Management Tables (IMT)

- Starts with data from MDM evaluation
- IMT assesses the consequences of failure
- Identifies gaps in inspection, mitigation, repair, and replacement guidance
- Gap priorities used to establish Issue Program project plans for 2007 and beyond.



Key is Communication

- Sharing information
- Prompt notifications of events
- Improving knowledge
- Improving responses
- Improved performance
- Timely and factual communication at management and tech staff levels