

RIC 2003

Emergent Technical Issues

Session T2

Acting on Emerging Issues – Role of Research

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Acting on Emerging Issues -- Role of Research

- Degradation of materials in LWR systems will continue and new issues will be identified
- Choices of materials and fabrication processes made 30-40 years ago are resulting in safety and operational issues today
- Today's challenge is to identify the new issues and take appropriate action to mitigate them

Acting on Emerging Issues -- Role of Research

- LWR plants have a long history of material degradation
 - IGSCC in BWR piping
 - IGSCC in BWR core shrouds
 - Degradation in PWR steam generator tubes
 - MIC in service water systems
 - Cracking in Inconel alloys and welds

Acting on Emerging Issues -- Role of Research

- Forward-looking challenge
 - Identify potential new degradation mechanisms
 - Develop nondestructive inspection techniques and strategies
 - Develop repair and mitigation strategies
 - Codify through national and international codes and standards
 - Take appropriate regulatory actions

Acting on Emerging Issues -- Role of Research

- What is the role of research?
 - Research provides technical underpinning needed to meet the challenges
 - Same basic role for government, industry, and international research organizations
 - Key elements
 - Exploring boundaries of conventional wisdom
 - Developing data, analysis methods, and inspection techniques
 - Evaluating operational experience to gain insights
 - Communicating the findings so actions can be taken

Acting on Emerging Issues -- Role of Research

- What is the best approach to communicating new information so that safety challenges are avoided?