RIC 2003
Emergent Technical Issues
Session T2

Acting on Emerging Issues – Role of Research

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April 17, 2003

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?