

Regulatory Perspectives on Spent Fuel Management

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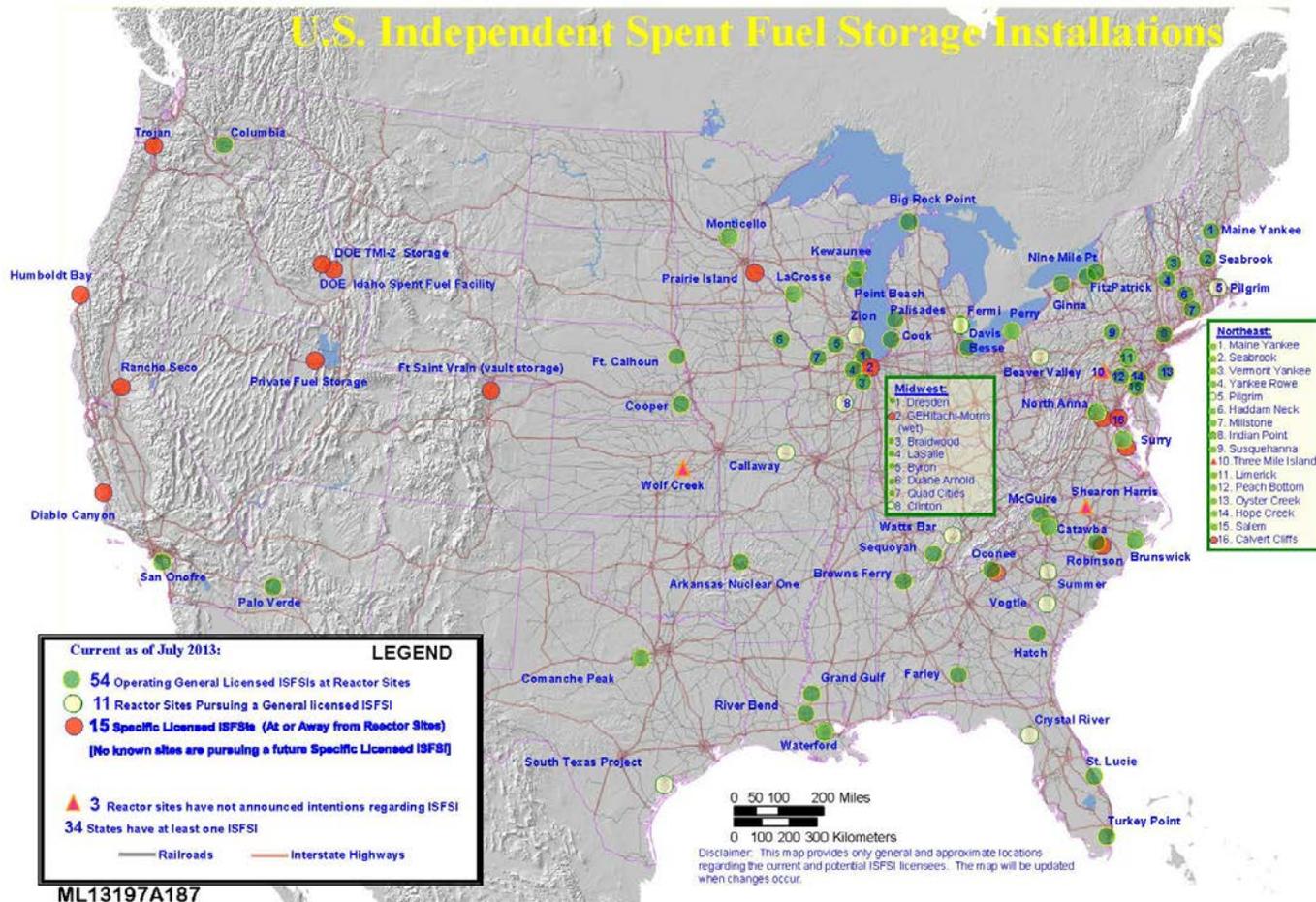
Monday, November 18, 2013

Washington, DC

PUTTING IT INTO CONTEXT

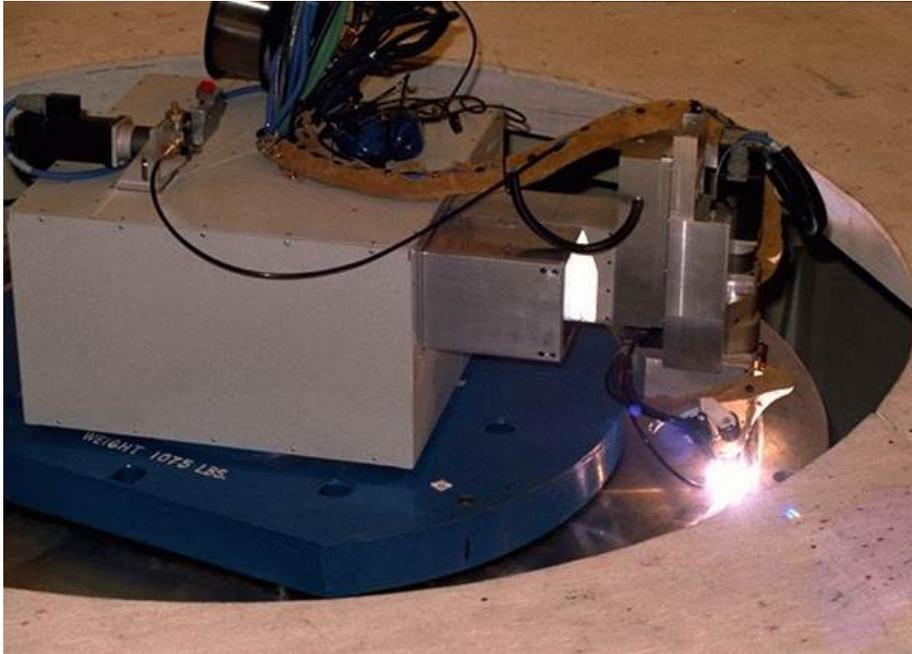
- Waste Confidence
- Yucca Mountain License Process
- Decommissioning Reactors
- Changes in national policy
- No permanent disposal solution
 - Continual need for integrated focus on storage, transportation, and disposal activities

NRC'S REGULATORY PROGRAM



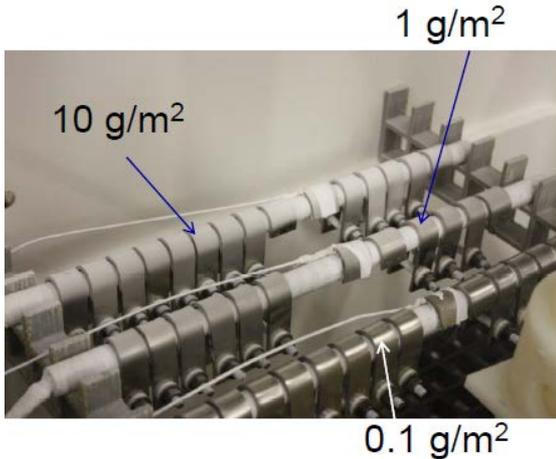
SPENT FUEL STORAGE REGULATION

Storage at Oyster Creek (welded canister)



Storage at Prairie Island (bolted-lid)

EXTENDED STORAGE

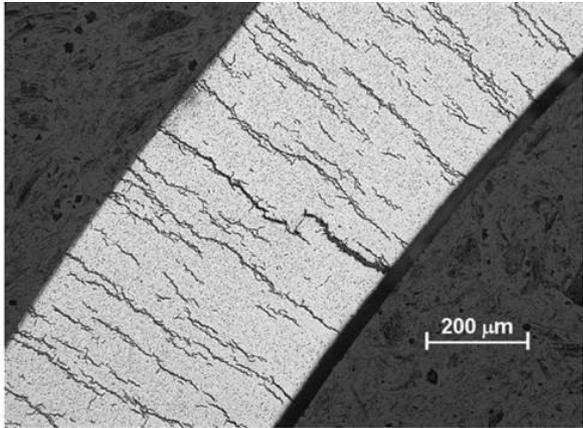


- Aging Management Issues
 - Stress Corrosion Cracking
 - Long-Term Concrete Degradation
 - Cask Inspection Methods
 - Residual Moisture in Canisters
 - Developing Realistic Thermal Models



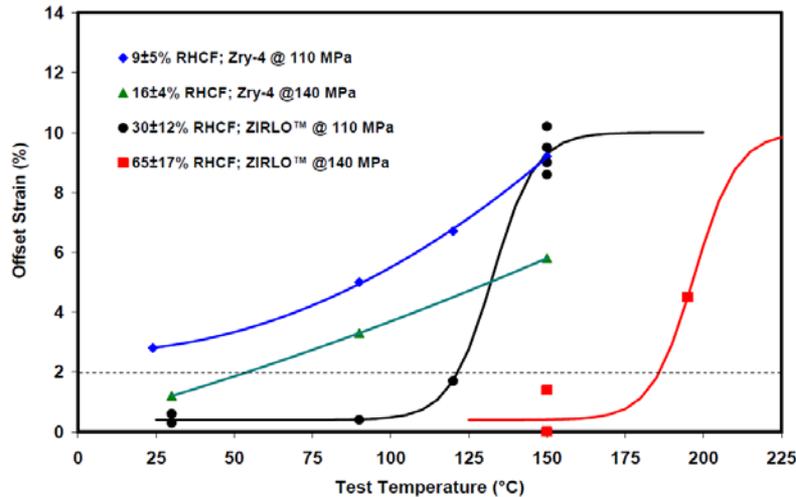
Atmospheric Salt Testing on U-Bend Steel Specimens (Southwest Research Institute)

HIGH BURNUP FUEL



Cladding hydride examination (ANL)

- Technical Issues
 - Ductile to Brittle Transition Phenomena
 - Vibration Fatigue during Transport
 - Realistic Temperature Modeling
 - Long-Term Demonstration Program (DOE)



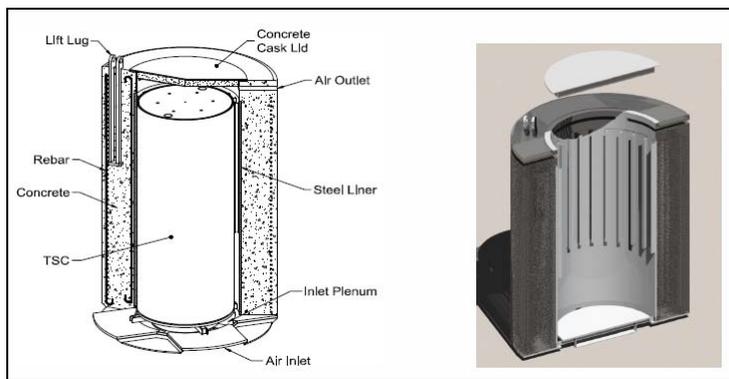
Ductile to Brittle Transition Temperatures (ANL)

CURRENT REGULATORY INITIATIVES



- Storage and Transportation Compatibility
 - NRC policies for retrievability and cladding integrity of spent fuel
 - Long-term aging and subsequent transport
- Regulating Stand-alone Sites

Horizontal dual-purpose technology (Susquehanna)



Vertical dual-purpose technology

WASTE CONFIDENCE



WHERE DO WE GO FROM HERE?

- Prepare for a variety of scenarios
- Consider integrated approaches
- Coordinate with DOE and industry
- Engage the Public

