

Technical Considerations for 100 years of Operation

EPRI Perspective

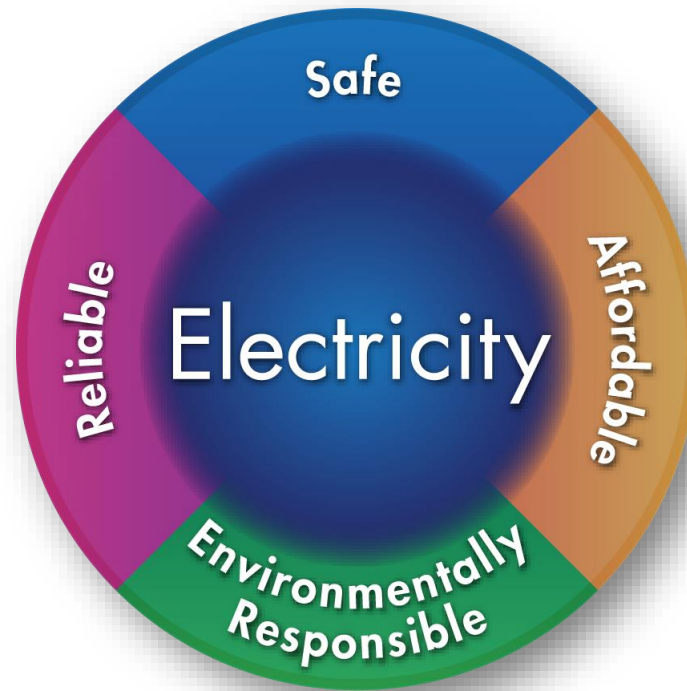
Emma Wong
Principal Technical Leader

NRC Public Meeting
January 21, 2021



EPRI's Mission

Advancing *safe, reliable, affordable*, and *environmentally responsible* electricity for society through global collaboration, thought leadership and science & technology innovation



Value of the Long Term Operations



Provides the **technical basis** for decision to operate plants through an **extended lifetime**



- ✓ Supports business case for life extension and refurbishments

Guidance and technology to manage plant assets through and **extended lifetime**



- ✓ Aging management, asset management, and risk management
- ✓ Address safety, performance and costs

EPRI's Approach to LTO

- Decades of aging management research
- Collaboration with the U.S. DOE, NRC Research and International partners
- NEI Initiative 03-08
- Technical basis for long term operations is independent of service life -- based on parameters relevant to aging management
- Plant support

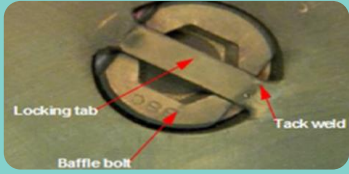
Living Research Programs

Technical reports are updated based upon:



Continued aging management technical support for long-term operations

LTO Highlights



Reactor Vessel and Core Internals

- Technical bases to support the aging of RPV and internals materials
- Advances in the welding for highly irradiated materials



Concrete and Civil Structures

- Developed guidance on Alkali Silica Reaction
- Developed guidance on irradiation effects on the concrete biological shield



Electrical Cables

- Research that supports cable reliability through end of plant operation
- Advances in condition monitoring technology



Other Projects

- Development of a Framework for Leveraging of Risk Insights for Aging Management Program Implementation
- Development of the Spent Fuel Pool Coupon International Database to support an Industrywide AMP

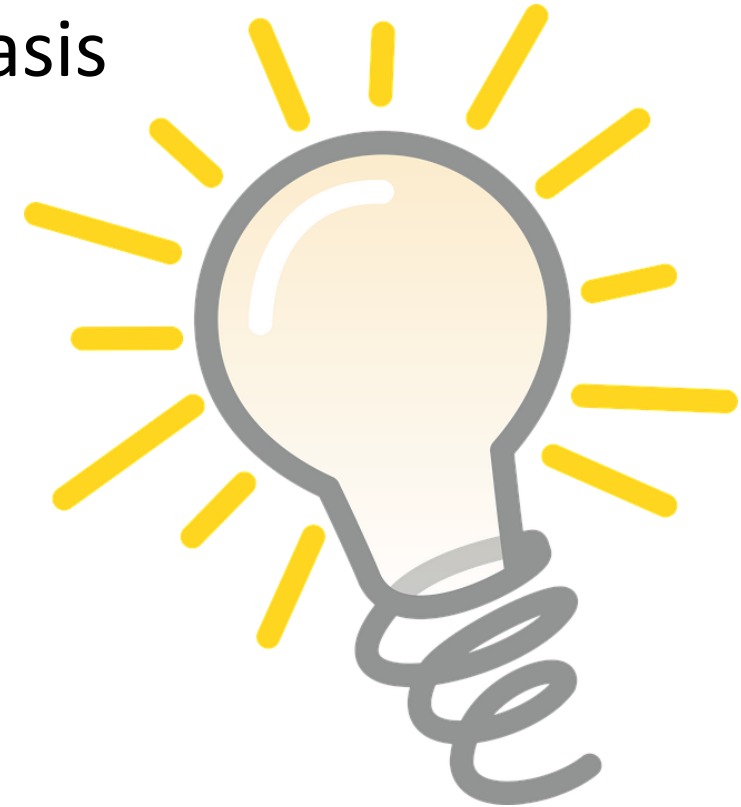


Ongoing Knowledge Transfer

- Updated and created Distance Learning and Computer Based Aging Training Modules
- Digitized the Aging Field Guide – CSTARR™, the Digital Assistant

Considerations for Longer-Term Operations

- Systematic Approach to the Technical Basis
 - Aging management programs/practices
 - Repair technologies
 - Replacements
- Impacts of LTO
 - Plant Modernization
 - Nuclear Beyond Electricity
 - Low Carbon Resource Initiative
- Market forecast



R&D Framework is in Place to Support Longer-Term Operations

A blue-tinted photograph of four people (three men and one woman) standing together, looking at documents. They are wearing EPRRI-branded lab coats or shirts. The woman is wearing a hard hat. The background is a solid blue gradient.

Together...Shaping the Future of Electricity