

# Subsequent License Renewals (SLRs): R&D and stakeholder collaboration

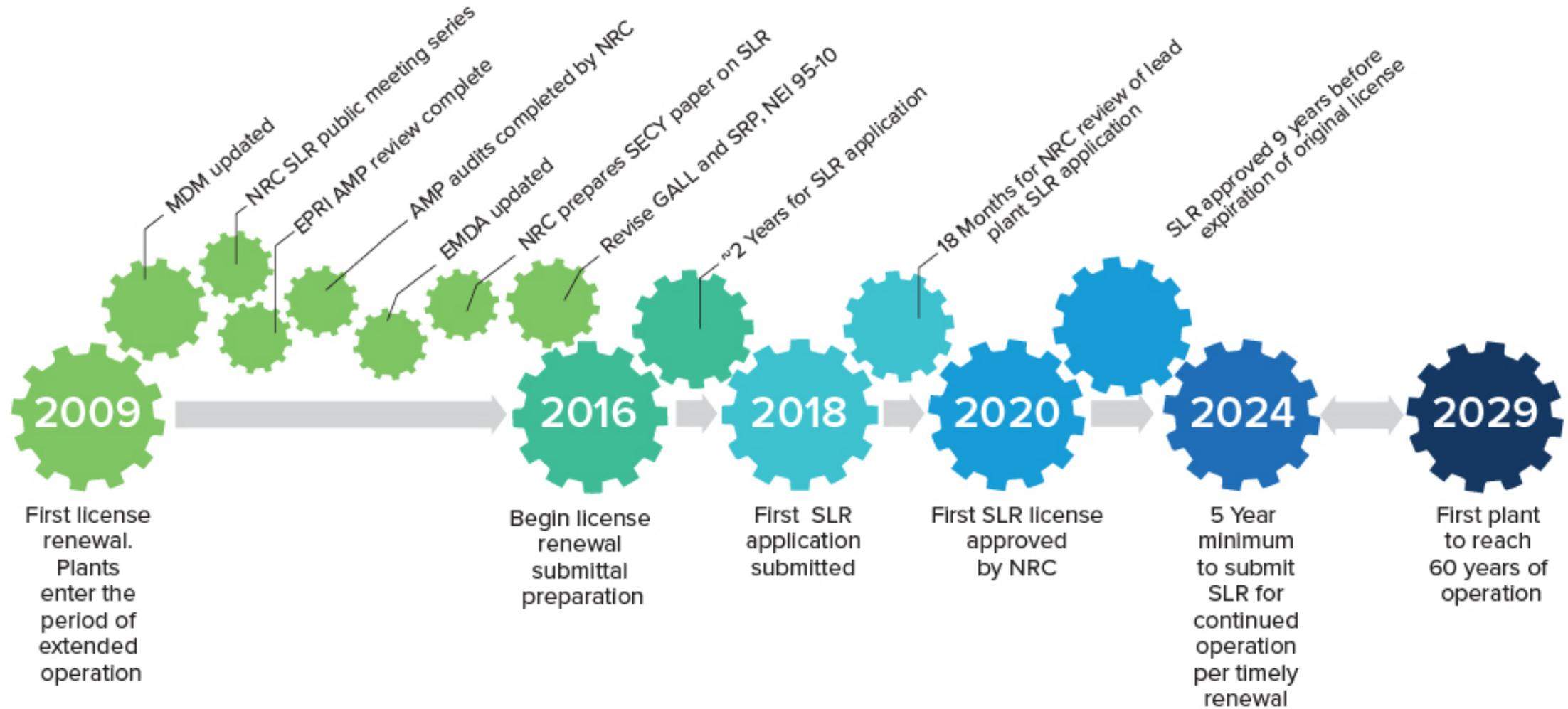
**Tina Taylor**

Senior Director, Research & Development,  
Deputy Chief Nuclear Officer, EPR

1st Plenary Session of the  
45th Annual Meeting of the Spanish Nuclear Society  
September 26, 2019



# SLR roadmap



Source: U.S. Nuclear Energy Institute (NEI), 2019

# Collaboration and Communication



U.S. DEPARTMENT OF  
**ENERGY**

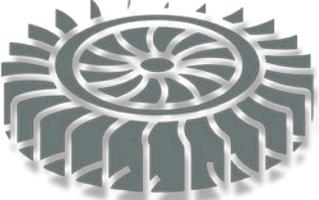
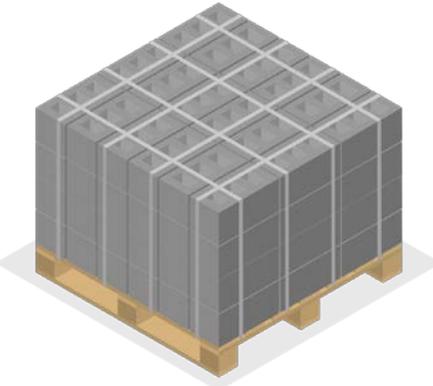
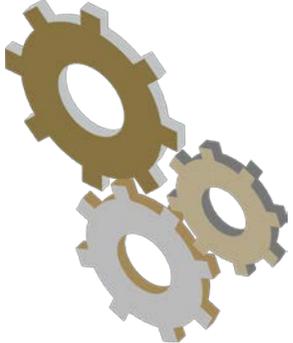
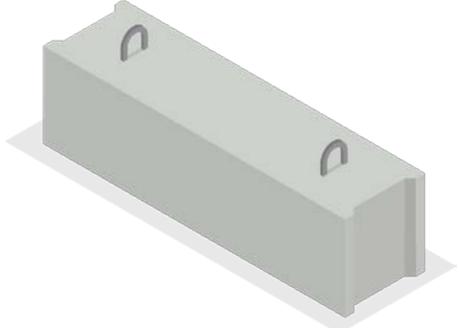
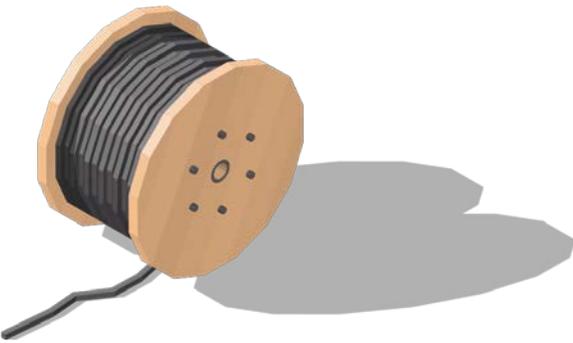
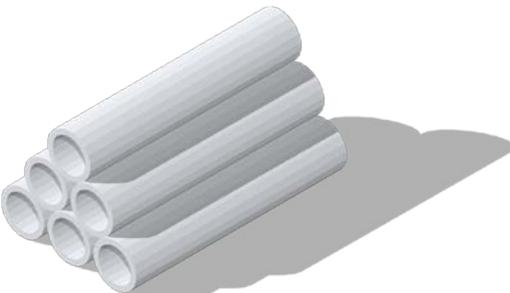
**EPRI** | ELECTRIC POWER  
RESEARCH INSTITUTE



**IAEA**  
International Atomic Energy Agency



# Key technical challenges for 80-year operations



# Elements of Aging Management



Assessment



Mitigation and Testing



Inspection



Technical Support



# Concrete Irradiation Aging Management Activities

## Review Plant Documentation

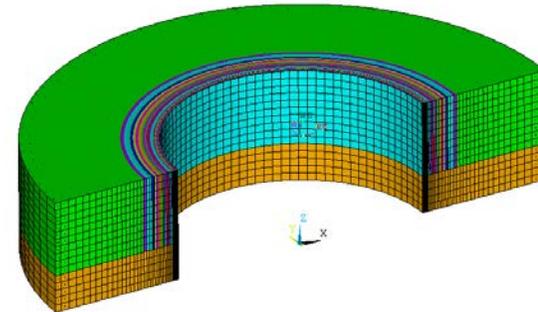
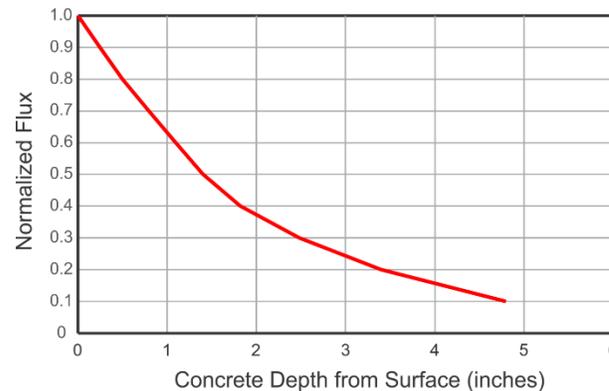
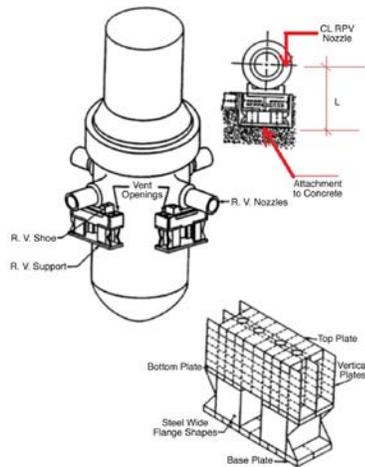
- Aggregate Type
- Design supports

## Fluence Calculation

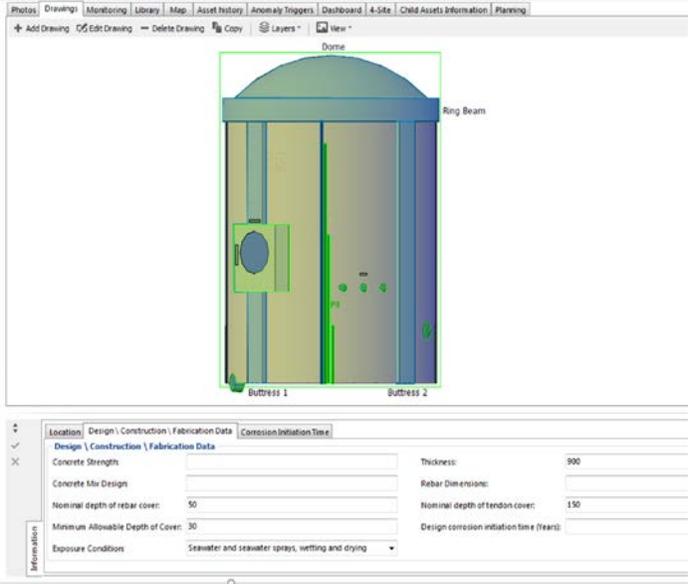
- Reactor Type and Thickness
- Effective Full Power Years
- Compare to Threshold

## Structural Analysis

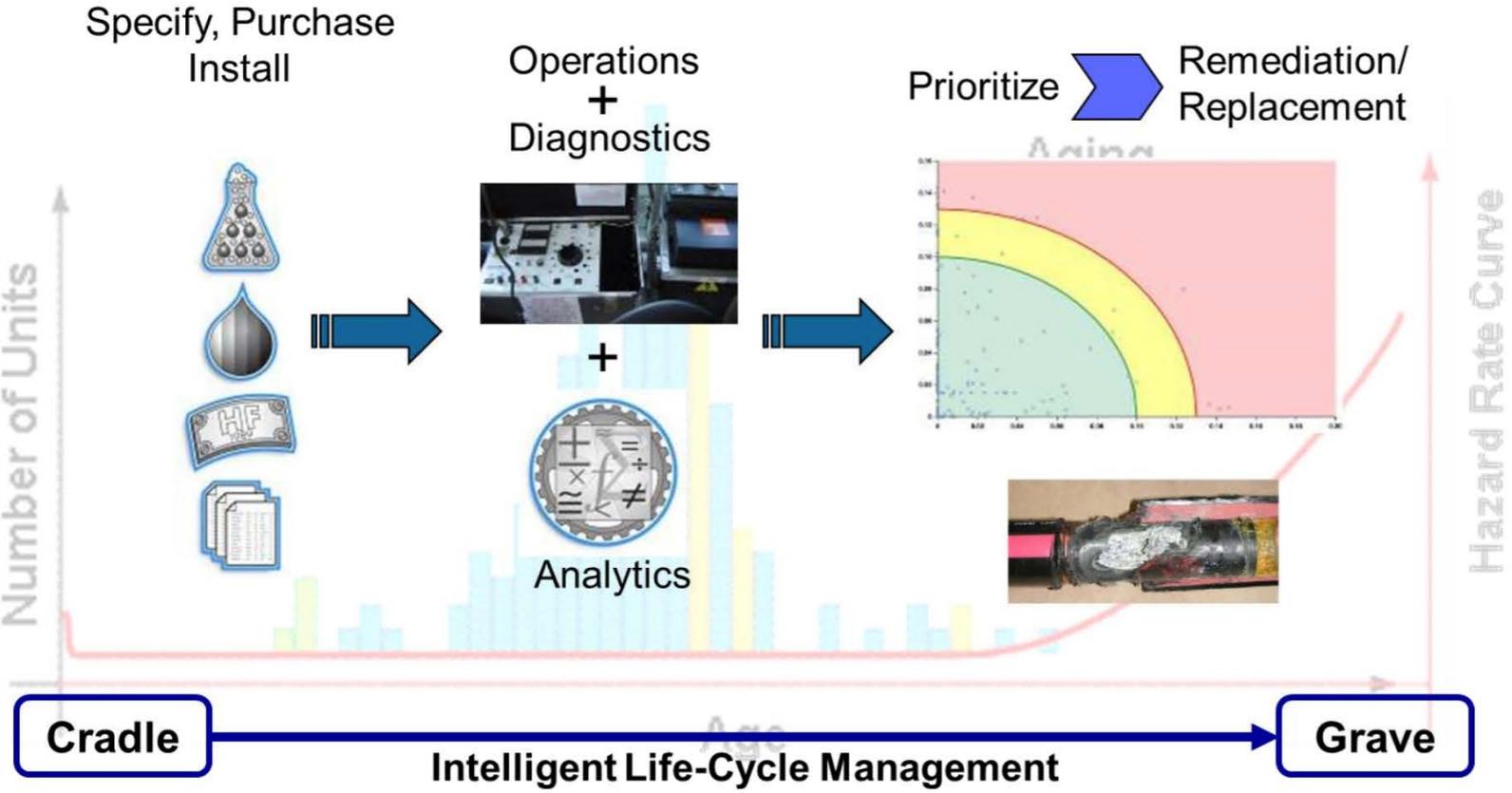
- Neutron Attenuation through thickness
- Temperature Affects
- Finite Element Modeling



# Concrete research



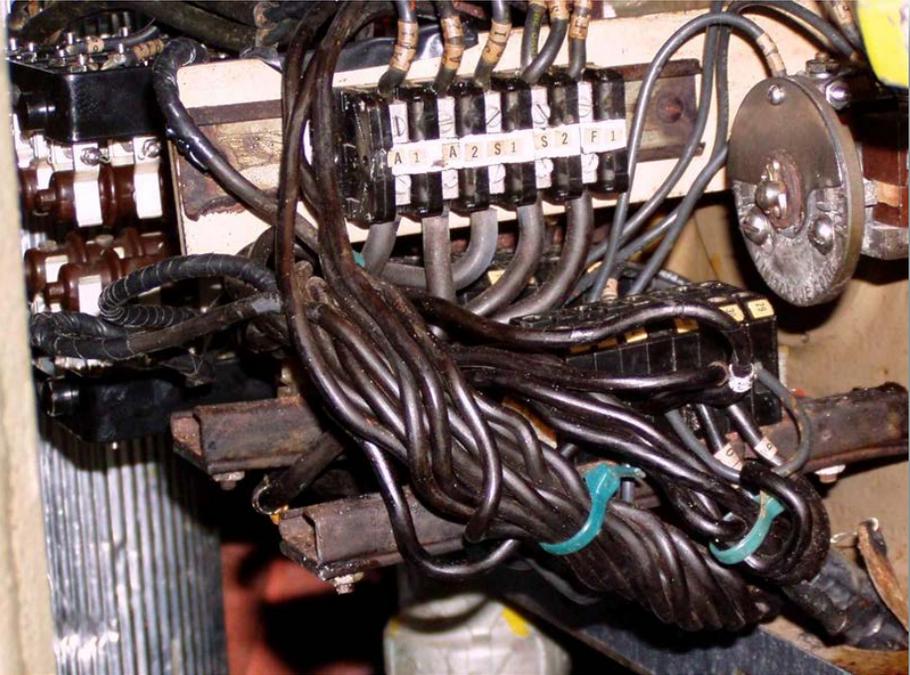
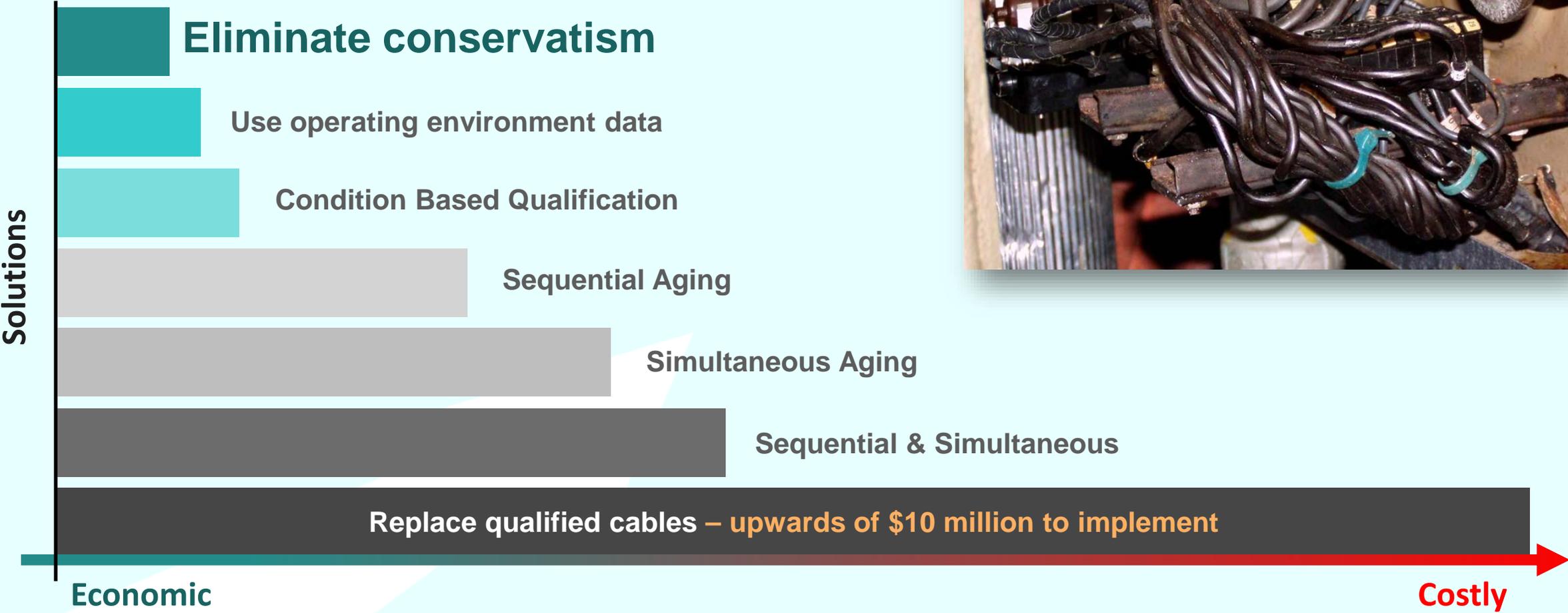
# Cable Aging Management



Focus should be on the condition of cables in **“Adverse Environments”** because those are the ones that may need to be replaced. If they are good, the ones in benign environments will be good.

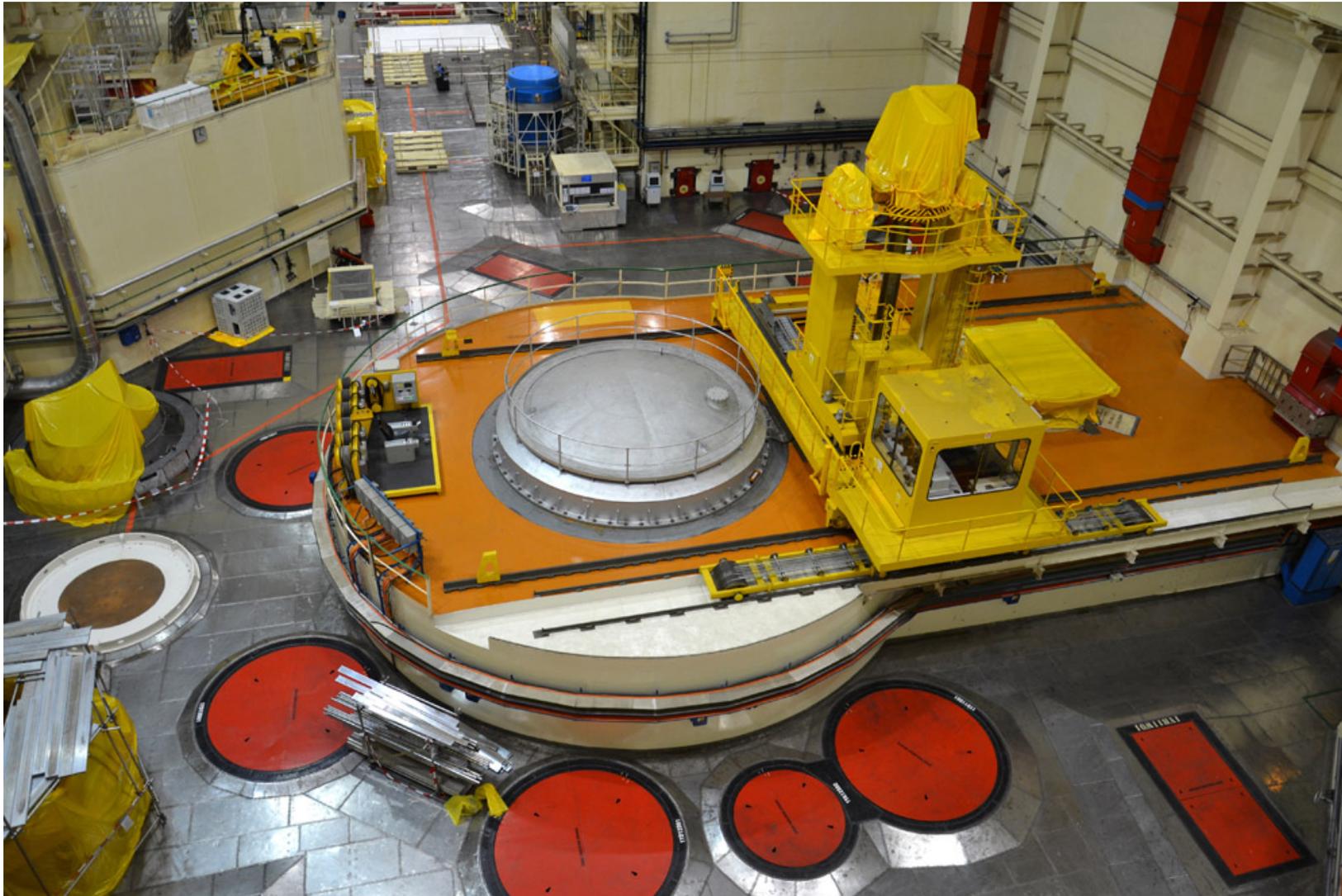
# Cable research

## – EXTENDING QUALIFIED LIFE –



# Reactor internals research

# Reactor vessel research

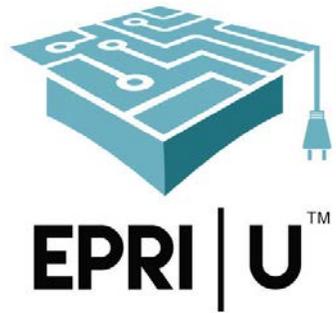


# Materials Research Continuously Updated

2018 Publication Summary



# License renewal tools



# Together...Shaping the Future of Electricity