



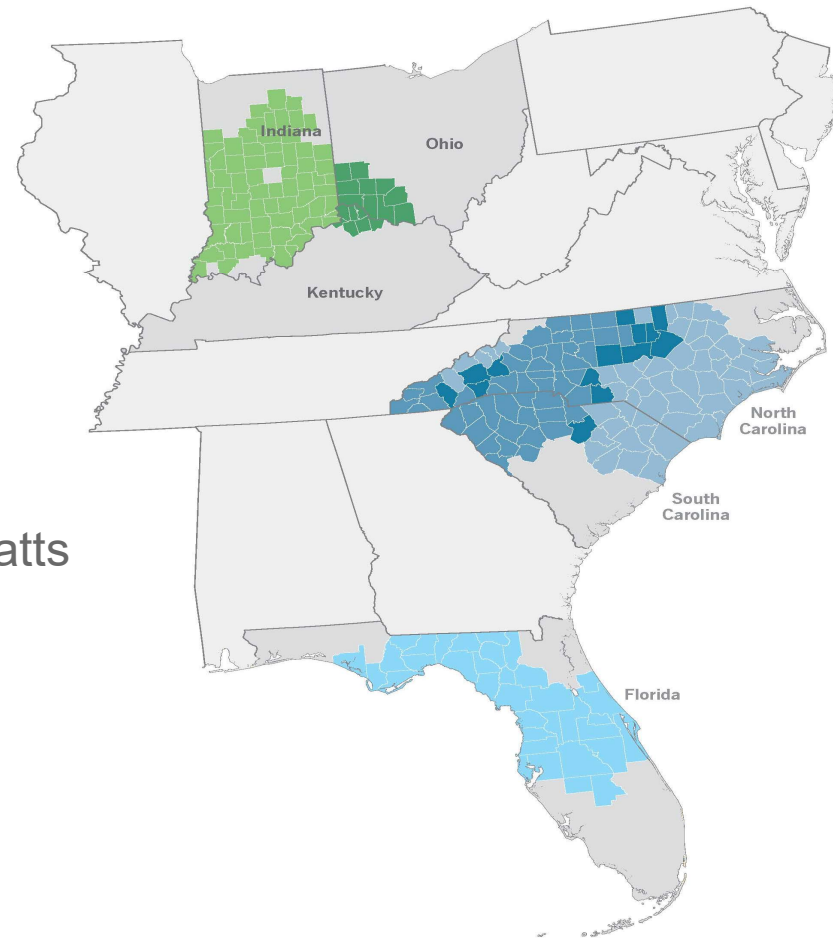
# Subsequent License Renewal at Duke Energy



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January 22, 2025

# Duke Energy Overview

- Electric customers: 8.4 million
  - Six States: North Carolina, South Carolina, Florida, Indiana, Ohio, Kentucky
- Total generating capacity: 54,800 megawatts
- Total nuclear capacity: 10,773 megawatts
  - Six nuclear sites
    - Three in South Carolina
    - Three in North Carolina



## THREE NUCLEAR STRATEGIES FOR A CLEAN ENERGY TRANSFORMATION



- **TODAY**, continue safe, reliable, innovative and efficient operations
- **TOMORROW**, renew current operating licenses and produce more energy by upgrading components and gaining efficiencies
- For the **FUTURE**, invest in new nuclear technologies and build advanced nuclear plants

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Nuclear generation is the only carbon-free energy source that is always on and available 24 hours a day, complementing renewables like solar and wind power.

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# License Renewal Road

**1980's**

**1990's**

**Aim:** Stable license renewal regulatory process

**Focus:** Renewal aging programs on passive hardware

**2000's**

**2010's**

**Investment:** Longer business window allows upgrades

**2020's**

**Direction:** Renewal Road supports today's business direction

**2030's**

**Understanding:** Value of strong maintenance investments

**Recognition:** Holistic aging management view – both active & passive hardware

**Achievement:** Initial license renewals to 60 years

**Pursuit:** Subsequent license renewal to 80 years

**Opportunity:** Next Generation

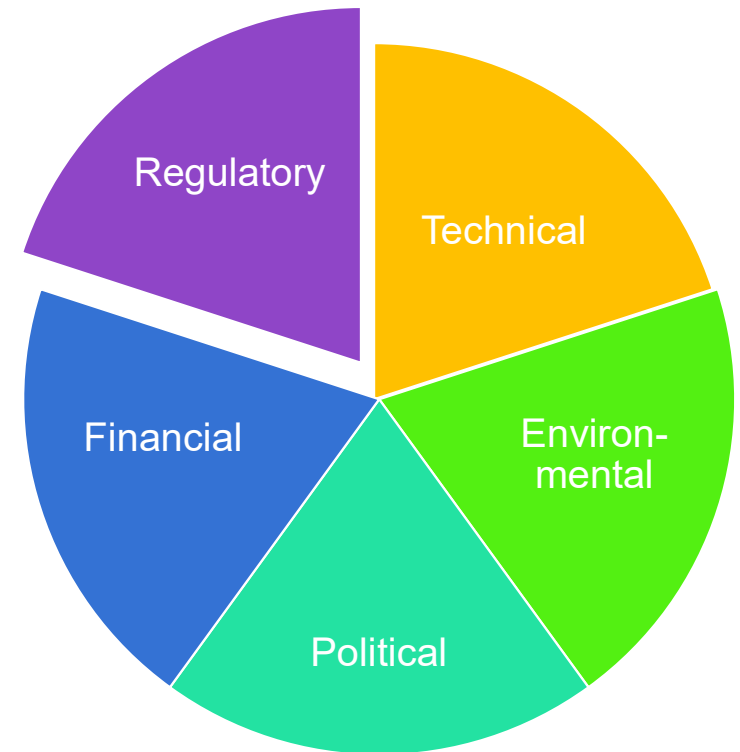


BUILDING A SMARTER ENERGY FUTURE®

# Keys for Subsequent License Renewal

## Continued Stable Regulatory Renewal Program

- The ongoing, stable regulatory renewal program has continued to mature as we now “Think 80”
- The regulatory renewal program is:
  - Appropriately designed to focus on the key technical safety and environmental topics
  - Captured in useful regulatory guidelines
  - Built as a learning program where operating experience will continue to inform
- Continued operations under this program will be the backbone of the clean energy transformation



# Keys for Subsequent License Renewal

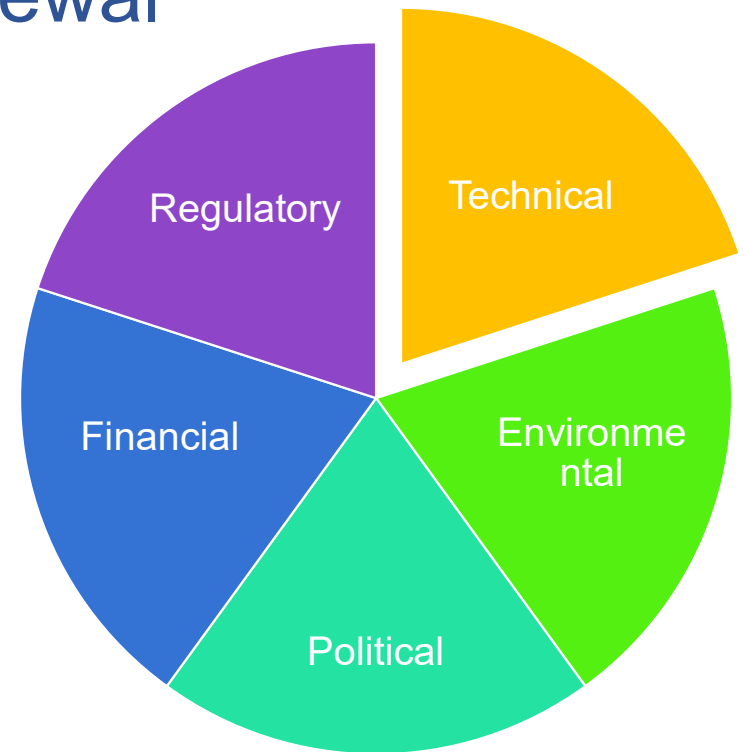
## Technical Challenges

- Mature the Aging Management Programs

- Using contemporary technology
- Learning from operating experience
- Letting insights lead to actions

- Know the Seasoned Challenges

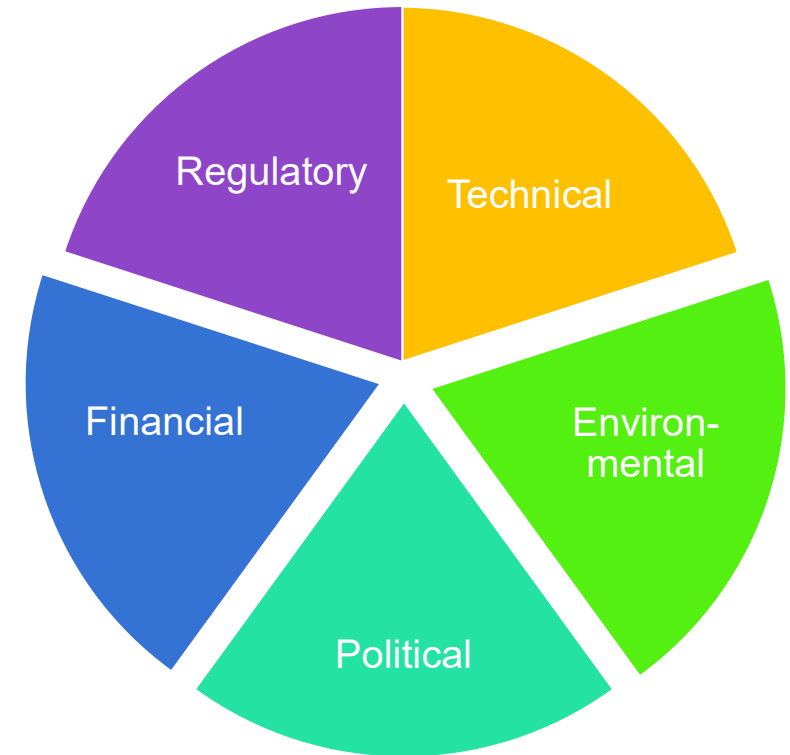
- Reactor vessel
- Reactor vessel internals
- Concrete structural issues
- Buried piping
- Electrical cables



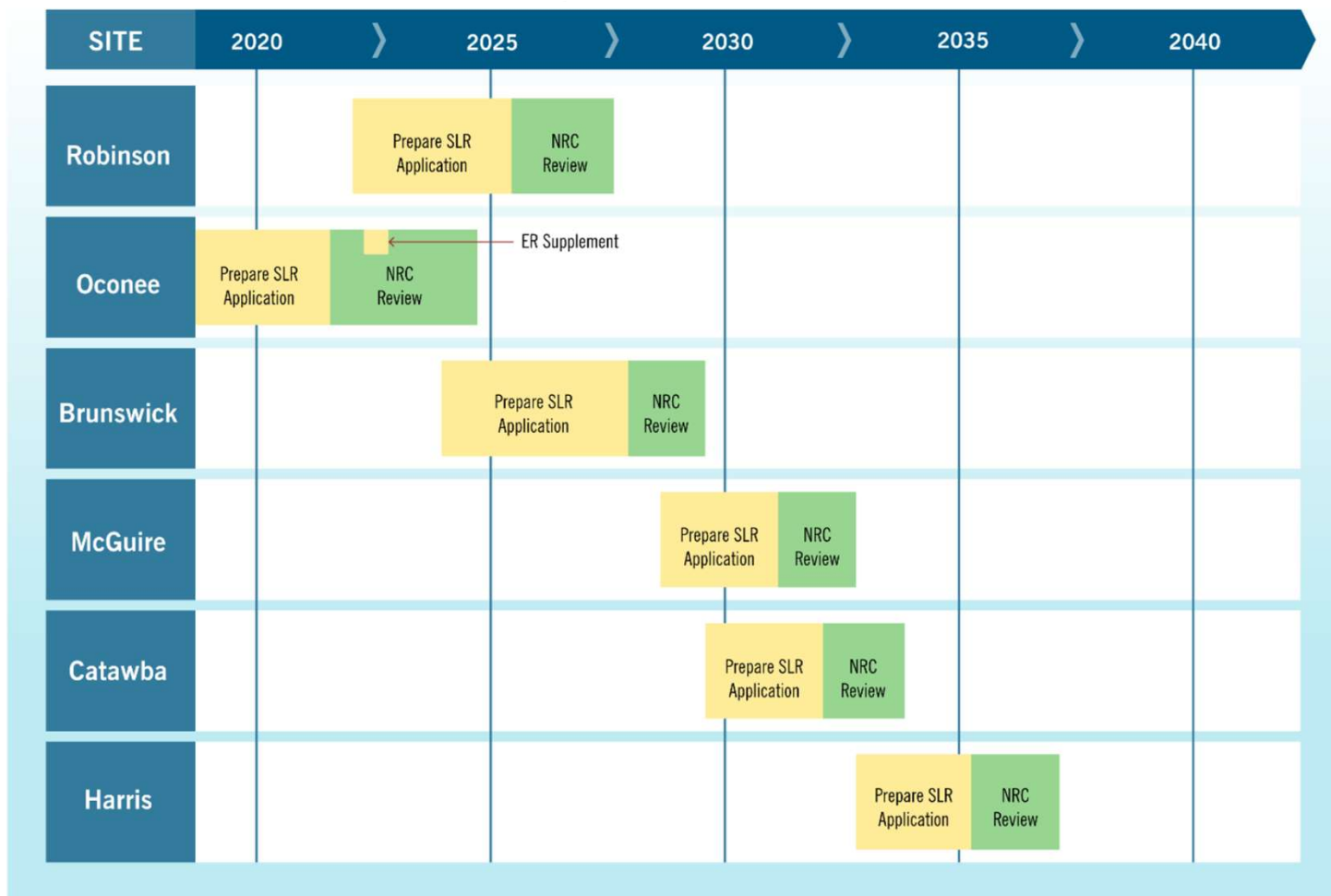
# Keys for Subsequent License Renewal

## North Carolina Clean Energy Legislation

- Law: North Carolina House Bill 951 signed into law in 2021
  - Directs a 70% reduction in carbon dioxide emissions by 2030 (from 2005 levels), and
  - Net-zero carbon emissions by 2050
- Order: North Carolina Utilities Commission Carbon Plan Order
  - Subsequent License Renewal is foundational to Duke Energy meeting its clean energy goals and achieving the Carbon Plan mandates
  - Pursuit of subsequent license renewal of the existing nuclear fleet is reasonable and appropriate



# Duke Energy Subsequent License Renewal Timing



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# Subsequent License Renewal Makes Business Sense

- Backbone of the clean energy transformation, as nuclear power is recognized as a vital clean energy source to be maintained in the Carolinas.
- Bridge to new carbon-free baseload technology
- Insurance policy that allows the opportunity to operate the nuclear plants to 2050 and beyond.
- Opportunity, not obligation, to operate for 80 years – investment payback is less than one fuel cycle.
- Prepares Next Generation to continue the same focus on safety, reliability and cost efficiency.

