

# H.B. Robinson Unit 2

## Subsequent License Renewal Environmental Pre-Submittal Meeting



February 4, 2025

# Agenda

- Opening Remarks
- Subsequent License Renewal (SLR) Project Team
- Overview of Robinson Nuclear Plant (RNP)
- Environmental Report (ER) Methodology
- Permits and Authorizations
- Agency and Stakeholder Consultations
- ER Discussion Items
- Closing Remarks

# Subsequent License Renewal Project Team

Rounette Nader\* – VP, New Nuclear Generation and License Renewal

Mark Pyne – Director, License Renewal and Subsequent License Renewal

Daniel Roberts\* – Manager, Subsequent License Renewal

Elizabeth Glenn\* – SLR Environmental Lead

Heather Galloway – Duke SLR Team

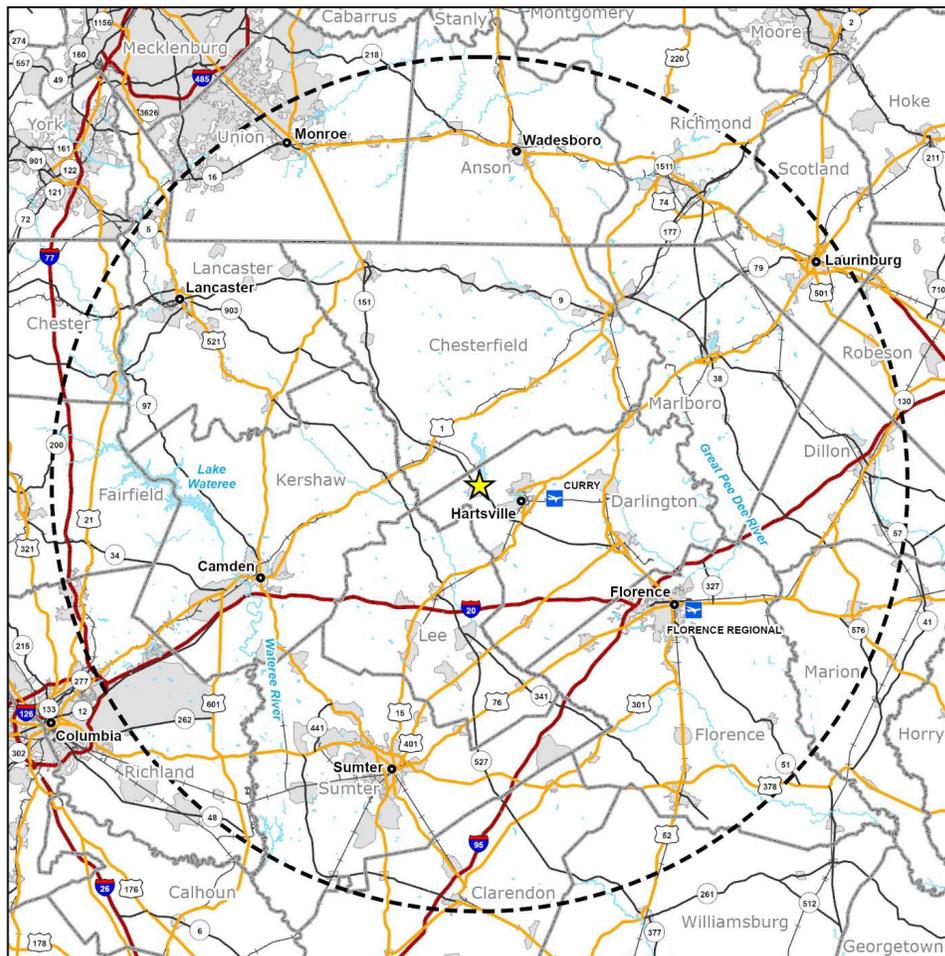
Matthew Montz – ENERCON Project Manager

Lisa Hendrick – ENERCON Editorial Lead

Rachel Turney-Work – ENERCON Environmental Licensing Manager

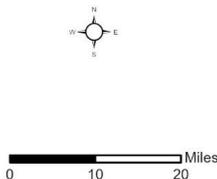
\* Speakers

# Overview of Robinson Nuclear Plant: Region



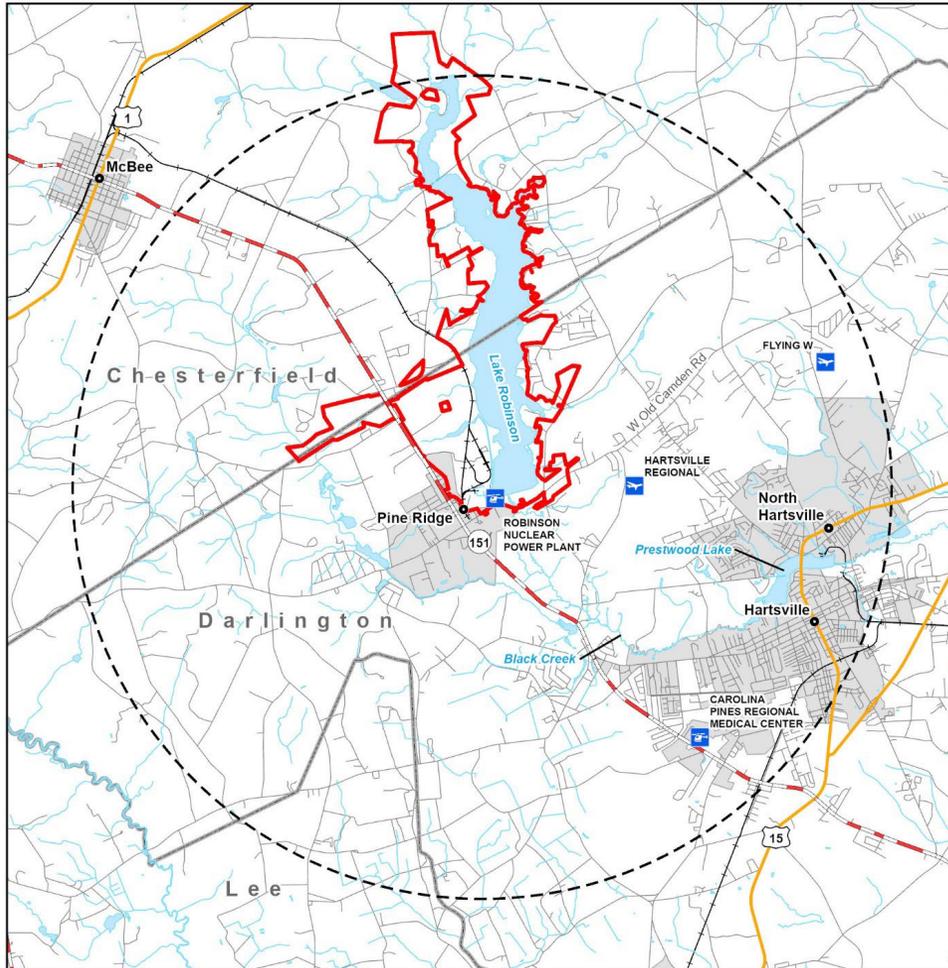
## Legend

- |             |                 |                  |
|-------------|-----------------|------------------|
| ★ RNP       | — Interstate    | Surface Water    |
| ● Community | — U.S. Route    | — 50-Mile Radius |
| ✈ Airport   | — State Highway | County           |
|             | — Railroad      | Place            |



- All or parts of 14 counties in SC and 4 counties in NC are located within the 50-mile region of RNP
  - Larger cities within the region include:
    - Camden
    - Florence
    - Hartsville
    - Sumter
- Duke Energy's Lake Robinson occupies the area immediately north and east of RNP
  - Lake Robinson is approximately 2,250 acres

# Overview of Robinson Nuclear Plant: Vicinity



## Legend

- |                 |                     |            |
|-----------------|---------------------|------------|
| • Community     | — U.S. Route        | ⊖ 6-Radius |
| ✈ Airport       | — Railroad          | ▭ County   |
| ✈ Heliport      | — Surface Water     | ▭ Place    |
| — Local Road    | — RNP Site Boundary |            |
| — State Highway |                     |            |

- Located approximately 5 miles NW of Hartsville, SC, on the southern shore of Lake Robinson.
- The vicinity map of Robinson Nuclear Plant is defined as the area within a 6-mile radius of the plant.
  - This includes portions of Darlington, Chesterfield, and Lee Counties, SC.
  - Towns within the vicinity of the plant:
    - Hartsville
    - Pine Ridge

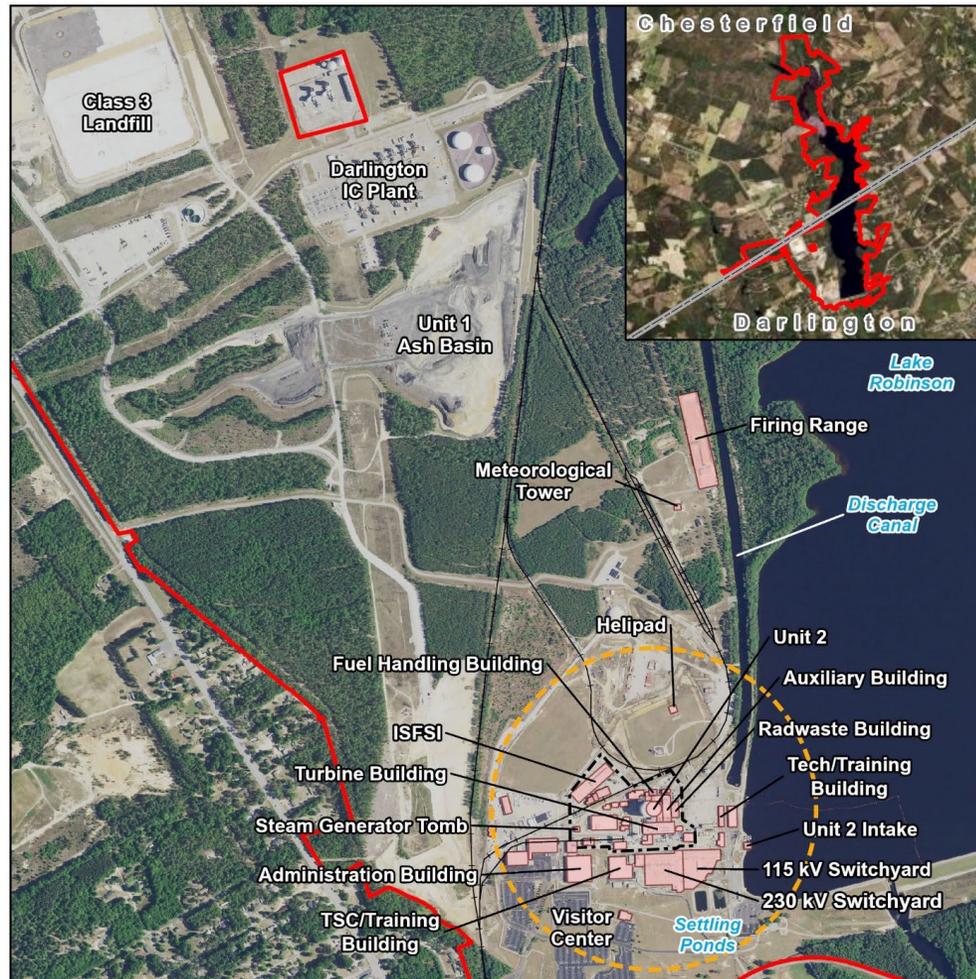
# Overview of Robinson Nuclear Plant: Site

- RNP is a single unit, three-loop Westinghouse NSSS, pressurized water reactor (PWR)
- Current rated core thermal power – 2,339 MW<sub>t</sub>
- Designed to operate at a gross electrical power output of 787 MW<sub>e</sub>
- Emergency power supplied by diesel generators
- No ground disturbing activities or refurbishment associated with SLR is expected

	OL	40 Yrs	60 Yrs	80 Yrs
Robinson Unit 2	1970	2010	2030	2050

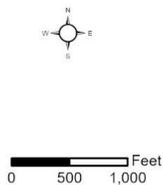


# Overview of Robinson Nuclear Plant: Site



## Legend

- Protected Area Fence
- Railroad
- Building/Structure
- Exclusion Zone
- RNP Site Boundary



- RNP is owned and operated by Duke Energy
- The RNP site is 5,900 acres, located in Darlington and Chesterfield Counties, SC
- The exclusion area is entirely within the site property
- Transmission lines with the scope of SLR are located within the RNP boundary site

# Environmental Report Methodology

- Duke Energy used the following guidance for preparation of the ER:
  - NUREG-1437, Rev. 2 (2024), *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*
  - NUREG-1555, Supplement 1, Rev. 2 (2024), *Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan, Operating License Renewal*
  - Regulatory Guide 4.2, Supplement 1, Rev. 2 (2024), *Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications*

# Permits and Authorizations

## ■ Permits and Authorizations

- National Pollutant Discharge Elimination System (NPDES) issued by South Carolina Department of Environmental Services (SCDES, formerly SCDHEC)
- Clean Water Act (CWA), Section 401 (SCDES granted waiver)
- Surface Water and Groundwater withdrawal permits from SCDES
- Title V Operating Permit from SCDES

## ■ Permits and Authorizations not applicable to RNP

- Essential Fish Habitat
- Coastal Zone Management Act
- Marine Mammal Protection Act
- Marine Sanctuary Act

# Agency and Stakeholder Consultations

- Agencies consulted to inform development of the ER included
  - US Fish and Wildlife Service
  - SC Department of Environmental Services
  - SC Department of Natural Resources
  - SC Department of Public Health
  - SC Department of Archives and History
  - SC Institute of Archaeology and Anthropology
  
- Additional Agencies and Stakeholders notified of SLR project
  - Native American Tribes (5 tribes contacted)
  - Other Stakeholders including applicable county, town and non- government organizations

# Environmental Report Discussion Items

## Surface & Groundwater Use

- Lake Robinson provides cooling water and service water for RNP
- Groundwater wells provide demineralized water, cooling water, and irrigation water for the plant
- Potable and sanitary water is provided by Darlington County Water and Sewer Authority (DCWSA)

## Cooling Water System

- Includes intake structure, four vertical wet pit pumps, condenser, discharge canal

# Environmental Report Discussion Items

## Alternatives Analysis

- Small Modular Reactor (SMR)
- Natural Gas Combined Cycle (NGCC) with Carbon Capture and Storage (CCS) system

## Independent Spent Fuel Storage Installation (ISFSI)

- RNP has two ISFSIs, both located onsite
  - 7P-ISFSI licensed per a site-specific license
  - 24P-ISFSI licensed per general license provisions of 10CFR72
- Future expansion has not been determined for the subsequent period of extended operation (SPEO)

# Environmental Report Discussion Items

## **Essential Fish Habitat**

- No essential fish habitat (EFH) areas located within the RNP vicinity

## **Habitat Areas of Concern**

- No habitat areas of concern are located within RNP vicinity

## **Critical Habitat**

- No critical habitats identified at RNP

## **Threatened and Endangered Species**

- Eleven state-listed species occur within Chesterfield, Darlington, and Lee counties
- Seven species federally listed either as threatened or endangered, and one candidate species potentially occur within a 6-mile radius of RNP

# Environmental Report Discussion Items

## Onsite Cultural Resource Surveys and Investigations

- No onsite cultural resources have been identified
- No archaeological sites or structures listed on the RNP property
- Architectural survey being prepared to determine National Register of Historic Places (NRHP) eligibility of onsite structures over and approaching 50 years

## Cultural Resources within the Vicinity

- Within the 6-mile vicinity, there are 71 offsite cultural resources identified
  - 25 historic properties are listed on the NRHP
  - No off-site disturbances are planned during the SLR period
  - No adverse effects are anticipated to any sites during the RNP subsequent period of extended operation

# Environmental Report Discussion Items

## New and Significant Information Assessment

Of the 59 Category 1 issues identified in 10CFR51, Subpart A, Appendix B, Table B-1:

- 6 were determined not applicable to RNP
- 53 were determined to be applicable to RNP
  - No new and significant emerging issues applicable to the continued operation of RNP were identified

# Environmental Report Discussion Items

## Severe Accident Mitigation Alternatives (SAMA)

- RNP SAMA analysis completed as part of initial license renewal effort – new SAMA analysis is not required
- For SLR, reviewed:
  - Updated 2024 GEIS information associated with industry SAMAs
  - SAMAs associated with license renewal applications under review (Perry, Clinton, Diablo Canyon)
- No new or significant SAMAs identified

## Climate Change

- Focus on climate change impacts on resource areas where possible incremental impacts from continued plant operation
  - Air quality
  - Surface water resources
- Content commensurate with Monticello site-specific supplemental environmental impact statement (SEIS) level of detail

# Closing Remarks

- The RNP SLR ER will be consistent with the 2024 revised NRC guidance to leverage new efficiency opportunities where applicable
  - Worked with Southern Company and NEI SLR Environmental Task Force to develop ER using revised NRC guidance
- Duke Energy has supported industry SLR application reviews and incorporated recent RAI responses
- Duke Energy will submit a high-quality SLR application to support an 18-month Staff review
- The RNP SLRA submittal remains on schedule to submit April 2025

# Acronyms

- CWA – Clean Water Act
- ER – Environmental Report
- GEIS – Generic Environmental Impact Statement
- $MW_e$  – Megawatts electric
- $MW_t$  – Megawatts thermal
- NC – North Carolina
- NEI – Nuclear Energy Institute
- NPDES – National Pollutant Discharge Elimination System
- NRC – Nuclear Regulatory Commission
- NSSS- Nuclear Steam Supply System
- NUREG – Nuclear Regulatory Guide
- OL – Operating License
- PWR – Pressurized Water Reactor
- RAI - Request for Additional Information
- RNP – Robinson Nuclear Plant
- SAMA – Severe Accident Mitigation Alternative
- SC – South Carolina
- SCDES – South Carolina Department of Environmental Services
- SEIS – Supplemental Environmental Impact Statement
- SLR – Subsequent License Renewal