

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

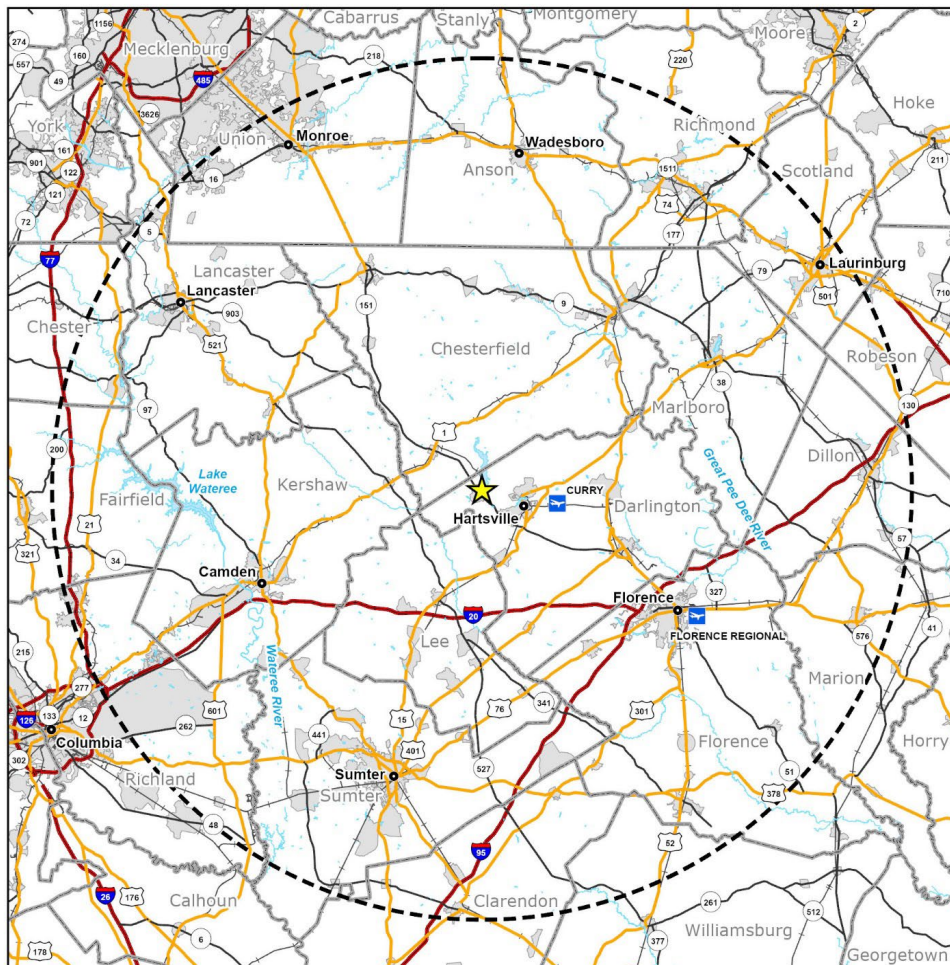
Matthew Montz – ENERCON Project Manager

Lisa Hendrick – ENERCON Editorial Lead

Rachel Turney-Work – ENERCON Environmental Licensing Manager

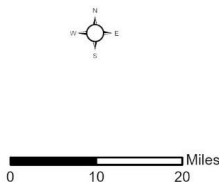
* Speakers

Overview of Robinson Nuclear Plant: Region



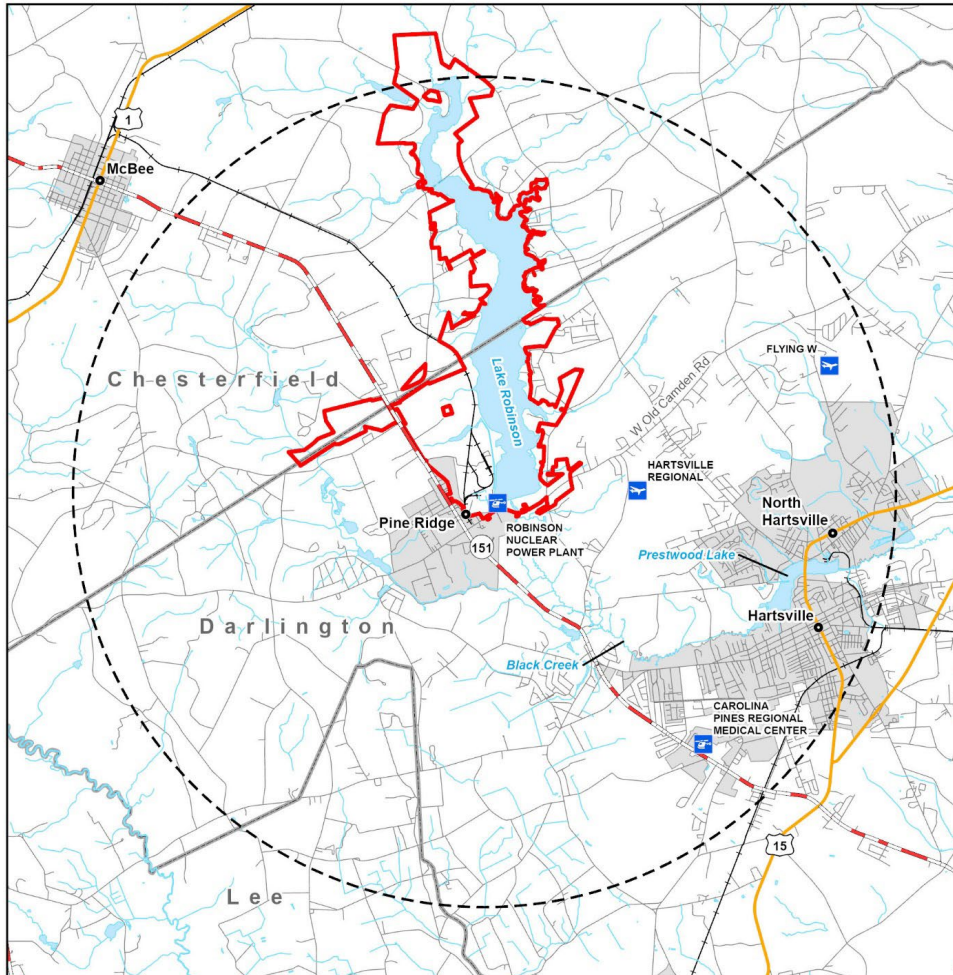
Legend

- ★ RNP
- Community
- ✈ Airport
- Interstate
- U.S. Route
- State Highway
- Railroad
- ☪ Surface Water
- ⬜ 50-Mile Radius
- ⬜ County
- ⬜ 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



- 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_t
- Designed to operate at a gross electrical power output of 787 MW_e
- 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

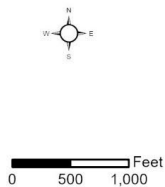


Overview of Robinson Nuclear Plant: Site



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