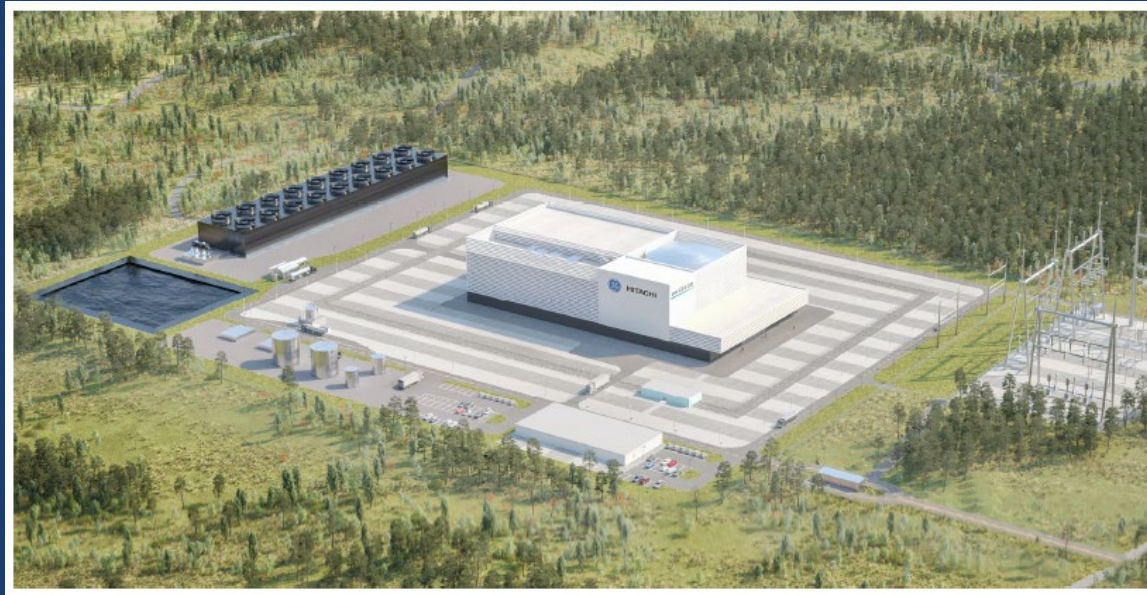


# Clinch River Nuclear (CRN) Site Draft Supplemental EIS Public Webinar



Deliberative and Pre-decisional

February 2025  
5:30-7:30 pm

**TVA** TENNESSEE  
VALLEY  
AUTHORITY

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# Agenda

- CRN Project Purpose & Need
- TVA's New Nuclear Program
- CRN Site Project Licensing Activities
- GEH BWRX-300
- Clinch River Nuclear Site & Site History
- National Environmental Policy Act (NEPA) Overview
- CRN Programmatic and Supplemental Environmental Impact Statements
- CRN-1 Site Layout
- SEIS Impact Analysis
- CRN SEIS Schedule & How to Submit Comments
- Question & Answer Session

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## Project Purpose & Need

- The primary purpose of the proposed action is to demonstrate the feasibility to license, construct, operate, and decommission a Small Modular Reactor (SMR) technology at the CRN Site.
- The proposed action is needed to:
  - support the recommendations outlined in TVA's 2019 Integrated Resource Plan (IRP) to evaluate emerging nuclear technologies, including SMRs, as part of technology innovation efforts aimed at developing future electricity generation capabilities, and
  - to enable TVA's Board of Directors to consider next steps as part of TVA's efforts to explore advanced reactor options that could help TVA maintain a firm, fixed, clean, and reliable power supply.

# TVA's New Nuclear Program

Exploring new advanced reactors and small modular reactor technologies

Small modular reactor designs are those with an electric generating capacity up to 300 MW

Small modular reactor designs are based on existing commercial technologies

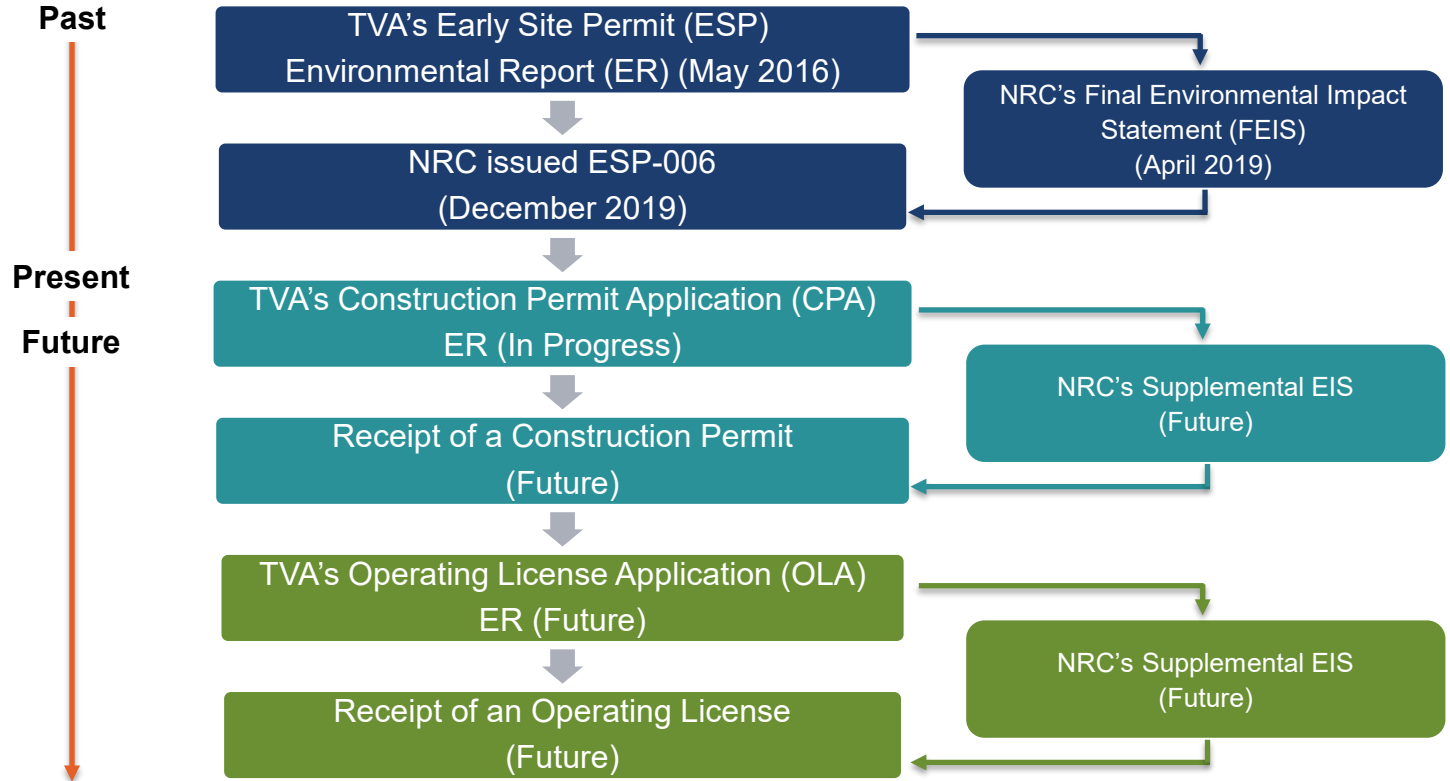
The smaller size enables components to be shipped to the site by rail or truck, allowing more of the construction to take place in factories.

## Potential Advantages of New Nuclear Technologies



- Improved safety and security
- Reduced construction time
- More standardization
- Small footprint; more site options
- Lower financing costs

# CRN Site NRC Licensing Activities



# GE-Hitachi BWRX-300

BUILT ON PROVEN TECHNOLOGY

TVA identified GEH's innovative BWRX-300\* reactor design as the most promising for near-term deployment.

- Thermal fission boiling water reactor (BWR)
- Light-water-moderated
- Cooled with natural circulation
- Designed with passive safety systems.

## BENEFITS OF THIS DESIGN INCLUDE

10

GENERATIONS  
OF DESIGN  
HISTORY



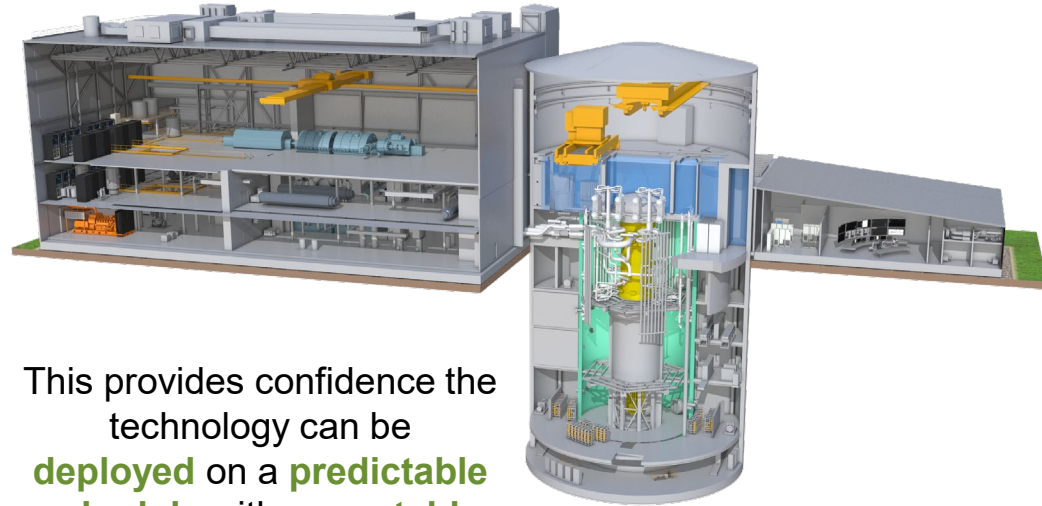
EXISTING  
SUPPLY  
CHAINS



AMERICAN  
FUEL



NRC LICENSING  
PATHWAY



This provides confidence the technology can be **deployed** on a **predictable schedule** with **acceptable risk**.

\*TVA has not yet decided to deploy an SMR. Any decisions will be subject to support, risk sharing, required internal and external approvals, and completion of all necessary environmental and permitting reviews



**TVA's Clinch River Nuclear Site**

The map displays the Clinch River Arm of the Watts Bar Reservoir, which is highlighted in green. The CRN Site is marked with a pink dot and labeled. Surrounding areas include Oak Ridge, Oliver Springs, and Farragut. The map also shows the Clinch River, various lakes (Whiteoak Lake, Melton Hill Reservoir, Cheoah Lake, Hitch Pond, Dead Horse Lake), and the Melton Hill Dam. Major highways (Interstates 40, 75, 76, 441, 275, 158, 73, 168, 129, 33, 35, 411, 25, 170, 62, 61, 29, 27, 116, 326, 70, 321, 75, 11) and county boundaries (Morgan, Roane, Anderson, Clinton, Powell, Halls, Knoxville, Karns, Farragut, Roane, Loudon, Blount, Alcoa, Eagleton Village, Maryville, Friendsville, Lenoir City) are indicated. The map is titled "TVA's Clinch River Nuclear Site" and includes a disclaimer: "The CRN Site is located on 935-acres of TVA land in Oak Ridge, Roane County, Tennessee adjacent to US Department of Energy Oak Ridge Reservation." The TVA logo and "TENNESSEE VALLEY AUTHORITY" are also present.

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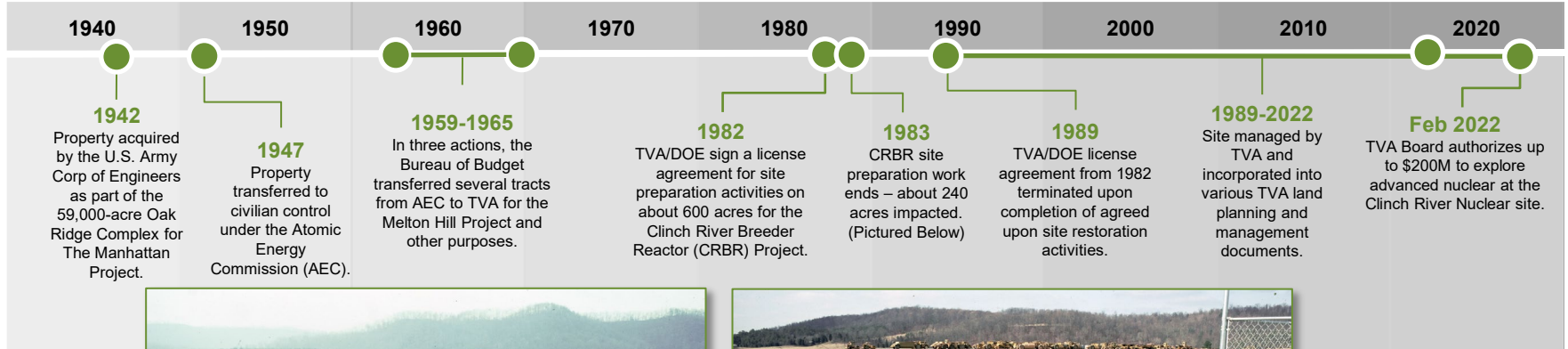
**11** Deliberative and Pre-decisional **FRIENDSVILLE**



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# Clinch River Nuclear Site History

## MANHATTAN PROJECT TO TVA'S POTENTIAL FIRST SMALL MODULAR REACTOR\*



CLINCH RIVER BREEDER REACTOR PROJECT, 1983

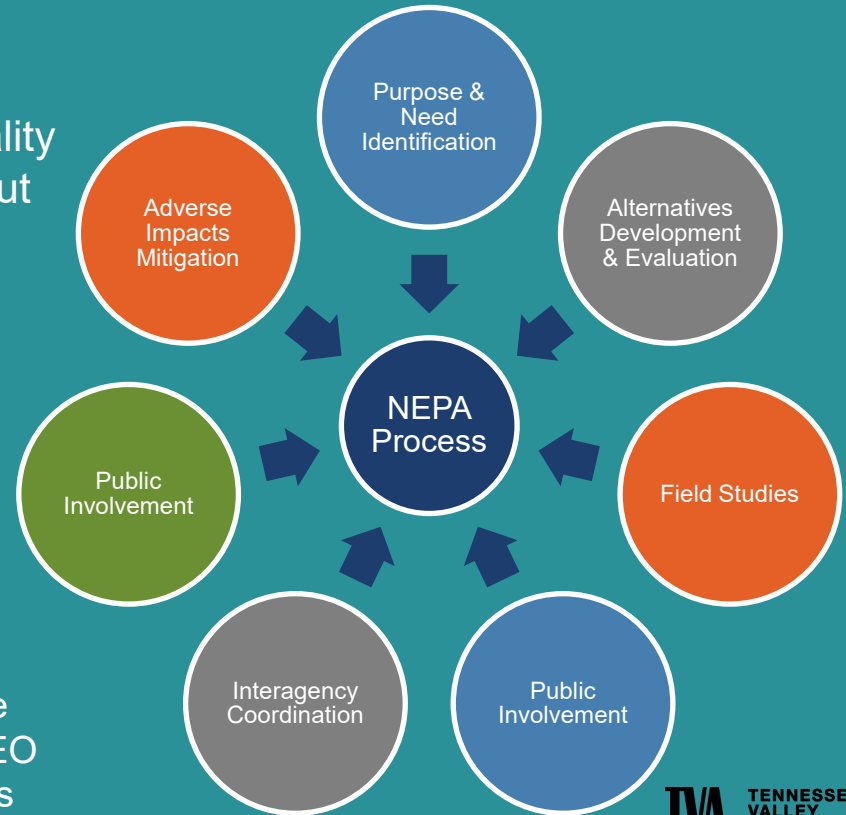


\* TVA has not yet decided to deploy an SMR. Any decisions will be subject to support, risk sharing, required internal and external approvals, and completion of all necessary environmental and permitting reviews



# National Environmental Policy Act (NEPA) Overview

- NEPA requires federal agencies to consider relevant environmental information for major Federal actions significantly affecting the quality of the environment and provide for public input prior to making a decision.
- The SEIS also addresses requirements associated with various federal laws and regulations:
  - National Historic Preservation Act (NHPA)
  - Endangered Species Act (ESA)
  - Clean Water Act (CWA)
  - Clean Air Act (CAA), as well as
  - Pertinent executive actions including Executive Order (EO) 11988 (Floodplain Management), EO 11990 (Protection of Wetlands), & EO 13112 as amended by 13751 (Invasive Species).



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# Tiering from the CRN Programmatic EIS (PEIS)

- The PEIS used a bounding approach to evaluate impacts from creating an Advanced Nuclear Reactor Technology Park, using plant parameter envelope (PPE) analysis, based on a range of reactor types with varying levels of design maturity, using the process established in TVA's Early Site Permit Application to the NRC in 2019.
- Analysis of environmental impacts based on a bounding approach encompasses a maximum of potential impacts resulting from implementing each of the alternatives.
- Federal agencies may rely on PEIS analyses for 5 years without conducting additional review unless there are substantial new circumstances or information about the significance of adverse effects that affect the analysis.

# Supplemental EIS (SEIS) Data Review

- For the SEIS TVA reviewed new information that differed from that considered in the Programmatic EIS
- New information included information about CRN-1 (one BWRX-300) or new data about environmental conditions at the CRN Site
- After review, the new information was determined to be either:
  - Consistent – information that was effectively the same or substantially similar to that considered in the Programmatic EIS – this information was incorporated by reference in the SEIS.
  - Notably different – information that was new and not previously considered or substantially different from that considered in the Programmatic EIS – this information was evaluated in the SEIS

## Alternatives Considered in the Supplemental EIS:

- **A** – No Action Alternative
- **B1** – Construction, Operation, and Decommissioning of CRN-1

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# Analyses Incorporated By Reference from the PEIS

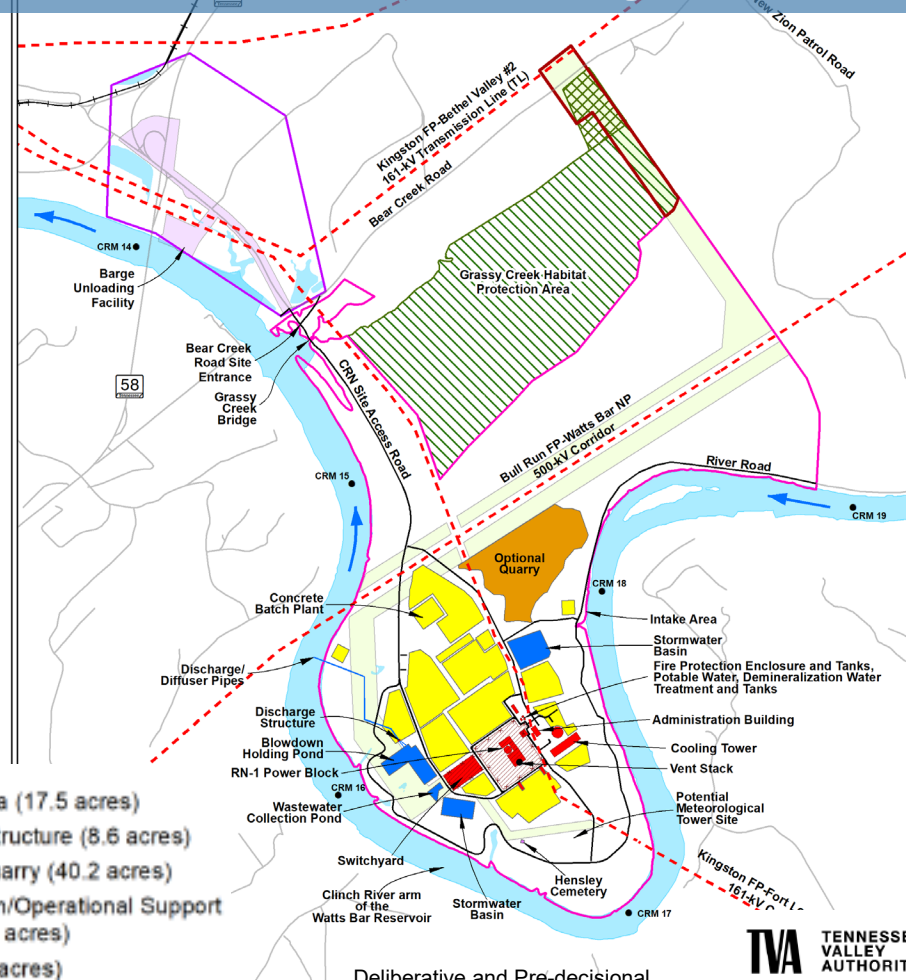
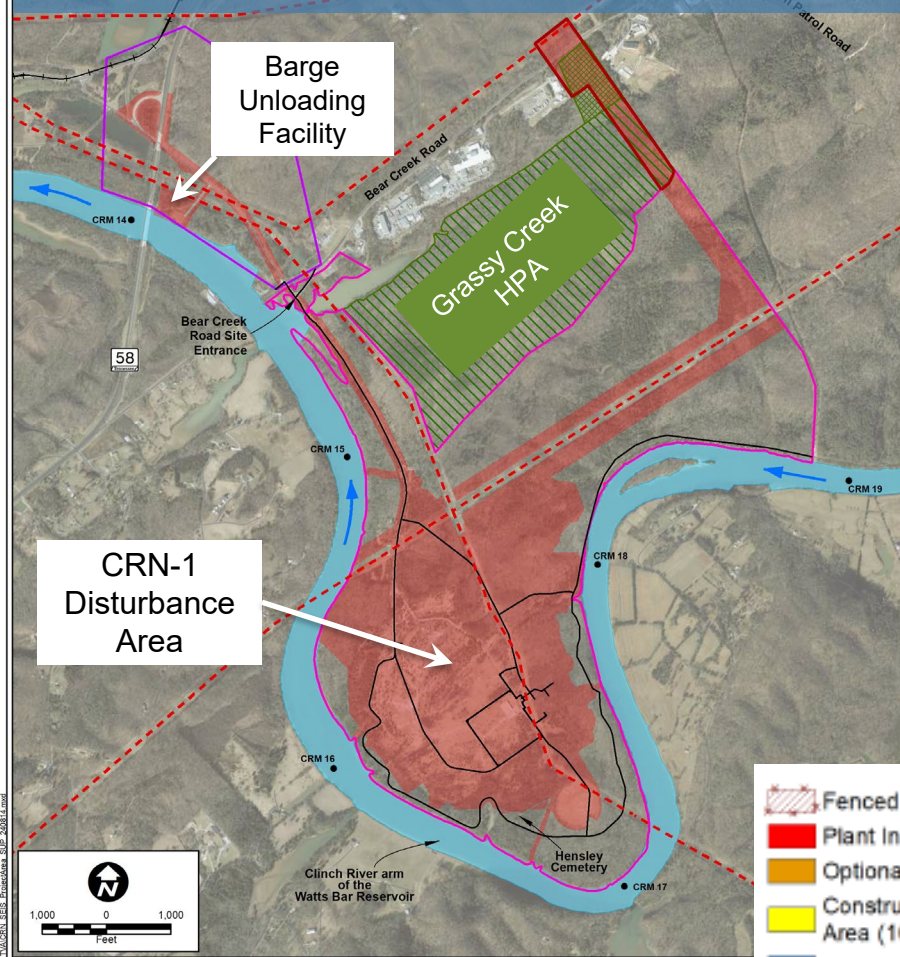
- Geology and Soils
- Meteorology, Air Quality, and Climate Change
- Noise
- Socioeconomics
- Solid and Hazardous Waste
- Public Safety and Nonradiological Health
- Radiological Effects of Normal Operations
- Nuclear Plant Safety and Security
- Decommissioning



# TVA NEPA Reviews & Coverage

Programmatic EIS (complete)	Supplemental EIS (in progress)	Future NEPA
<p>Final PEIS published 8/2022 ROD signed 09/21/2022</p> <p>TVA could proceed with:</p> <ul style="list-style-type: none"> <li>• Tree clearing in evaluated areas</li> <li>• Construction of osprey platforms/osprey nest relocation</li> <li>• Utility infrastructure installation along existing road rights-of-way</li> <li>• Improvements to existing roads</li> <li>• Construction of new onsite roads in evaluated areas within specific criteria</li> <li>• Grading &amp; construction of berms in evaluated areas</li> <li>• Construction of facilities in evaluated areas that do not require permits or blasting, and are not in the protected area</li> </ul>	<p><b>Draft issued January 2025</b> <b>Anticipated ROD Late Summer 2025</b></p> <p>After finalizing the SEIS TVA could proceed with:</p> <ul style="list-style-type: none"> <li>• Construction and operation of any safety-related nuclear power generation systems for CRN-1</li> <li>• Excavation for the reactor building</li> <li>• Construction of intake and discharge facilities</li> <li>• Offsite 161-kV transmission improvements</li> <li>• Barge landing improvements</li> <li>• Import of borrow and/or development of onsite quarry</li> <li>• New site drainage, stormwater management, outfalls, and culverts; filling of landfills and existing ponds</li> </ul>	<p>TBD</p> <p>Necessary for:</p> <ul style="list-style-type: none"> <li>• Significant changes in operations characteristics or impacts (if any)</li> <li>• Additional offsite transmission improvements (if any)</li> <li>• Preconstruction, construction, operation, and decommissioning of additional units (if any)</li> </ul>

# Alternative B1 – Construction, Operation, & Decommissioning of CRN-1



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# Impact Analysis of Evaluated Resources

Resource Area	Phase	Impacts	Resource Area	Phase	Impacts
Water Resources	Construction	Minor	Recreation	Construction	Minor
	Operations	Minor		Operations	Minor
Floodplains & Flood Risk	Construction	Minor	Transportation	Construction	Moderate to Large
	Operations	None		Operations	Minor
Wetlands	Construction	Minor	Visual Resources	Construction	Minor to Moderate
	Operations	None		Operations	Minor to Moderate
Aquatic Ecology	Construction	Minor	Archaeological Resources & Historic Structures	Construction	Minor
	Operations	Minor		Operations	Minor
Terrestrial Ecology	Construction	Moderate	Radiological Effects of Normal Operations	Construction	Minor
	Operations	Minor		Operations	Minor
Threatened & Endangered Species	Construction	Minor to Moderate	Uranium Fuel Use Effects	Construction	Minor
	Operations	Minor		Operations	Minor
Managed and Natural Areas	Construction	Minor			
	Operations	Minor			

# CRN Project Consultations & Permitting

Agency	Authority	Status
US Fish & Wildlife Service	Endangered Species Act Section 7 Consultation	In progress
Tennessee Historical Commission (State Historic Preservation Officer) & Federally Recognized Tribes	National Historic Preservation Act Section 106 Consultation	Complete
Watts Bar Interagency Working Group	Consultation regarding disturbance to sediments in the Reservoir	Complete
US Army Corps of Engineers	Clean Water Act Section 401 and 404 Permitting	In progress
US Army Corps of Engineers & US Coast Guard	Rivers and Harbors Act Section 10 Permitting	Future
TN Dept of Environment & Conservation	Aquatic Resource Alteration Permit	In progress



# How to Provide Comments

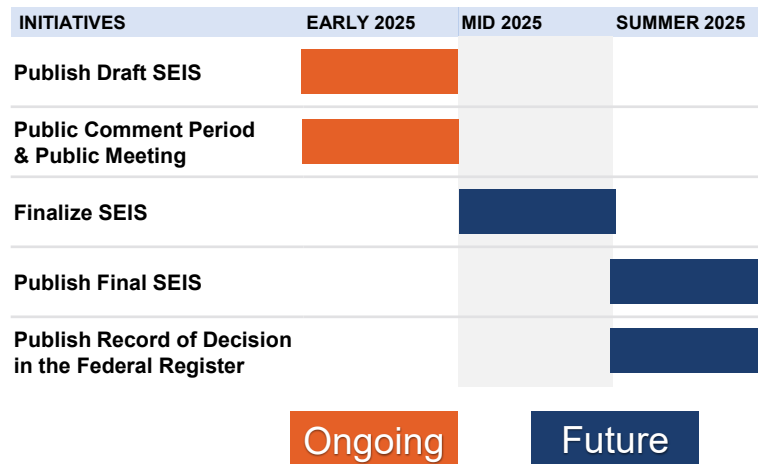
Comments can be provided by:

**Email:** [nepa@tva.gov](mailto:nepa@tva.gov)

**Web:** [www.tva.com/nepa](http://www.tva.com/nepa)

**Mail:** Attn: Carol Butler Freeman  
NEPA Compliance  
400 West Summit Hill Drive, WT 11B  
Knoxville, TN 37902

## Projected CRN SEIS NEPA Schedule



Public comments are encouraged and must be submitted or postmarked by **March 18, 2025.**

*Electronic comment submissions are preferred.*

Please note that any comments received, including names and addresses, will become part of the project administrative record and will be publicly available.

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# Question & Answer Session

TVA is virtually available until 7:30 p.m. EST for questions pertaining to the CRN Draft SEIS.

Questions asked during the open house will not serve as a formal comment. More information, and how to submit formal comments, can be found at [www.tva.com/nepa](http://www.tva.com/nepa).





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