

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-615

CLINCH RIVER NUCLEAR UNIT 1

CONSTRUCTION PERMIT

Construction Permit No. [CPAR-2]

1. The U.S. Nuclear Regulatory Commission (NRC) has found that—
 - A. The application, as supplemented and revised, for a construction permit, which references Early Site Permit No. ESP-006, filed by Tennessee Valley Authority (TVA), complies with the requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission set forth in Title 10 of the *Code of Federal Regulations* (10 CFR) Chapter I, “Nuclear Regulatory Commission.” There is reasonable assurance that the activities the permit authorizes will be conducted in compliance with the Commission’s rules and regulations, and all required notifications to other agencies or bodies have been duly made.
 - B. The applicant has described the proposed design of the facility, including, but not limited to, the principal architectural and engineering criteria for the design, and has identified the major features or components incorporated therein for the protection of the health and safety of the public.
 - C. Such further technical or design information as may be required to complete the safety analysis, and which can reasonably be left for later consideration, will be supplied in the final safety analysis report.
 - D. The applicant has not identified any safety features or components that require research and development. As such, the applicant did not need to identify a research and development program.
 - E. On the basis of the foregoing, there is reasonable assurance that: (i) such safety questions will be satisfactorily resolved at or before the latest date stated in the application for the completion of construction of the proposed facility, and (ii) taking into consideration the site criteria contained in 10 CFR Part 100, “Reactor Site Criteria,” the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.
 - F. The processes to be performed provide reasonable assurance that the applicant will comply with the regulations in 10 CFR Chapter I, including the regulations in 10 CFR Part 20, “Standards for Protection Against Radiation,” and that the health and safety of the public will not be endangered.
 - G. TVA is technically qualified to construct the facility in accordance with the Commission’s regulations set forth in 10 CFR Chapter I.

- H. TVA is financially qualified to construct the facility in accordance with the Commission's regulations set forth in 10 CFR Chapter I.
 - I. The issuance of a permit for the construction of the facility will not be inimical to the common defense and security or to the health and safety of the public.
 - J. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs, and considering reasonable alternatives, the issuance of this construction permit, subject to the conditions for protection of the environment set forth herein, is in accordance with Subpart A, "National Environmental Policy Act—Regulations Implementing Section 102(2)," of 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations, and all applicable requirements have been satisfied.
 - K. The conditions in early site permit ESP-006, with the exception of those listed below, have been met.
2. After holding a public hearing consistent with the Act, and on the basis of the foregoing findings regarding this facility, Construction Permit No. CPAR-2 is hereby issued to TVA pursuant to sections 103 and 185a of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," for a utilization facility, as defined in 10 CFR 50.2, "Definitions," as described in the application filed in this matter by the applicant. The utilization facility owned by TVA, known as Clinch River Nuclear Unit 1, will be located in Roane County, Tennessee, and is described in the application.
 3. This permit shall be deemed to contain and be subject to the conditions specified in 10 CFR 50.55, "Conditions of construction permits, early site permits, combined licenses, and manufacturing licenses"; is subject to all applicable provisions of the Act and rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the conditions specified or incorporated below:
 - A. The earliest date for the completion of the construction of the facility is October 1, 2031, and the latest date for completion is September 30, 2032.
 - B. The facility shall be constructed and located at the site as described in the application, in Roane County, Tennessee.
 - C. This construction permit authorizes the applicant to construct a power reactor facility described in the application and the hearing record, in accordance with the principal architectural and engineering criteria and environmental protection commitments set forth therein.
 - D. TVA shall perform detailed geologic mapping of the excavations for the safety-related engineered structures; examine and evaluate the geologic features discovered in those excavations; and, once geologic mapping information from the excavations for safety-related structures is available for examination by the NRC, notify the director of the Office of Advanced Reactors, or the director's designee, as specified in 10 CFR 50.4.

- E. An applicant for a combined operating license (COL) or an operating license (OL) that references this CP that has determined that an offsite emergency planning zone is required shall update the evacuation time estimate (ETE) consistent with the applicable regulations and guidance¹.
 - F. As a condition of this construction permit, the applicant shall ensure that reactor isolation valve bodies, including reactor isolation valves NPS 2, are subject to a one-time augmented volumetric examination during construction (prior to initial startup) using the procedures and acceptance criteria of American Society of Mechanical Engineers (ASME) Code, section III, paragraph NB-2540 (identified as Permit Condition 15-1 in the final safety evaluation report).
 - G. The Environmental Protection Plan described in Appendix A to this permit is hereby incorporated into this permit.
- 4. This permit is subject to the limitation that a license authorizing operation of the facility will not be issued by the Commission unless: (a) the applicant submits to the Commission the complete the final safety analysis report, portions of which may be submitted and evaluated from time to time; (b) the Commission finds that the final design provides reasonable assurance that the health and safety of the public will not be endangered by the operation of the facility in accordance with procedures approved by it in connection with the issuance of said license; (c) the Commission finds that operation of the facility will be in accordance with 10 CFR, Part 51 of the Commission's regulations and all applicable requirements were satisfied; and (d) the applicant submits proof of financial protection and executes an indemnity agreement as required by section 170 of the Act.
 - 5. This permit is effective as of its date of issuance and shall expire on the latest completion date indicated in paragraph 3.A. above.

FOR THE NUCLEAR REGULATORY COMMISSION



Signed by Jeremy Bowen on 09/28/26

Jeremy Bowen, Director
Office of Advanced Reactors

Attachment: Appendix A—
Environmental Protection Plan

Date of Issuance: September 28, 2026

¹ This permit condition was originally identified in ESP-006, but because there is not a requirement to provide an updated ETE in a CP application, the permit condition carries forward as a requirement that must be addressed in either a COL or OL application.

APPENDIX A
TO CONSTRUCTION PERMIT NO. CPAR-2
TENNESSEE VALLEY AUTHORITY
CLINCH RIVER NUCLEAR UNIT 1
DOCKET NO. 50-615
ENVIRONMENTAL PROTECTION PLAN (NONRADIOLOGICAL)
September 28, 2026

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1.0 Objective of the Environmental Protection Plan

The objective of the Environmental Protection Plan (EPP) is to ensure compliance with the Endangered Species Act of 1973, as amended (ESA), and to ensure that the U.S. Nuclear Regulatory Commission (NRC) is kept informed of other environmental matters. The EPP is intended to be consistent with Federal, State, and local requirements for environmental protection.

2.0 Environmental Protection Issues

In the final supplemental environmental impact statement issued April 2026, the NRC considered the environmental impacts associated with the issuance of a construction permit, including consideration of the impacts of construction of a new nuclear reactor, Clinch River Nuclear Unit 1, at the Clinch River Nuclear Site. This EPP applies to the permit holder's actions affecting the environmental resources evaluated in the final supplemental environmental impact statement and that may affect any newly discovered environmental resources.

2.1 Aquatic Resources Issues

Federal agencies other than the NRC, such as the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, have jurisdiction to regulate aquatic resources under the Federal Water Pollution Control Act and the Rivers and Harbors Appropriation Act of 1899. Nothing within this EPP shall be construed to place additional requirements on the regulation of aquatic resources except the imposition of requirements in a Biological Opinion under the ESA (see section 2.3).

2.2 Terrestrial Resources Issues

Several statutes govern the regulation of terrestrial resources. For example, the U.S. Fish and Wildlife Service (FWS) regulates matters involving migratory birds and their nests in accordance with the Migratory Bird Treaty Act. Activities affecting migratory birds or their nests may require permits under the Migratory Bird Treaty Act. The FWS also regulates matters involving the protection and taking of bald and golden eagles in accordance with the Bald and Golden Eagle Protection Act. Nothing within this EPP shall be construed to place additional requirements on the regulation of terrestrial resources except the imposition of requirements in a Biological Opinion under the ESA (see section 2.3).

2.3 Endangered Species Act of 1973, as Amended

In accordance with Section 7(a) of the Endangered Species Act, the FWS issued a Biological Opinion related to the construction and operation of CRN-1. The Biological Opinion includes an Incidental Take Statement (ITS), which contains Reasonable and Prudent Measure that the FWS determined to be necessary and appropriate to minimize the amount and extent of incidental take. The Terms and Conditions that implement the Reasonable and Prudent Measures are nondiscretionary. The currently applicable Biological Opinion concludes that the construction and operation of CRN-1 is not likely to jeopardize the continued existence of certain species, including the Indiana bat, northern long-eared bat, gray bat, and tricolored bat.

The licensee must adhere to the requirements within the ITS of the currently applicable FWS Biological Opinion. Changes to the Biological Opinion, including the ITS, Reasonable and Prudent Measures, and Terms and Conditions contained therein, must be preceded by

consultation between the NRC, as the authorizing agency, and the FWS. The permit holder shall provide any necessary information to the NRC if the NRC initiates or reinitiates consultation under the ESA. The licensee must provide copies to the NRC of all notifications and reports required by the Terms and Conditions of the ITS at the time such notifications and reports are made to the FWS. Written notifications shall be made to endangeredspecies@nrc.gov.

2.4 National Historic Preservation Act of 1966

In accordance with section 106 of the National Historic Preservation Act, Tennessee Valley Authority (TVA), shall implement its established programmatic agreements for all construction activities at the CRN-1 site.

3.0 Consistency Requirements

The permit holder shall notify the NRC of proposed changes to permits or certifications concerning aquatic or terrestrial resources by providing the NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The permit holder shall provide the NRC with a copy of the application for renewal of permits or certifications at the same time the application is submitted to the permitting agency.

Changes to or renewals of these permits or certifications shall be reported to the NRC within 30 days following the later of the following two dates: the date that the change or renewal is approved, or the date that the change or renewal becomes effective. If a permit or certification, in part or in its entirety, is appealed, the report shall be made within 30 days following the date that the stay is granted.

4.0 Administrative Procedures

4.1 Plant Reporting Requirements: Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of any unusual ESA-related event described in section 2.3 of this EPP. The report shall (1) describe, analyze, and evaluate the event, including the extent and magnitude of the impact and plant characteristics at the time of the event, (2) describe the probable cause of the event, (3) indicate the action taken to correct the reported event, (4) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (5) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection, which also require reports to other Federal, State, or local agencies, shall be reported in accordance with those reporting requirements, in lieu of the requirements of this subsection. The NRC shall be provided with a copy of such report at the same time as it is submitted to the other agency.

4.2 Review and Audit

The permit holder shall provide for the review and audit of compliance with section 2.3 of this EPP. These audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organizational structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

4.3 Records Retention

Records required by this EPP shall be made and retained in a manner convenient for review and inspection. These records shall be made available to the NRC upon request. The records, data, and logs relating to this EPP shall be retained for 5 years or, where applicable, in accordance with the requirements of other agencies.

4.4 Changes in Environmental Protection Plan

A request for a change in this EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence before NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the EPP.