

TENNESSEE VALLEY AUTHORITY

Programmatic Environmental Impact Statement – Clinch River Nuclear Site

Advanced Nuclear Reactor Technology Park

AGENCY: Tennessee Valley Authority.

ACTION: Notice of Intent.

SUMMARY: The Tennessee Valley Authority (TVA) intends to prepare a Programmatic Environmental Impact Statement (PEIS) to address the potential environmental effects associated with the construction, operation, and decommissioning of an advanced nuclear reactor technology park at the Clinch River Nuclear (CRN) Site in Oak Ridge, Roane County, Tennessee. The park would contain one or more advanced nuclear reactors with a cumulative electrical output not to exceed 800 megawatts electric (MWe). TVA plans to evaluate a variety of alternatives including a no-action alternative. Public comments are invited to identify other potential alternatives, information, and analysis relevant to the proposed action.

DATES: The public scoping period begins with the publication of this Notice in the Federal Register and comments on the scope of the PEIS must be received or postmarked by March 19, 2021. To accommodate social distancing guidelines and public health recommendations related to the COVID-19 pandemic, TVA will host a virtual open house on March 1, 2021 from 6:00-8:00 pm EST. Visit <https://www.tva.com/nepa> to obtain more information.

ADDRESSES: Comments may be submitted in writing to J. Taylor Cates, NEPA Specialist, 1101 Market Street, BR 2C-C, Chattanooga, TN, 37402. Comments may also be submitted online at: <https://www.tva.com/nepa> or by email to nepa@tva.gov. Due to COVID-19 teleworking restrictions, electronic submission of comments is encouraged to ensure timely review and consideration.

FOR FURTHER INFORMATION CONTACT: Other related questions should be sent to Tennessee Valley Authority, J. Taylor Cates, NEPA Specialist, 1101 Market Street, BR 2C-C, Chattanooga, TN, 37402, or 423-751-2732/jtcates@tva.gov.

SUPPLEMENTARY INFORMATION: This notice is provided in accordance with the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) at 40 CFR parts 1500-1508 and Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations (36 CFR Part 800). The PEIS will be prepared consistent with the 2020 CEQ regulations for implementing NEPA at 40 CFR parts 1500-1508 (85 FR 43304-43376, Jul. 16, 2020).

TVA Power System

TVA is a corporate agency and instrumentality of the United States created by and existing pursuant to the TVA Act of 1933 (16 U.S.C. Part 831), to, among other things, foster the social and economic welfare of the people of the Tennessee Valley region and promote the proper use and conservation of the Valley's natural resources. TVA generates and distributes electricity for business customers and local power distributors, serving more than 10 million people in parts of seven southeastern states. TVA is fully self-financed without Federal appropriations and funds operations through electricity sales and power system bond financing. In addition to operating and investing its revenues in its electric system, TVA provides flood control, navigation and land management for the Tennessee River system, and assists local power companies and state and local governments with economic development and job creation.

Dependable electrical capacity on the TVA power system is about 33,000 MWe. TVA's current generating assets include one pumped-storage facility, one diesel generator site, three nuclear plants, five coal plants, nine combustion turbine plants, eight combined cycle plants, 14 solar energy sites, 29 hydroelectric dams, and several small renewable generating facilities. A portion of delivered power is obtained through long-

term power purchase agreements. About 13 percent of TVA's annual generation is from hydro; 14 percent is from coal; 27 percent is from natural gas; 41 percent is from nuclear; and the remainder is from wind, solar, and energy efficiency programs. TVA transmits electricity from these facilities over almost 16,000 miles of transmission lines. Like other utility systems, TVA has power interchange agreements with utilities surrounding the Tennessee Valley region, and buys and sells power on an economic basis almost daily.

Background

The CRN Site is in Oak Ridge, Roane County, Tennessee, on 935 acres of TVA-managed land on the Clinch River arm of the Watts Bar Reservoir. The site is located adjacent to the U.S. Department of Energy's (DOE) Oak Ridge Reservation, a roughly 33,500 acre reservation with defense, research, and environmental cleanup missions.

In May 2016, TVA submitted an application to the Nuclear Regulatory Commission (NRC) for an Early Site Permit (ESP) at the CRN Site for two or more new nuclear power units demonstrating Small Modular Reactors (SMR) technology with a total combined nuclear generating capacity not to exceed 800 MWe. SMRs provide the benefits of nuclear power in situations where large units, generally considered units with approximate electrical output exceeding 1000 MWe, are not appropriate or practical because of various constraints (i.e. local transmission system, limited physical space or water availability, constraints on the availability of capital for construction and operation, proximity to population centers, etc.). A NRC ESP provides early resolution of site safety and environmental issues, which in turn provides predictability and stability in any subsequent NRC licensing process.

The NRC prepared and released a Final EIS in April 2019 to assess the environmental aspects of their action, to decide whether or not to issue an ESP to TVA for the CRN Site. Following the NRC ESP Final EIS determination, the NRC issued the ESP to TVA in December 2019. The ESP provides NRC approval of the CRN site for

considering new nuclear power units demonstrating SMR technology; the ESP does not authorize TVA to construct or operate a nuclear facility. TVA must apply for and receive additional licenses from the NRC prior to initiating construction or operation of advanced nuclear reactors at the CRN Site.

Project Purpose and Need

In June 2019, TVA released the Final 2019 Integrated Resource Plan (IRP) and the associated IRP Final EIS. The IRP identified the various resources that TVA intends to pursue to meet the energy needs of the Valley over the 20-year planning period in accordance with TVA's mission. The 2019 IRP recommends that TVA continue to evaluate emerging nuclear technologies, including SMRs, as part of technology innovation efforts aimed at developing future electricity generation capabilities.

TVA's purpose and need for the CRN Advanced Nuclear Reactor Technology Park is two-fold. First is to evaluate and demonstrate the feasibility of deploying advanced nuclear reactors to support TVA's mission of providing safe, clean, reliable, and low-cost energy to the Tennessee Valley. Second is to evaluate emerging nuclear technologies as part of technology innovation efforts aimed at developing future generation capacities.

TVA will consider the potential environmental effects associated with the proposed construction, operation, and decommissioning of one or more advanced nuclear reactors, with a cumulative electrical output not to exceed 800 MWe at the CRN Site. In addition to producing energy, advanced reactors could support a low carbon future, including demonstration of technologies such as microgrids, grid resiliency, waste heat energy storage for grid support, and the production of isotopes of hydrogen and other elements.

Preliminary Proposed Action and Alternatives

The PEIS will address a range of alternatives for construction, operation, and decommissioning of an advanced nuclear reactor technology park at the CRN Site. Action alternatives include construction of light water reactor (LWR) alternatives and/or non-LWR alternatives at the CRN Site. There are two areas within the 935-acre CRN Site that are best suitable for development; these are designated as Area 1 and Area 2. Therefore, TVA plans to evaluate four discrete alternatives (A-D) for these proposed actions including the No-Action Alternative (A) and an advanced nuclear reactor technology park at Area 1 (B); at Area 2 (C); at Area 1 and Area 2 (D). Two additional alternatives E and F were considered but eliminated.

Anticipated Environmental Impacts

The PEIS will include a detailed evaluation of all environmental, social, and economic impacts associated with implementation of the proposed action. Resource areas to be addressed in the PEIS include, but are not limited to: air quality; aquatics; botany; climate change; cultural resources; emergency planning; floodplains; geology and groundwater; hydrothermal; land use; navigation; noise and vibration; radiological safety; soil erosion and surface water; socioeconomics and environmental justice; threatened and endangered species; transportation; visual; waste; water use; wetlands; and wildlife. Measures to avoid, minimize, and mitigate adverse effects will be identified and evaluated in the PEIS.

Anticipated Permits and Other Authorizations

TVA anticipates consulting on the required authorities including, but not limited to: the Endangered Species Act; Bald and Golden Eagle Protection Act; Rare Species Protection and Conservation Act; National Historic Preservation Act; Clean Air Act; and Federal Clean Water Act.

TVA anticipates seeking required permits or authorizations, from the following governmental entities: the Nuclear Regulatory Commission; Federal Aviation

Administration; US Department of Transportation; Tennessee Department of Transportation; US Army Corps of Engineers; US Coast Guard; US Environmental Protection Agency; Tennessee Department of Environment and Conservation; US Fish and Wildlife Service; the City of Oak Ridge; Tennessee State Historic Preservation Officer; Tribal Historic Preservation Officers; and Texas Department of State Health Services, Radiation Control Program, Radiation Safety Licensing Branch. This is not an exhaustive list, other permits or authorizations may be sought as required or appropriate.

Public Participation and Scoping Process

TVA seeks comment and participation from all interested parties for the proposed action, including, but not limited, to assisting TVA in determining the scope of issues for analysis in the PEIS. Information about this project is available at <https://www.tva.com/nepa>, which includes a link to an online public comment page. TVA invites the public to identify other potential alternatives, information, and analysis relevant to the proposed action. Comments must be received or postmarked no later than March 19, 2021. Federal, state, local agencies, and Native American Tribes are also invited to provide comments. Please note that any comments received, including names and addresses, will become part of the project administrative record and will be available for public inspection.

To accommodate social distancing guidelines and public health recommendations related to the COVID-19 pandemic, TVA will host a virtual open house during the scoping period. The virtual open house will be held on March 1, 2021, from 6:00-8:00 pm EST. Visit <https://www.tva.com/nepa> to obtain more information about the virtual open house. Additional open house details will be available on the project site by February 17, 2021.

PEIS Preparation and Schedule

TVA will consider comments received during the scoping period and develop a scoping report, which will be published at <https://www.tva.com/nepa>. The scoping report will summarize public and agency comments that were received and identify the projected schedule for completing the PEIS process. Following completion of the CRN Site environmental analysis, TVA will post a Draft PEIS for public review and comment on the project web page. TVA anticipates holding a public open house, which may be virtual, after releasing the Draft PEIS. Open house details will be posted on TVA's website in conjunction with the Draft PEIS. TVA expects to release the Draft PEIS in the Fall of 2021.

TVA will consider the substantive comments received on the Draft PEIS, financial assessments, engineering evaluations, risk evaluations, and other applicable evaluations in the Final PEIS before selecting one or more alternatives. TVA projects completing a Final PEIS in Spring 2022. Subsequently, a final determination on proceeding with the CRN Site will be documented in a Record of Decision.

Authority: 40 CFR 1501.9.

Rebecca Tolene,

Vice President, Environment.