

**PROPOSED BOARD APPROVAL**

(Advanced Reactor Development Program – TVA Clinch River Site)

WHEREAS in December 2021, the TVA Board approved by notation the creation of an Advanced Reactor (AR) Development Program (Board Program Approval);

WHEREAS the Board Program Approval: (a) approved funding of up to two hundred million dollars (\$200,000,000) for a program to: (1) perform design engineering, scoping, estimating, and planning associated with potential, future deployment of an AR at the Clinch River Nuclear (CRN) site, (2) develop content for potential, future license application(s) to the Nuclear Regulatory Commission for AR design(s), (3) continue to study potential, future deployment of ARs of various designs at CRN, and (4) study potential future deployment of ARs of various designs at various sites in addition to CRN (collectively defined as the “Program”), and (b) delegate to TVA’s Chief Executive Officer (CEO) the authority to enter into one or more contracts with one or more AR vendors and other private entities, as necessary and appropriate to implement the Program;

WHEREAS a memorandum from the Chief Operating Officer and Chief Nuclear Officer dated July 11, 2024, a copy of which is filed with the records of the Board as Exhibit 08/22/24C (Memorandum), recommends that the Board approve increasing the funding cap for the program from two hundred million dollars (\$200,000,000) to three hundred fifty million dollars (\$350,000,000) so that TVA may continue its efforts at CRN and as otherwise approved as part of the Program;

BE IT RESOLVED, That the Board of Directors hereby approves the recommendation as outlined in the Memorandum and specifically approves increasing the funding cap for the Program from \$200 million to \$350 million through FY 2026; and

RESOLVED further, That any TVA dollars to be spent on the Program must still be approved separately through the Board’s annual budget process; and

RESOLVED further, That the CEO or CEO’s designee shall update the Operations and Nuclear Oversight Committee on the Program no less than quarterly through the end of FY 2026; and

RESOLVED further, That the CEO or the CEO’s designee shall update the Board of Directors on the Program no less than annually through the end of Fiscal Year 2026.

**Approved by TVA Board of  
Directors  
August 22, 2024  
EA  
Assistant Secretary**

July 11, 2024

**ADVANCED REACTOR PROGRAM  
INCREASE FUNDING AUTHORIZATION REQUEST**

**Board of Directors****SUBJECT**

Recommend TVA Board approval, on the recommendation of the Operations and Nuclear Oversight Committee (ONOC), of an increase in Program funding for the TVA Advanced Reactor Development Program.

**BACKGROUND**

In December 2021, the Board of Directors, at the recommendation of the ONOC, notationally approved management's request to (a) fund up to two hundred million dollars (\$200,000,000) through FY 2024 for a program to: (1) perform design engineering, scoping, estimating, and planning associated with potential, future deployment of an advanced reactor (AR) at TVA's Clinch River Nuclear (CRN) site, (2) develop content for potential, future license application(s) to the Nuclear Regulatory Commission (NRC) for AR design(s) at CRN, (3) continue to study potential, future deployment of ARs of various designs at CRN, and (4) study potential future deployment of ARs of various designs at various sites in addition to CRN (the foregoing, the "**Program**"), and (b) delegated to TVA's Chief Executive Officer (CEO) the authority to enter into one or more contracts with one or more AR vendors and other entities, as necessary and appropriate to implement the Program. The Notational Board Approval of the Program and the related memorandum recommending approval are attached to this memorandum as Attachment 1.

Since 2021, TVA has taken active steps to implement the Program by, among other things, entering into the Technology Collaboration Agreement with GE-Hitachi (GEH), Ontario Power Generation, and Synthos Green Energy to support development of the standard design of the BWRX-300 technology, entering into other contracts with GEH to support the development of a Construction Permit Application (CPA) for the CRN site, and engaging with prospective architects, engineers, and manufacturers on a potential integrated project development framework in anticipation of a potential construction of a BWRX-300 at the CRN, subject to completion of all required legal and environmental reviews and further approvals from the Board. At this point, TVA has spent, or committed to spend, a total of \$200 million to implement the Program.

Additional funding authorization, through FY 2026 and subject to availability in TVA's annual budgets, is needed to continue the Program. Specifically, additional funding is needed to (1) complete the design of the GEH BWRX-300 Standard Plant Design under the Technology Collaboration Agreement and (2) finalize and submit the Construction Permit Application and support the subsequent review by the Nuclear Regulatory Commission. Limited additional project cost and schedule estimate work will be performed as well.

In addition to the background details provided in the memorandum dated November 15, 2021, it is important to note that TVA continues to explore the viability of AR technologies to support the energy system of the future. TVA is currently assessing the viability of ARs as part of its least-cost planning efforts through the integrated resource plan (IRP). Many federal, state, and local

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officials and other stakeholders have shown public support for TVA's leadership with new nuclear technologies, with the State of Tennessee creating a Nuclear Energy Advisory Council to position Tennessee as a national leader for nuclear energy innovation and advancement. Further, the federal government has implemented programs, through the Infrastructure Investment and Jobs Act (IIJA), Inflation Reduction Act (IRA), and other recent laws, to incentivize the development of new nuclear technologies in the United States.

While it is still too early to determine the feasibility of investing in the construction of a new AR at CRN, TVA's leadership in this area is important to continue to develop potential options to support a clean, reliable, resilient energy mix for the future. Additional funding to continue to perform design engineering, scoping, estimating, and planning associated with potential future deployment of ARs at CRN, and engage in other activities as authorized by the Program, will ensure that TVA maintains its leadership role and preserves options for future construction activities that would need to be separately approved by the Board.

The Board's approval of this request will merely increase the total cap that TVA management is authorized to spend on Program-related activities and helps ensure that the Board has oversight of TVA's research and development activities with respect to investments in new nuclear technologies. Any dollars that TVA actually spends on Program-related activities will require approval through TVA's annual budget process.

**ALTERNATIVE CONSIDERED**

In lieu of requesting approval of the additional funding authorization to support the Program, TVA management has considered the option of waiting for AR technologies to develop in the market without further TVA financial support or active participation. This option would result in certain abandoned investment and lost opportunity under the terms of the Technology Collaboration Agreement and would not preserve TVA's objective of having AR technology available for deployment at the CRN site by the 2030s. In addition, TVA's active involvement (and completion of a CPA through the NRC review process) best preserves TVA's long-term decarbonization and technology demonstration goals.

**CONCLUSION**

Increasing funding authorization for the Program to a total of \$350 million through FY 2026 will allow TVA to preserve the option of deploying at least one AR at CRN during the early 2030s, in alignment with TVA's near term decarbonization and technology demonstration goals.

**RECOMMENDED ACTION**

The COO and CNO request that the Board authorize the increased funding cap of \$350 million for the Program through FY 2026, as described above and in the Board Resolution, and otherwise reaffirm the CEO's authority to implement the Program in accordance with the Board's December 2021 approval.



Donald A. Moul  
Executive Vice President and  
Chief Operating Officer  
WT 7B-K



Timothy S. Rausch  
Executive Vice President and  
Chief Nuclear Officer  
LP 4A-C

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Attachments  
cc: John M. Thomas III, MR 6D-C

**REVIEWED AND APPROVED**



July 31, 2024

Edward C. Meade delegate for  
David B.Fountain  
Executive Vice President and  
General Counsel

Date



August 1, 2024

Jeffrey J. Lyash  
President and Chief Executive Officer

Date

**NOTATIONAL BOARD APPROVAL**

(Advanced Reactor Development Program – TVA Clinch River Site)

WHEREAS in December 2019, the U.S. Nuclear Regulatory Commission (NRC) issued a technology neutral Early Site Permit (ESP) to TVA for its Clinch River Nuclear Site, located in Roane County, Tennessee, and adjacent to the U.S. Department of Energy's Oak Ridge Reservation ("CRN"); and

WHEREAS a subset of advanced nuclear reactors (ARs) remains a viable option to meet TVA's increasing decarbonization priorities, and practicably be deployed in the 2030s; and

WHEREAS one of TVA's objectives in developing a new nuclear program is to pursue a nuclear technology that would evolve into a cost competitive energy technology; and

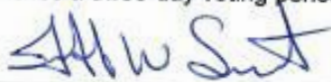
WHEREAS TVA's Nuclear Technology Innovation group has evaluated multiple AR technologies and has identified specific designs that represent viable AR options for potential, future deployment at CRN, within the ESP's parameters; and

WHEREAS AR vendors and other private entities, are willing to negotiate agreements to jointly fund development of one or more AR design(s); and

WHEREAS TVA is separately conducting a programmatic environmental impact statement, pursuant to the National Environmental Policy Act (NEPA) and associated regulations and guidance, assessing the potential environmental impacts associated with the construction, operation, and decommissioning of an advanced nuclear reactor technology park at CRN, which includes evaluating the feasibility of deploying multiple ARs at CRN; and

WHEREAS a confidential memorandum dated November 15, 2021, a copy of which is filed with the records of the Board as Exhibit \_\_\_\_\_ (Memorandum), recommends that the Board: (a) approve funding of up to two hundred million dollars (\$200,000,000) for a program to: (1) perform design engineering, scoping, estimating, and planning associated with potential, future deployment of an AR at CRN, (2) develop content for potential, future license application(s) to NRC for AR design(s), (3) continue to study potential, future deployment of ARs of various designs at CRN, and (4) study potential future deployment of ARs of various designs at various sites in addition to CRN (the foregoing, the "Program"), and (b) delegate to TVA's Chief Executive Officer (CEO) the authority to enter into one or more contracts with one or more AR vendors and other private entities, as necessary and appropriate to implement the Program;

WHEREAS based on the Memorandum, the Operations and Nuclear Oversight Committee recommends notational approval by the TVA Board of Directors (Board) of the proposed action, and the Chair of ONOC establishes a three-day voting period for the action;



Jeff W. Smith, Chair ONOC

WHEREAS this item is appropriate for notational approval consideration under criteria 1.b (Time Sensitive – "Fleeting Opportunity") and Criteria 2.c (Confidential – TVA's Proprietary/Confidential Information) of the Board Practice on "Notational Approvals;" and



Confidential Memorandum redacted