



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 27, 2013

Mr. Michael D. Skaggs  
Senior Vice President  
Nuclear Construction  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – ENVIRONMENTAL ASSESSMENT  
AND FINDING OF NO SIGNIFICANT IMPACT FOR EXTENSION OF  
CONSTRUCTION PERMIT (TAC NO. ME8738)

Dear Mr. Skaggs:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your May 17, 2012, request for an extension of the latest construction completion date for Construction Permit No. CPPR-92 to September 30, 2016. This assessment is being forwarded to the Office of the *Federal Register* for publication.

I can be reached at 301-415-2048 or at [Justin.Poole@nrc.gov](mailto:Justin.Poole@nrc.gov) if you have questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to be "JP", is written above the typed name of Justin C. Poole.

Justin C. Poole, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:  
As stated

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**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-391; NRC-20YY-XXXX]**

**Tennessee Valley Authority**

**Watts Bar Nuclear Plant, Unit 2**

**Environmental Assessment and Finding of No Significant Impact**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Environmental assessment and finding of no significant impact; issuance.

**ADDRESSES:** Please refer to Docket ID <NRC-20YY-XXXX> when contacting the NRC about the availability of information regarding this document. You may access information related to this document, which the NRC possesses and are publicly available, using any of the following methods:

- **Federal rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID <NRC-20YY-XXXX>. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov).

- **NRC's Agencywide Documents Access and Management System (ADAMS):**  
You may access publicly available documents online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search.](#)" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each

document referenced in this notice (if that document is available in ADAMS) is provided the first time that a document is referenced. The request to extend the construction permit expiration date, dated May 17, 2012, is available electronically under ADAMS Accession No.

**ML12143A346.**

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**SUPPLEMENTARY INFORMATION:**

**I. Introduction**

The U.S. Nuclear Regulatory Commission (NRC) is considering extending the latest construction completion date specified in Construction Permit No. CPPR-92 issued to Tennessee Valley Authority (permittee, TVA) for the Watts Bar Nuclear Plant (WBN), Unit 2. The facility is located at the permittee's site on the west branch of the Tennessee River approximately 50 miles northeast of Chattanooga, Tennessee. Therefore, as required by 10 CFR 51.21, the NRC performed an environmental assessment. Based on the results of the environmental assessment that follows, the NRC has determined not to prepare an environmental impact statement for the action of extending the completion date of the construction permit, and is issuing a finding of no significant impact.

## **II. Environmental Assessment**

### *Identification of the Proposed Action:*

The proposed action would extend the latest construction completion date of Construction Permit No. CPPR-92 from March 31, 2013, to September 30, 2016. TVA submitted the construction permit request by letter dated May 17, 2012 (ADAMS Accession No. ML12143A346). TVA submitted the request to extend the construction permit at least 30 days before the expiration of the existing permit, therefore, in accordance with 10 CFR 2.109(a), the existing construction permit will remain in effect until the NRC staff has completed the review of the request.

The proposed extension will not allow any work to be performed that is not already allowed by the existing construction permit. The extension will merely grant the permittee more time to complete construction in accordance with the previously approved construction permit.

### *The Need for the Proposed Action:*

The proposed action is necessary to give the permittee adequate time to complete construction of WBN Unit 2 given their latest estimate to completion. The construction permit for WBN Unit 2 was originally issued on January 23, 1973. The permit listed the earliest date for completing WBN Unit 2 as November 1, 1976, and the latest date for completion as May 1, 1977. The completion date of the WBN Unit 2 construction permit has been extended numerous times since 1977, mainly for construction delays.

In a July 14, 2000, letter, TVA confirmed that WBN Unit 2 met the NRC's definition of a deferred plant, as described in Generic Letter (GL) 87-15, "Policy Statement on Deferred Plants." By letter dated, August 3, 2007, and in accordance with the policy specified in GL 87-15, TVA informed the Commission of its intent to complete construction and licensing of WBN Unit 2 by April 1, 2012. TVA provided the information requested in GL 87-15, and also

informed the Commission that it would resume construction activities no sooner than December 3, 2007. These activities were within the scope of the construction permit, which was set to expire December 31, 2010. By letter dated May 8, 2008, TVA requested the construction permit completion date be extended from December 31, 2010, to March 31, 2013. The NRC granted the extension of the permit completion date by order dated July 7, 2008.

In March of 2012, TVA completed a detailed review of the status of WBN 2 construction and developed a revised estimate of the time necessary to complete the project. The results of the review came up with a completion range of September 2015 to June 2016, with the most likely date being December 2015. TVA is requesting September 30, 2016, to ensure the entire completion range is covered, including a few extra months in case of additional delay.

*Environmental Impacts of the Proposed Action:*

The environmental impacts associated with the construction of the facility have been previously discussed and evaluated in TVA's Final Environmental Statement for construction (FES-CP) of WBN, Units 1 and 2, issued on November 9, 1972 (ADAMS Accession No. ML073470580). Since TVA is a corporate agency of the Federal government, the Atomic Energy Commission (AEC), the precursor agency to NRC, agreed that TVA was the lead agency for preparing and circulating detailed environmental statements for TVA nuclear plants. TVA consulted with the AEC in preparing the environmental statement and incorporated AEC's comments and recommendations in the final environmental statement.

NRC staff evaluated the environmental impacts of construction and operation of this plant, issuing comments on TVA's FES-CP as part of its review. In December 1978, NRC staff issued NUREG-0498, "Final Environmental Statement Related to Operation of Watts Bar Nuclear Plant Units 1 and 2," (ADAMS Accession No. ML082540803) for the operating-license stage (FES-OL), which addressed environmental impacts of construction activities not

addressed previously in TVA's FES-CP. The activities included: (1) construction of the transmission route for the Watts Bar - Volunteer 500 kilovolt line, (2) construction of the settling pond for siltation control for construction runoff at a different location from that originally proposed in the FES-CP, and (3) the relocation of the blowdown diffuser from the originally proposed site indicated in the FES-CP. The staff addressed the terrestrial and aquatic environmental impacts in the FES-OL, as well as historic and archeological impacts, and concluded that the assessment presented in the FES-CP remains valid.

The NRC issued NUREG-0498, Supplement 1 (FES-95) in April 1995 (ADAMS Accession No. ML081430592) to re-evaluate the environmental issues before deciding to issue the operating license for WBN Unit 1. Environmental issues evaluated included changes to regional demography, natural resource use, meteorology, ecology, impacts to humans and the environment, severe accident mitigation design alternatives, and socioeconomic impacts, including environmental justice issues. The staff concluded that there were no significant changes to the environmental impacts discussed in the 1978 FES-OL due to changes in plant design or operation, or changes in the environment. Furthermore, the staff concluded that no additional impacts not previously discussed in the NRC's 1978 FES-OL related to construction of Unit 2 were expected.

On February 15, 2008, TVA submitted "Watts Bar Nuclear Plant (WBN) – Unit 2 – Final Supplemental Environmental Impact Statement [FSEIS] For the Completion and Operation of Unit 2," (ADAMS Accession No. ML080510469) to the NRC. This FSEIS was completed in June 2007, and was submitted in support of TVA's operating license application for WBN Unit 2. It also included TVA's evaluation of the environmental impacts of construction.

The NRC staff reviewed TVA's 2008 FEIS and in May 2013, the NRC issued NUREG-0498, Supplement 2 (FES-2013) (ADAMS Accession Nos. ML13144A092 – Vol. 1 and ML13144A039 – Vol. 2) to describe the environmental impacts associated with completing

construction and subsequently operating, WBN Unit 2. Additionally, FES-2013 covers issues that have changed since the publication of 1978 FES-OL, or were introduced subsequent to the publication of FES-95. Issues that were either not included in the previous versions of NUREG-0498, or issues that needed updating, include groundwater quality, public services, noise, socioeconomic impacts, severe accident mitigation alternatives, cultural and historical resources, environmental justice, greenhouse gas emissions, and cumulative impacts.

FES-2013 reviews the impacts on the environment of operating WBN Unit 2 and since the majority of environmentally disruptive activities have been completed, the findings in FES-2013 will bound any further environmental impacts as a result of construction activities. In FES-2013, the NRC staff concluded that the impacts from operation of WBN Unit 2 associated with water use, aquatic ecology, terrestrial resources, design basis accidents, socioeconomics, the radiological exposure and nonradiological wastes and effluents, decommissioning, air quality and land use are generally consistent with the impacts disclosed in the FES-OL, and FES-95 documents. The NRC staff concluded that impacts associated with operation of WBN Unit 2 on groundwater quality, public services, noise, transportation infrastructure, cultural and historical resources, greenhouse gas emissions, and severe accidents would be small. The staff also concluded that operation of the WBN Unit 2 would not result in disproportionately high and adverse human health or environmental effect to any of the minority and low-income communities near the WBN site. The NRC staff also considered the cumulative impacts from past, present, and reasonably foreseeable future actions. The NRC staff concluded that the potential cumulative impacts from the issues evaluated in FES-2013, with the exception of aquatic ecology, would be small. The staff concluded that the overall cumulative impact to the aquatic ecology from all past, present and future activities is large; however, the incremental impact from the operation of WBN Unit 2 would be minor and would not be noticeable in comparison.

The permittee has no plans to construct additional transmission lines or disturb any land not discussed in previous environmental reviews. Completed construction of WBN Unit 2 includes major structures such as the containment, turbine building, control building, and equipment such as the reactor pressure vessel, reactor coolant system piping, and steam generators. Installation of equipment shared with WBN Unit 1, such as diesel generators, was completed prior to issuance of the Unit 1 operating license in 1996. Therefore, most of the construction impacts discussed in the previous versions of environmental documents have already occurred. The remaining construction activities will take place within structures already completed. Therefore extending these types of construction activities an additional three and half years out from March 31, 2012, to September 31, 2016, as previously approved by order dated July 7, 2008, does not involve any different impacts or a significant change to those impacts described and analyzed in any of the previous environmental documents (FES-CP, FES-OL, FES-95, FES-2013).

Based on the foregoing, the NRC staff has concluded that the proposed action would have no significant environmental impact. Since this action would only extend the period of construction activities described in the FES, it does not involve any different impacts or a significant change to those impacts described and analyzed in any of the previous environmental documents (FES-CP, FES-OL, FES-95, FES-2013).

*Environmental Impacts of the Alternatives to the Proposed Action:*

A possible alternative to the proposed action would be to deny the request, or the no-action alternative. This alternative would result in expiration of the construction permit for Watts Bar, Unit 2. This option would require submittal of another application for construction in order to allow the permittee to complete construction of the facility with no significant



environmental benefit. The environmental impacts of the proposed action and alternative action are similar.

*Alternative Use of Resources:*

Since the permittee has no plans to construct additional transmission lines or disturb any land not discussed in previous environmental reviews, the construction of major structures such as the containment, turbine building, control building, intake pumping station, and equipment such as the reactor pressure vessel, reactor coolant system piping, and steam generators and diesel generators were already completed prior to issuance of the Unit 1 operating license in 1996, the remaining construction activities will take place within structures already completed. Spreading these activities across three and half more years does not involve the use of resources not previously considered in the environmental documents already discussed for Watts Bar, Units 1 and 2 (FES-CP, FES-OL, FES-95, FES-2013).

*Agencies and Persons Consulted:*

In accordance with its stated policy, on August 14, 2013, the staff consulted with officials from the State of Tennessee, including Anthony Hogan, Deputy Director of Radiological Health, Tennessee Department of Environment and Conservation, regarding the environmental impact of the proposed action. The State officials had no comments.

**III. Finding of No Significant Impact**

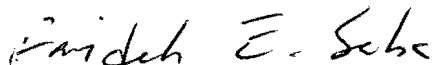
Based on the details provided in the environmental assessment, which is incorporated by reference, the NRC staff concludes that the proposed action of extending the latest construction completion date of Construction Permit No. CPPR-92 from March 31, 2013, to September 30, 2016, does not involve any different impacts or a significant change to those

impacts described and analyzed in the original environmental impact statement or its supplements. Therefore, the NRC staff has determined that extending the construction completion date will not have a significant effect on the quality of the human environment because the major construction activities have already occurred, and the work being extended out for three and half more years is within previously disturbed areas at the site within the existing structures. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

This finding and documents related to this action such as the permittee's request for extension dated May 17, 2012 (ADAMS Accession No. ML12143A346) and related environmental documents (FES-CP, FES-OL, FES-95, and FES-2013 (ADAMS Accession Nos. ML073470580, ML082540803, ML081430592, and ML13144A092 – Vol. 1/ML13144A039 – Vol. 2, respectively)), are available electronically at the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "Begin Web-based ADAMS Search."

Dated at Rockville, Maryland this 27<sup>th</sup> day of September 2013.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Farideh E. Saba".

Farideh E. Saba, Acting Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

September 27, 2013

Mr. Michael D. Skaggs  
Senior Vice President  
Nuclear Construction  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

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Sincerely,

/RA/

Justin C. Poole, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:

As stated

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**FRN ML13221A401**

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