



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

June 23, 2016

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3R-C  
Chattanooga, TN 37402-2801

**SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 – ENVIRONMENTAL ASSESSMENT  
AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO LICENSE  
AMENDMENT REQUEST TO REVISE TECHNICAL SPECIFICATION 4.2.1,  
“FUEL ASSEMBLIES” (CAC NO. MF6050)**

Dear Mr. Shea:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendment dated March 31, 2015, as supplemented on April 28, May 27, June 15, September 14, September 25, November 30, December 22, December 29, 2015, February 22, and March 31, 2016. The proposed amendment would revise Technical Specification (TS) 4.2.1, “Fuel Assemblies”; TS 3.5.1 “Accumulators”; Surveillance Requirement (SR) 3.5.1.4; TS 3.5.4, “Refueling Water Storage Tank”; and SR 3.5.4.3, to increase the maximum number of tritium producing burnable absorber rods and to delete outdated information related to the tritium production program.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in cursive script, reading "Jeanne A. Dion", is positioned above the typed name.

Jeanne A. Dion, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure:  
Environmental Assessment

cc w/encl: Distribution via Listserv

**ENCLOSURE**

**FEDERAL REGISTER NOTICE**

**NUCLEAR REGULATORY COMMISSION**

**Docket No. 50-390; NRC-2016-XXXX**

**Tennessee Valley Authority**

**Watts Bar Nuclear Plant, Unit 1**

**AGENCY:** Nuclear Regulatory Commission.

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

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is considering the issuance of an amendment to Facility Operating License No. NFP-90, issued February 7, 1996, and held by the Tennessee Valley Authority (TVA, the licensee) for the operation of Watts Bar Nuclear Plant (WBN), Unit 1. The proposed amendment would revise Technical Specification (TS) 4.2.1, "Fuel Assemblies"; TS 3.5.1 "Accumulators"; Surveillance Requirement (SR) 3.5.1.4; TS 3.5.4, "Refueling Water Storage Tank"; and SR 3.5.4.3, to increase the maximum number of tritium producing burnable absorber rods (TPBARs) and to delete outdated information related to the tritium production program. The NRC staff is issuing an environmental assessment (EA) and Finding of No Significant Impact (FONSI) associated with the proposed license amendment.

**DATES:** The Environmental assessment referenced in this document is available on [INSERT DATE OF PUBLICATION].

**ADDRESSES:** Please refer to Docket ID <INSERT: NRC-2016-XXXX> when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID <INSERT: NRC-20016-XXXX>. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection 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). For the convenience of the reader, the ADAMS accession numbers are provided in a table in the AVAILABILITY OF DOCUMENTS section of this document.

- **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.

**FOR FURTHER INFORMATION CONTACT:** Robert Schaaf, Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-6020, e-mail: [Robert.Schaaf@nrc.gov](mailto:Robert.Schaaf@nrc.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Introduction**

The NRC is considering issuance of an amendment to Facility Operating License No. NFP-90, issued to TVA for operation of the WBN, Unit 1, located in Rhea County, Tennessee. The proposed action would allow TVA to make changes to the TSs to increase the maximum number of TPBARs that can be irradiated, per cycle, in the WBN, Unit 1 core from 704 to 1,792. In accordance with National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*) and §51.21 of Title 10 of the *Code of Federal Regulations* (10 CFR), the NRC performed an EA. Based on the following EA, the NRC has concluded that the proposed actions will have no significant environmental impact, and is issuing a FONSI.

The U.S. Department of Energy (DOE) and TVA will cooperate in a program to produce tritium for the National Security Stockpile by irradiating TPBARs in the WBN, Unit 1 reactor core. Tritium is produced when the neutrons produced by nuclear fission in the core are absorbed by the lithium target material of the TPBAR. A solid zirconium metal cladding covering the TPBAR (called a "getter") captures the tritium produced. Most of the tritium is contained within the TPBAR, however, some tritium permeates through the TPBAR cladding and is released into the reactor coolant system.

By letter dated September 23, 2002, the NRC approved Amendment No. 40 to Facility Operating License No. NPF-90 for WBN, Unit 1. The amendment allowed TVA to irradiate up to 2,304 TPBARs in the WBN, Unit 1 reactor core each fuel cycle. This approval was based, in part, on NRC's approval of DOE topical report "Tritium Production Core Topical Report," NPD-98-181, dated July 30, 1998, revised February 10, 1999, which assumed that an average of 1 Curie (Ci) per year of tritium would be released from each TPBAR into the reactor coolant,

thereby establishing a design basis source term for impact evaluation of 2,304 Ci/year attributable to TPBARs.

Because of issues related to the reactor coolant boron concentration, and a higher than expected permeability of tritium from the TPBARs, the TVA requested, and the NRC approved, Amendment 48 to the WBN, Unit 1 operating license, issued October 8, 2003. Amendment 48 limited the number of TPBARs to be irradiated in WBN, Unit 1, fuel cycle number 6 to 240 TPBARs. Subsequently, a series of amendments limiting the number of TPBARs allowed to be loaded into the WBN, Unit 1, reactor core were reviewed and approved by the NRC. Currently, Amendment 77, issued May 4, 2009, limits the maximum loading of the WBN, Unit 1 reactor core to 704 TPBARs. This limit reflects the average tritium permeation of approximately 3.27 Ci/TPBAR/year experienced during TPBAR operations in fuel cycles 6 through 8, which limits the number of TPBARs that could be loaded without exceeding the original design basis source term of 2,304 Ci/year attributable to TPBARs.

The current request to allow core loadings up to 1,792 TPBARs will support TVA's ability to meet the DOE agreement and national security stockpile needs.

## **II. Environmental Assessment**

### *Description of the Proposed Action*

The proposed action would revise TS 4.2.1, "Fuel Assemblies"; TS 3.5.1 "Accumulators"; SR 3.5.1.4; TS 3.5.4, "Refueling Water Storage Tank"; and SR 3.5.4.3, to increase the maximum number of TPBARs and to delete outdated information related to the tritium production program.

The proposed action is in accordance with the licensee's application dated March 31, 2015, as supplemented by letters dated April 28, May 27, June 15, September 14, September 25, November 30, December 22, December 29, 2015, February 22, and March 31, 2016.

#### *Need for the Proposed Action*

The proposed action would allow WBN, Unit 1, to support the DOE, National Nuclear Security Administration, national security stockpile needs in accordance with Public Law (PL) 106-65. Section 3134 of PL 106-65 directs the Secretary of Energy to produce new tritium at TVA's Watts Bar power plant.

#### *Environmental Impacts of the Proposed Action*

The radiological and non-radiological impacts on the environment that may result from the proposed action are summarized below.

#### **Non-Radiological Impacts**

The proposed action would not change the types and amounts of any non-radiological liquid or gaseous effluents that may be released offsite. There would also be no physical changes to any structures or land use within the WBN site, and the proposed action would not impact air quality, water resources, or aquatic resources. In addition, the proposed action would not result in any socioeconomic or environmental justice impacts or impacts to historic and cultural resources.

Therefore, there would be no significant non-radiological environmental impacts to any resource or any irreversible and irretrievable commitments of resources.

## **Radiological Impacts**

### Radioactive Gaseous and Liquid Effluents and Solid Waste

WBN, Unit 1, includes waste treatment systems to collect, process, recycle, and dispose of gaseous, liquid, and solid wastes that contain radioactive material in a safe and controlled manner within NRC and U.S. Environmental Protection Agency's radiation safety standards. Implementation of the proposed action would result in an increase in the maximum number of TPBARs that can be irradiated, per cycle, in the WBN, Unit 1 core, from 704 to 1,792. This would affect the quantities of radioactive material generated during plant operations as some tritium permeates through the TPBAR cladding and is released into the reactor coolant system. The historical average observed TPBAR tritium permeation rate through cycle 12 is 3.4 Ci/TPBAR/year, with the maximum observed permeation rate being approximately 4.8 Ci/TPBAR/year. For the purposes of assessing the environmental impacts and regulatory compliance of its license amendment request, TVA assumed a core load of 1,900 TPBARs with a permeation rate of 5.0 Ci/TPBAR/year of tritium, which is a conservative source term that bounds the observed and maximum TPBAR tritium permeation rate. While the quantity of tritium generated during plant operations will increase under the proposed action, TVA has stated that the current radioactive waste treatment systems will be able to handle that increase.

### Radioactive Gaseous Effluents

WBN, Unit 1, maintains a gaseous waste management system (GWMS) that is designed to process and control the release of radioactive gaseous effluents into the environment in accordance with the requirements of 10 CFR 20.1301, "Dose limits for individual members of the public," and to ensure consistency with the as low as is reasonably achievable (ALARA) dose objectives set forth in Appendix I to 10 CFR Part 50.



As stated above relative to TVA's license amendment request, TVA assumed a core load of 1,900 TPBARs with a permeation rate of 5.0 Ci/TPBAR/year of tritium, which is a conservative source term that bounds the observed and maximum TPBAR tritium permeation rate. For its analysis of radioactive gaseous effluents, TVA assumed that 10 percent of the tritium is released as gaseous effluent.

To determine whether the gaseous effluents would fall within the requirements of 10 CFR 20.1301, TVA calculated the sum of the ratios of each isotope concentration (C) to its corresponding gaseous Effluent Concentration Limit (ECL, as listed in 10 CFR 20, Appendix B, Table 2, Column 1). Consistent with the requirements of 10 CFR 20.1302(b)(2)(i), a C/ECL sum of less than 1.0 indicates that the annual average effluent release is within the limits of 10 CFR 20.1301. Tables 8 and 9 of the license amendment request demonstrate that TVA's calculated C/ECL sums for gaseous effluent releases from an assumed core load of 1,900 TPBARs for containment purge without filtration would be  $3.15 \times 10^{-1}$  and would be  $2.73 \times 10^{-1}$  with continuous filtration. Both numbers are within the maximum C/ECL limit of 1.0.

To determine whether the gaseous effluents are consistent with the ALARA dose objectives set forth in Appendix I to 10 CFR Part 50, TVA calculated bounding public doses from the applicable plant effluent dose pathways with the tritium release attributable to TPBAR permeability. These doses were based on an assumed core load of 1,900 TPBARs and the methods and assumptions in the current WBN Offsite Dose Calculation Manual (ODCM), (documented in the "Watts Bar Nuclear Plant Unit 1, Annual Radioactive Effluent Release Report – 2014"). TVA calculated that the Whole Body dose to a Maximally Exposed Individual would be 0.55 millirem (mrem) (0.0055 millisievert (mSv)), which is much less than the Whole Body dose criterion in Appendix I to 10 CFR Part 50 of 5.00 mrem (0.05 mSv). TVA also calculated that the Organ Dose (Bone) to the Maximally Exposed Individual would be 10.6

mrem (0.106 mSv), which is less than the Organ dose criterion in Appendix I to 10 CFR Part 50 of 15.00 mrem (0.15 mSv).

The NRC staff finds that the TVA's analyses have demonstrated that WBN, Unit 1, can be operated with the proposed maximum core loading of 1,792 TPBARs and that the current GWMS can maintain the gaseous effluents within the Effluent Concentration Limits listed in 10 CFR Part 20 Appendix B to meet the dose limit requirements to members of the public in 10 CFR 20.1301, as well as maintain doses to the public ALARA dose objectives set forth in Appendix I to 10 CFR Part 50. Therefore, the NRC staff concludes that there would not be a significant radiological impact from gaseous effluents under the proposed action.

#### Radioactive Liquid Effluents

The WBN, Unit 1 liquid radioactive waste system (LRWS) is used to collect and process radioactive liquid wastes to reduce radioactivity and chemical concentrations to levels acceptable for discharge to the environment. The LRWS maintains sufficient processing capability so that liquid waste may be discharged to the environment below the regulatory limits of 10 CFR 20.1301 and consistent with the ALARA dose objectives in Appendix I to 10 CFR Part 50. WBN, Unit 1 has three large tanks in the LRWS, which includes a Tritiated Water Storage Tank with a capacity of 500,000 gallons. This tank supports managing large volume/high tritium concentrations in the reactor coolant system. These tanks can be used for liquid effluent holdup, dilution, and timing of releases to ensure that regulatory requirements are met. Release of radioactive liquids from the LRWS only occurs after laboratory analysis of the tank contents. If the activity is found to be above ODCM limits, the liquid waste streams are returned to the system for further processing by a mobile demineralizer. If the activity is found to be below the ODCM limits, the liquid waste stream is pumped to a discharge pipe where it is

monitored for radiation levels and flowrate before it enters the Cooling Tower Blowdown line, where it can be ultimately discharged into the Tennessee River.

As previously described, TVA assumed a core load of 1,900 TPBARs with a permeation rate of 5.0 Ci/TPBAR/year of tritium, which is a conservative source term that bounds the observed and maximum TPBAR tritium permeation rate. For its analysis of radioactive liquid effluents, TVA assumed that 90 percent of the tritium is released as liquid effluent.

To determine whether the liquid effluents are within the requirements of 10 CFR 20.1301, TVA calculated the sum of the ratios of each isotope concentration (C) to its corresponding liquid Effluent Concentration Limit (ECL as listed in 10 CFR Part 20, Appendix B, Table 2, Column 2). Consistent with the requirements of 10 CFR 20.1302(b)(2)(i), a C/ECL sum of less than 1.0 indicates that the annual average effluent release is within the limits of 10 CFR 20.1301. Tables 5 through 7 of the license amendment request supplement dated March 31, 2016, show TVA's calculated C/ECL sums for liquid effluent releases from an assumed core load of 1,900 TPBARs. Table 5 indicates that extended effluent releases, without processing the liquid radioactive waste streams through the mobile demineralizer or allowing for sufficient dilution of the radioactive waste stream, would not meet the regulatory requirements of 10 CFR 20.1301. The calculated C/ECL is 3.37, which is greater than the maximum allowable C/ECL of 1.0. To ensure that the effluent concentration limits of 10 CFR 20.1301 are met, TVA has revised Section 11.2.6.5 of the Final Safety Analysis Report to include the statement that "No untreated wastes are released unless they are below the Lower Limit of Detection." Table 6 of the license amendment request demonstrates that TVA's calculated C/ECL sum for liquid effluent releases processed through the mobile demineralizer would be  $5.7 \times 10^{-1}$ . Table 7 demonstrates that TVA's calculated C/ECL for liquid effluents not processed through the mobile

demineralizer, but sufficiently diluted before release, would be  $5.8 \times 10^{-1}$ . Both numbers are within the maximum C/ECL limit of 1.0.

To determine whether the liquid effluents are consistent with the ALARA dose objectives set forth in Appendix I to 10 CFR Part 50, TVA calculated bounding public doses from the applicable plant effluent dose pathways with the tritium release attributable to TPBAR permeability. These doses were based on an assumed core load of 1,900 TPBARs and the methods and assumptions in the current ODCM. TVA calculated that the Whole Body dose to a Maximally Exposed Individual from liquid effluents would be 0.43 mrem (0.0043 mSv), which is much less than the Whole Body dose criterion in Appendix I to 10 CFR Part 50 of 3.00 mrem (0.03 mSv). TVA also calculated that the Organ Dose (Liver) to the Maximally Exposed Individual from liquid effluents would be 0.57 mrem (0.0057 mSv), which is less than the Organ dose criterion in Appendix I to 10 CFR Part 50 of 10.00 mrem (0.15 mSv).

The NRC staff finds that the TVA analyses have demonstrated that WBN, Unit 1, can be operated with the proposed core loading of 1,792 TPBARs, and that with processing of the liquid radioactive waste streams through the demineralizer, or allowing for proper dilution of the liquid radioactive waste streams, the current LRWS can maintain the liquid effluents within the Effluent Concentration Limits listed in 10 CFR Part 20 Appendix B. Specifically, doses from liquid effluents would meet the requirements regarding members of the public in 10 CFR 20.1301 as well as maintain the public ALARA dose objectives set forth in Appendix I to 10 CFR Part 50. Therefore, the NRC staff concludes that there would not be a significant radiological impact from gaseous effluents under the proposed action.

#### Solid Radioactive Wastes

Solid radioactive wastes generated by nuclear power plant operations at WBN, Unit 1, are processed, packaged, and stored until they are shipped offsite to a vendor for further

processing or to a licensed facility for permanent disposal, or both. The storage areas have restricted access and shielding to reduce radiation rates to plant workers. Solid radioactive wastes are packaged and transported in compliance with NRC regulations in 10 CFR Parts 61, "Licensing Requirements for Land Disposal of Radioactive Waste," and 71, "Packaging and Transportation of Radioactive Material," and the U.S. Department of Transportation regulations in 49 CFR Parts 170 through 179; and to maintain the dose limits of 10 CFR 20.1201, 10 CFR 20.1301, and Appendix I to 10 CFR Part 50.

Implementation of the proposed action would be expected to increase the activity and volume of solid radioactive waste due to the irradiation of the TPBAR base plates and thimble plugs, which remain after TPBAR consolidation activities. TVA will consolidate and temporarily store these items on-site, and offsite shipment and ultimate disposal would be conducted in accordance with agreements between TVA and DOE. The disposal volume of the TPBAR base plates and thimble plugs is estimated to be 33.3 cubic feet per year. This additional volume represents a slight increase in the WBN, Unit 1, annual estimated solid waste generation from 32,820 cubic feet per year to 32,853 cubic feet per year. This projected increase in volume can be handled by the existing equipment and plant procedures that control radioactive solid waste handling without modification. The estimated increase in activity inventory attributable to the handling of the TPBAR base plates and thimble plugs ranges from approximately 1,800 Ci/yr to 5,530 Ci/yr. While there would be increased activity associated with implementation of the proposed action, the existing equipment and plant procedures that control radioactive solid waste handling will continue to be used to maintain exposures to plant personnel within the dose limits of 10 CFR 20.1201, 10 CFR 20.1301, and 10 CFR Part 50 Appendix I. Based on the above, the NRC staff concludes that there would not be a significant radiological impact from solid radioactive waste management under the proposed action.

### Spent Fuel Generation and Storage

The number of spent fuel bundles would be expected to increase by approximately four per cycle with implementation of the proposed action. WBN, Unit 1, currently stores spent fuel in spent fuel pools on site, and under 10 CFR 72.210, TVA holds a general license authorizing the operation of an Independent Spent Fuel Storage Installation (ISFSI) at the Watts Bar site. TVA has notified NRC of its intent to construct an ISFSI under the general license. There will be adequate spent fuel storage available on-site, therefore, the NRC staff concludes that there would not be a significant radiological impact from spent fuel generation and storage under the proposed action.

### Occupational Radiation Doses

At WBN, Unit 1, TVA maintains a radiation protection program to monitor radiation levels throughout the nuclear power plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses will remain within the dose limits of 10 CFR Part 20, Subpart C, "Occupational Dose Limits." Implementation of the proposed action would affect the quantities of radioactive material generated during plant operations since some tritium permeates through the TPBAR cladding and is released into the reactor coolant system, as previously described. Separate from the environmental review for this EA, the NRC staff is evaluating the licensee's technical and safety analyses provided in TVA's license amendment request to ensure the licensee continues to meet NRC regulatory requirements for occupational dose. The results of the NRC staff's safety review and conclusion will be documented in a safety evaluation that will be made publicly available following issuance of the EA. If the NRC staff concludes in the safety evaluation that the requested increase in the maximum number of TPBARs that can be irradiated, per cycle, in the WBN, Unit 1, core from 704 to 1,792 continues to comply with NRC regulations for occupational

dose, then granting the proposed license amendment will not have a significant radiological impact to workers.

#### Design-Basis Accidents

Design-basis accidents are evaluated by both TVA and the NRC staff to ensure that WBN, Unit 1, can withstand the spectrum of postulated accidents without undue hazard to public health and safety and ensure the protection of the environment.

Separate from the environmental review for this EA, the NRC staff is evaluating the licensee's technical and safety analyses provided in the proposed license amendment to ensure the licensee continues to meet the NRC regulatory requirements for safe operation. The results of the NRC staff's safety review and conclusion will be documented in a safety evaluation that will be made publicly available following issuance of the EA. If the NRC staff concludes in the safety evaluation that the requested increase in the maximum number of TPBARs that can be irradiated, per cycle, in the WBN, Unit 1, core continues to comply with NRC regulations, and there is reasonable assurance that public health and safety will not be endangered, then granting the proposed license amendment will not have a significant environmental impact.

#### Radiological Impacts Summary

Based on the radiological evaluations associated with this EA, with the exception of the impacts associated with occupational dose and design-basis accidents, which the NRC staff are evaluating separately, implementation of the proposed action would not result in any significant radiological impacts. If the NRC staff concludes in its safety evaluation that the requested increase in the maximum number of TPBARs that can be irradiated, per cycle, in the WBN, Unit 1, core continues to comply with NRC regulations, and there is reasonable assurance that public health and safety will not be endangered, then granting the proposed license amendment will not have a significant radiological impact to workers or the environment.

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

As an alternative to the proposed action, the NRC staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the license amendment request would result in no change in current environmental impacts.

### *Alternative Use of Resources*

This action does not involve the use of any different resources not previously considered in NUREG-0498, “Final Environmental Statement Related to Operation of Watts Bar Nuclear Plant Units Nos. 1 and 2,” and NUREG-0498, Supplement 1.

### *Agencies and Persons Consulted*

In accordance with its stated policy, on May 13, 2016, the staff consulted with the State of Tennessee official, regarding the environmental impact of the proposed action. The state official concurred with the EA and finding of no significant impact.

## **III. Finding of No Significant Impact**

The NRC is considering the issuance of an amendment to Facility Operating License No. NFP-90, issued February 7, 1996, and held by TVA for the operation of WBN, Unit 1. The proposed amendment would revise TS 4.2.1, “Fuel Assemblies”; TS 3.5.1 “Accumulators”; SR 3.5.1.4; TS 3.5.4, “Refueling Water Storage Tank”; and SR 3.5.4.3, to increase the maximum number of tritium producing burnable absorber rods and to delete outdated information related to the tritium production program.



As previously discussed, the proposed license amendment would not result in any significant radiological or non-radiological environmental impacts, therefore the NRC has concluded that a Finding of No Significant Impact is appropriate. The NRC's EA, included in Section II of this document, is incorporated by reference into this finding.

On the basis of the EA, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has concluded that an environmental impact statement is not necessary for the evaluation of the proposed action.

#### **IV. Availability of Documents**

The following table identifies the environmental and other documents cited in this document. These documents are available for public inspection online through ADAMS at <http://www.nrc.gov/reading-rm/adams.html> or in person at the NRC's PDR as previously described.

<b>DOCUMENT</b>	<b>DATE</b>	<b>ADAMS ACCESSION NO.</b>
NUREG-0498 - Final Environmental Statement Related to Operation of Watts Bar Nuclear Plant, Units 1 and 2.	12/1978	ML082540803
NUREG-0498 - Final Environmental Statement Related to the Operation of Watts Bar Nuclear Plant, Units 1 and 2, Supplement 1.	4/1995	ML081430592
Amendment No. 8 - Authorized irradiation of 32 lead Test Assembly tritium-producing burnable absorber rods (TPBARs) during Cycle 2.	9/15/1997	ML020780128
Department of Energy NPD-98-181, Tritium Production Core Topical Report.	2/8/1999	ML16077A093

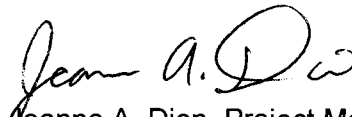
Amendment No. 40 - Authorized loading up to 2,304 TPBARs.	9/23/2002	ML022540925
Environmental Assessment for Amendment No. 40, 67 FR54926	8/26/2002	ML022320905
Amendment No. 48 - Authorized irradiation of 240 TPBARs during Cycle 6.	10/8/2003	ML032880062
Amendment No. 67 - Authorized loading of 400 TPBARs during Cycle 9.	1/18/2008	ML073520546
Amendment No. 77 - Authorized an increase in the maximum number of TPBARs from 400 to 704.	5/4/2009	ML090920506
Department of Energy Final Supplemental Environmental Impact Statement for the Production of Tritium in a Commercial Light Water Reactor. DOE/EIS-0288-S1	2016	<a href="http://energy.gov/nepa/downloads/eis-0288-s1-epa-notice-availability-final-supplemental-environmental-impact-statement">http://energy.gov/nepa/downloads/eis-0288-s1-epa-notice-availability-final-supplemental-environmental-impact-statement</a>
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies."	3/31/2015	ML15098A446
TVA letter to NRC, Correction to Application to Revise Technical Specification 4.2.1, "Fuel Assemblies."	4/28/2015	ML15124A334
"Watts Bar Nuclear Plant Unit 1, Annual Radioactive Effluent Release Report - 2014"	5/1/2015	ML15121A826
NRC letter to TVA, Watts Bar Nuclear Plant, Unit 1 - Supplemental Information Needed for Acceptance of Requested Licensing Action Regarding Application to Increase Tritium Producing Absorbing Rods (TAC No. MF6050).	5/14/2015	ML15127A250
TVA letter to NRC, Response to NRC Request to Supplement the Application to Revise Technical Specification 4.2.1, "Fuel Assemblies."	5/27/2015	ML15147A611
TVA letter to NRC, Response to NRC Request to Supplement Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) - Radiological Protection and Radiological Consequences.	6/15/2015	ML15167A359

TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) (TAC No. MF6050) - Response to NRC Request for Additional Information - Reactor Systems Branch.	9/14/2015	ML15258A204
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) – Response to NRC Request for Additional Information – Radiation Protection and Consequence Branch.	9/25/2015	ML15268A568
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03)(TAC No. MF6050) – Response to NRC Request for Additional Information – Nuclear Performance and Code Review Branch.	11/30/2015	ML15335A468
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) (TAC No. MF6050) - Response to NRC Request for Additional Information - Radiation Protection and Consequence Branch.	12/22/2015	ML16054A661
NRC letter to TVA, Audit Report Related to License Amendment Request to Revise Technical Specification 4.2.1, "Fuel Assemblies" (CAC No. MF6050).	12/23/2015	ML15345A424
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) – Supplemental Information Related to the Onsite Regulatory Audit at Pacific Northwest National Laboratory.	12/29/2015	ML16004A161
TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) (TAC No. MF6050) - Supplement to Response to NRC Request for Additional Information - Radiation Protection and Consequence Branch.	2/22/2016	ML16053A513

TVA letter to NRC, Application to Revise Technical Specification 4.2.1, "Fuel Assemblies" (WBN-TS-15-03) (TAC No. MF6050) - Radioactive Waste System Design Basis Source Term Supplement to Response to NRC Request for Additional Information - Radiation Protection and Consequence Branch.	3/31/2016	ML16095A064
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Dated at Rockville, Maryland, this 23<sup>rd</sup> day of June 2016.

For the Nuclear Regulatory Commission.



Jeanne A. Dion, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

June 23, 2016

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3R-C  
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 – ENVIRONMENTAL ASSESSMENT  
AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO LICENSE  
AMENDMENT REQUEST TO REVISE TECHNICAL SPECIFICATION 4.2.1,  
“FUEL ASSEMBLIES” (CAC NO. MF6050)

Dear Mr. Shea:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendment dated March 31, 2015, as supplemented on April 28, May 27, June 15, September 14, September 25, December 22, December 29, 2015, February 22, and March 31, 2016. The proposed amendment would revise Technical Specification (TS) 4.2.1, “Fuel Assemblies”; TS 3.5.1 “Accumulators”; Surveillance Requirement (SR) 3.5.1.4; TS 3.5.4, “Refueling Water Storage Tank”; and SR 3.5.4.3, to increase the maximum number of tritium producing burnable absorber rods and to delete outdated information related to the tritium production program.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

Jeanne A. Dion, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure:  
Environmental Assessment

cc w/encl: Distribution via Listserv

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**ADAMS Accession Nos. Letter: ML16138A020**

**EA FRN: ML16138A045**

OFFICE	NRR/DORL/LPL3-2/PM	NRR/DORL/LPL3-2/PM	NRR/DORL/LPL2-2/LA	NRR/DLR/RERB/BC
NAME	JHauser	JDion	BClayton	JDanna
DATE	5/25/2016	5/31/2016	5/20/2016	6/03/2016
OFFICE	OGC	NRR/DORL/LPL2-2/BC(A)	NRR/DORL/LPL3-2/PM	
NAME	VHoang	TOrf	JDion	
DATE	6/15/2016	6/17/2016	6/23/2016	

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