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April 20, 2021

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 1 & Unit 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: **Watts Bar Nuclear Plant - Annual Non-Radiological Environmental
Operating Report - 2020**

In accordance with Section 5.4.1, "Routine Reports," of Appendix B, "Environmental Protection Plan (Non-Radiological)," to the Watts Bar Nuclear Plant (WBN) Units 1 and 2 Operating Licenses, enclosed is the 2020 Annual Non-Radiological Environmental Operating Report for WBN. This report is required to be submitted to the Nuclear Regulatory Commission (NRC) within 90 days following the anniversary of the issuance of the WBN Unit 1 operating license (i.e., February 7, 1996). This report addresses the period from February 7, 2020 through February 6, 2021.

There are no new regulatory commitments in this letter. If you have any questions concerning this matter, please contact Michael Brown, WBN Licensing Manager, at (423) 365-7720.

Respectfully,

A handwritten signature in black ink, appearing to read 'Anthony L. Williams IV', is written over a large, stylized, looping flourish.

Anthony L. Williams IV
Site Vice President
Watts Bar Nuclear Plant

U.S. Nuclear Regulatory Commission
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Enclosure:

Tennessee Valley Authority Watts Bar Nuclear Plant Annual Non-Radiological
Environmental Operating Report February 7, 2020 through February 6, 2021

cc:(w/ Enclosure)

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRC Project Manager - Watts Bar Nuclear Plant
U.S. Fish and Wildlife Service

ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT**

**Annual Non-Radiological Environmental Operating Report
February 7, 2020 through February 6, 2021**



TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**ANNUAL NON-RADIOLOGICAL
ENVIRONMENTAL OPERATING
REPORT**

FEBRUARY 7, 2020 THROUGH FEBRUARY 6, 2021

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I. INTRODUCTION

The Tennessee Valley Authority (TVA) Watts Bar Nuclear Plant (WBN) Annual Non-Radiological Environmental Operating Report is provided for the period of February 7, 2020 through February 6, 2021. This report was prepared in accordance with Appendix B to facility operating licenses NPF-90 and NPF-96, "Environmental Protection Plan (EPP)," Section 5.4.1, "Routine Reports." This report includes a summary of:

- A. Reports previously submitted as specified in the WBN National Pollutant Discharge Elimination System (NPDES) Permit Number TN0020168.
- B. All special reports submitted per EPP Sections 4.1 (Unit 1 (U1)) or 3.0 (Unit 2 (U2)), "Environmental Monitoring."
- C. All EPP noncompliances and the corrective actions taken to remedy them.
- D. Changes made to applicable state and federal permits and certifications.
- E. Changes in station design or operation that could involve a significant environmental impact or changes to the findings of the Final Environmental Statement (FES).
- F. Non-routine reports submitted per EPP Section 5.4.2 (Both U1 and U2), "Nonroutine Reports"
- G. Changes in the approved EPP.

II. REPORTS PREVIOUSLY SUBMITTED AS SPECIFIED IN THE WBN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

The following reports were submitted as specified in the WBN NPDES Permit Number TN0020168 and the Tennessee Storm Water Multi-Sector General Permit (TMSP) Numbers TNR051343 and TNR050000:

- A. As required by the NPDES permit, Discharge Monitoring Reports (DMRs) were completed and submitted monthly to the Tennessee Department of Environment and Conservation (TDEC) no later than 15 days after the completion of the reporting period.
- B. WBN submitted to the TDEC the "Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone for "Winter 2019" and "Summer 2020". As summarized in the reports, the compliance surveys confirm the adequacy of the passive mixing zone and the adequacy of the thermal model to evaluate the operation of Outfall 113.
- C. The annual Biocide/Corrosion Treatment Report was completed and submitted to TDEC prior to the February 15, 2021 deadline.

II. REPORTS PREVIOUSLY SUBMITTED AS SPECIFIED IN THE WBN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (continued)

- D. The annual sampling and analysis required by the 2018 TMSP for storm water was performed and the annual reports were submitted to the TDEC within 30 days after the sample results were obtained.
- E. DMR Quality Assurance (QA) Laboratory Performance Evaluation Study 40 was completed by and submitted to Environmental Resource Associates, the TDEC, and the Environmental Protection Agency (EPA) prior to the November 20, 2020 deadline. The analysis performed and reported by our contract analytical laboratories were “Acceptable”.

III. SPECIAL BIOLOGICAL MONITORING REPORTS

- A. EPP Sections 4.1.1 (U1) or 3.1 (U2), “Aquatic Monitoring”
 - 1. Routine semi-annual Whole Effluent Toxicity (WET), a.k.a. chronic biotoxicity tests, were conducted on plant effluents and the appropriate reports were submitted as part of the DMR for Outfall Serial Numbers (OSNs) 101 and 113 as required by the NPDES permit. OSN 101 was sampled in June and October, and OSN 113 was tested July and October 2020. Separate testing dates were required as WBN was unable to sample OSN 113 during the Spring sampling event as the SCCW was isolated due to a U2 forced outage. All TVA test results were valid for all sampling outfalls, dates, and for both IC25 tests (*P. promelas* and *C. dubia*).
 - 2. A report on the “Biological Monitoring of the Tennessee River near the Watts Bar Nuclear Plant 2020” is not required in accordance with Part III, Section I of the WBN NPDES Permit, but was a recommendation in the “Watts Bar Nuclear Plant Supplemental Condenser Cooling Water System Fish Monitoring Program, 2001” report to be consistent with other required annual reporting programs at Tennessee and Alabama nuclear plants. TVA determined in January 2013 that these reports, or an equivalent, would be submitted with the permit renewals versus the historical annual basis (last submitted December 29, 2015 as a component of the NPDES permit renewal application).
 - 3. In accordance with the provisions of Tennessee Code Annotated Section 69-7-301 et seq., the Water Resources Information Act, WBN submitted the Water Withdrawal Registration Form for Calendar Year (CY) 2020 to the TDEC prior to the February 15, 2021 deadline. Although federal agencies are not subject to laws and regulations promulgated by state governments unless Congress has clearly waived the federal government’s sovereign immunity, in 2003 TVA voluntarily agreed as a matter of policy to provide the registration information in order to assist both TVA and TDEC in carrying out their water management responsibilities.

III. SPECIAL BIOLOGICAL MONITORING REPORTS (continued)

4. On September 9, 2020, the Tennessee Department of Environment and Conservation (TDEC) performed a Compliance Evaluation Inspection (CEI). The purpose of the inspection was to evaluate the site's compliance with the terms and conditions of the site's National Pollutant Discharge Elimination System (NPDES) permit, NPDES Permit TN0020168 and its Tennessee Multi-sector Permit (TMSP), NPDES Permit Tracking Number TNR051343. No violations were noted.

B. EPP Section 4.1.2 (U1 Only), "Maintenance of Transmission Line Corridors"

Listed below are the 500 kV transmission lines associated with WBN and information regarding the maintenance that was performed on each line:

500 kV Line Identifier	Maintenance Performed
Bull Run - Watts Bar (Note Below)	No chemical or herbicide was utilized on these lines within the period.
Watts Bar - Roane	No chemical or herbicide was utilized on these lines within the period.
Watts Bar - Volunteer	The following methods were used to treat the 42.5 acres: A product of 80 gallons of Rodeo and Arsenal Solution was used to treat 42.5 acres (10 gallons of solution per acre).
Watts Bar - Sequoyah 1 (Note Below)	No chemical or herbicide utilized on these lines within the period.
Watts Bar - Sequoyah 2 (Note Below)	No chemical or herbicide utilized on these lines within the period.
<p>Note: The transmission line designated as Bull Run - Sequoyah in previous versions of this report has been split into the following transmission lines: 1) Watts Bar - Sequoyah 1, and 2) Bull Run - Watts Bar.</p>	

IV. ENVIRONMENTAL PROTECTION PLAN NONCOMPLIANCES

WBN received zero Notice of Violations (NOVs) from February 2020 to February 2021.

In accordance with the NPDES permit, the following noncompliances were reported to the TDEC.

- A. The IMP 103 Oil and Grease results for samples both collected on June 9th were averaged (21.7 mg/L and < 5.38 mg/L) as required by the permit to calculate a daily value. TVA believes the first sample result is due to lab error and not representative of plant operations. Pace Analytical investigated the cause and determined that the sample may have been inadvertently contaminated during the weighing process. Oil and Grease by EPA Method 1664 is a gravimetric procedure which uses hexane to extract material from acidified samples. Results are determined by calculation of initial and final sample weight. False positives may be obtained if contaminants are introduced into the weigh pan during analysis.

V. CHANGES MADE TO APPLICABLE STATE AND FEDERAL PERMITS AND CERTIFICATIONS

- A. NPDES Permit Number TN 0020168

No changes were made to the NPDES Permit during this time period.

- B. Air Permit Number 463822

No changes were made to the Air Permit during this time period.

VI. CHANGES IN FACILITY DESIGN OR OPERATION

In accordance with EPP Section 3.1 (U1) or 5.3 (U2), "Plant Design and Operation," facility design and operational changes were reviewed for potential effect on the environment as described below. A review of facility design and operational changes proposed from February 7, 2020, through February 6, 2021, was performed. Projects considered as having potential impact on the environment included those that:

- Could have caused waste stream generation/alteration.
- Required the acquisition/modification of permits.
- Involved the use of hazardous material.
- Required physical construction.

The review, performed in accordance with the guidelines of TVA's National Environmental Policy Act (NEPA) Program, documented that design and operational changes did not involve an unreviewed environmental question. The following criteria were used to identify those projects with a potential for environmental effects:

- A. Waste stream generation/alteration:
Air, Hazardous Waste, Solid Waste, Polychlorinated Biphenyls, Asbestos, or Wastewater.

VI. CHANGES IN FACILITY DESIGN OR OPERATION (continued)

- B. Permit Acquisition/Modification:
NPDES, Air, Inert Landfill, or Other.
- C. Hazardous Materials:
Hazardous Materials that are environmentally unfriendly and are likely to generate a Resource Conservation and Recovery Act (RCRA) hazardous or Toxic Substances Control Act (TSCA) waste.
- D. Physical Construction Involved:
Erosion/Sedimentation Effects, Transportation Effects, Noise Effects, Groundwater Effects, Surface Water Effects, Floodplain Effects, Wetland Effects, Prime Farmland Effects, Unique Natural Features Effects, Aquatic Ecology Effects, Terrestrial Ecology Effects, Protected Species Effects, Sensitive Habitat Effects, Visual Effects, Historical, Cultural and Archeological Effects, Changes in Site Land Use, or Controversy.
- E. Temporary Alterations:
There were no temporary alterations conducted during this period that met the environmental impact criteria.

Design and Operational Changes

Most of the design and operational changes conducted during this period did not meet the environmental impact criteria. There were 11 facility design and operational changes made during this reporting period with a potential impact on the environment. The appropriate environmental reviews were completed and all changes were found to be within the scope of existing environmental permits and in compliance with NEPA regulations.

The following Environmental Assessments (EAs) written to document the review of site changes are as follows:

No EAs were issued during this reporting period.

VI. CHANGES IN FACILITY DESIGN OR OPERATION (continued)

Those Categorical Exclusion Checklists (CECs) written to document the review of site changes are as follows:

(1)	42435	WBN North Portal Vehicle Barrier Replacement
(2)	42553	WBN Multipurpose Building Construction
(3)	43107	Groundwater Investigation Due to Elevated Tritium Levels at MW-09 Area
(4)	43188	WBN Makeup Water Treatment Plant (MWTP) Dedicated Water Source
(5)	43241	WBN New Fire Hall Construction
(6)	43249	Recycle Abandoned Rail Line
(7)	43301	WBN Roadway Paving
(8)	43466	WBN Abandoned Railway Line Removal
(9)	43468	WBN U1 Low Pressure Turbine A and B Replacement
(10)	43925	WBN Condenser Circulating Water (CCW) System Chemical Treatment
(11)	44662	WBN Tritiated Water Storage Tank (TWST) and Liquid Radwaste Processing System Modifications

All other facility design and operational changes made during this reporting period with a potential impact on the environment were found to be within the scope of existing environmental permits and in compliance with regulations.

In summary, there were no facility designs or operational changes from February 7, 2020 to February 6, 2021, which resulted in an unreviewed environmental question.

VII. NON-ROUTINE REPORTS

No non-routine reports for EPP Section 5.4.2 (Both U1 and U2) were issued during this reporting period.

VIII. CHANGES IN APPROVED ENVIRONMENTAL PROTECTION PLAN SPECIFICATIONS

No changes were made to the WBN operating license, Appendix B, EPP during the reporting period.