



Tennessee Valley Authority, Post Office Box 200, Spring City, Tennessee 37381-2000

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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001


Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

Subject: **Watts Bar Nuclear Plant Unit 1 - Annual Non-Radiological
Environmental Operating Report - 2014**

In accordance with Section 5.4.1 of Appendix B, "Environmental Protection Plan (EPP)," of the Watts Bar Nuclear Plant (WBN) Operating License, enclosed is the 2014 Annual Non-Radiological Environmental Operating Report for WBN. This report addresses the period from February 7, 2014 through February 6, 2015.

There are no new regulatory commitments in this letter. If you have any questions concerning this matter, please contact Gordon Arent, WBN Licensing Director, at (423) 365-2004.

Respectfully,


K. T. Walsh
Site Vice President
Watts Bar Nuclear Plant

Enclosure:
Annual Non-Radiological Environmental Operating Report - 2014

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May 11, 2015

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TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**ANNUAL NON-RADIOLOGICAL
ENVIRONMENTAL OPERATING
REPORT**

FEBRUARY 7, 2014 THROUGH FEBRUARY 6, 2015

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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, 2014 through February 6, 2015. This report was prepared in accordance with Appendix B to facility operating license NPF-90, "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 Section 4.1, "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 4.2, "Unusual or Important Environmental Events."
- 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. The "Summer 2014" and the "Winter 2014 Compliance Surveys for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone" are pending completion by TVA's River Management organization with subsequent submittal to TDEC.
- C. The annual Biocide/Corrosion Treatment Report was completed and submitted to TDEC prior to the February 15, 2015 deadline.
- D. The annual sampling and analysis required by the 2014 TMSP for storm water was performed and the annual report was submitted to TDEC prior to the March 31, 2015 deadline.

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

- E. DMR Quality Assurance (QA) Laboratory Performance Evaluation Study 34 was completed by and submitted to Environmental Resource Associates, the TDEC, and the Environmental Protection Agency (EPA) prior to the August 29, 2014 deadline. All analyte performance evaluations were acceptable.

III. SPECIAL BIOLOGICAL MONITORING REPORTS

A. EPP Section 4.1.1, "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, in May and October 2014 as required by the NPDES permit. All TVA test results were valid for all sampling outfalls and dates and for both IC25 tests (*P. promelas* and *C. dubia*).
2. An annual report on the "Biological Monitoring of the Tennessee River near the Watts Bar Nuclear Plant 2012", indicating no adverse impact to aquatic life due to WBN operation, will be submitted to the TDEC with the NPDES permit renewal. This report 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 would be submitted with the permit renewals versus the historical annual basis.
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) 2014 to the TDEC prior to the February 15, 2015 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)

B. EPP Section 4.1.2, "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)	There was not any Chemical or Herbicide utilized on these lines within the period.
Watts Bar - Roane	<p>08/15/2014 - The following methods were used to treat the 59.39 acres (Meigs County)</p> <ol style="list-style-type: none"> Mix 1 - 270 gallons <ul style="list-style-type: none"> Accord XRT II - 13.5 gallons Milestone VM - 0.68 gallons Aqufact - 2.03 gallons Bullseye - 0.27 gallons Lineage Clearstand - 102.60 ounces Water - 253.53 gallons Mix 2 - 10 gallons <ul style="list-style-type: none"> Rodeo - 0.40 gallons Polaris - 0.08 gallons Aqufact - 0.10 gallons Water - 9.43 gallons Mix 3 - 0 gallons - 1 Machette <p>08/18/2014 - The following methods were used to treat the 9.6 acres (Roane County)</p> <ol style="list-style-type: none"> Mix 1 - 140 gallons <ul style="list-style-type: none"> Accord XRT II - 7.00 gallons Milestone VM - 0.35 gallons Aqufact - 1.05 gallons Bullseye - 0.14 gallons Lineage Clearstand - 53.20 ounces Water - 131.46 gallons Mix 2 - 10 gallons <ul style="list-style-type: none"> Rodeo - 0.40 gallons Polaris - 0.08 gallons Aqufact - 0.10 gallons Water - 9.43 gallons

500 kV Line Identifier	Maintenance Performed
Watts Bar - Roane (continued)	3. Mix 3 - 2 gallons <ul style="list-style-type: none"> • Accord XRT II - 1.33 gallons • Milestone VM - 0.07 gallons • Aqufact - 0.20 gallons • Bullseye - 0.03 gallons • Water - 0.37 gallons
Watts Bar - Volunteer	There was not any Chemical or Herbicide utilized on these lines within the period.
Watts Bar - Sequoyah 1 (Note Below)	There was not any Chemical or Herbicide utilized on these lines within the period.
Watts Bar - Sequoyah 2	08/28/2014 - The following methods were used to treat the 91.82 acres (Meigs County) <ol style="list-style-type: none"> 1. Mix 1 - 100 gallons <ul style="list-style-type: none"> • Rodeo - 3.10 gallons • Capstone VM Plus - 0.25 gallons • Aqufact - 1.00 gallon • Escort XP - 3.00 ounces • Water - 94.90 gallons 2. Mix 2 - 0 gallons - 1 Machette 3. Mix 3 - 0 gallons 08/29/2014 - The following methods were used to treat the 120.55 acres (McMinn County) <ol style="list-style-type: none"> 1. Mix 1 - 70 gallons <ul style="list-style-type: none"> • Rodeo - 2.17 gallons • Capstone VM Plus - 0.18 gallons • Aqufact - 0.70 gallons • Escort XP - 2.10 ounces • Water - 66.43 gallons 2. Mix 2 - 0 gallons - 1 Machette 3. Mix 3 - 0 gallons

500 kV Line Identifier	Maintenance Performed
Watts Bar - Sequoyah 2 (continued)	<p>08/30/2014 - The following methods were used to treat the 54.55 acres (McMinn County)</p> <ol style="list-style-type: none"> 1. Mix 1 - 50 gallons <ul style="list-style-type: none"> • Rodeo -1.55 gallons • Capstone VM Plus - 0.13 gallons • Aqufact - 0.50 gallons • Escort XP - 1.50 ounces • Water - 47.45 gallons 2. Mix 2 - 0 gallons - 1 Machette 3. Mix 3 - 0 gallons
	<p>09/02/2014 - The following methods were used to treat the 60.45 acres (McMinn County)</p> <ol style="list-style-type: none"> 1. Mix 1 - 150 gallons <ul style="list-style-type: none"> • Rodeo - 4.65 gallons • Capstone VM Plus - 0.38 gallons • Aqufact - 1.50 gallons • Escort XP - 4.50 ounces • Water - 142.35 gallons 2. Mix 2 - 1 gallon <ul style="list-style-type: none"> • Rodeo - 0.39 gallons • Polaris - 0.06 gallons • Capstone VM Plus - 0.02 gallons • Aqufact - 0.00 gallons • Water - 0.53 gallons 3. Mix 3 - 0 gallons

500 kV Line Identifier	Maintenance Performed
<p>Watts Bar - Sequoyah 2 (continued)</p>	<p>09/03/2014 - The following methods were used to treat the 422 acres (Bradley County)</p> <ol style="list-style-type: none"> 1. Mix 1 - 280 gallons <ul style="list-style-type: none"> • Rodeo - 8.68 gallons • Capstone VM Plus - 0.70 gallons • Aquafact - 2.80 gallons • Escort XP - 8.40 ounces • Water - 265.72 gallons 2. Mix 2 - 1 gallon <ul style="list-style-type: none"> • Rodeo - 0.39 gallons • Polaris - 0.06 gallons • Capstone VM Plus - 0.02 gallons • Aquafact - 0.00 gallons • Water - 0.53 gallons 3. Mix 3 - 6 gallons <ul style="list-style-type: none"> • Rodeo - 0.24 gallons • Polaris - 0.05 gallons • Aquafact - 0.06 gallons • Water - 5.66 gallons
<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

On June 16, 2014, the TDEC conducted a NPDES Compliance Evaluation Inspection (CEI). The CEI was scheduled for two days, then reduced to one day as no issues were identified. The TDEC reviewed NPDES and storm water records, and conducted physical inspections of each NPDES and storm water outfall. They were very pleased with the organization of the records and the Best Management Practices at the site.

WBN received zero Notice of Violations (NOV) from February 2014 to February 2015. In accordance with the NPDES permit, the following noncompliances were reported to the TDEC.

- A. WBN reported to TDEC on the applicable DMRs that due to a temporary power outage for the flow meter and erroneous low flows of zero, OSN 103 flows were calculated for the months of February through October 2014.
- B. Due to an issue with the temperature sensor, temperature grab samples were obtained at OSN 101 from March 6 through April 31, 2014.
- C. WBN reported to TDEC on May 16, 2014 that on April 4, 2014, WBN exceeded

the benchmark monitoring requirement for iron at storm water monitoring outfall SW-13.

- D. WBN reported to TDEC on November 13, 2014 that on October 3, 2014, WBN exceeded the benchmark monitoring requirement for iron at storm water monitoring outfalls SW-9 and SW-13.

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

A. NPDES Permit Number TN 0020168

1. In accordance with 40 CFR 122.22, TVA updated the NPDES signatory authority noting Kevin Walsh as the current WBN Site Vice President.
2. On March 7, 2014 TVA submitted a modified Notice of Intent (NOI) to the TDEC to delete storm water monitoring points SW-2, SW-3, and SW-10 in drainage area 8 and to add SW-12. SW-12 is located in the wet weather conveyance after all monitoring point flow paths have converged. The monitoring point SW-8 for the construction switchyard was removed from the NOI in the spring 2014 based on WBN historical documentation that this monitoring outfall does not receive flow. SW-13 was added to account for runoff from a transformer yard near the deconstructed Watts Bar Fossil Plant.
3. On August 22, 2014 TVA submitted a NOI to the TDEC for coverage under the general permit for storm water discharges associated with construction activity. This NOI was submitted for the planned construction of the Independent Spent Fuel Storage Installation (ISFSI) pads and haul path. The TDEC provided a Notice of Coverage (NOC) on September 16, 2014.

B. Air Permits

- A. In accordance with 1200-03-09-.02(11)(b)21(i) of the Tennessee Air Pollution Control Regulations, TVA updated the NPDES signatory authority noting Kevin Walsh as the current WBN Site Vice President.

VI. CHANGES IN FACILITY DESIGN OR OPERATION

In accordance with EPP Section 3.1, "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, 2014, through February 6, 2015, 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
- 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.
- B. 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 21 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:

- (1) Independent Spent Fuel Storage Installation Watts Bar Nuclear Plant, June 16, 2014
- (2) Production of Tritium in a Commercial Light Water Reactor, August 2014 (draft Supplemental Environmental Review). TVA is a cooperating agency with the National Nuclear Security Administration.

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

- (1) 29867 Emergency Preparedness Voice Annunciation Capable Sirens (Tracking ID COC/NPG)
- (2) 29884 Four new Conexus (Sea-Lands) at two separate sites inside the Protected Area
- (3) 29896 One temporary triple wide trailer inside the Protected Area
- (4) 29911 Proposal for a temporary triple wide office trailer to support U1R12 Refueling Outage (Tracking ID Watts Bar Unit 1 Modifications)
- (5) 30158 Ethanolamine container upgrade
- (6) 30179 Gravel road, equipment pads, and ramps for FLEX (Fukushima) project
- (7) 30208 Preconstruction activities for Watts Bar Nuclear Plant Independent Spent Fuel Storage Installation Vertical Cask Transporter Equipment Building
- (8) 30282 WBN installation of a gravel parking area, gravel walkway, additional job trailer and sealand containers in support of the Independent Spent Fuel Storage Installation (ISFSI) Project
- (9) 30310 Proposal to add one new 40 ft. Conexus inside the switchyard for Power Service Shop
- (10) 30380 Add Two new Conexus along Switchyard fence next to Trailer 128
- (11) 30463 Preconstruction activities for WBN Independent Spent Fuel Storage Installation (ISFSI) Pad
- (12) 30707 DCN 62948, Security Active Pathway Project
- (13) 30837 DCN Active Pathways (Tracking ID Watts Bar Unit 1 Modifications/ Projects)
- (14) 30956 Diesel Generator located on the west side of the Turbine Building Railroad Bay
- (15) 30974 WBN Flood Mode Mitigation System (Tracking ID D1B7340000)
- (16) 31018 Replace road & wet weather conveyance culvert east of Make-Up Water Building
- (17) 31170 DCN 61285, WBN Unit 1 High Pressure Fire Protection (HPFP) Train-A piping replacement
- (18) 31339 Construct parking lot for Unit 2 employees
- (19) 31599 Additional Chillers near Additional Equipment Building
- (20) 31716 WBN drainage ditch near the west portal parking lot (Tracking ID WBNP Facilities)
- (21) 31783 Railroad track and railroad bed removal

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, 2014 to February 6, 2015, which resulted in an unreviewed environmental question.

VII. NON-ROUTINE REPORTS

No non-routine reports for EPP Section 4.2 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.