



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

MAY 06 1999

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - 1998 ANNUAL
NONRADIOLOGICAL ENVIRONMENTAL OPERATING REPORT (ANEOR)

In accordance with Section 5.4.1 of Appendix B, "Environmental Protection Plan," of the
WBN Technical Specifications, provided in the enclosure is the 1998 ANEOR for WBN.
This report addresses the period from February 7, 1998, through February 6, 1999.

If you should have any questions, please contact me at (423) 365-1824.

Sincerely,

P. L. Pace
Manager, Licensing and Industry Affairs

Enclosure
cc: See page 2

1/1
C001

9905130221 990228
PDR ADDCK 05000390
R PDR

U.S. Nuclear Regulatory Commission

Page 2

MAY 06 1999

cc (Enclosure):

NRC Resident Inspector
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

Mr. Robert E. Martin, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

U.S. Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501

Enclosure

1998 Annual Nonradiological Environmental Operating Report (ANEOR)

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

THIRD ANNUAL NONRADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT

FEBRUARY 7, 1998 THROUGH FEBRUARY 6, 1999

TABLE OF CONTENTS

I.	INTRODUCTION-----	3
II.	REPORTS PREVIOUSLY SUBMITTED AS SPECIFIED IN THE WATTS BAR NUCLEAR PLANT (WBN) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT-----	3
III.	ENVIRONMENTAL PROTECTION PLAN NONCOMPLIANCES -----	4
IV.	CHANGES MADE TO APPLICABLE STATE AND FEDERAL PERMITS AND CERTIFICATIONS-----	4
V.	CHANGES IN FACILITY DESIGN OR OPERATION -----	5
VI.	SPECIAL BIOLOGICAL MONITORING REPORTS-----	5
VII.	NON-ROUTINE REPORTS-----	5
VIII.	CHANGES IN APPROVED ENVIRONMENTAL PROTECTION PLAN SPECIFICATIONS-----	5
	 ATTACHMENT 1 - STUDY OF WBN DESIGN AND OPERATIONAL CHANGES BETWEEN FEBRUARY 7, 1998 AND FEBRUARY 6, 1999 FOR EFFECTS ON THE ENVIRONMENT -----	 6

I. INTRODUCTION

The Watts Bar Nuclear Plant Third Annual Environmental Operating Report for the period of February 7, 1998 through February 6, 1999, is prepared in accordance with Appendix B of the WBN Technical Specifications 5.4.1, Environmental Protection Plan (Non-Radiological) (EPP). EPP Section 4.2 requires no non-routine reports at this time. This report includes a summary of:

- ◆ Reports previously submitted as specified in the Watts Bar Nuclear Plant National Pollutant Discharge Elimination System (NPDES) Permit No. TN0020168.
- ◆ All EPP noncompliances and the corrective actions taken to remedy them.
- ◆ Changes made to applicable state and federal permits and certifications.
- ◆ Changes in station design that could involve a significant environmental impact or change the findings of the Final Environmental Statement (FES).
- ◆ All special reports submitted per EPP Section 4.1.
- ◆ Reports submitted per EPP Section 4.2.
- ◆ Changes in approved EPP.

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

The following reports were submitted as specified in the WBN National Pollutant Discharge Elimination System (NPDES) Permit No. TN0020168:

- ◆ Application for renewal of NPDES Permit, submitted March 1998.
- ◆ 1997 Discharge Monitoring Report Quality Assurance (DMR-QA) Study 17 Corrective Action Report, submitted March 1998.
- ◆ Aquatic Chronic Toxicity Monitoring Studies, submitted April and June 1998.
- ◆ *Aquatic Environmental Conditions In The Vicinity Of Watts Bar Nuclear Plant During Two Years Of Operation, 1996-1997*, submitted June 1998.
- ◆ Disposal of Diisopropylamine as Laboratory Waste, submitted August 1998.
- ◆ Aquatic Chronic Toxicity Monitoring Studies, submitted October and December 1998.

III. ENVIRONMENTAL PROTECTION PLAN NONCOMPLIANCES

- ◆ March 1998 - Semi-annual toxicity testing of the effluent from the Runoff Holding Pond, NPDES Discharge Serial Number (DSN) 112, demonstrated an observable chronic effect for larval fathead minnows (*Pimephales promelas*). The exact cause could not be definitely determined. The test species susceptibility to the presence of natural bacteria in the pond is the suspected cause due to sporadic mortality in different test concentrations. Toxicity testing was repeated again in March and in April, using additional side-by-side aliquots treated with UV light and antibiotics. Retesting in April did not demonstrate chronic toxicity to fathead minnows for all treatment aliquots. Consequently, the April testing with antibiotic test aliquots was not reproducible. Additionally, routine semi-annual testing in November remained within the permit limitation of No Observable Effect Concentration in not less than 100% effluent.

- ◆ September 1998 - NPDES DSN 112, Runoff Holding Pond discharge exceeded the daily minimum permit limitation of 5.0 Milligrams per Liter (mg/L) for one day. The dissolved oxygen measurement was 2.70 mg/L. Extreme dry weather and low flow conditions resulted in sheet (uncollectable) flow at the bottom of the discharge spillway. The effluent sample had to be collected directly from the only flowing discharge pipe at the top of the spillway. Discharge flow ceased the following day for a period of 10 weeks. The noncompliance was a result of a dissolved oxygen demand from a die-off of excessive algal growth in the pond and the lack of the reaeration benefit provided by the discharge spillway. Although the noncompliance was mainly attributable to a natural environmental phenomenon, the temporary use of low flow sampling assists were evaluated for collection use during drought conditions.

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

An application for renewal of the existing permit was made to the Tennessee Water Pollution Control Division in March 1998, as required by NPDES Permit No. TN0020168 Part II, Section A.1. The application included a request for minor changes in flow monitoring requirements and pH limitation for the Low Volume Waste Treatment Pond, DSN 103. Following WBN's timely submittal of this application, authorization to discharge beyond the permit expiration date, September 29, 1998, was continued.

Application for permit modification to add a new discharge outfall and additional cooling water from Watts Bar Reservoir to the existing WBN cooling tower was made to Tennessee Water Pollution Control Division on September 30, 1998. The Division reviewed and conditionally approved the Supplemental Condenser Cooling Water (SCCW) final engineering plans in October 1998. This approval is contingent upon satisfactorily completing the public participation process and implementing various aquatic monitoring and reporting commitments.

A Notice of Intent to be covered under the Tennessee Storm Water Permit Associated with Construction Activities was filed in October 1998 for the SCCW project. At risk construction on this project began in November 1998.

V. CHANGES IN FACILITY DESIGN OR OPERATION

In accordance with EPP Section 3.1, facility design and operational changes were reviewed for potential affect on the environment. A study of facility design and operational changes proposed from February 7, 1998 through February 6, 1999, was performed. Projects considered as having potential impact on the environment included: those that could have caused waste stream generation/alteration; or that required the acquisition/modification of permits; or involved the use of hazardous material; or required physical construction. The study identified and documented a basis that the design and operational changes did not involve an unreviewed environmental question. A copy of this study is attached (Attachment 1).

VI. SPECIAL BIOLOGICAL MONITORING REPORTS FOR EPP SECTION 4.1

A. EPP Section 4.1.1, Aquatic Monitoring

Collection of data for the second and final year of the biological aquatic operational monitoring program was completed and a report submitted in June 1998, as required by the NPDES permit. The monitoring program found that the first two years of WBN operation have had no affect on the aquatic communities nor the water quality in the upper Chickamauga Reservoir.

B. EPP Section 4.1.2, Maintenance of Transmission Line Corridors

In accordance with TVA Transmission Power Supply *Right-Of-Way (ROW) Maintenance Procedure*, herbicide was applied along the 161 kV line from Athens - Watts Bar and the 161 kV lines that parallel sections of the 500 kV Watts Bar - Roane and Watts Bar - Volunteer lines. Spike 40P was applied at a rate of 15 pounds per acre in December 1998. In areas where state or federally listed species are known or likely to occur, as identified in a September 1996 survey, no herbicide was used.

VII. NONROUTINE REPORTS

No nonroutine reports for EPP Section 4.2 were issued during this reporting period.

VIII. CHANGES IN APPROVED ENVIRONMENTAL PROTECTION PLAN SPECIFICATIONS

There were no changes in approved environmental technical specifications during this reporting period.

ATTACHMENT 1

a. **Study of Watts Bar Nuclear Plant (WBN) Design and Operational Changes Between February 7, 1998 and February 6, 1999 for Effects on the Environment**

Facility design and operational changes made or proposed during this report period were reviewed for potential to affect the environment as described below. None were found to result in an unreviewed environmental question. The following criteria were used to identify those projects with a potential for environmental affects:

- (1) Waste stream generation/alteration -
(Air, Hazardous Waste, Solid Waste, PCB's, Asbestos, Wastewater)
- (2) Permit Acquisition/Modification
[NPDES, Air, Inert Landfill, Other (316a, 404, etc.)]
- (3) Hazardous Materials
- (4) 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, and Controversy)

b. **Special Tests**

A joint Department of Energy and TVA special test, involving the production of tritium in Watts Bar Nuclear Plant's commercial light water reactor was performed during this reporting period. The lead test assemblies were removed from the reactor during the second refueling outage. There were no increases in non-radiological environmental releases attributable to this test.

c. **Temporary Alterations**

There were no temporary alterations conducted during this period that met environmental impact criteria.

d. **Design and Operational Changes**

As part of TVA's continuing efforts to improve the efficiency of its facilities, an environmental review for a project which will connect the existing Watts Bar Fossil Plant intake and discharge piping to WBN cooling towers was completed in August 1998. The Environmental Assessment, *Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Project*, and Finding of No Significant Impact concluded that potential environmental impacts could be avoided subject to appropriate provisions to be included in the required environmental permits.

ATTACHMENT 1

d. Design and Operational Changes (continued)

The Tennessee Division Water Pollution Control granted conditional site approval in August 1998, contingent upon various design, monitoring and reporting requirements, including development and implementation of mussel relocation and habitat enhancement plans.

With the exception of the Supplemental Condenser Cooling Water Project, all other facility design and operational changes made during this report period with a potential impact on the environment were found to be within the scope of existing environmental permits and in compliance with regulations. Those changes reviewed are as follows:

1. Install Additional New Heads on Acid Storage Tank - Water Treatment
2. Install Above Ground Diesel Fuel Storage Tank - Security Lighting Backup Power and Fuel Oil Systems
3. Add Backup Diesel Generator Power System for Computer Room
4. Replace Obsolete, Leaking Transmitter - Condenser Cooling System
5. Delete Clean Lube Oil Tank Heaters - Lubricating Oil
6. Remove Valves From Piping System and Cap Line at T - HP Fire Protection
7. Modify Resin Fill Tank - Chemical Volume Control System
8. Security Access Modifications - Closed Circuit TV and Security

In summary, there have been no facility design or operational changes from February 7, 1998 to February 6, 1999, which have resulted in an unreviewed environmental question.