

TENNESSEE VALLEY AUTHORITY

KNOXVILLE, TENNESSEE 37902

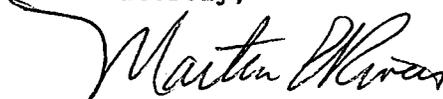
DEC 9 1985

Mr. B. Youngblood, Project Director
PWR Project Directorate No. 4
Division of Pressurized Water
Reactor (PWR) Licensing A
Director of Nuclear Regulatory Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Youngblood:

Enclosed for your information is a copy of a September 30 letter from the Tennessee Valley Authority to the U.S. Environmental Protection Agency that requests their approval on modifications to the Watts Bar Nuclear Plant NPDES Permit No. TN0020168. We inadvertently failed to include your office on the original distribution list for the letter.

Sincerely,



Martin E. Rivers, Director
Environmental Quality

Enclosure

cc: Dr. J. Nelson Grace, Regional Administrator (Enclosure)
U.S. Nuclear Regulatory Commission, Region IV
101 Marietta Street, NW., Suite 2900
Atlanta, Georgia 30303

Mr. Paul E. Davis, Deputy Director
Division of Water Pollution Control
Tennessee Department of Health
and Environment
TERRA Building
150 Ninth Avenue, North
Nashville, Tennessee 37203

Mr. Douglas K. Lankford, Chief
South Carolina/Tennessee Unit
Facilities Performance Branch
Water Management Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

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Mr. B. Youngblood, Project Director

DEC 9 1985

cc: Mr. Charles H. Kaplan, P.E.
Coordinator, Thermal Analysis
Permits Section
Water Management Division
U.S. Environmental Protection Agency
345 Courtland Street, NE.
Atlanta, Georgia 30365

Mr. Philip L. Stewart, Manager
Chattanooga Field Office
Division of Water Pollution Control
2501 Milne Street
Chattanooga, Tennessee 37406

SEP 30 1985

Mr. Bruce R. Barrett, Director
Water Management Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Dear Mr. Barrett:

WATTS BAR NUCLEAR PLANT (WBN) - NPDES PERMIT NO. TN0020168 (M00028)

In accordance with my July 29 letter to you, enclosed is a report regarding the evaluation of chlorination practices at WBN as required by Part III.K of the subject permit.

The report describes 10 scenarios involving discharge routes and plant conditions that could affect the total residual chlorine (TRC) concentration in discharges to the Tennessee River. The following scenario is expected to result in the highest TRC concentration discharge to the river and assumes (1) the two nuclear reactors are in shutdown mode, (2) the two cooling towers are not in operation (water is not being circulated through the condensers), (3) both the raw cooling water (RCW) and essential raw cooling water (ERCW) flows are routed to the cold water channel of the cooling tower, and (4) the diffuser is in operation. Field investigations showed that for this scenario a discharge limitation of 0.1 mg/L for TRC could not be met when the TRC averaged 1.0 mg/L at the intake pumping station (IPS) but could be met when the TRC concentration averaged 0.6 mg/L at the IPS. Field investigations also showed that the maximum concentration limitation of 0.8 mg/L for TRC at the IPS could not be met, primarily because the sodium hypochlorite feed system is difficult to control accurately. Instantaneous TRC concentrations as high as 1.8 mg/L at the IPS did not result in a TRC concentration greater than 0.1 mg/L at the diffuser while the TRC concentration averaged 0.6 mg/L at the IPS. Therefore, operating procedures and limitations governing the sodium hypochlorite feed rate should be based on maintaining an average TRC concentration at the IPS in place of an instantaneous maximum value. Based on these findings, TVA does not believe that dechlorination equipment will be necessary to comply with an effluent limitation of 0.1 mg/L TRC.

If you are in agreement with the findings of this report, TVA requests the following modifications to Part I.A, Page I-1, discharge serial No. 101 of the NPDES permit for WBN.

SEP 30 1985

Mr. Bruce R. Barrett

1. Change the allowable total chlorine addition from 30.9 lbs/hr to 27.3 lbs/hr. The revised value is based on a maximum flow rate of 78,010 gpm (six RCW pumps and four ERCW pumps in operation) and maintaining an average TRC concentration of 0.7 mg/L. The 0.7 mg/L value was obtained by interpolating the study results for an intake concentration that would result in a TRC concentration of 0.1 mg/L at the diffuser.
2. Change the wording "Additionally, continuous chlorination of the ERCW and RCW systems at a maximum concentration of 0.8 mg/L of total residual chlorine . . . at an intake temperature above 15.6°C (60°F)" to "Additionally, continuous chlorination of the ERCW and RCW systems at an average concentration of 0.7 mg/L of total residual chlorine . . . at an intake temperature above 15.6°C (60°F)."

If you have questions regarding the report or the request for permit modification, please call Stephen R. Wells at (205) 386-2971 or Madonna E. Martin at (615) 632-6695.

Sincerely,

Original signed by
Martin E. Rivers

Martin E. Rivers, Director
Environmental Quality

Enclosure

cc (Enclosure):

Mr. Paul E. Davis, Deputy Director
Division of Water Pollution Control
Tennessee Department of Health
and Environment
TERRA Building
150 Ninth Avenue, North
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