



STATE OF TENNESSEE
DEPARTMENT OF PUBLIC HEALTH
NASHVILLE 37219

RAY BLANTON
GOVERNOR

Eugene W. Fowinkle, M.D., M.P.H.
Commissioner

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August 4, 1978

Director of Nuclear Reactor Regulation
Division of Site, Safety, and Environmental Analysis
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. William H. Regan, Chief
Environmental Projects Branch No. 2

Dear Sir:

Enclosed is a copy of Tennessee's draft 401 certification for Watts Bar Nuclear Plant, as required by the Clean Water Act of 1977. All known discharges from this facility are covered in the proposed NPDES permit and the licensing of the facility by the NRC will not cause any additional water quality problem.

I hope this will meet your needs for completion of the Environmental Impact Statement. If further information is desired, please contact me personally at 615-741-7883.

Very truly yours,

Stephen E. Anderson
Assistant Director for Enforcement and Planning
Division of Water Quality Control

SEA/jdp 5/2

cc: Mr. Jack McCormick, WQC
Mr. Jim Norris, TVA

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RAY BLANTON
GOVERNOR

STATE OF TENNESSEE
DEPARTMENT OF PUBLIC HEALTH
NASHVILLE 37219
621 Cordell Hull Building

Eugene W. Fowles, M.D., MPH
Commissioner

April 17, 1978

Mr. George L. Harlow
Chief, Water Enforcement Branch
Enforcement Division
U.S. Environmental Protection Agency, Region IV
345 Courtland Street
Atlanta, Georgia 30308

Re: Watts Bar Nuclear Plant
NPDES Permit Number TN0020168
Draft State Certification

Dear Mr. Harlow:

As requested in your letter of March 24, 1978, to Mr. Jack McCormick of our Chattanooga Office, attached is a draft State Certification for the Watts Bar Nuclear Plant, Units One and Two. We appreciate the responses and explanations offered in your letter based upon our previous comments on this project. Although your letter offered an explanation, we feel that several of our previous requests were not adequately addressed by the new draft NPDES Permit, and a number of these have been included in our draft Certification. There are a number of other items on which we also still disagree, but we do not believe anything would be gained by attempting to include them in the Certification at this time. We would, however, like to offer the following additional comments for the record on both the technical details of this project and the NPDES Permitting process for projects of this type in general. Our comments are as follows:

1. In our earlier review of this project, we failed to notice one possible significance of the fact that the water intake strainer backwash and screen backwash are directed to the holding pond. Since the ports in the diffusers are only one inch in diameter, we feel that the solids contained in the backwash may present a clogging problem in being discharged through the diffusers. Although the impingement studies which are a part of the Operational Monitoring Program will indirectly assess this situation, diffusion problems could conceivably develop early in the operating history of the plant, prior to availability of information developed from the studies. Removal of solids from at least the screen backwash prior to its introduction into the holding pond may be desirable. Also, screening the effluent from the holding pond may be necessary.
2. Although required in general terms by the draft Permit under the section on "Removed Substances", we feel that adequate documentation has not been provided concerning ultimate means of disposal for the sludge from the water treatment plant and the cooling tower desilting basins.

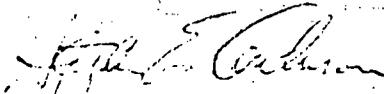
3. We note that additional monitoring has been included at Serial Numbers 002 and 019. This partially satisfies some of our comments on the previous draft Permit, and we support the inclusion of these additional monitoring requirements. We would suggest that consideration also be given to requiring monitoring, at least initially, for total chromium, dissolved aluminum and ammonia nitrogen.
4. With regard to our previous statements concerning the desirability of more stringent limitations on suspended solids and the addition of limitations and monitoring requirements on additional materials and pH at several of the serial number locations in the Permit, we recognize the constraints imposed by the Federal Guidelines for this Point Source Category. However, we still believe that these Guidelines do not require treatment of all concentrated waste streams within the plant based on best practicable technology and that they were, therefore, not promulgated within the spirit of the "Declaration of Goals and Policy" of the Federal Water Pollution Control Act Amendments. Of course, we cannot show any demonstrable effects on water quality in the Tennessee River at this location, but we feel that the limits which have been established generally allow excessive dilution of concentrated waste streams into large volumes of cleaner water. This statement applies to Serial Numbers 002, 004, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, and 018 as presently designated.
5. We also feel that the questions regarding the toxic chemical properties of radioactive metals and other materials which were raised in Item 15 of our letter of August 5, 1977, have not been adequately addressed. With the new emphasis by the Environmental Protection Agency on the control of toxic materials, we feel that this is an issue which will in time have to be considered in greater depth.

We have reviewed the Tentative Determination prepared by your office pursuant to Section 316 (a), and can concur with its findings. We also concur with the mixing zone which has been proposed and documented in the TVA submittals. Incidentally, a typographical error has been made and carried throughout the 316 (a) Determination and the draft NPDES Permit. The proposed mixing zone is 240 feet by 240 feet, whereas all references in your documents record it as 225 feet by 225 feet.

April 17, 1978
Mr. George L. Harlow
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We appreciate your cooperation on the preparation and review of this NPDES Permit. Should you have any questions concerning this letter or the draft Certification, please advise.

Sincerely,



Stephen E. Anderson
Assistant Director for
Enforcement and Planning
Division of Water Quality Control

SEA/mmd 1-2

Enclosure

cc: Division of Water Quality Control - Chattanooga - Mr. Jack McCormick ←
Tennessee Valley Authority - Chattanooga - Mr. Jim Morris
Rhea County Health Department
Southeast Regional Health Office

Division of Water Quality Control
Tennessee Department of Public Health
Certification of NPDES Permit Number TN0020168

DRAFT

Tennessee Valley Authority Watts Bar Nuclear Plant, Units One and Two
Spring City, Rhea County, Tennessee
Receiving Waters - Tennessee River, Mile 527.8, and Yellow Creek, Mile 1.3

Pursuant to Section 401 of the Federal Water Pollution Control Act (33 U.S.C. 466 et. seq.), as amended, the State of Tennessee hereby issues certification to the Tennessee Valley Authority for a National Pollutant Discharge Elimination System (NPDES) Permit for its Watts Bar Nuclear Plant.

The State of Tennessee is not aware of any condition or limitation under Section 301, Section 302, or Section 303 of the Federal Act that would be violated by issuance of the proposed NPDES Permit; additionally, the State of Tennessee is not aware of any standard of performance under Section 306 or Section 307 that would be violated by issuance of the proposed Permit.

Certification of this NPDES Permit is contingent upon the following conditions:

1. Permittee is in no way relieved from any liability for damages which might result from the discharge of wastewater.
2. Permittee must additionally comply with all requirements, conditions, or limitations which may be imposed by any provision of the Tennessee Water Quality Control Act (TCA Sections 70-324 through 70-342) or any regulations promulgated pursuant thereto.
3. The State of Tennessee reserves the right to modify or revoke this Certification or to seek revocation or modification of the NPDES Permit issued subject to this Certification should the State determine that the wastewater discharge violates the Tennessee Water Quality Control Act, or any applicable water quality criteria, or any rules or regulations which may be promulgated pursuant to the Clean Water Act of 1977, Public Law 95-217.
4. The State requests that the following discharge limitations, criteria, and requirements be included in the NPDES Permit:
 - a. With regard to Serial Number 902, the State requests the following wording to govern direct overflows from the yard drainage holding pond to the Tennessee River:

"Direct overflow from the yard holding pond to the Tennessee River is allowed under emergency conditions to protect dike stability, but only to the minimum extent necessitated by the emergency. Notification of such overflow shall be provided to the Director, Enforcement Division, and to the State Director within five days after any occurrence. On each occurrence, a grab sample shall be collected for suspended solids analysis and the results of such analysis shall be reported with the notification of overflow."

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- b. With regard to Serial Numbers 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, the State requests that the following statement be included to govern discharge of floating materials:

"The wastewater discharge must contain no distinctly visible floating scum, oil sheen, or other floating matter."

- c. With regard to Serial Number 003, the State requests that the discharge limitations and monitoring requirements set out in Attachment A to this Certification be included in the NPDES Permit.

- d. With regard to Serial Number 004, the State requests that the following additional language be included to govern the possible disposal of this wastewater by means of land application or spray irrigation:

"Permittee must obtain approvals from the Tennessee Division of Water Quality Control and EPA prior to any land disposal or spray irrigation of these wastes. Said approvals shall be based upon site inspections and review of appropriate engineering submittals."

- e. With regard to Serial Number 005, the State requests that the discharge limitations and monitoring requirements set out in Attachment B to this Certification be included in the NPDES Permit.

- f. With regard to Part I B.1.c., and Part III c., control of polychlorinated biphenyl materials, the State requests that the PCB Control Report be submitted no later than thirty (30) days from the effective date of the NPDES Permit.

- g. With regard to all wastewater discharges from the facility, the effluent quality as relates to radioactive constituents shall meet the requirements specified in the operational technical specifications issued by the U.S. Nuclear Regulatory Commission for this facility under 10 CFR 20.

5. With regard to the various studies and reports required of the applicant pursuant to Part I B. of the NPDES Permit, the State reserves the right to modify or revoke this Certification or to seek revocation or modification of the NPDES Permit issued subject to this Certification as may be required to protect water quality based upon the results of these studies and reports.

Attachment A
Serial Number 003

Effluent Characteristic	Discharge Limitations						Monitoring Requirements	
	Daily Average		Weekly Average		Daily Maximum		Measurement Frequency	Sample Type
	mg/l	kg/day (lbs/day)	mg/l	kg/day (lbs/day)	mg/l	kg/day (lbs/day)		
Flow - M ³ /day (MGD)			136 (0.036)				1/day	In situ
SO ₂	30	4.1 (9.0)	40	5.4 (12)	45	6.4 (14)	1/2 weeks	Grat
Suspended Solids	30	4.1 (9.0)	40	5.4 (12)	45	6.4 (14)	1/2 weeks	Grat
Fecal Coliform - (#/100ml)			See below				1/2 weeks	Grat
Total Chlorine Residual			See below				1/day	
Settleable Solids (ml/l)			See below				1/day	Grat
pH			See below				1/week	Grat
Dissolved Oxygen			See below				1/day	Grat

The pH of the wastewater discharge must, at no time, be less than 6.0 nor greater than 9.0.

The concentration of settleable solids in the wastewater discharge must, at no time, exceed 1.0 ml/l as measured by the standard one-hour Imhoff cone test.

The wastewater discharge must contain no distinctly visible floating scum, oil sheen, or other floating matter.

The wastewater discharge must be disinfected to the extent that viable coliform organisms are effectively eliminated. The concentration of the fecal coliform group shall not exceed 200 per 100 ml, as the geometric mean based on a minimum of 10 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purpose of determining the geometric mean, individual samples having a fecal coliform group concentration of less than one per 100 ml shall be considered as having a concentration of one per 100 ml. In addition, the concentration of the fecal coliform group in any individual sample shall not exceed 1000 per 100 ml. The use of chlorine as a disinfecting agent must be controlled to the extent that the total chlorine residual does not exceed 2.0 mg/l.

The concentration of dissolved oxygen in the wastewater discharge must be greater than 1.0 mg/l.

Any sludge or other materials removed by any treatment works must receive disposal adequate to prevent their entrance into or

Attachment B
Serial Number 005

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>						<u>Monitoring Requirements</u>	
	<u>Daily Average</u>		<u>Weekly Average</u>		<u>Daily Maximum</u>		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>mg/l</u>	<u>kg/day (lbs/day)</u>	<u>mg/l</u>	<u>kg/day (lbs/day)</u>	<u>mg/l</u>	<u>kg/day (lbs/day)</u>		
Flow - MG /day (MGD)			45 (0.012)				1/day	Instantaneous
BOD ₅	30	1.4 (3.0)	40	1.8 (4.0)	45	2.0 (4.5)	1/2 Weeks	Grab
Suspended Solids	30	1.4 (3.0)	40	1.8 (4.0)	45	2.0 (4.5)	1/2 Weeks	Grab
Fecal Coliforms (#/100 ml)			N/A				N/A	
Total Chlorine Residual			N/A				N/A	
Settleable Solids (ml/l)			N/A				N/A	
pH			N/A				N/A	
Dissolved Oxygen			N/A				N/A	

The wastewater discharge must contain no distinctly visible floating scum, oil sheen, or other floating matter.

Any sludge or other materials removed by any treatment works must receive disposal adequate to prevent their entrance into or pollution of any surface or subsurface waters.