



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

JUL 15 1977



50-390/391

Mr. Voss Moore
Director for Environmental Projects
Directorate of Reactor Licensing
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20555

Re: Watts Bar Nuclear Plant
NPDES No. TN0020168

Regulatory

FILED

Dear Mr. Moore:

Enclosed is a copy of a draft permit for the referenced facility.

To assure adequate coordination and input from all interested agencies, a meeting has been scheduled for August 2, 1977, at 10:30 a.m. in room 302 of our offices. Participation by TVA, Fish and Wildlife Service, and State of Tennessee is expected. Items for discussion will include specific NPDES permit conditions, aquatic monitoring programs completed or underway, and scope of the aquatic monitoring program to be required by the NPDES permit.

One copy of the NPDES application and updates for the plant have been forwarded to Mr. Oliver D. T. Lynch, Jr. of your staff.

It would be appreciated if you could provide us with written comments on the draft permit and a list of your representatives prior to the meeting.

Should you have any questions, please contact Mr. Charles Kaplan or Mr. William Steiner at 257-2328.

Your assistance in this matter is greatly appreciated.

Sincerely yours,

Howard Zeller
Paul J. Traina

Director
Enforcement Division

Enclosure

cc: Mr. Robert Samworth
Mr. Oliver D. T. Lynch, Jr.
U.S. Nuclear Regulatory Comm.
w/enclosure(s)

772020211

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act,
as amended, (33 U.S.C. 1251 et. seq; the "Act"),

Tennessee Valley Authority
268 401 Building
Chattanooga, Tennessee 37401

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07/15/77

is authorized to discharge from a facility located at

Watts Bar Nuclear Plant
Units 1 and 2
Rhea County, Tennessee
(Near Spring City)

to receiving waters named Tennessee River (RM 527.8) and Yellow Creek
from discharge points enumerated herein as serial numbers 001, 002, 003, 004, 005,
006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, and 019

during the effective period of this permit

in accordance with effluent limitations, monitoring requirements and other
conditions set forth in Parts I, II, and III hereof.

This permit is a modification of the NPDES permit issued for this facility on
December 5, 1973, and replaces that permit in its entirety. This modified
permit shall become effective

This modified permit and the authorization to discharge shall expire at midnight,
Permittee shall not discharge after the above date of
expiration without prior authorization. In order to receive authorization to
discharge beyond the above date of expiration, the permittee shall submit such
information, forms, and fees as are required by the Agency authorized to issue
NPDES permits no later than 180 days prior to the above date of expiration.

Signed this day of

Paul J. Traina, Director
Enforcement Division

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on effective date and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 001 - Point source(s) runoff from construction (includes preoperational metal cleaning wastes, treated domestic waste and treated concrete washing wastes)

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristics</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|---------------------------------|------------------------------|--|--------------------------------|--------------------|
| | <u>Instantaneous Maximum</u> | | <u>Measurement Frequency</u> | <u>Sample Type</u> |
| Flow-m ³ /Day (MGD) | N/A | | 1/week | Grab |
| Total Suspended Solids (mg/l) | 1/ | | 1/week | Grab |
| Settleable Solids (ml/l) | N/A | | 1/week | Grab |
| Turbidity | N/A | | 1/week | Grab |

1/ Pending repromulgation of effluent guidelines for this waste category, limitations on total suspended solids shall not be applicable. Within 90 days of repromulgation, permittee shall submit a proposed implementation schedule and shall expeditiously complete necessary facilities, if any, to assure compliance with such repromulgated regulations. In the interim, construction practices and control of site runoff shall be consistent with sound engineering practices such as those contained in "Guidelines for Erosion and Sediment Control Planning and Implementation," EPA-R2-72-015 (August, 1972) or "Processes, Procedures and Methods to Control Pollution Resulting from all Construction Activity," EPA-430/9-73-007 (October, 1973). Where an impoundment is utilized by permittee, it shall be capable of containing a 10-year, 24-hour rainfall event.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Point(s) of discharge from the construction yard drainage pond prior to mixing with any other waste streams.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 002 - Diffuser Discharge

Such discharges shall be limited and monitoring by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|----------------------|--------------------------------|----------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow-m /Day (MGD) | N/A | N/A | Continuous | Recorder |
| Temperature °C(°F) | N/A | 31.0(87.8) <u>1/</u> | Continuous | Recorder |
| Total Chlorine Residual | See Below | | 1/week <u>2/</u> | Multiple Grabs |

Total residual chlorine shall not exceed a maximum instantaneous concentration of 0.1 mg/l. In the event that the units cannot be operated at or below this level of chlorination, the permittee may submit a demonstration, based on biological toxicity data, that discharge of higher levels of chlorine are consistent with toxicity requirements of the Tennessee Water Quality Standards. Effluent limitations will be modified consistent with an acceptable demonstration.

- 1/ The receiving water shall not exceed (1) a maximum water temperature change of 3°C (5.4°F) relative to an upstream control point, (2) a maximum temperature of 30.5°C (86.9°F), except when upstream temperatures approach or exceed this value, and (3) a maximum rate of change of 2°C (3.6°F) per hour outside of a mixing zone which shall not exceed (1) a maximum width of 275 feet nor (2) a foot linear downstream length.
- 2/ During the first two-month period of substantially full power operation, analyses shall follow each application of chlorine until sufficient operating experience has been obtained to assure compliance with limitations and then analysis frequency may be reduced to one day per week.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): plant discharge prior to entry into the Tennessee River.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on effective date and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 003 1/ - Construction Sewage Treatment Plant Effluent

Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | Monitoring Requirements | |
|--|-----------------------|---------------|--------------------|---------------|-------------------------|----------------|
| | kg/day (lbs/day) | | Other Units (mg/l) | | Measurement Frequency | Sample Type |
| | Daily Avg | 7-Day Average | Daily Avg | 7-Day Average | | |
| Flow—m ³ /Day (MGD) | N/A | N/A | 136(0.036) | | 1/day | Grab |
| BOD ₅ | 4.1 (9.0) | 3.1 (13.5) | 30 | 45 | 1/2 weeks | Grab <u>2/</u> |
| Total Suspended Solids | 4.1 (9.0) | 3.1 (13.5) | 30 | 45 | 1/2 weeks | Grab <u>2/</u> |
| Settleable Solids (ml/l) | N/A | N/A | 1.0 | 1.0 | 1/day | Grab |
| Chlorine Residual | N/A | N/A | N/A | N/A | 1/day | Grab |
| Fecal Coliform <u>3/</u> (organisms/100 ml) | N/A | N/A | 200 | 400 | 1/2 weeks | Grab |

In addition to the specified limits, the daily average effluent BOD and suspended solids concentration shall not exceed 15 percent of the respective daily average influent concentrations.

Effluent shall be aerobic at all times.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Sewage treatment plant effluent prior to mixing with any other waste stream discharging through Serial Number 001.

1/ Serial number assigned for identification and monitoring purposes.

2/ Influent and effluent.

3/ Geometric mean.

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PART I
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Permit No. TN0020168

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on effective date and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 004 1/ - Concrete washing wastes

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|---------------|--------------------------------|--------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow—m ³ /Day (MGD) | N/A | N/A | 1/week | Weir reading |
| Oil and Grease (mg/l) | N/A | 20 | 1/month | Grab |
| Total Suspended Solids (mg/l) | N/A | 50 | 1/week | Grab |

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1/ Serial number assigned for identification and monitoring purposes.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from concrete wash water pond prior to mixing with any other waste stream discharging through serial number 001.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on effective date and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 005 1/ - Preoperational Metal Cleaning Wastes

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|---------------|--------------------------------|------------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow—m ³ /Day (MGD) | N/A | N/A | 1/day | Weir or pump log |
| Oil and Grease (mg/l) | 15 | 20 | <u>2/</u> | Grab |
| Total Suspended Solids (mg/l) | 30 | 100 | <u>2/</u> | 8-hr. composite |
| Copper, Total (mg/l) | 1.0 | 1.0 | <u>2/</u> | 8-hr. composite |
| Iron, Total (mg/l) | 1.0 | 1.0 | <u>2/</u> | 8-hr. composite |
| Phosphorus, as P (mg/l) | 1.0 | 1.0 | <u>2/</u> | 8-hr. composite |

Metal cleaning wastes shall mean any cleaning compounds, rinse waters, or any other waterborne residue derived from cleaning any metal process equipment.

The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the above concentrations, times the volume of metal cleaning wastes.

1/ Serial number assigned for identification and monitoring purposes.

2/ On start of discharge and once/week thereafter until termination of discharge with one sample taken immediately prior to termination of discharge.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from the metal cleaning wastes treatment facility(s) prior to mixing with any other waste stream discharging through Serial Number 001.

NOTE: In the event that the permittee provides land disposal or spray irrigation of these wastes, the above limitations and monitoring requirements shall not be applicable.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 006 and 007 1/ - Cooling Tower Blowdown (Units 1 and 2 are separate)

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|---------------|--------------------------------|-------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow-m ³ /Day (MGD) | N/A | N/A | 1/day | Calculation |

Discharge of blowdown from the cooling system shall be limited to the minimum discharge of recirculating water necessary for the purpose of discharging materials contained in the process, the further buildup of which would cause concentrations or amounts exceeding limits established by best engineering practice. Discharge temperature shall not exceed the lowest temperature of the recirculating cooling water prior to the addition of make-up. A study of blowdown minimization shall be implemented by the commercial operation date of Unit 1. A study plan, including detailed operational control procedures, shall be submitted for approval by the Regional Administrator no later than 90 days prior to fuel loading. Annual reports of operations experience shall be submitted starting 15 months after commercial operation date of Unit 1 and shall include data from Unit 2 when placed in commercial operation.

1/ Serial number assigned for identification and monitoring purposes.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from the cooling tower systems.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 008 1/ - Operational Sewage Treatment Plant Effluent

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | | | <u>Monitoring Requirements</u> | |
|--------------------------------------|------------------------------|---------------|--------------------|---------------|--------------------------------|-------------|
| | kg/day (lbs/day) | | Other Units (mg/l) | | Measurement Frequency | Sample Type |
| | Daily Avg | 7-Day Average | Daily Avg | 7-Day Average | | |
| Flow—m ³ /Day (MGD) | N/A | N/A | 45 (0.012) | | 1/day | Grab |
| BOD 5 | 1.4 (3.0) | 2.0 (4.5) | 30 | 45 | 1/month | Grab |
| Total Suspended Solids | 1.4 (3.0) | 2.0 (4.5) | 30 | 45 | 1/month | Grab |
| Chlorine Residual | N/A | N/A | N/A | N/A | 1/day | Grab |
| Fecal Coliform (organisms/100 ml) | N/A | N/A | 200 | 400 | 1/month | Grab |

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Effluent shall be aerobic at all times.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Sewage treatment plant effluent prior to mixing with any other waste stream.

1/ Serial number assigned for identification and monitoring purposes.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 009 1/ - Liquid Radwaste System

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|---------------|--------------------------------|-------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow-m ³ /Day (MGD) | N/A | N/A | 1/batch | Calculation |
| Total Suspended Solids (mg/l) | 15 | 20 | 1/batch | Grab |

1/ Serial number assigned for identification and monitoring purposes.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from radwaste treatment system prior to mixing with any other waste stream.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 010 1/ - Neutral Waste Sump

Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | Monitoring Requirements | |
|--------------------------------|-----------------------|---------------|--------------------|---------------|-------------------------|-------------------|
| | kg/day (lbs/day) | | Other Units (mg/l) | | Measurement Frequency | Sample Type |
| | Daily Avg | Daily Maximum | Daily Avg | Daily Maximum | | |
| Flow—m ³ /Day (MGD) | N/A | N/A | N/A | N/A | 2/week | Grab or pump logs |
| Oil and Grease | 2.0 (4.5) | 2.7 (6.0) | 15 | 20 | 2/week | Grab |
| Total Suspended Solids | 4.1 (9.0) | 13.6 (30.0) | 30 | 100 | 2/week | Grab |

1/ Serial number assigned for identification and monitoring purposes.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week on a grab sample.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): individual discharges prior to mixing with any other waste streams.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 011 1 - Condensate Demineralizer System

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|------------|--------------------|------------|--------------------------------|-------------|
| | Kg/day(lbs/day) | | Other Units (mg/l) | | Measurement Frequency | Sample Type |
| | Daily Avg. | Daily Max. | Daily Avg. | Daily Max. | | |
| Flow-m ³ /Day(MGD) | N/A | N/A | N/A | N/A | 2/week | Grab |
| Oil and Grease | 2.5(5.4) | 3.3 (7.2) | 15 | 20 | 2/week | Grab |
| Total Suspended Solids | 4.9(10.8) | 16.4(36.1) | 30 | 100 | 2/week | Grab |

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The Ph shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week or a grab sample.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): effluent from condensate demineralizer system prior to mixing with any other waste stream.

1/ Serial number assigned for identification and monitoring purposes.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 012 1/- Turbine Building Station Sump

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|------------|--------------------|-----------|--------------------------------|-------------------|
| | Kg/day (lbs/day) | | Other units (mg/l) | | Measurement Frequency | Sample Type |
| | Daily Avg | Daily Max | Daily Avg. | Daily Max | | |
| Flow-m ³ /Day (MGD) | N/A | N/A | N/A | N/A | 2/week | Grab or pump logs |
| Oil and Grease | 62(140) | 220(480) | 15 | 20 | 2/week | Grab |
| Total Suspended Solids | 120(280) | 1090(2400) | 30 | 100 | 2/week | 3-grab composite |

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There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): station sump discharge prior to mixing with any other waste stream.

1/ Serial number assigned for identification and monitoring purposes.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee is authorized to discharge from outfall(s) serial number(s) 013 1/- Hypochlorite Building Drains, 014 1/ - Service Building Sump, 015 1/ - Diesel Generator Building Drains, 017 1/ and 018 1/- Auxiliary Building Sumps, and 019 1/ - CCW Pump Station Sump

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|------------|--------------------------------|-------------------|
| | Daily Avg. | Daily Max. | Measurement Frequency | Sample Type |
| Flow-m ³ /Day (MGD) | N/A | N/A | 2/week | Grab or pump logs |
| Oil and Grease (mg/l) | 15 | 20 | 2/week | Grab |
| Total Suspended Solids (mg/l) | 30 | 100 | 2/week | Grab |

The quantity of pollutants discharged from each serial number shall not exceed the quantity determined by multiplying the flow from that waste source times the concentrations listed above.

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There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from each source prior to discharge to the yard drainage system.

1/ Serial numbers assigned for identification and monitoring purposes.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on start of discharge and lasting through expiration the permittee shall monitor serial number(s) 020 1/ - Plant Intake

Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | <u>Monitoring Requirements</u> | |
|--------------------------------|------------------------------|---------------|--------------------------------|-------------|
| | Daily Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow—m ³ /Day (MGD) | N/A | N/A | Continuous | Pump logs |
| Temperature °C(°F) | N/A | N/A | Continuous | Recorder |

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Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Plant Intake

1/ Serial number assigned for identification and monitoring purposes.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule.
 - a. Compliance with effluent limitations - effective date or start of discharge (001 through 019)
 - b. Preoperational aquatic monitoring program (III.H.)
 - (1) Study plan - 8/31/77
 - (2) Implement - 10/15/77
 - (3) Report - 11/31/78
 - c. Blowdown report (006 and 007)
 - (1) Study plan - 90 days prior to fuel loading
 - (2) First report - 15 months after commercial operation date of Unit 1
 - (3) Subsequent reports - annually after first report
 - d. Condenser tube report (III.K.)
 - (1) Study plan - one year prior to commercial operation date of Unit 1
 - (2) Annual reports - with first quarterly monitoring report each year after commercial operation date of Unit 1
 - e. Operational aquatic monitoring program (III.I.)
 - (1) Study plan - 11/31/78
 - (2) Implement - commercial operation date of Unit 1
 - (3) First report - 15 months after implementation date
 - (4) Subsequent reports - annually after the first report
 - f. Plume reports (III.F.)
 - (1) First report - 15 months after commercial operation date of Unit 1
 - (2) Second report - 15 months after commercial operation date of Unit 2

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2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results obtained during the previous 3 months shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on * Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and the State at the following addresses:

Regional Administrator
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30308

AND

Director, Division of Water
Quality Control
Tenn. Dept. of Public Health
621 Cordell Hull Building
Nashville, Tennessee 37219

3. Definitions

- a. The "daily average" concentration means the arithmetic average (weighted by flow) of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow) of all the samples collected during that calendar day.
- b. The "daily maximum" concentration means the daily determination of concentration for any calendar day.
- c. "Weighted by flow" means the summation of each sample concentration times its respective flow in convenient units divided by the summation of the flow values.
- d. "Nekton" means free swimming aquatic animals whether of freshwater or marine origin.
- e. For the purpose of this permit, a calendar day is defined as any continuous 24-hour period.

* Continuation of present reporting frequency

- f. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.
- g. The "daily maximum" discharge means the total discharge by weight during any calendar day.

4. *Test Procedures*

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Act, under which such procedures may be required.

5. *Recording of Results*

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The dates the analyses were performed;
- c. The person(s) who performed the analyses;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses.

6. *Additional Monitoring by Permittee*

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA No. 3320-1). Such increased frequency shall also be indicated.

7. *Records Retention*

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the State water pollution control agency.

A. MANAGEMENT REQUIREMENTS**1. *Change in Discharge***

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. *Noncompliance Notification*

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. A description of the discharge and cause of noncompliance; and
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. *Facilities Operation*

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. *Adverse Impact*

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. *Bypassing*

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Regional Administrator and the State in writing of each such diversion or bypass.

6. *Removed Substances*

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

7. *Power Failures*

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part I,

- b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

B. RESPONSIBILITIES

1. *Right of Entry*

3. The permittee shall allow the Regional Administrator, and/or his his authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. *Transfer of Ownership or Control*

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator and the State water pollution control agency.

3. *Availability of Reports*

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public

inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

4. *Permit Modification*

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. *Toxic Pollutants*

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. *Civil and Criminal Liability*

Except as provided in permit conditions on "Bypassing" (Part II, A-5) and "Power Failures" (Part II, A-7), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. *Oil and Hazardous Substance Liability*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. *State Laws*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected hereby.

PART III

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OTHER REQUIREMENTS

- A. There shall be no discharge of metal cleaning wastes (except as noted for Serial 005) as defined in 40 CFR Part 432.11(j) to any plant waste stream which discharges to waters of the United States.
- B. If the permittee, after monitoring for at least 12 months, determines that he is consistently meeting the effluent limits contained herein, the permittee may request of the Regional Administrator that the monitoring requirements be reduced to a lesser frequency or be eliminated.
- C. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid. In the event that PCB containing equipment is used on site, administrative procedures shall be instituted to (1) maintain a detailed inventory of PCB use, (2) assure engineering design and construction to preclude release of PCB's to the environment, and (3) effectively detect the loss of PCB's from equipment. Detail of such procedures shall be submitted no later than 180 days prior to receipt of PCB containing equipment.
- D. The company shall notify the Regional Administrator in writing not later than sixty (60) days prior to instituting use of any additional biocide or chemical used in cooling systems, other than chlorine, which may be toxic to aquatic life other than those previously reported to the Environmental Protection Agency. Such notification shall include:
 - 1. name and general composition of biocide or chemical,
 - 2. 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge shall occur,
 - 3. quantities to be used,
 - 4. frequencies of use,
 - 5. proposed discharge concentrations, and
 - 6. EPA registration number, if applicable.

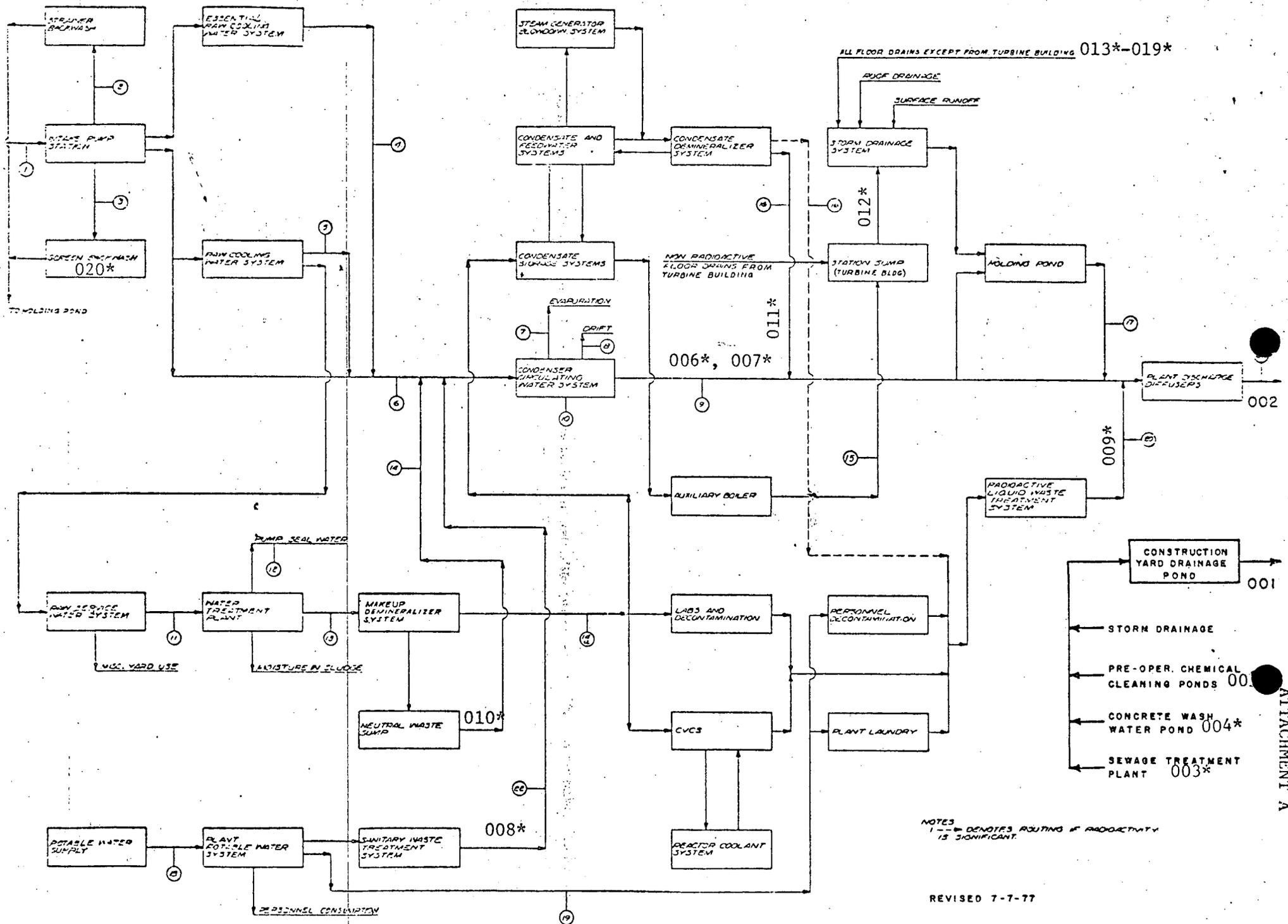
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- E. Intake screen backwash and strainer backwash shall be discharged to the holding pond unless results of operational aquatic monitoring program indicate the need for rerouting. Material removed from the bar racks shall not be returned to the Tennessee River.
- F. Effluent diffuser shall be designed to assure a minimum dilution factor of 10 at all river flow conditions. Subsequent to commercial operation of each unit, field measurements (supplemented as necessary with modeling results) shall be conducted to determine three dimensional configuration of the thermal plumes, substantiate the dispersion modeling, and assure conformance with the assigned thermal mixing zone. The reports on thermal plume and dispersion characteristics shall be submitted not later than 15 months after commercial operation dates of each unit.
- G. There shall be no discharge through the plant diffuser system when Tennessee River flows are less than 3500 cubic feet per second. Positive interlocks with the Watts Bar Hydroelectric Plant shall be provided to assure compliance with this requirement.
- H. Permittee shall implement an approved one-year preoperational non-radiological aquatic monitoring program to reestablish baseline data on water quality and biotic conditions in the Tennessee River not later than October 15, 1977. By August 31, 1977, the permittee shall submit to the Regional Administrator for review and approval, a detailed monitoring plan as generally outlined in NRC Regulatory Guide 4.8. A report on this study shall be submitted by November 31, 1978.
- I. Permittee shall implement an approved operational non-radiological aquatic monitoring program by the date of commercial operation of Unit 1. By November 31, 1978, the permittee shall submit to the Regional Administrator for review and approval, a detailed monitoring plan as generally outlined in NRC Regulatory Guide 4.8. Reports shall be submitted annually, not more than three months following completion of the reporting period with the first report due 15 months after implementation of the program. The program shall continue for a period of not less than two years after commercial operation of Unit 2.
- J. Permittee shall comply with applicable requirements of 40 CFR Part 112, OIL POLLUTION PREVENTION.
- K. The permittee shall provide a technical study that correlates operations experience with condenser tubes from Units 1 and 2 and demonstrates a sufficiently low corrosion/erosion rate to assure protection of aquatic organisms. A study plan shall be submitted not later than one year prior to commercial operation date of Unit 1. Annual reports of study results shall be submitted starting one year after commercial operation date of Unit 1.
- L. Copies of all routine liquid effluent and water quality monitoring reports submitted to NRC shall be submitted to EPA and the State of Tennessee.
- M. Copies of all plans, and reports submitted in accordance with Parts III.F, H, I, and K herein shall be forwarded by the permittee as follows:

Number of Copies

Addressee

| | |
|---|---|
| 6 | Director, Enforcement Division, EPA (Atlanta) |
| 1 | Chief, Ecology Branch, EPA (Athens) |
| 2 | Director for Environmental Projects, NRC (Washington) |
| 1 | Regional Director, Fish and Wildlife Service (Atlanta) |
| 1 | Director, Tennessee Division of Water Quality Control (Nashville) |
| 1 | Regional Engineer, Tennessee Division of Water Quality Control (Chattanooga) |



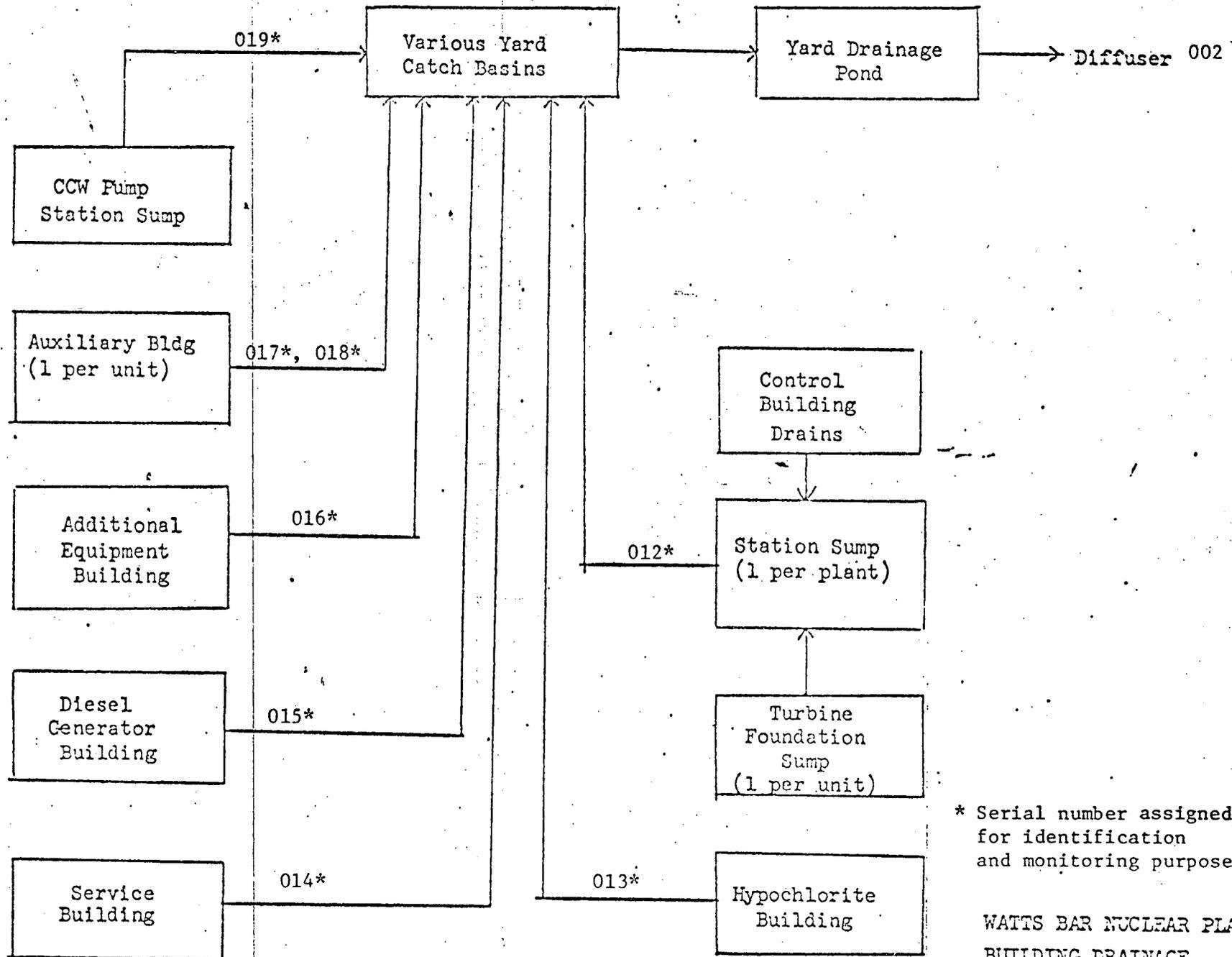
WATTS BAR NUCLEAR PLANT - WATER USE DIAGRAM

* Serial number assigned for identification and monitoring purposes

NOTES
 1 --- DENOTES ROUTING OF RADIOACTIVITY
 15 SIGNIFICANT.

REVISED 7-7-77

ATTACHMENT A



* Serial number assigned for identification and monitoring purposes

WATTS BAR NUCLEAR PLANT
BUILDING DRAINAGE

ATTACHMENT B