



South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, SC 29065
(803) 345-4001

John L. Skolds
Senior Vice President
Nuclear Operations

November 21, 1994
Refer to: RC-94-0302

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. G. F. Wunder

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
NPDES SC0030856 (LP 251)

South Carolina Electric & Gas Company (SCE&G) hereby submits a copy of the modified National Pollutant Discharge Elimination System (NPDES) Permit No. SC0030856 for the Virgil C. Summer Nuclear Station (VCSNS). This submittal provides updated information for this permit in accordance with the Operating License NPF-12, Appendix B, for the VCSNS.

If there are any questions, please contact Ms. Susan B. Reese at (803) 345-4591.

Very truly yours,

John L. Skolds

SBR
Attachment

c: O. W. Dixon (w/o attachments)
R. R. Mahan (w/o attachments)
R. J. White (w/o attachments)
S. D. Ebnetter
NRC Resident Inspector
J. B. Knotts
RTS (LP 251)
File (814.07-1)

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CERTIFIED MAIL/RETURN RECEIPT REQUESTED

May 19, 1994

Mr. John L. Skolds, Vice President
Nuclear Operatins
SC Electric & Gas
P. O. Box 88
Jenkinsville, South Carolina 29065

RECEIVED
MAY 24 1994

NUCLEAR
LICENSING

RE: SCE&G/VC SUMMER NUCLEAR
NPDES Permit # SC0030856
Fairfield County

Dear Mr. Skolds:

Enclosed is the modification to the National Pollutant Discharge Elimination System (NPDES) Permit for the above referenced facility.

This modification will become effective on the effective date specified in the modification, provided no appeal for an adjudicatory hearing is made. In the event an appeal is filed, the contested provisions of the modification will be stayed and will not become effective until the administrative review process is complete. All uncontested provisions of the modification will be considered issued and effective on the effective date set out in the modification and must be complied with by the facility.

If you wish to appeal the staff's decision, you must submit an initial pleading in accordance with Regulation 61-72, Volume 25, S.C. Code of Laws, 1976, as amended. As required by this regulation, the initial pleading must be served on the Board of SCDHEC, Attn: Clerk of the Board, 2600 Bull Street, Columbia, S.C. 29201, (803)734-4880. The submission of the initial appeal will be within the time period if delivered by First Class mail or other parcel delivery service on or before the fifteenth day.

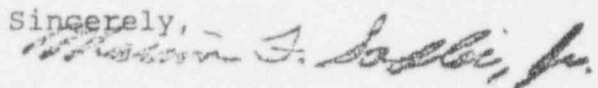
The following elements must, at a minimum, be included within the request:

1. Identity of the petitioner and nature of interest in the matter for which review is requested;
2. Caption or other information sufficient to identify the permit decision being appealed;
3. The date of receipt of the decision;
4. Facts, stated with particularity, alleged by the petitioner as grounds entitling it to relief;
5. A summary of any prior proceedings in the case, and the extent of petitioner's participation;
6. The relief requested;
7. Any other information necessary for a clear understanding of the case; and
8. An agreement by the petitioner to be subject to cross-examination and to make any employee or consultant of such petitioner or other person represented by the petitioner available for cross-examination at the expense of the petitioner or such other person upon the request of the Hearing Officer, on his own motion, or on the motion of any party.

(2)

If you have any questions about the technical aspects of this permit, please contact me at (803) 734-5300. Information pertaining to adjudicatory matters may be obtained by contacting the Legal Office, SCDHEC, 2600 Bull Street, Columbia, S.C. 29201, or by calling them at (803) 734-4910.

Sincerely,



Marion F. Sadler, Jr.
Industrial and Agricultural
Wastewater Division

Enclosure

cc: EPA
Betty Lou Foster, NPDES Permit Administration
Facilities Compliance
District Office

South Carolina
DHEC
Department of Health and Environmental Control

**Water Pollution Control
PERMIT**

TO DISCHARGE WASTEWATER IN ACCORDANCE WITH THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

THIS CERTIFIES THAT

SCE&G VIRGIL C. SUMMER NUCLEAR STATION

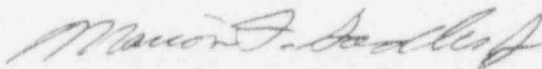
has been granted permission to discharge wastewater from a facility located at

Jenkinsville, Fairfield County, South Carolina

to receiving waters named

Monticello Reservoir and Broad River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof. This permit is issued in accordance with the provisions of the Pollution Control Act of South Carolina (S.C. Code Sections 48-1-10 et seq., 1976) and with the provisions of the Federal Clean Water Act (PL 92-500), as amended, 33 U.S.C. 1251 et seq., the "Act."



Marion F. Sadler, Jr.

DIRECTOR, DIVISION OF INDUSTRIAL & AGRICULTURAL WASTEWATER
BUREAU OF WATER POLLUTION CONTROL

Issued: SEP 13, 1993

Expires: SEP 30, 1997

Effective: NOV 1, 1993

Permit No.: SC0030856

MODIFICATION DATE: JUN 1 1994

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting (See Part III Special Condition 14), the Permittee is authorized to discharge from outfall(s) serial number(s) 001: once through cooling water to Monticello Reservoir.

EFFLUENT CHARACTERISTICS

DISCHARGE LIMITATIONS

kg/day (lbs/day)

Monthly

Daily

Average

Maximum

Other Units (Specify)

Monthly

Daily

Average

Maximum

MONITORING REQUIREMENTS

Measurement

Sample

Frequency

Type

⁽¹⁾Biological Monitoring
(Whole Effluent Chronic
Toxicity Testing)

MR⁽¹⁾

1/month⁽¹⁾

Grab

(1) See Part III Special Condition 12 a,b,c,d,e

MR = Monitor and Report

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Prior to mixing with the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 001: once through noncontact cooling water to Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day) Monthly Average	Daily Maximum	Monthly Average	Inst. Maximum	Measurement Frequency	Sample Type
Flow	N/A	N/A	MR, MGD	MR, MGD	Continuous	Estimate*
Intake Temperature ^{4b}	N/A	N/A	MR, MGD	MR, MGD	Continuous	Continuous
Plume Temperature °C (°F) ^{4c}	N/A	N/A	32.2(90)	MR ✓	Continuous	Continuous
Discharge Temperature °C (°F) ^{4a}	N/A	N/A	MR	45(113) ✓	Continuous	Continuous
Plume Temperature Rise °C (°F) ^{4d}	N/A	N/A	1.66(3.0)	MR ✓	Continuous	Continuous
Total Boron	N/A	N/A	MR, mg/l	MR, mg/l	2/month	Grab
Total Zinc	N/A	N/A	MR, mg/l	MR, mg/l	1/month	Grab

(*) See Part III, special condition 19.

MR = Monitor and Report

2. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor, shall the effluent cause a visible sheen on the receiving waters.
3. There shall be no addition of chlorine to the main condenser cooling water.
4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:
 - a. Discharge temperature shall be monitored at the outlet corresponding to an individual unit prior to mixing with the receiving stream.
 - b. Intake temperature shall be measured on the inlet side of the main condenser.
 - c. Plume temperatures shall be taken at the intake structure of Fairfield Pumped Storage Facility when the Fairfield Pumped Storage Facility is generating.
 - d. The points of the plume temperature rise monitoring shall be; (A) at the intake structure of the Fairfield Pumped Storage Facility in the most practicable and representative point at a depth of one foot and (B) on the south side of S.C. Highway No. 99 dam, as close to the dam as practicable at a depth of one foot. The plume temperature rise is equal to temperature at point A minus temperature at point B (ambient) when the Fairfield Pumped Storage Facility is generating.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 002: house service water for cooling of emergency generators, cooling heat exchangers and reactor building cooling units to Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Monthly	Daily	Measurement	Sample
	Monthly Average	Inst. Maximum	Monthly Average	Daily Maximum	Frequency	Type
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/occurrence	Estimate***
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/occurrence	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/occurrence	Grab
TRC*, **	N/A	N/A	<0.1 mg/l	<0.1 mg/l	1/occurrence	Grab
Discharge Temperature	N/A	N/A	N/A	MR	1/occurrence	Continuous

(*) Total residual chlorine samples shall be taken 1/occurrence whenever any wastewater that contribute to Outfall 002 are being chlorinated and Outfall 002 is discharging to the Monticello Reservoir. All other samples are required to be taken 1/occurrence(1/occurrence shall be defined as whenever Outfall 002 is directly discharging to the Monticello Reservoir), with a maximum frequency of 1/month. Where the duration of discharge exceeds 1 month, monitoring shall be required 1/month.

(**) See Part III, special condition 18.

(***) See part III, special condition 19.

MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by grab sample at a frequency of 1/occurrence, with a maximum frequency of 1/month. Where the duration of the discharge exceeds 1 month, monitoring shall be conducted 1/month.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor shall the effluent cause a visible sheen on the receiving waters.
4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Nearest accessible point after the discharge from the house service pond, but prior to mixing with the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 001: once through cooling water to Monticello Reservoir.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units (Specify)		Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		
⁽¹⁾ Biological Monitoring (Whole Effluent Chronic Toxicity Testing)				0 ⁽¹⁾	1/month ⁽¹⁾	Grab

(1) See Part III Special Condition 12 a,b,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Prior to mixing with the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 002: house service water for cooling of emergency generators, cooling heat exchangers, and reactor building units to Monticello Reservoir.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)	Other Units (Specify)			Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		

⁽¹⁾ Biological Monitoring (Whole Effluent Chronic Toxicity Testing)	0 ⁽¹⁾	1/occurrence ⁽¹⁾ Grab
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Samples are required to be taken 1/occurrence of the discharge via Outfall 002 to the Monticello Reservoir. Where the duration of discharge exceeds 1 month, monitoring shall be required 1/month.

(1) See Part III Special Condition 12 a,b,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Nearest accessible point after the discharge from the house service pond, but prior to mixing with the receiving waters

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 002: house service water for cooling of emergency generators, cooling heat exchangers, and reactor building units to Monticello Reservoir.

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (Specify)		Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		
⁽¹⁾ Biological Monitoring (Whole Effluent Chronic Toxicity Testing)				MR ⁽¹⁾	1/occurrence ⁽¹⁾	Grab

Samples are required to be taken 1/occurrence of the discharge via Outfall 002 to the Monticello Reservoir. Where the duration of discharge exceeds 1 month, monitoring shall be required 1/month.

(1) See Part III Special Condition 12 a,b,c,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
Nearest accessible point after the discharge from the house service pond, but prior to mixing with the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 004: steam generator blowdown via Outfall 001 to Monticello Reservoir or Outfall 003 to Broad River.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units (Specify)		Measurement	Sample
	Monthly	Inst.	Monthly	Inst.	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/occurrence	Continuous*
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/occurrence	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/occurrence	Grab

(*) See Part III, special condition 19.

MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by grab sample at a frequency of 1/week.
3. Samples shall be taken at least once per occurrence but need not be taken more than once per month.
4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge of steam generator blowdown, but prior to commingling with any other wastestream or the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 003: low level radiological wastes to Broad River.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)					
	Monthly	Inst.	Monthly	Inst.	Measurement	Sample
	Average	Maximum	Average	Maximum	Frequency	Type
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/occurrence	Estimate*
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/occurrence	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/occurrence	Grab
Total Copper	N/A	N/A	1.0 mg/l	1.0 mg/l	1/occurrence	Grab
Total Iron	N/A	N/A	1.0 mg/l	1.0 mg/l	1/occurrence	Grab
Total Boron	N/A	N/A	MR,mg/l	MR,mg/l	1/occurrence	Grab
Chemical Oxygen Demand	N/A	N/A	MR,mg/l	MR,mg/l	1/occurrence	Grab
Sulfate	N/A	N/A	MR,mg/l	MR,mg/l	1/occurrence	Grab

(*) See Part III, special condition 19.

MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by grab sample at a frequency of 1/occurrence, with a maximum frequency of 1/month. Where the duration of the discharge exceeds 1 month, monitoring shall be conducted 1/month.
3. Samples for compliance with the monitoring requirements specified above shall be taken at the following location(s):
Downstream at the point after the discharge from the Liquid Waste Processing System or the Waste Monitor Tanks, but prior to mixing with receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 06A: low volume wastes from the Alum Sludge Basin (06A) via Outfall 014 to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)				Measurement	Sample
	Monthly	Inst.	Monthly	Inst.	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/month	Inst.*
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/month	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge from the sedimentation basin, but prior to commingling with other internal wastestreams.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 005: sanitary sewerage via Outfall 014 to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)				Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/week	Inst.*
BOD ₅	N/A	N/A	30 mg/l	45 mg/l	1/week	24-hour composite
TSS	N/A	N/A	30 mg/l	45 mg/l	1/week	24-hour composite
Fecal coliform	N/A	N/A	200/100 mls	400/100 mls	2/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge from the chlorine contact chamber, but prior to commingling with other internal wastestreams.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Interim

1. During the period beginning on the effective date of this permit and lasting through December 31, 1994, the permittee is authorized to discharge from outfall(s) serial number(s) 007: low volume wastes from ion exchange regeneration and from sumps in the chemical feed equipment, caustic tank, and "D" battery room areas to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units (Specify)		Measurement	Sample
	Monthly	Inst.	Monthly	Inst.	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/month	Estimate*
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/month	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/month	Grab
Total Lead	N/A	N/A	MR,mg/l	MR,mg/l	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by grab sample at a frequency of 1/week.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge from the neutralization basin, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 06B: low volume wastes and storm water from sumps in the transformer and fuel oil storage and handling areas via Outfall 014 to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)				Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/month	Inst.*
Total Suspended Solids	N/A	N/A	30 mg/l	98 mg/l	1/month	Grab
Oil and Grease	N/A	N/A	15 mg/l	19 mg/l	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge from the retention basin, but prior to commingling with other internal wastestreams.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 008: metal cleaning wastewaters via Outfall 014 to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)				Measurement	Sample
	Monthly	Inst.	Monthly	Inst.	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m ³ /day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/day	Inst.*
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/occurrence	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/occurrence	Grab
Total Copper	N/A	N/A	1.0 mg/l	1.0 mg/l	1/occurrence	Grab
Total Iron	N/A	N/A	1.0 mg/l	1.0 mg/l	1/occurrence	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples shall be taken at least once per occurrence; should the duration of the discharge exceed one week the discharge shall be sampled on a weekly basis until the end of discharge.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge from the Plant Startup Holding Basin, but prior to commingling with other internal wastestreams.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Final

1. During the period beginning on January 1, 1995 and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 007: low volume wastes from ion exchange regeneration and from sumps in the chemical feed equipment, caustic tank, and "D" battery room areas to the Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units (Specify)		Measurement Frequency	Sample Type
	Monthly Average	Inst. Maximum	Monthly Average	Inst. Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/month	Estimate***
Total Suspended Solids	N/A	N/A	30 mg/l	100 mg/l	1/month	Grab
Oil and Grease	N/A	N/A	15 mg/l	20 mg/l	1/month	Grab
Total Lead*, **	N/A	N/A	<0.05 mg/l	<0.05 mg/l	1/month	Grab

(*) Limits for total metals are daily maximum, not instantaneous maximum.

(**) See Part III, special condition 18.

(***) See Part III, special condition 19.

MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by grab sample at a frequency of 1/week.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge from the neutralization basin, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 011: sanitary sewerage via Outfall 014 to Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Monthly	Daily	Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	0.006 MGD	MR, MGD	1/month	Instan*
BOD ₅	N/A	N/A	30 mg/l	45 mg/l	1/month	24 hour composite
TSS	N/A	N/A	30 mg/l	45 mg/l	1/month	24 hour composite
Fecal coliform	N/A	N/A	200/100 mls	400/100 mls	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge from the chlorine contact chamber, but prior to commingling with other internal wastestreams.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 010: sanitary sewerage via Outfall 014 to the Broad River.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Monthly	Daily	Measurement	Sample
	Monthly	Daily	Monthly	Daily	Frequency	Type
	Average	Maximum	Average	Maximum		
Flow-m3/day (MGD)	N/A	N/A	0.012 MGD	MR, MGD	1/month	Instan*
BOD ₅	N/A	N/A	30 mg/l	45 mg/l	1/month	24 hour composite
TSS	N/A	N/A	30 mg/l	45 mg/l	1/month	24 hour composite
Fecal coliform	N/A	N/A	200/100 mls	400/100 mls	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. The pH shall not be less than 6.0 s.u. nor greater than 9.0 s.u. and shall be monitored twice per month by grab sample.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge from the chlorination tank, but prior to commingling with internal Outfall 012 wastewaters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting (See Part III Special Condition 14), the Permittee is authorized to discharge from outfall(s) serial number(s) 012: yard drains in the north/northwest area of the plant site and Internal Outfalls 009A and 009B discharges to the Broad River via this outfall.

EFFLUENT CHARACTERISTICS

DISCHARGE LIMITATIONS

MONITORING REQUIREMENTS

kg/day (lbs/day)		Other Units (Specify)	
Monthly	Daily	Monthly	Daily
Average	Maximum	Average	Maximum

Measurement	Sample
Frequency	Type

⁽¹⁾Biological Monitoring
(Whole Effluent Acute
Toxicity Testing)

MR⁽¹⁾

1/month⁽¹⁾ Grab

(1) See Part III Special Condition 13 a,b,c,d,e

MR = Monitor and Report

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 012: yard drains in the north/northwest area of the plant site and Internal Outfalls 09A and 09B discharges to the Broad River via this outfall.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day) Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	1/month	Estimate*
Total Suspended Solids	N/A	N/A	26 mg/l	70 mg/l	1/month	Grab
Oil and Grease	N/A	N/A	9 mg/l	11 mg/l	1/month	Grab
Total Residual Chlorine	N/A	N/A	0.5 mg/l	1.0 mg/l	1/month	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge, but prior to commingling with Internal Outfall 010 wastestreams.
3. The pH shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored by grab sample at a frequency of 1/month.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from internal outfall(s) serial number(s) 013: yard drains in the southeast area of the plant site

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Monthly	Daily	Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	2/year	Estimate*
Total Suspended Solids	N/A	N/A	MR,mg/l	MR,mg/l	2/year	Grab

MR = Monitor and Report

(*) See Part III, special condition 19.

2. The pH shall be monitored by grab sample at a frequency of 2/year.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 012: yard drains in the north/northwest area of the plant site and Internal Outfalls 09A and 09B discharges to the Broad River via this outfall.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units (Specify)		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		

⁽¹⁾ Biological Monitoring (Whole Effluent Acute Toxicity Testing)	0 ⁽¹⁾	1/month ⁽¹⁾	Grab
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(1) See Part III Special Condition 13 a,b,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
 After discharge, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 014: Combination of Internal Outfalls 005, 06A, 06B, 008, and 011 to Monticello Reservoir.

EFFLUENT CHARACTERISTICS

DISCHARGE LIMITATIONS

kg/day (lbs/day)
Monthly Daily
Average Maximum

Other Units (Specify)
Monthly Daily
Average Maximum

MONITORING REQUIREMENTS

Measurement Sample
Frequency Type

⁽¹⁾Biological Monitoring
(Whole Effluent Chronic
Toxicity Testing)

MR⁽¹⁾

1/month⁽¹⁾ Grab

(1) See Part III Special Condition 12 a,b,c,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge, but prior to commingling with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 014: Combination of Internal Outfalls 005, 06A, 06B, 008, and 011 to Monticello Reservoir.

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

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day) Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow-m3/day (MGD)	N/A	N/A	MR, MGD	MR, MGD	Continuous	Continuous**
Total Residual Chlorine*	N/A	N/A	<0.1 mg/l	<0.1 mg/l	1/month	Grab
Chemical Oxygen Demand	N/A	N/A	MR, mg/l	MR, mg/l	1/month	Grab
Sulfate	N/A	N/A	MR, mg/l	MR, mg/l	1/month	Grab
Ammonia	N/A	N/A	2.1 mg/l	4.2 mg/l	1/month	Grab
Total Copper*	N/A	N/A	<0.01 mg/l	<0.01 mg/l	1/month	Grab
Dissolved oxygen	N/A	N/A	1.0 mg/l, minimum		1/month	Grab
Zinc	N/A	N/A	0.059 mg/l	0.065 mg/l	1/month	Grab

(*) See Part III, special condition 18.

(**) See Part III, special condition 19.

MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored by grab sample at a frequency of 1/month.
3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After discharge, but prior to commingling with the receiving stream.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedules:
 - A. A plan addressing the final limitations for lead, copper, zinc, and ammonia shall be submitted on or before January 1, 1994. This plan must include a proposed schedule for achieving compliance with the final effluent limitations.
 - B. The effluent shall be in compliance with all final limitations no later than January 1, 1995 unless otherwise approved by the Department upon review of the study plan noted in (A) above.
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.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on (See Part III Special Condition 14) of this Permit and lasting through the expiration date the Permittee is authorized to discharge from outfall(s) serial number(s) 014: Combination of Internal Outfalls 005, 06A, 06B, 008, and 011 to Monticello Reservoir.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		Other Units (Specify)		MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Monthly	Daily	Measurement Frequency	Sample Type
	Monthly	Daily	Monthly	Daily		
	Average	Maximum	Average	Maximum		
⁽¹⁾ Biological Monitoring (Whole Effluent Chronic Toxicity Testing)				0 ⁽¹⁾	1/month ⁽¹⁾	Grab

(1) See Part III Special Condition 12 a,b,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
After discharge, but prior to commingling with the receiving stream.

- a. the exact place, date and time of sampling;
- b. the dates and times the analyses were performed;
- c. the person(s) who performed the analyses and the laboratory certification number where applicable;
- 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 herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA-3320-1). Such increased frequency shall also be indicated. Additional or accelerated monitoring may be required to determine the nature and impact of a non-complying discharge on the environment or to determine if a single non-complying sample is representative of the long term condition (monthly average).

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analysis 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 Department. The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

8. Definitions

- a. The "monthly average", other than for fecal coliform, is the arithmetic mean of all samples collected in a calendar month period. The monthly average for fecal coliform bacteria is the geometric mean of all samples collected in a calendar month period. The monthly average loading is the arithmetic average of all individual loading determinations made during the month.
- b. The "weekly average", other than for fecal coliform, is the arithmetic mean of all the samples collected during a one-week period. For self-monitoring purposes, weekly periods in a calendar month are defined as three consecutive seven day intervals starting with the first day of the calendar month and a fourth interval containing seven days plus those days beyond the 28th day in a calendar month. The value to be reported is the single highest of the four weekly averages computed during a calendar month. The weekly average loading is the arithmetic average of all individual loading determinations made during the week.

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. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be present and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than $\pm 10\%$ from the true discharge rates throughout the range of expected discharge volumes. The primary flow device must be accessible to the use of a continuous flow recorder. Where a flume is present, a separate stilling well for Department/EPA use must be provided if required by the Department.

3. Reporting Monitoring Results

Monitoring results obtained each month shall be reported monthly on a Discharge Monitoring Report Form (EPA Form 3320-1). The first report is due postmarked no later than the 28th day of the month following the month this permit becomes effective. Two copies of these and all other reports required herein shall be submitted to the Department:

S.C. Department of Health and Environmental Control
ATTN: BWPC/Enforcement Section
2600 Bull Street
Columbia, South Carolina 29201

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to State Environmental Laboratory Certification Regulation 61-81 and Section 304(h) of the Act, as amended. (Federal Register, October 16, 1973; Title 40, Chapter I, Sub-chapter D, Part 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants." Amended by Federal Register, December 1, 1976, and any other amendments that may be promulgated).

5. Recording of Results

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

- (3) A combination of not less than 8 influent or effluent grab samples of equal volume but at variable time intervals that are inversely proportional to the volume of the flow. That is, the time interval between aliquots is reduced as the volume of flow increases.
- (4) A combination of not less than 8 influent or effluent grab samples of constant (equal) volume collected at regular (equal) time intervals over a specified period of time, while being properly preserved.

Continuous flow or the sum of instantaneous flows measured and averaged for the specified compositing time period shall be used with composite sample results to calculate quantity.

9. Right of Entry

The permittee shall allow the Commissioner of the Department of Health and Environmental Control, the Regional Administrator of EPA, and/or their authorized representatives:

- a. To enter upon the permittee's premises where a regulated facility or activity and effluent source is located 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 facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit and sample or monitor any substances or parameters at any location for the purposes of assuring permit compliance.

- c. The "daily maximum" is the highest average value recorded of any sample collected during the calendar month.
- d. The "instantaneous maximum or minimum" is the highest or lowest value recorded of any sample collected during the calendar month.
- e. Arithmetic Mean: The arithmetic mean of any set of values is the summation of the individual values divided by the number of individual values.
- f. Geometric Mean: The geometric mean of any set of values is the Nth root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).
- g. Department: The South Carolina Department of Health and Environmental Control.
- h. Act: The Clean Water Act (Formerly referred to as the Federal Water Pollution Control Act) Public Law 92-500, as amended.
- i. Grab Sample: An individual discrete or single influent or effluent portion of at least 100 milliliters collected at a time representative of the discharge and over a period not exceeding 15 minutes and retained separately for analysis. Instantaneous flow measured at the time of grab sample collection shall be used to calculate quantity.
- j. Composite Sample: One of the following four types of composite samples as defined is specified within this permit:
 - (1) An influent or effluent portion collected continuously over a specified period of time at a rate proportional to the flow.
 - (2) A combination of not less than 8 influent or effluent grab samples collected at regular (equal) intervals over a specified period of time, properly preserved, (See part I.C.4.) and composited by increasing the volume of each aliquot in proportion to flow. If continuous flow measurement is not used to composite in proportion to flow, the following method will be used: Take an instantaneous flow measurement each time a grab sample is collected. At the end of the sampling period, sum the instantaneous flow measurements to obtain a total flow to determine the partial amount (percentage) of each grab sample to be combined to obtain the composite sample.

- c. The filing of a request by the permittee for a permit modification, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.

5. Toxic Pollutants

Notwithstanding Part II.A.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 limitations for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and permittee so notified.

6. 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.

7. 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.

8. Severability

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

9. Onshore and Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit non-compliance constitutes a violation of the Act and the S.C. Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for the denial of a permit renewal application.

2. Civil and Criminal Liability

- a. Any person who violates a term, condition or schedule of compliance contained within this permit is subject to the actions defined by Sections 48-1-320 and 48-1-330 of the S.C. Pollution Control Act.
- b. Except as provided in permit conditions on "Bypassing" (Part II.C.2.), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance.
- c. It shall not be an acceptable defense of the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- d. It is the responsibility of the permittee to have a treatment facility that will meet the final effluent limitations of this permit. The approval of plans and specifications by the Department does not relieve the permittee of responsibility for compliance.

3. 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 to under Section 311 of the Act, the S.C. Pollution Control Act or applicable provisions of the S.C. Hazardous Waste Management Act and the S.C. Oil and Gas Act.

4. Permit Modification

- a. The permittee shall furnish to the Department within a reasonable time any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit.
- b. Upon sufficient cause, this permit may be modified, revoked, reissued, or terminated during its term, after public notice and opportunity for a hearing. Modifications deemed to be minor will not require public notice.

3. Other Non-Compliance

The permittee shall report in narrative form, all instances of non-compliance not previously reported under Section B, Paragraph B.2., at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in Paragraph B.2.a.

4. Transfer of Ownership or Control

A permit may be transferred to another party under the following conditions:

- a. The permittee notifies the Department of the proposed transfer at least thirty (30) days in advance of the proposed transfer date;
- b. A written agreement is submitted to the Department between the existing and new permittee containing a specific date for the transfer of permit responsibility, coverage, and liability for violations up to that date and thereafter.

Transfers are not effective if, within 30 days of receipt of proposal, the Department disagrees and notifies the current permittee and the new permittee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed.

5. Expiration of Permit

The permittee is not authorized to discharge after the expiration date of this permit, unless a completed application for reissuance is submitted no later than 180 days prior to the expiration date. Permission may be granted to submit an application later than this, but not later than the expiration date of the permit. In accordance with Section 1-23-370 of the code of laws of South Carolina, if a timely and sufficient application is made for any activity of a continuing nature, the existing permit does not expire until a final determination is made to renew or deny renewal of the existing permit.

6. Signatory Requirements

All applications, reports or information submitted to the Department shall be signed and certified.

- a. All permit applications shall be signed as follows:
 1. For a corporation: by a principal executive officer of at least the level of vice-president or by a duly authorized representative;
 2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or,

B. REPORTING 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 planned facility expansions, production increases, or process modifications which will result in a new or different discharge 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 Department of such changes. Following such notice, the permit may be modified to specify and limit any pollutant not previously limited.

2. Twenty-Four Hour Non-Compliance Reporting

a. The permittee shall report any non-compliance with provisions specified in this permit which may endanger public health or the environment. The permittee shall notify the Department orally within 24 hours of becoming aware of such conditions. During normal working hours call 803/734-5300. After hour reporting should be made to the 24 hour Emergency Response telephone number 803/253-6488. The permittee shall provide the following information to the Department in writing, within five (5) days of becoming aware of such conditions:

1. A description of the discharge and cause of non-compliance; and,
2. The period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the non-complying discharge.

b. The following violations shall be included in a 24 hour report when they might endanger health or the environment:

1. An unanticipated bypass which exceeds any effluent limitation in this permit;
2. Any upset which exceeds any effluent limitation in the permit.

c. As soon as the permittee has knowledge of or anticipates the need for a bypass, but not later than 10 days before the date of the bypass, it shall notify the Department and provide a determination of the need for bypass as well as the anticipated quality, quantity, time of duration, and effect of the bypass.

3. For a municipality, State, Federal or other public agency: by either a principal executive officer or ranking elected official.
- b. All reports required by the permit and other information requested by the Department shall be signed by a person described above or by duly authorized representation only if:
 1. The authorization is made in writing by a person described above and submitted to the Department;
 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

7. Availability of Reports

Except for data determined to be confidential under Section 48-1-270 of the S.C. Pollution Control Act, all reports prepared in accordance with the terms and conditions of this permit shall be available for public inspection at the offices of the Department 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 48-1-340 of the S.C. Pollution Control Act.

8. Changes in Discharges of Toxic Pollutants or Hazardous Substances

- a. The permittee shall notify the Department as soon as it knows or has reason to believe that any activity has occurred or will occur which would result in the discharge in any outfall of:
 1. Any toxic pollutant(s) identified under Section 307(a) of the Act which exceed the highest of the following concentrations and are not limited in the permit.
 - 1 mg/l for antimony (Sb);
 - 0.500 mg/l for 2,4-dinitrophenol or 2-methyl, -4,6-dinitrophenol;
 - 0.200 mg/l for acrolein or acrylonitrile;
 - 0.100 mg/l for any other toxic pollutant; or,
 - Ten (10) times the maximum concentration value reported in the permit application.

2. Any hazardous substance(s) identified under Section 311 of the Act as determined by Federal Regulation 40 CFR 117.

b. The permittee must notify the Department as soon as it knows or has reason to believe that it has begun or expects to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant or hazardous substance which was not reported in the permit application.

C. OPERATION AND MAINTENANCE

1. Facilities Operation

a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance based on design facility removals, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls as determined by the laboratory certification program of the Department. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. Maintenance of facilities, which necessitates unavoidable interruption of operation and degradation of effluent quality shall be scheduled during non-critical water quality periods and carried out in a manner approved by the Department.

b. The permittee shall provide for an operator, as certified by the South Carolina Board of Certification for Environmental Systems Operators, with a grade equal to or higher than the classification designated in Part III.A.3. The name and grade of the operator of record shall be submitted to the Department prior to placing the facility into operation. A roster of operators associated with the facility's operation and their certification grades shall also be submitted with the name of the "operator-in-charge". Any changes in operator or operators shall be submitted to the Department as they occur.

2. Bypassing

Any intentional diversion from or bypass of waste streams from any portion of wastewater collection and treatment facilities which is not a designed or established operating mode for the facility is

prohibited except (a) where unavoidable to prevent loss of life, personal injury or severe property damage, or (b) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit and there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or retention of untreated wastes. "Severe property damage" does not mean economic loss caused by delays in production.

3. Duty to Mitigate, Halt or Reduce Activity

The permittee shall take all reasonable steps to prevent, minimize or correct any adverse impact on public health or the environment, resulting from non-compliance with this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with this permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided.

4. Power Failures

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

- a. In accordance with the Schedule of Compliance contained in Part I.B., 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., have a plan of operation which will:

- 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.

5. Removed Substances

Solids, sludges, filter backwash or other residuals removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent such materials from entering State waters and in accordance with guidelines issued pursuant to Section 405 of the Act, and the terms of a construction or NPDES and/or solid or hazardous waste permit issued by the Department.

A. OTHER REQUIREMENTS

1. The permittee shall maintain at the permitted facility a complete Operations and Maintenance Manual for the waste treatment plant. The manual shall be made available for on-site review during normal working hours. The manual shall contain operation and maintenance instructions for all equipment and appurtenances associated with the waste treatment plant. The manual shall contain a general description of the treatment process(es), operating characteristics that will produce maximum treatment efficiency, and corrective action to be taken should operating difficulties be encountered.
2. The permittee shall provide for the performance of routine daily treatment plant inspections by a certified operator of the appropriate grade as defined in Part II.C.1. The inspection shall include, but is not limited to, areas which require a visual observation to determine efficient operations and for which immediate corrective measures can be taken using the O & M manual as a guide. All inspections shall be recorded and shall include the date, time and name of the person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The permittee shall maintain all records of inspections at the permitted facility as required by Part I.C.7., and the records shall be made available for on-site review during normal working hours.
3. The wastewater treatment plant has been assigned a classification of Group III-Bio in the Permits to Construct which are issued by the Department. This classification corresponds to an operator with a Grade of B-Bio or higher.
4. The permittee shall maintain an all weather access road to the wastewater treatment plant and appurtenances at all times.
5. The permittee shall continue to maintain a Best Management Practices (BMP) plan to identify and control the discharge of significant amounts of oils and the hazardous and toxic substances listed in 40 CFR Part 117 and Tables II and III of Appendix D to 40 CFR Part 122. The plan shall include a listing of all potential sources of spills or leaks of these materials, a method for containment, a description of training, inspection and security procedures, and emergency response measures to be taken in the event of a discharge to surface waters or plans and/or procedures which constitute an equivalent BMP. Sources of such discharges may include materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas. The BMP plan shall be developed in accordance with good engineering practices, shall be documented in narrative form, and shall include any necessary plot plans, drawings, or maps. The BMP plan shall be maintained at the plant site and shall be available for inspection by EPA and Department personnel.
6. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

7. The permittee shall monitor all parameters consistent with conditions established by this permit in accordance with the sampling plan to be submitted by the permittee, unless otherwise approved by this Department. Additional monitoring, as necessary to meet the frequency requirements of this permit (Part I.A. Effluent Limitations and Monitoring Requirements) shall be performed by the permittee.
8. Unless authorized elsewhere in this permit, the permittee shall meet the following requirements concerning maintenance chemicals for the following waste streams: once-through noncontact cooling water, recirculated cooling water, boiler blowdown, cooling tower blowdown, and air washer water. Maintenance chemicals shall be defined as any man-induced additives to the above-referenced waste streams. This includes materials added for corrosion inhibition including zinc, chromium, and phosphorus.
 - a. The discharge, in detectable amounts, of any of the one hundred and twenty-six priority pollutants is prohibited, if the pollutants are present due to the use of maintenance chemicals.
 - b. Slimicides, algicides and biocides shall be used in accordance with registration requirements of the Federal Insecticide, Fungicide and Rodenticide Act.
 - c. The use of maintenance chemicals containing bis(tributyltin) oxide is prohibited unless written approval is obtained from SCDHEC.
 - d. Any maintenance chemicals added to the above referenced waste streams must degrade rapidly, either due to hydrolytic decomposition or biodegradation.
 - e. The discharge of maintenance chemicals added to waste streams must be limited to concentrations which protect indigenous aquatic populations in the receiving stream and shall not exceed the "no observed effect level (NOEL)".

The permittee shall keep sufficient documentation on-site which support that the above requirements are being met. The information shall be made available for on-site review by Department personnel during normal working hours. The occurrence of in-stream problems may necessitate the submittal of chemical additive data and may require a permit modification to include additional monitoring and limitations. The permittee may demonstrate compliance with these limitations to the South Carolina Department of Health and Environmental Control by either sampling and analyzing for the pollutants in the discharge or providing mass balance calculations to demonstrate that use of particular maintenance chemicals will not result in detectable amounts of the toxic pollutants in the discharge.

9. The company shall notify the South Carolina Department of Health and Environmental Control in writing no later than sixty (60) days prior to

instituting use of any additional maintenance chemicals in the cooling water system. Such notification shall include:

1. Name and general composition of the maintenance chemical
 2. Quantities to be used
 3. Frequency of use
 4. Proposed discharge concentration
 5. EPA registration number, if applicable
 6. Aquatic toxicity information
10. All sludges, waste oil and solid and hazardous waste shall be properly disposed of in accordance with the rules and regulations of the Bureau of Solid and Hazardous Waste Management, including the intake screen backwash. Within ninety (90) days of the permit effective date, the permittee shall submit a plan which details the sludge and solids management and disposal practices including the chemical metal cleaning sludge at this facility for review and approval.
11. The Permittee must develop and submit, within 60 days of the permit effective date, a groundwater monitoring program for all treatment impoundments located on the facility grounds. The groundwater monitoring program shall at a minimum contain:
- a. The number of impoundments for which groundwater monitoring is to be conducted
 - b. The number and location of the groundwater monitoring wells by description and by designation on a facility site diagram
 - c. Facility site description of the groundwater leachate flow direction
 - d. The parameters to be monitored
 - e. The frequency of monitoring
12. a. On a monthly basis, a three-brood chronic toxicity test shall be conducted using a control and the instream waste concentration (IWC) of 100% at Outfalls 001, 002, and 014. The test shall be conducted using Ceriodaphnia dubia as the test organism and in accordance with the most recent "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA/600/5-89/01) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted in accordance with Part I.C.3 of the permit for each monthly test.

The test must be performed by a DHEC certified laboratory.

- b. Test results shall be analyzed according to statistical methods in Section 12.13 in USEPA (1989) or the most recent edition of this document. The toxicity test shall be deemed a failure if survival and/or reproduction of the test group is lower than that of the control group and this difference is significant at the $\alpha = 0.05$ level.
 - c. If a test fails, a toxicity evaluation plan shall be submitted to the Enforcement Section of the Bureau of Water Pollution Control within sixty (60) days of notification to the Department of test results.
 - d. The Permittee must indicate on the discharge monitoring report forms whether the test passes or fails. If the test fails, the number "1" shall be placed on the form, if the test passes, the number "0" shall be placed on the form.
 - e. Twelve consecutive acceptable months of toxicity testing results may result in quarterly testing in lieu of monthly tests at the Department's discretion.
13. a. On a monthly basis, a 48 hour static acute toxicity test shall be conducted using a control and 100% effluent at Outfalls 012. The test shall be conducted using Ceriodaphnia dubia as the test organism and in accordance with the most recent "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA/600/4-85/013) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted in accordance with Part I.C.3 of the permit for each monthly test. The test must be performed by a SCDHEC certified laboratory.
- b. If the test results indicate a significant difference in Ceriodaphnia dubia survival between the control and 100% waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.
 - c. If a test fails, a toxicity evaluation plan shall be submitted to the Enforcement Section of the Bureau of Water Pollution Control within sixty (60) days of notification to the Department of test results.
 - d. The permittee must indicate on the discharge monitoring report forms whether the test passes or fails. If the test fails, the number "1" shall be placed on the form, if the test passes, the number "0" shall be placed on the form.
 - e. Twelve consecutive acceptable months of toxicity testing results may result in quarterly testing in lieu of monthly tests at the Department's discretion.

14. After twelve consecutive months of "passed" toxicity testing results, the Department may terminate the screening process and impose a limitation.

Pages 4, 7, 22, and 26 of the permit shall become effective and pages 3, 6, 21, and 25 shall expire immediately after the Department informs the permittee in writing.

15. The Permittee shall not store soil nor other similar erodible materials in a manner in which runoff is uncontrolled, nor conduct construction activities in a manner which produces uncontrolled runoff unless such uncontrolled runoff has been specifically approved by SCDHEC. "Uncontrolled" shall mean without sedimentation basin or other controls approved by SCDHEC.
16. Upset - (1) Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- (2) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitation if the requirements of paragraph (3) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (3) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (ii) The permitted facility was at the time being properly operated; and
 - (iii) The permittee submitted notice of the upset as required in paragraph Part II.B.2 of this permit (24 hour notice).
 - (iv) The permittee complied with any remedial measures required by Part II.C.3 of this permit (duty to mitigate).
- (4) Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

17. Discharge of any waste resulting from the combustion of chemical metal cleaning wastes, toxic wastes, or hazardous wastes to any waste stream which ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.
18. The water quality-based limitations developed for total residual chlorine (TRC), cadmium, lead and copper based on State procedures follow:

<u>Parameter</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
TRC	0.011 mg/l	0.019 mg/l
Lead	0.0013 mg/l	0.0026 mg/l
Copper	0.0065 mg/l	0.0092 mg/l

However, the State's minimum detection level for these parameters are reflected in the limits pages. To attain compliance with the permit limits, the Permittee must have pollutant analyses performed by a South Carolina certified laboratory using the lowest detection level achievable. If analytical capabilities improve, the minimum detection level must be met to a level which will provide assurance of compliance with the above water quality standards.

19. The permittee shall maintain at the permitted facility a record of the method(s) used in measuring the discharge flow:

Estimate - Pump Curve, Production Chart, Water Use Records

Instantaneous - Bucket and Watch, Weir and Gauge, Parshall Flume

Continuous - Totalizer, Continuous Chart Recorder

Records of any necessary calibrations must also be kept. This information shall be made available for on-site review by Department personnel during normal working hours.

Rationale
South Carolina Electric and Gas Company
Summer Nuclear Station
NPDES Permit No. SC0030856

This is a renewal of the above referenced NPDES permit.

A. General Information

The South Carolina Electric and Gas Company, Summer Nuclear Station (hereinafter referred to as the Permittee), operates a nuclear powered electric power generating facility (SIC 4911) located at Highway 215, Jenkinsville, South Carolina. The plant has a total rated electric generating capacity of 930 megawatts (MW) per day.

The following is a description of the discharges from the facility:

Once-through cooling water is discharged through Outfall 001 to the Monticello Reservoir. Outfall 001 is located at latitude 034° 17' 44" and longitude 081° 18' 31".

Low volume wastes (house service water for cooling of emergency generators, cooling heat exchangers, and reactor building cooling units) are discharged through Outfall 002. Outfall 002 is an internal outfall that discharges via Outfall 001 normally or via the Circulating Water Intake to Monticello Reservoir when circulating pumps are secured. Outfall 002 is located at latitude 034° 17' 58" and longitude 081° 18' 53".

Low level radiological wastes are discharged via Outfall 003 to Broad River. Outfall 003 is located at latitude 034° 17' 54" and longitude 081° 18' 55".

Low volume wastes (steam generator blowdown) are discharged via Outfall 004. Outfall 004 is an internal outfall that ultimately discharges via Outfall 001 to Monticello Reservoir. Outfall 004 is located at latitude 034° 17' 54" and longitude 081° 18' 56".

Treated sanitary sewerage is discharged via Internal Outfall 005 located at latitude 034° 17' 41" and longitude 081° 18' 40". Ultimately, wastewaters are discharged via Outfall 014 to the Monticello Reservoir.

Low volume wastes (water treatment wastewaters) are discharged via Internal Outfall 06A located at latitude 034° 17' 40" and longitude 081° 18' 39". Ultimately, wastewaters are discharged via Outfall 014 to the Monticello Reservoir.

Low volume wastes and storm water from sumps in the transformer and fuel oil storage and handling areas) are discharged via Internal Outfall 06B located at latitude 034° 17' 40" and longitude 081° 18' 37". Ultimately, wastewaters are discharged via Outfall 014 to the Monticello Reservoir.

Low volume wastes (ion exchange regeneration and wash water from sumps located in the chemical feed equipment, caustic tank, and "D" battery room areas) are discharged via Outfall 007. Outfall 007 is an internal outfall that discharges via Outfall 001 to the Monticello Reservoir. Outfall 007 is located at latitude 034° 17' 52" and longitude 081° 18' 52".

Chemical metal cleaning wastes are discharged via Internal Outfall 008 located at latitude 034° 17' 40" and longitude 081° 18' 40". Ultimately, wastewaters are discharged via Outfall 014 to the Monticello Reservoir.

Low volume wastes (house service cooling waters) are discharged via Internal Outfall 09A located at latitude 034° 17' 56" and longitude 081° 18' 54". Ultimately, wastewaters are discharged via Internal Outfall 012 to the Broad River.

Low volume wastes (house service cooling waters) are discharged via Internal Outfall 09B located at latitude 034° 17' 54" and longitude 081° 18' 53". Ultimately, wastewaters are discharged via Internal Outfall 012 to the Broad River.

Treated sanitary sewerage from the construction office and construction warehouse is discharged via Internal Outfall 010 located at latitude 034° 17' 54" and longitude 081° 19' 18". Outfall 010 discharges to the Broad River.

Treated sanitary sewerage from Warehouse "C," the warehouse maintenance shop, the guard house and the blue building is discharged via Internal Outfall 011 located at latitude 034° 17' 42" and longitude 081° 18' 38". Ultimately, wastewaters are discharged via Outfall 014 to the Monticello Reservoir.

Wastewaters from yard drains in the north/northwest area of the plant site and previously monitored house service water and storm water from Internal Outfalls 009A and 009B are discharged via Outfall 012 located at latitude 034° 17' 54" and longitude 081° 19' 19". Outfall 012 discharges to the Broad River.

Wastewaters from yard drains in the southeast area of the plant site are discharged from Outfall 013 to the Broad River. Outfall 013 is located at latitude 034° 17' 39" and longitude 081° 18' 32".

Through review of the permit application, it was noted that several outfalls are combined prior to discharge to the receiving waters. Since all wastewaters discharging to receiving waters are subject to water quality standards, it was determined to be beneficial

designate Outfall 014 (consisting of combined Internal Outfalls 005, 006A, 006B, 008, and 011) for application of water quality-based limitations.

The effluent from this facility is subject to the Steam Electric Power Generating Point Source Category (40 CFR Part 423).

The Monticello Reservoir is classified as a tributary to a Class FW water by the South Carolina Department of Health and Environmental Control. For purposes of this permit, Monticello Reservoir will also be classified as a Class FW water, designated as freshwaters suitable for primary and secondary contact recreation and as a source for drinking water after conventional treatment. The waters are suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora, as well as for industrial and agricultural uses.

The Broad River segment receiving discharge from the Permittee is classified as a Class FW water by the South Carolina Department of Health and Environmental Control.

The facility contact and mailing address follows:

John L. Skolds
Vice President
Nuclear Operations
South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, South Carolina 29065

B. Derivation of Limitations

Discharge limitations will be based on 1) the Steam Electric Effluent Guidelines, 40 CFR Part 423; 2) State Water Quality Criteria set forth in The South Carolina Department of Health and Environmental Control (SCDHEC) Toxic Control Strategy for Wastewater Discharges, South Carolina Department of Health and Environmental Control, October 1990; 3) the Water Classification and Standards (Regulation 61-68); Classified Waters (Regulations 61-69), South Carolina Department of Health and Environmental Control, April 27, 1990; and 4) Guidance for NPDES Permits Issued to Steam Electric Power Plants, Rebecca W. Hanmer, Office of Water Enforcement and Permits, USEPA, August 22, 1985.

C. Proposed Effluent Limitations

The total flow (Q) from the facility to Monticello Reservoir follows:

Outfall 001 (once-through cooling water)	= 769 MGD
Outfall 002 (low volume wastes)	= 13.5 MGD
Outfall 004 (low volume wastes)	= 0.144 MGD
Outfall 007 (low volume wastes)	= 0.08 MGD
Outfall 014 (sanitary sewerage from Outfall 005, low volume wastes from Outfalls 06A and 06B, metal cleaning wastes from Outfall 008, and sanitary sewerage from Outfall 011)	= <u>0.2146 MGD</u>
Total	= 782.9386 MGD

The following dilution is provided for Outfalls 001, 002, 004, 007, and 014 discharges to Monticello Reservoir:

Monticello Reservoir 7Q10 = 0 cfs = 0 MGD
 Monticello Reservoir annual average = 0 cfs = 0 MGD

Therefore,

Dilution factor = $\frac{\text{Stream flow} + \text{Plant Discharge}}{\text{Plant Discharge}}$

7Q10 Dilution factor = $\frac{(0 + 782.9386) \text{ MGD}}{782.9386 \text{ MGD}} = 1.0$

Annual average dilution factor = $\frac{(0 + 782.9386) \text{ MGD}}{782.9386 \text{ MGD}} = 1.0$

The total flow (Q) from the facility to the Broad River follows:

Outfall 003 (low level radiological wastes)	= 0.02 MGD
Outfall 013 (storm water)	= 0.00144 MGD
Outfall 015 (sanitary sewerage from Outfall 010 and from Outfall 012, a combination of low volume wastes (Outfalls 09A and 09B) and storm water (Outfall 09B and yard drains)	= <u>0.026 MGD</u>
Total	= 0.04744 MGD

The following dilution is provided for Outfalls 003, 013, and 015 discharges to Broad River:

Broad River 7Q10 = 973 cfs = 629 MGD
Broad River annual average = 973 cfs = 629 MGD

Therefore,

Dilution factor = $\frac{\text{Stream flow} + \text{Plant Discharge}}{\text{Plant Discharge}}$

7Q10 Dilution factor = $\frac{(629 + 0.04744) \text{ MGD}}{0.04744 \text{ MGD}} = 13260$

Annual average dilution factor = $\frac{(629 + 0.04744) \text{ MGD}}{0.04744 \text{ MGD}} = 13260$

Outfall 001

Description of Discharge: Outfall 001 discharges once-through cooling water at an average rate of 769 MGD. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. There shall be no discharge of PCBs.
2. Once-through cooling water

Parameter	Maximum concentration (mg/l)
Total residual chlorine	0.20

3. Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control. Simultaneous multi-unit chlorination is permitted.

Flow

1. Form 2C Value: 769 MGD average, 769 MGD daily maximum.
2. Previous Permit: Monitor and report.

3. Past DMR Data¹ (3/90-2/91): 769 MGD monthly average, 769 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The flow shall be monitored continuously by pump logs or recorder. This requirement is retained from the previous permit.

Total Residual Chlorine (TRC)

1. Form 2C Value: Reported as believed absent.
2. Previous Permit: 0.2 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): Not reported.
4. Effluent Guidelines: 0.20 mg/l instantaneous maximum.
5. Water quality criteria: 0.011 mg/l chronic, 0.019 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: Not applicable.
7. Detection Limit: <0.1 mg/l.
8. Conclusion: The permittee has indicated that chlorine is not presently added to the cooling water. In lieu of monitoring, a statement will be placed on the limits page prohibiting the addition of chlorine.

pH

1. Form 2C Value: 7.64 s.u. minimum, 7.64 s.u. maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 standard units and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Since this is cooling water with no chemicals added, pH will not be limited at this outfall.

1. 316(a)

The thermal component of the discharge from this facility is subject to

¹ The DMR data provided is the maximum of the 30-day average, daily maximum, or instantaneous maximum values reported during the DMR summary period. DMRs from December 1990 and January 1991 were not available for this summary and were therefore excluded.

compliance with South Carolina Water Classifications and Standards (Reg. 61-68). Section D.(8)(a) of the standards stipulates that the water temperature of all Class A waters "shall not be increased more than 5°F(2.8°C) above natural temperature conditions or exceed a maximum of 90°F(32.2°C) as a result of the discharge of heated liquids," unless a different temperature standard has been established, a mixing zone has been established, or a Section 316(a) determination under the Federal Clean Water Act (the Act) has been completed. Section 316(a) of the Act allows the permitting authority to impose alternative and less stringent thermal limitations after demonstration that the water quality standards limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the receiving water.

On April 7, 1975, as a part of permitting activities of the original NPDES permit, SCE&G provided information to support its request that alternative thermal effluent limitations be allowed under Section 316(a) of the Act. In April 30, 1976, a determination was made that the permittee had submitted adequate information to demonstrate that the alternative limitations for the thermal component of the discharge would assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the Edisto River. The alternate maximum discharge temperature for Outfall 001 is 45°C(113°F). A maximum thermal plume temperature of 32.2°C(90°F) and temperature rise of 1.66°C(3.0°F) is also imposed.

On July 1, 1984 a continuation of the 316(a) variance was allowed by the reissuance of the NPDES permit. On January 3, 1989, a request to continue the variance was included as part of the application for reissuance of the NPDES Permit. To support the request, the permittee has indicated there has been no change in facility operation and no change in the biological community. A tentative determination has been made that continuation of the 316(a) variance is appropriate in the reissuance of this permit.

Section 316(b) of the Act requires that the location, design, construction, and capacity of a cooling water intake structure reflect the best technology available for minimizing environmental impact.

On April 19, 1985, a determination was made, in accordance with Section 316(b) of the Act, that the location, design, construction, and capacity of the cooling water intake structure(s) reflects the best technology available for minimizing adverse environmental impact. This determination was based on information submitted by SCE&G in a 316(b) Demonstration (March 1977).

Outfall 002

Outfall 002 consists of house service water for cooling of emergency generators, cooling heat exchangers and reactor building cooling units and is discharged at an average rate of 13.5 MGD. These wastewaters are considered house service waters, a low volume waste. The facility occasionally adds biocides and corrosion inhibitors to the water supply.

Wastewaters are settled in the house service pond and periodically discharged to the Monticello Reservoir. The house service pond also serves as the backup source for emergency feed water. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 13.5 MGD average, 44 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 12.9 MGD monthly average, 55.7 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Flow conditions at this outfall are similar to those during the previous permit's term. Since this discharge is intermittent, the flow monitoring requirements of an instantaneous measurement taken 1/occurrence, as in the previous permit, remain

appropriate and are therefore imposed.²

pH

1. Form 2C Value: 7.24 s.u. minimum, 7.24 s.u. maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 standard units and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Since Outfall 002 usually acts as an internal outfall, limits of 6.0 s.u. minimum and 9.0 s.u. maximum, based on effluent guidelines, are adopted in the permit. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall for other parameters and for parameters at other intermittently discharging outfalls.

Total Suspended Solids (TSS)

1. Form 2C Value: 3.1 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The discharge from Outfall 002 consists entirely of house service water, a low volume wastes. Therefore, low volume wastes limitations of 30 mg/l daily average and 100 mg/l daily maximum are applicable and are adopted in the permit. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall for other parameters and for parameters at other intermittently discharging outfalls.

Oil and Grease

1. Form 2C Value: 0.3 mg/l daily maximum.

² For purposes of requiring monitoring 1/occurrence of discharge at Outfalls 002 and 003, an occurrence of discharge is limited to a duration of one month. Discharges which continue more than one month shall be monitored 1/month by the required sample type.

2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: The discharge from Outfall 002 consists entirely of house service water, a low volume wastes. Therefore, low volume wastes limitations of 15 mg/l daily average and 20 mg/l daily maximum are applicable and are adopted in the permit. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall for other parameters and for parameters at other intermittently discharging outfalls.

Total Residual Chlorine

1. Form 2C Value: Reported as believed absent.
2. Previous Permit: 0.2 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): Not reported.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 0.011 mg/l chronic, 0.019 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.1 mg/l.
8. Conclusion: The previous permit provides a limit of 0.2 mg/l instantaneous maximum which is less stringent than the water quality-based limitations (See Other Pollutants for a discussion of the derivation of these limits). Therefore, the water quality-based limits of 0.011 mg/l monthly average and 0.019 mg/l daily maximum are imposed. However, the State's achievable detection level for total residual chlorine is higher than water quality limitations. Therefore, the minimum detection level of <0.1 mg/l will be imposed as the monthly average and daily maximum limits. In the Form 2C, the facility reports the use of biocides, but does not specify that chlorine is added. Since there is a possibility that chlorination occurs, monitoring requirements of 1/occurrence of chlorination by grab sample, as in the previous permit, remain appropriate and are adopted.

Sulfate

1. Form 2C Value: 10 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.

6. Human Health Consideration: Not applicable.
7. Detection limit: 0.01 mg/l.
8. Conclusion: Sulfate was evaluated to be limited at this Outfall due to the addition of sulfate containing compounds. Sulfate was reported in the Form 2C application in concentrations (10 mg/l) which were at the typical levels for the discharge of low volume wastes. Outfall 004 (a low volume waste discharge which does not receive sulfate containing compounds) at this facility has a reported sulfate level of <5 mg/l. Since analytical data indicates that sulfate concentrations in the Outfall 002 discharge are consistent with others at this facility, monitoring for sulfate will not be required at this time.

Temperature

1. Form 2C Value: 30.5°C daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 61.9°F monthly average, 70°F instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: The receiving water temperature may not be increased by more than 2.8°C or exceed a maximum of 32.2°C, unless a Section 316(a) determination has been completed.
6. Human Health Consideration: Not applicable.
7. Detection limit: Not applicable.
8. Conclusion: Based on historical data it does appear that the temperature standard will be exceeded, therefore temperature will be monitored and reported as in the previous permit.

Outfall 003

Outfall 003 consists of low level radiological wastes including reactor water, non-reactor grade floor drains, and laundry and shower drains intermittently discharged at an average rate of 0.02 MGD. Wastewaters are treated in the Liquid Waste Processing System by evaporation and ion exchange, and are held in Waste Monitor Tank Nos. 1 and 2 for wastewater monitoring to ensure the wastewater quality is within NPDES and NRC limits prior to discharging. The facility has requested permission to bypass these tanks if upstream monitoring indicates that compliance with limits is obtained. It is the permit writer's understanding that the Waste Monitor Tanks afford no additional treatment and are used for monitoring only. If that such is the case, these units are not considered treatment and therefore bypass is permissible. However, the Permittee should keep in mind that sampling of a treatment unit does not represent sampling of Outfall 003 effluent discharge. Sampling of the discharge must be conducted to meet the intent of this permit.

Flow

1. Form 2C Value: 0.02 MGD average, 0.051 MGD daily maximum.

2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.0048 MGD monthly average, 0.1 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Flow conditions at this outfall are similar to those during the previous permit's term. Since the discharge is intermittent, the flow monitoring requirements of an instantaneous measurement taken 1/occurrence, as in the previous permit, remain appropriate and are therefore imposed.

pH

1. Form 2C Value: 6.02 s.u. minimum, 8.98 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.45 s.u. minimum, 8.96 s.u. maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: pH is being evaluated at this Outfall to determine if possibilities for exceedances of water quality exists as a result of discharges from Outfalls 003, 013, and 015 (a newly designated outfall which consists Outfall 012 (contributions from Internal Outfalls 009A and 009B, and yard drains) and Outfalls 010). In order to conduct this calculation, the background receiving water was assumed to have a neutral pH of 7.0 standard units. Based on this assumption, the following is calculated:

Source	pH min/max (s.u.)	Hydrogen ion
		concentrations
Background	7.0/7.0	$1 \times 10^{-7} / 1 \times 10^{-7}$
Outfall 003	6.02/8.98	$9.55 \times 10^{-9} / 1.05 \times 10^{-9}$
Outfall 010	6.01/8.04	$9.77 \times 10^{-9} / 9.12 \times 10^{-9}$
Outfall 012	7.87/8.09	$1.35 \times 10^{-8} / 8.13 \times 10^{-9}$
Outfall 013	7.57/7.82	$2.69 \times 10^{-8} / 1.51 \times 10^{-8}$

Therefore, the hydrogen ion concentration of the receiving stream can be calculated as follows:

$$\frac{629(1 \times 10^{-7}) + 0.02(9.55 \times 10^{-9}) + 0.012(9.77 \times 10^{-9}) + 0.014(1.35 \times 10^{-8}) + 0.00144(2.69 \times 10^{-8})}{629 + 0.02 + 0.012 + 0.014 + 0.00144} = 1 \times 10^{-7}$$

$$\frac{629(1 \times 10^{-7}) + 0.02(1.05 \times 10^{-9}) + 0.012(9.12 \times 10^{-9}) + 0.014(8.13 \times 10^{-9}) + 0.00144(1.51 \times 10^{-8})}{629 + 0.02 + 0.012 + 0.014 + 0.00144} = 1 \times 10^{-7}$$

Therefore, the pH of the receiving stream would be equal to 7 s.u. Thus, the pH of the receiving water should be unaffected by this discharge and therefore regulating Outfall 003 for pH based on water quality is not considered appropriate at this time. However, the previous permit contained limits of 6.0 s.u. minimum and 9.0 s.u. maximum for this discharge. These values are adopted as limitations based on anti-backsliding. Conditions at this outfall are similar to those during the previous permit's term. Since this discharge is intermittent, pH monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Total Suspended Solids (TSS)

1. Form 2C Value: 30.3 mg/l daily maximum, 3.3 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 5.7 mg/l monthly average, 54.3 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Limitations of 30 mg/l monthly average and 100 mg/l instantaneous maximum are adopted based on anti-backsliding. Conditions at this outfall are similar to those during the previous permit's term. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Oil and Grease

1. Form 2C Value: 18.3 mg/l daily maximum, 3.82 mg/l long term average.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 4.4 mg/l monthly average, 18.5 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: Limitations of 15 mg/l monthly average and 20 mg/l instantaneous maximum are adopted based on anti-backsliding. Conditions at this outfall are similar to those during the previous permit's term. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Boron

1. Form 2C Value: 3944 mg/l daily maximum, 348 mg/l long term average.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 607.7 mg/l monthly average. .88 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: EPA Gold Book criteria suggest . 0.75 mg/l
 $0.75 \text{ mg/l}(13260) = 9945 \text{ mg/l}$
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Monitoring for this parameter was imposed in the previous permit to determine if the discharge levels were sufficiently high as to require permit limits.
A comparison of the calculated limit and the reported 2C value indicate that a limit for Boron is not required at this time.
However, the levels are high enough to warrant concern, therefore Boron will continue to be monitored and reported.

Chromium

1. Form 2 C Value: 188 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 11 ug/l(13260) = 145.86 mg/l chronic
 $16 \text{ ug/l}(13260) = 212.16 \text{ mg/l}$ acute
6. Human Health Consideration: 50 ug/l(13260) = 663 mg/l
7. Detection Limit: <0.01 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, no limit for chromium will be required at this outfall.

Zinc

1. Form 2 C Value: 132 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 59 ug/l(13260) = 782.34 mg/l chronic
 $65 \text{ ug/l}(13260) = 861.9 \text{ mg/l}$ acute
6. Human Health Consideration: 5 mg/l(13260) = 66300 mg/l
7. Detection Limit: <0.01 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, no limit for zinc will be required at this outfall.

Total Copper

1. Form 2C Value: 0.556 mg/l daily maximum, 0.046 mg/l long term average.

2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 0.043 mg/l monthly average, 0.238 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: $0.0065 \text{ mg/l}(13260) = 86.2 \text{ mg/l}$ chronic
 $0.0092 \text{ mg/l}(13260) = 122 \text{ mg/l}$ acute
6. Human Health Consideration: 1.0 mg/l allowable instream waste concentration.
7. Detection limit: $<0.01 \text{ mg/l}$.
8. Conclusion: The previous permit established limits for total copper at 1.0 mg/l monthly average and 1.0 mg/l instantaneous maximum. These limits are more stringent than the water quality-based values of 86.2 mg/l monthly average and 122 mg/l daily maximum. Therefore, limitations of 1.0 mg/l monthly average and 1.0 mg/l instantaneous maximum are imposed based on anti-backsliding. Conditions at this outfall are similar to those during the previous permit term. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Total Iron

1. Form 2C Value: 0.956 mg/l daily maximum, 0.184 mg/l long term average.
2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 0.703 mg/l monthly average, 0.988 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: 0.001 mg/l .
8. Conclusion: Limitations of 1.0 mg/l monthly average and 1.0 mg/l instantaneous maximum are adopted based on anti-backsliding. Conditions at this outfall are similar to those during the previous permits term. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Chemical Oxygen Demand (COD)

1. Form 2C Value: 215 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.

6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: COD was evaluated to be limited at this Outfall due to the addition of oxygen demanding pollutants such as morpholine and hydrazine. COD was reported in the Form 2C application in concentrations (215 mg/l) which were above typical levels for the discharge of low level radioactive wastes. For example, the Duke Power, Catawba, Form 2C application reported COD levels at 45 mg/l for low level radioactive wastes. The cause of this high discharge concentration has not been identified and it is unknown as to whether the value reported on the Form 2C is typical of discharges throughout the year. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall and other intermittently discharging outfalls.

Sulfate

1. Form 2C Value: 346 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Sulfate was evaluated to be limited at this Outfall due to the addition of sulfate containing compounds. Sulfate was reported in the Form 2C application in concentrations (346 mg/l) which were above typical levels for the discharge of low level radioactive wastes. For example, the Duke Power, Catawba, Form 2C application reported sulfate at 5 mg/l for low level radioactive wastes. The cause of the high discharge concentration of sulfate at this outfall has not been identified and it is unknown as to whether the value reported on the Form 2C is typical of discharges throughout the year. Since this discharge is intermittent, monitoring requirements of 1/occurrence by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall and other intermittently discharging outfalls.

Ammonia

1. Form 2C Value: 5.08 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 2.1 mg/l(chronic, 19.2 mg/l acute allowable freshwater instream waste concentration.

6. Human Health Consideration: Not applicable.
7. Detection limit: Not applicable.
8. Conclusion: The regulation of ammonia at this outfall is being considered as a result of the addition of ammonia containing chemicals. With the dilution provided by the receiving stream, water quality-based limits of 27,845 mg/l monthly average and 55,691 mg/l daily maximum (See Other Pollutants for a discussion of the derivation of these limits) are calculated. State procedures require that permit limits be applied unless the derived limit is greater than the reported concentration by 200% or more. Since the derived limit of 27,845 mg/l is more than 200% of the reported concentration of 5.08 mg/l, no limit will be imposed for ammonia at this Outfall.

Outfall 004

Outfall 004 consists of steam generator blowdown discharged at an average rate of 0.144 MGD. Wastewaters are settled then discharged via Outfall 001 to Monticello Reservoir or via Outfall 003 (as low level radiological waste) to Broad River.

Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.144 MGD average, 0.313 daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.208 MGD monthly average, 0.208 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.

6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall are similar to those during the previous permit's term. Therefore, monitoring requirements of an instantaneous measurement taken 1/month, as in the previous permit, remain appropriate and are imposed.

pH

1. Form 2C Value: 6.95 s.u. minimum, 8.98 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 7.58 s.u. minimum, 8.89 s.u. maximum.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Although the water quality standard is more stringent than the effluent guideline limits, this wastestream is combined with once through cooling water prior to discharge through Outfall 001. It is unlikely that an exceedance of the water quality standard would occur. Therefore a limit of 6.0 to 9.0 s.u. based on effluent guidelines will be applied at Outfall 004.

Total Suspended Solids (TSS)

1. Form 2C Value: 2.1 mg/l daily maximum, 1.03 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 2.3 mg/l monthly average, 2.3 mg/l instantaneous maximum.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Outfall. Therefore, effluent guidelines-based limitations of 30 mg/l monthly average and 100 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 100 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 100 mg/l daily maximum. Therefore, limitations of 30 mg/l monthly average and 100 mg/l instantaneous maximum are adopted based on anti-backsliding. These limits are applicable in all 3 discharge situations. Conditions at this outfall are similar to those during the previous permit's term. Therefore, the monitoring frequency of 1/month, as in the previous permit, remains appropriate and is adopted. As a result of past data

indicating compliance with previous permit limitations, the monitoring type has been changed from a composite sample to grab sample to be consistent with the requirements at other outfalls regulated in this permit.

Oil and Grease

1. Form 2C Value: 4.6 mg/l daily maximum, 1.18 mg/l long term average.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 1.5 mg/l monthly average, 1.5 mg/l daily maximum.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Outfall. Therefore, effluent guidelines-based limitations of 15 mg/l monthly average and 20 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 20 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 20 mg/l daily maximum. Therefore, limitations of 15 mg/l monthly average and 20 mg/l instantaneous maximum are adopted based on anti-backsliding. These limits are applicable in all 3 discharge situations. Conditions at this outfall are similar to those during the previous permit's term. Therefore, the monitoring frequency of 1/month, as in the previous permit, remains appropriate and is adopted. As a result of past data indicating compliance with previous permit limitations, the monitoring type has been changed from a composite sample to a grab sample to be consistent with the requirements at other outfalls regulated in this permit.

Total Copper

1. Form 2C Value: 0.13 mg/l daily maximum, 0.04 mg/l long term average.
2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 0.034 mg/l monthly average, 0.034 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 0.0065 mg/l chronic, 0.0092 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: 1 mg/l allowable instream waste concentration.
7. Detection limit: <0.01 mg/l.

Rationale

NPDES Permit No. SC0030856

Page 20 of 58

8. Conclusion: Since this Outfall acts as an internal outfall, water quality limits are not applicable. Based upon dilution with the cooling water, past DMR data, and the Form 2C sampling, it does not appear that Water Quality Criteria would be exceeded at Outfall 001. Additional sampling data provided by the permittee on December 29, 1992, indicates that copper would not be a problem at the final discharge point, Outfall 001. Therefore, there will not be a limit for copper at Outfalls 001 or 004.

Total Iron

1. Form 2C Value: 0.53 mg/l daily maximum, 0.22 mg/l long term average.
2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 0.171 mg/l daily maximum, 0.171 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 1.0 mg/l
6. Human Health Consideration: 0.3 mg/l (domestic water supplies - welfare)
7. Detection limit: 0.001 mg/l.
8. Conclusion: Since this Outfall acts as an internal outfall, water quality limits are not applicable at this point. Water quality limits are applicable at the final discharge point. Since this wastestream combines with the cooling water prior to discharge, it is unlikely that an exceedance of the water quality limit would occur. Therefore, there will be no limit for iron.

Ammonia

1. Form 2C Value: 0.418 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 2.1 mg/l chronic, 19.2 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: Not applicable.
7. Detection limit: Not applicable.
8. Conclusion: The regulation of ammonia at this outfall is being considered as a result of the addition of ammonia containing chemicals. With the dilution provided by the receiving stream, water quality-based limits of 2.1 mg/l monthly average and 4.2 mg/l daily maximum (See Other Pollutants for a discussion of the derivation of these limits) are calculated. State procedures require that permit limits be applied unless the derived limit is greater than the reported concentration by 200% or more. Since the derived limit of 2.1 mg/l is more than 200% of the reported concentration of 0.418 mg/l, no limit will be imposed for ammonia at

this Outfall.

Boron

1. Form 2C Value: 0.12 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The regulation of boron at this outfall is being considered as a result of the addition of boron containing compounds. EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation. State procedures provide the following formula for calculating water quality-based limits:

Limit = Water quality criteria/standard * dilution factor

Limit = 0.75 mg/l * 1 = 0.75 mg/l

The procedures require that permit limits be applied unless the derived limit is greater than the reported concentration by 200% or more. Since the derived limit of 0.75 mg/l is more than 200% of the reported concentration of 0.12 mg/l, no limit will be imposed for boron at this Outfall.

Chemical Oxygen Demand (COD)

1. Form 2C Value: 20 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: 0.01 mg/l.
8. Conclusion: COD was evaluated to be limited at this Outfall due to the addition of oxygen demanding pollutants such as morpholine and hydrazine. COD was reported in the Form 2C application in concentrations (20 mg/l) which are at typical levels for low volume wastes. For example, Outfalls 009A and 009B (low volume waste discharges which receives no additions of hydrazine or morpholine) at this facility both have reported COD levels of 30 mg/l. Since analytical data indicate that COD concentrations in the Outfall 004 discharge are consistent with others at this facility, monitoring for COD will not be required at this time.

Outfall 005

Outfall 005 is an internal outfall consisting of treated sanitary sewerage with an average discharge flow of 0.0386 MGD. Wastewaters are treated in an aeration pond, followed by a stabilization pond. Ultimately, effluent is chlorinated in a chlorine contact chamber prior to commingling with other wastewaters and discharging via newly designated Outfall 014 to the Monticello Reservoir.

Flow

1. Form 2C Value: 0.0386 MGD average, 0.046 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.0227 MGD monthly average, 0.0828 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The SCDHEC waste load allocation dated 2/21/89 set forth recommendations for a flow limitation of 0.039 MGD monthly average and this limitation is adopted into the permit. Flow conditions at this outfall have not changed. However, there have been noted excursions of several parameters at this Outfall. Therefore, the monitoring requirements of instantaneous measurements taken 1/week, as in the previous permit, remain appropriate and are imposed.

pH

1. Form 2C Value: 6.03 s.u. minimum, 10.18 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.01 s.u. minimum, 9.7 s.u. maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: A limit for pH will not be required at this outfall, since this is an internal outfall and the wastestream is not subject to the steam electric guidelines. A water quality limit for pH will be applied at the final discharge point (Outfall 014) to the receiving water body.

5-Day Biochemical Oxygen Demand (BOD₅)

1. Form 2C Value: 23.2 mg/l daily maximum, 9.04 mg/l long term average

2. Previous Permit: 30 mg/l monthly average, 45 mg/l daily maximum.
3. Past DMR Data (3/90-2/91): 35.9 mg/l monthly average, 49.0 mg/l daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <2 mg/l.
8. Conclusion: Limitations of 30 mg/l monthly average and 45 mg/l daily maximum are adopted based on anti-backsliding. Past data indicate that exceedances of BOD₅ have occurred. Therefore, the monitoring frequency is increased to 1/week. Monitoring by 24-hour composite sample, as in the previous permit, remains appropriate and is adopted.

Total Suspended Solids (TSS)

1. Form 2C Value: 53.5 mg/l daily maximum, 24.8 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 45 mg/l daily maximum.
3. Past DMR Data (3/90-2/91): 73.3 mg/l monthly average, 100 mg/l daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Limitations of 30 mg/l monthly average and 45 mg/l daily maximum are adopted based on anti-backsliding. Past data indicate that exceedances of TSS have occurred. Therefore, the monitoring frequency is increased to 1/week. Monitoring by 24-hour composite sample, as in the previous permit, remains appropriate and is adopted.

Fecal Coliform

1. Form 2C Value: <0.1/100 ml.
2. Previous Permit: 200/100 ml monthly average, 400/100 ml daily maximum.
3. Past DMR Data (3/90-2/91): <1/100 ml monthly average, <1/100 ml daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <2/100 ml.
8. Conclusion: The previous permit limits of 200/100 ml monthly average and 400/100 ml daily maximum are adopted based on anti-backsliding. Conditions relating to fecal coliform at this outfall are similar to those during the previous permit's term. Therefore,

monitoring requirements of 2/month by grab sample, as in the previous permit, remain appropriate and are adopted.

Total Residual Chlorine

1. Form 2C Value: 3.5 mg/l daily maximum, 1.5 mg/l long term average.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: A limit for TRC will not be required at this outfall, since this is an internal outfall and the wastestream is not subject to the steam electric guidelines. A water quality limit for TRC will be applied at the final discharge point (Outfall 014) to the receiving water body.

Dissolved Oxygen

1. Form 2C Value: Not a Form 2C application parameter.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The SCDHEC waste load allocation dated 2/21/89 set forth recommendations for a dissolved oxygen limitation of 1.0 mg/l minimum and this limitation is adopted into the permit. This limit will be applied at the final discharge point (Outfall 014) to the receiving water body.

Outfall 006A

Outfall 006A is an internal outfall consisting of low volume wastes discharging at an average rate of 0.08 MGD. Internal Outfall 006A discharges treated wastewater from the water treatment area referred to as the Alum Sludge Basin. Treatment consists of sedimentation prior to discharge. Wastewaters from Internal Outfall 006A is commingled with other wastewaters and discharged via newly designated Outfall 014 to Monticello Reservoir. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.

2. There shall be no discharge of PCBs.

3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.08 MGD average, 0.451 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.2017 MGD monthly average, 0.4506 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall are similar to those during the previous permit's term. Therefore, monitoring by instantaneous measurement, as in the previous permit, remains appropriate and are imposed. To be consistent with other outfalls regulated in this permit, the monitoring frequency is reduced to 1/month.

pH

1. Form 2C Value: 6.85 s.u. minimum, 10.22 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.14 s.u. minimum, 9.49 s.u. maximum.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): 6.0 to 8.5 s.u.(applicable at final discharge point 014)
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Since the stream standard is more stringent than the effluent guideline based limit, a pH limit of 6.0 to 8.5 s.u. will be applied at the final discharge point.

Total Suspended Solids (TSS)

1. Form 2C Value: 14.2 mg/l daily maximum, 5.87 mg/l monthly average.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 3.95 mg/l monthly average, 8.8 mg/l instantaneous maximum.

4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Internal Outfall. Therefore, effluent guidelines-based limitations of 30 mg/l monthly average and 100 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 100 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 100 mg/l daily maximum. Therefore, limitations of 30 mg/l monthly average and 100 mg/l instantaneous maximum are adopted based on anti-backsliding. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month and the type has been changed from a composite sample to a grab sample to be consistent with the requirements at other outfalls regulated in this permit.

Oil and Grease

1. Form 2C Value: 4.0 mg/l daily maximum, 0.63 mg/l long term average.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 0.8 mg/l monthly average, 2.3 mg/l instantaneous maximum.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Outfall. Therefore, effluent guidelines-based limitations of 15 mg/l monthly average and 20 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 20 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 20 mg/l daily maximum. Therefore, limitations of 15 mg/l monthly average and 20 mg/l instantaneous maximum are adopted based on anti-backsliding. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month to be consistent with the requirements at other outfalls regulated in this permit. Monitoring by grab sample, as in the previous permit, remains appropriate and is adopted.

Zinc

1. Form 2 C Value: 49.4 ug/l

2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 59 ug/l chronic
65 ug/l acute
6. Human Health Consideration: 5 mg/l
7. Detection Limit: <0.01 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, a limit of 59 ug/l monthly average and 65 ug/l daily maximum for zinc will be required. Since this is an internal outfall, the limit will be applied at the final discharge point, Outfall 014.

Other Pollutants

Several other pollutants may be present in this outfall due to the addition of chemical additives. These include ammonia; morpholine; soda ash; aluminum sulfate; chlorine; boron; biocides including zinc sulfate, tetrasodium pyrophosphate, and polymer; and algicides containing copper. These pollutants were evaluated at the final discharge location: newly designated Outfall 014 to Monticello Reservoir.

Outfall 006B

Outfall 006B is an internal outfall consisting of low volume wastes discharging at an average flow of 0.09 MGD. Internal Outfall 006B discharges treated wastewater from various sumps in the transformer and fuel oil storage and handling areas. Treatment consists of oil skimming and sedimentation prior to discharge. Wastewaters from Internal Outfall 006B are commingled with other wastewaters and discharged via newly designated Outfall 014 to Monticello Reservoir. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
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TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.09 MGD average, 0.315 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.1116 MGD monthly average, 0.4139 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall are similar to those during the previous permit's term. Therefore, monitoring by instantaneous measurement, as in the previous permit, remains appropriate and are imposed. To be consistent with other outfalls regulated in this permit, the monitoring frequency is reduced to 1/month.

pH

1. Form 2C Value: 6.95 s.u. minimum, 10.47 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.24 s.u. minimum, 9.21 s.u. maximum
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): 6.0 to 8.5 s.u.(applicable at final discharge point 014)
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The stream standard based limit of 6.0 to 8.5 s.u. will be applied at the final discharge point since it is more stringent than the effluent guideline limit.

Total Suspended Solids (TSS)

1. Form 2C Value: 25.7 mg/l daily maximum, 8.9 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 5.8 mg/l monthly average, 7.3 mg/l instantaneous maximum.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: With the exception of fuel oil handling drains and transformer drains, discharges at Outfall 006B consist of low volume wastes as per the Steam Electric Effluent Guidelines. Since these drains provide dilution, it must be accounted for via the

following³:

	<u>Flow</u>	<u>30 day Average</u>	<u>Daily Maximum</u>
Total low volume wastes process flows	0.0868 MGD	30 mg/l	100 mg/l
Fuel oil and transformer area yard drains	0.0032 MGD	20 mg/l	30 mg/l
Total flows	0.090 MGD		

Using this data, the limitations at Outfall 006B are calculated as follows:

Total Suspended Solids Monthly Average Limit

$$\frac{0.0868 (30) + 0.0032 (20)}{0.09} = 29.6 \text{ mg/l}$$

Total Suspended Solids Daily Maximum Limit

$$\frac{0.0868 (100) + 0.0032 (30)}{0.090} = 97.5 \text{ mg/l}$$

Based on these calculations, limitations of 29.6 mg/l monthly average and 97.5 mg/l daily maximum are adopted. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month and the type has been changed from a composite sample to a grab sample to be consistent with the requirements at other outfalls regulated in this permit.

Oil and Grease

1. Form 2C Value: 12.13 mg/l daily maximum, 2.97 mg/l long term average.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.

³

The procedures and limitations for flow weighted averaging calculations when regulated wastestreams are commingled are taken from the August 22, 1985, memo entitled "Guidance for NPDES Permits Issued to Steam Electric Power Plants." The TSS values of 20 mg/l monthly average and 30 mg/l daily maximum for the yard drain component of the discharge come from this memo.

3. Past DMR Data (3/90-2/91): 2.7 mg/l monthly average, 5.8 mg/l instantaneous maximum.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: With the exception of fuel oil handling drains and transformer drains, discharges at Outfall 006B consist of low volume wastes as per the Steam Electric Effluent Guidelines. Since these

drains provide dilution, it must be accounted for via the following⁴:

	<u>Flow</u>	<u>30 day Average</u>	<u>Daily Maximum</u>
Total low volume wastes process flows	0.0868 MGD	15 mg/l	20 mg/l
Fuel oil and transformer area drains	0.0032 MGD	0 mg/l	0 mg/l
Total flows	0.090 MGD		

Using this data, the limitations at Outfall 006B are calculated as follows:

Oil and Grease Monthly Average Limit

$$\frac{0.0868 (15) + 0.0032 (0)}{0.090} = 14.5 \text{ mg/l}$$

Oil and Grease Daily Maximum Limit

$$\frac{0.0868 (20) + 0.0032 (0)}{0.090} = 19.3 \text{ mg/l}$$

⁴

The procedures and limitations for flow weighted averaging calculations when regulated wastestreams are commingled are taken from the August 22, 1985, memo entitled "Guidance for NPDES Permits Issued to Steam Electric Power Plants." The oil and grease values of 0 mg/l monthly average and daily maximum for the yard drain component of the discharge come from this memo.

Based on these calculations, limitations of 14.5 mg/l monthly average and 19.3 mg/l daily maximum are adopted. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month to be consistent with the requirements at other outfalls regulated in this permit. Monitoring by grab sample, as in the previous permit, remains appropriate and is adopted.

Zinc

1. Form 2 C Value: 49.4 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 59 ug/l chronic
65 ug/l acute
6. Human Health Consideration: 5 mg/l
7. Detection Limit: <0.01 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, a limit of 59 ug/l monthly average and 65 ug/l daily maximum for zinc will be required. Since this is an internal outfall, the limit will be applied at the final discharge point, Outfall 014.

Other Pollutants

Several other pollutants may be present in this outfall due to the addition of chemical additives. These include ammonia; sodium nitrate/sodium borate; and algicides containing copper. These pollutants were evaluated at the final discharge location: newly designated Outfall 014 to Monticello Reservoir.

Outfall 007

Outfall 007 consists of low volume wastes from ion exchange regeneration and from sumps located in the chemical feed equipment, caustic tank, and "D" battery room areas with a commingled average discharge flow of 0.08 MGD. Treatment consists of neutralization prior to commingling with other wastestreams and final discharge through Outfall 001 to Monticello Reservoir. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.08 MGD average, 0.338 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.1059 MGD monthly average, 0.525 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall are similar to those during the previous permit's term. The current method of monitoring fits the definition of "estimate" and will continue as such. To be consistent with other outfalls regulated in this permit, the monitoring frequency is lessened to 1/month.

pH

1. Form 2C Value: 6.05 s.u. minimum, 9.0 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.1 s.u. minimum, 8.9 s.u. maximum.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Since this wastestream is commingled with other wastestreams prior to the final discharge, water quality limits are not applicable. Effluent guideline based limits of 6.0 to 9.0 s.u., as in the previous permit, shall be imposed. Monitoring requirements of 1/week by grab sample, as in the previous permit, should be adequate to regulate the discharge pH from this Outfall and these requirements are thus adopted.

Total Suspended Solids (TSS)

1. Form 2C Value: 13.5 mg/l daily maximum, 1.36 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 4.8 mg/l monthly average, 16.7 mg/l instantaneous maximum.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Outfall. Therefore, effluent guidelines-based limitations of 30 mg/l monthly average and 100 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 100 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 100 mg/l daily maximum. Therefore, limitations of 30 mg/l monthly average and 100 mg/l instantaneous maximum are adopted based on anti-backsliding. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month and the type has been changed from a composite sample to a grab sample to be consistent with the requirements at other outfalls regulated in this permit.

Oil and Grease

1. Form 2C Value: 6.0 mg/l daily maximum, 0.37 mg/l long term average.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): 1.6 mg/l monthly average, 5.3 mg/l instantaneous maximum.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Outfall. Therefore, effluent guidelines-based limitations of 15 mg/l monthly average and 20 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 20 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 20 mg/l daily maximum. Therefore, limitations of 15 mg/l monthly average and 20 mg/l instantaneous maximum are adopted based on anti-backsliding. As a result of past data indicating compliance with the previous permit limitations, the monitoring frequency has been lessened to 1/month to be consistent with the requirements at other outfalls regulated in this permit. Monitoring by grab sample, as in the previous permit, remains appropriate and is

adopted.

Boron

1. Form 2C Value: 1.25 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Boron was evaluated to be limited at this Outfall since the permittee has indicated that Boron is discharged from this outfall and 2C sampling has detected significant levels. EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation. State procedures provide the following formula for calculating water quality-based limits:

Limit = Water quality criteria/standard * dilution factor

Limit = 0.75 mg/l * 1 = 0.75 mg/l

The procedures require that permit limits be applied unless the derived limit is greater than the reported concentration by 200% or more. Since the reported value of 1.25 mg/l exceeds the derived limit, a limitation of 0.75 mg/l instantaneous maximum would be appropriate for direct discharge to Monticello Reservoir. However, since this wastestream is diluted with other wastestreams and once through cooling water prior to discharge through Outfall 001, it is difficult to determine whether or not this limit would be exceeded. Monitoring and reporting for Boron at Outfall 001 will be required 2/month by grab sample to ascertain the concentrations at the final outfall.

Lead

1. Form 2 C Value: 7 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 1.3 ug/l
6. Human Health Consideration: 50 ug/l
7. Detection Limit: <0.05 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, a limit of 1.3 ug/l as a monthly average

and 2.6 ug/l as a daily maximum would be appropriate. However, the state lower limit of detection is higher than the water quality limit; therefore, the limit shall be less than detection.

Zinc

1. Form 2 C Value: 331 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 59 ug/l chronic
65 ug/l acute
6. Human Health Consideration: 5 mg/l
7. Detection Limit: 0.01 mg/l
8. Conclusion: Since this wastestream is diluted with once through cooling water prior to discharge, it appears unlikely that an exceedance of water quality criteria would occur. Zinc shall be monitored and reported at Outfall 001 to ascertain the concentration at the final discharge point.

Outfall 008

Outfall 008 is an internal outfall which consists of chemical metal cleaning wastes. Internal Outfall 008 discharges approximately 2 times per year from the Plant Startup Waste Holding Basin. The facility has reported 0 MGD as the average discharge flow rate from Internal Outfall 008. Treatment consists of neutralization and sedimentation prior to discharge. Wastewaters from Internal Outfall 008 are commingled with other wastewaters and discharged via newly designated Outfall 014 to Monticello Reservoir. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Metal cleaning wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
Total Copper	1.0	1.0
Total Iron	1.0	1.0

Flow

1. Form 2C Value: 0 MGD average, 0 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall are similar to those during the previous permit term. Therefore, monitoring requirement of an instantaneous measurement 1/day, as in the previous permit, remain appropriate and are imposed.

pH

1. Form 2C Value: 10 s.u. minimum, 10 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The stream standard based limit of 6.0 to 8.5 s.u. will be applied at the final discharge point (Outfall 014) since it is more stringent than the effluent guideline limit.

Total Suspended Solids (TSS)

1. Form 2C Value: 24.4 mg/l daily maximum.
2. Previous Permit: 30 mg/l monthly average, 100 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Internal Outfall. Therefore, effluent guidelines-based limitations of 30 mg/l monthly average and 100 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 100 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 100 mg/l daily maximum. Therefore, limitations of 30 mg/l monthly average and 100 mg/l instantaneous maximum are adopted based on anti-backsliding. Since

this discharge is a batch-type discharge, monitoring by grab sample is deemed appropriate and is thus adopted. A monitoring frequency of 1/occurrence, as in the previous permit, remains appropriate and is adopted.

Oil and Grease

1. Form 2C Value: 0.0 mg/l daily maximum.
2. Previous Permit: 15 mg/l monthly average, 20 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: There is no dilution provided at the point of

discharge of this Outfall. Therefore, effluent guidelines-based limitations of 15 mg/l monthly average and 20 mg/l daily maximum are applicable to this discharge. However, the previous permit limit of 20 mg/l instantaneous maximum is more stringent than the effluent guidelines-based limit of 20 mg/l daily maximum. Therefore, limitations of 15 mg/l monthly average and 20 mg/l instantaneous maximum are adopted based on anti-backsliding. Conditions at this Outfall for the pollutant oil and grease are similar to those during the previous permit's term. Therefore, monitoring requirements of 1/occurrence by grab sample, as in the previous permit, remain appropriate and are adopted.

Total Copper

1. Form 2C Value: Not reported.
2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: 1.0 mg/l monthly average and 1.0 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: 0.0065 mg/l monthly average, 0.0092 mg/l daily maximum
6. Human Health Consideration: 1.0 mg/l instream waste concentration
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Internal Outfall. Therefore, effluent guidelines-based limitations of 1.0 mg/l monthly average and 1.0 mg/l daily maximum are applicable to this discharge. Water quality limits of 0.0065 mg/l monthly average and 0.0092 mg/l daily maximum are applicable at the final discharge point 014. A monitoring frequency of

1/occurrence, as in the previous permit, remains appropriate and is adopted.

Total Iron

1. Form 2C Value: 2.06 mg/l daily maximum.
2. Previous Permit: 1.0 mg/l monthly average, 1.0 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): No discharge.
4. Effluent Guidelines: 1.0 mg/l monthly average and 1.0 mg/l daily maximum with adjustments for dilution..
5. Water Quality Criteria: 1.0 mg/l
6. Human Health Consideration: 0.3 mg/l (domestic water supplies)
7. Detection limit: <0.01 mg/l.
8. Conclusion: There is no dilution provided at the point of discharge of this Internal Outfall. Therefore, effluent guidelines-based limitations of 1.0 mg/l monthly average and 1.0 mg/l daily maximum are applicable to this discharge. A monitoring frequency of 1/occurrence, as in the previous permit, remains appropriate and is adopted.

Other Pollutants

Several other pollutants may be present in this outfall due to the addition of chemical additives. These include hydrazine; morpholine; boron; gaseous chlorine; and sodium nitrate/sodium borate. These pollutants were evaluated at the final discharge location: newly designated Outfall 014 to Monticello Reservoir.

Outfall 009A

Outfall 009A is an internal outfall which consists of house service water blowdown from the Reactor Building Cooling Units, the Boron Thermal Regeneration System Chiller Condenser, the Reactor Building air compressors, and the Reactor Building air dryers. Internal Outfall 009A has an average discharge flow of 0.006 MGD. Cooling waters used in the cooling units are treated, when needed, with chlorine in order to prevent algae build-up. Ultimately, wastewaters are discharged via Internal Outfall 012 to the Broad River. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.006 MGD average, 0.01 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.067 MGD monthly average, 0.067 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Conditions at this outfall concerning flow monitoring are similar to those during the previous permit's term.

pH

1. Form 2C Value: 7.04 s.u. minimum, 8.5 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 7.3 s.u. minimum, 8.63 s.u. maximum.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The discharge from Outfall 009A is commingled with Outfall 009B and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of pH is not deemed appropriate at Outfall 009A. Therefore, pH will be limited at Outfall 012.

Total Suspended Solids (TSS)

1. Form 2C Value: 2.1 mg/l daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 2.1 mg/l monthly average, 2.1 mg/l instantaneous maximum.

4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The discharge from Outfall 009A is commingled with Outfall 009B and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of TSS is not deemed appropriate at Outfall 009A. Therefore, TSS will be limited at Outfall 012.

Oil and Grease

1. Form 2C Value: 0.4 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: The discharge from Outfall 009A is commingled with Outfall 009B and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of oil and grease is not deemed appropriate at Outfall 009A. Therefore, oil and grease will be limited at Outfall 012.

Total Residual Chlorine

1. Form 2C Value: Reported as believed absent.
2. Previous Permit: 0.2 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): <0.1 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.1 mg/l.
8. Conclusion: A limit for TRC will not be required at this outfall, since this is an internal outfall and this parameter is not regulated in this wastestream by the steam electric guidelines. A water quality limit for TRC will be applied at the final discharge point (Outfall 012) to the receiving water body.

Arsenic

1. Form 2 C Value: 5.21 ug/l
2. Previous Permit: Not regulated

3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 190 ug/l(13260) = 2519.4 mg/l chronic
360 ug/l(13269) = 4773.6 mg/l acute
6. Human Health Consideration: 1.4 ug/l(13260) = 18.56 mg/l (risk factor 10^{-5} , fish consumption only); Drinking Water MCL - 50 ug/l(13260) = 663 mg/l
7. Detection Limit: <0.005 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, arsenic will not be limited at this outfall.

Outfall 009B

Outfall 009B is an internal outfall which consists of sump overflows (blowdown) from house service cooling water from the Control Rod Drive Mechanism Cooling Water System with an average flow rate of 0.002 MGD. Cooling waters are treated, when needed, with chlorine in order to prevent algae build-up. Ultimately, wastewaters are discharged via Internal Outfall 012 to the Broad River. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.002 MGD average, 0.01 MGD daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.0013 MGD monthly average, 0.0013 MGD instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.

8. Conclusion: Conditions at this outfall concerning flow monitoring are similar to those during the previous permit's term.

pH

1. Form 2C Value: 8.11 s.u. minimum, 8.96 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 7.3 s.u. minimum, 8.88 s.u. maximum.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The discharge from Outfall 009B is commingled with Outfall 009A and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of pH is not deemed appropriate at Outfall 009B. Therefore, pH will be limited at Outfall 012.

Total Suspended Solids (TSS)

1. Form 2C Value: 6.3 mg/l daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 3.0 mg/l monthly average, 3.0 mg/l instantaneous maximum.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The discharge from Outfall 009B is commingled with Outfall 009A and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of TSS is not deemed appropriate at Outfall 009B. Therefore, TSS will be limited at Outfall 012.

Oil and Grease

1. Form 2C Value: 1.1 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.

8. Conclusion: The discharge from Outfall 009B is commingled with Outfall 009A and thence commingled with Outfall 012. Outfalls 009A, 009B, and 012 consist of low volume wastes and storm water. In the previous permit, Outfall 012 did not exist. Due to the introduction of Outfall 012, the regulation of oil and grease is not deemed appropriate at Outfall 009B. Therefore, oil and grease will be limited at Outfall 012.

Total Residual Chlorine

1. Form 2C Value: Reported as believed absent.
2. Previous Permit: 0.2 mg/l instantaneous maximum.
3. Past DMR Data (3/90-2/91): <0.1 mg/l instantaneous maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.1 mg/l.
8. Conclusion: A limit for TRC will not be required at this outfall, since this is an internal outfall and this parameter is not regulated in this wastestream by the steam electric guidelines. A water quality limit for TRC will be applied at the final discharge point (Outfall 012) to the receiving water body.

Zinc

1. Form 2 C Value: 132 ug/l
2. Previous Permit: Not regulated
3. Past DMR Data (9/89-8/90): Not applicable
4. Effluent Guidelines: Not applicable
5. Water Quality Criteria: 59 ug/l(13260) = 782.34 mg/l chronic
65 ug/l(13260) = 861.9 mg/l acute
6. Human Health Consideration: 5 mg/l(13260) = 66300 mg/l
7. Detection Limit: <0.01 mg/l
8. Conclusion: Based on a comparison between the 2C value and water quality based limits, a limit for zinc will not be required for this outfall.

Since no parameters are limited at Outfall 009A & B, it is proposed that these outfalls are no longer necessary and will not be included in this permit.

Outfall 010

Outfall 010 is an internal outfall consisting of treated sanitary sewerage discharging at an average flow of 0.012 MGD. Sewerage is received from the construction office and construction warehouse and is treated in an extended aeration tank, a settling tank, and a chlorine contact tank. Ultimately, wastewater is commingled with other wastes and discharged to the Broad River.

Based upon an engineering submittal received March 26, 1993, the permittee intends to upgrade the sewage treatment facility such that Outfall 010 will cease

to exist. The limitations and monitoring requirements associated with this outfall are considered interim until the upgrade is complete. The previous permit limits will continue in effect until the outfall has been closed out.

Outfall 011

Outfall 011 is an internal outfall consisting of treated sanitary sewerage discharging at an average flow rate of 0.006 MGD. Sewerage is received from Warehouse "C," the warehouse maintenance shop, the guard house and the blue building and is treated in an aeration/settling pond, followed by a chlorine contact chamber. Ultimately, wastewaters are commingled with other wastes and discharged via newly designated Outfall 014 to Monticello Reservoir.

Flow

1. Form 2C Value: 0.005 MGD average, 0.005 daily maximum.
2. Previous Permit: Monitor and report.
3. Past DMR Data (3/90-2/91): 0.0064 MGD monthly average, 0.0118 MGD daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The SCDHEC waste load allocation dated 2/21/89 sets forth recommendations for a flow limitation of 0.006 MGD monthly average and this limitation is adopted into the permit. Flow conditions at this outfall are similar to those during the previous permit's term. Therefore, monitoring by flow indicator, as in the previous permit, remains appropriate and is imposed. However, due to other steam electric facilities in South Carolina having a reduced frequency of monitoring at sanitary sewerage outfalls, the monitoring frequency is reduced to 1/month.

pH

1. Form 2C Value: 6.73 s.u. minimum, 8.02 s.u. maximum.
2. Previous Permit: 6.0 s.u. minimum, 9.0 s.u. maximum.
3. Past DMR Data (3/90-2/91): 6.55 s.u. minimum, 8.7 s.u. maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: A limit for pH will not be required at this outfall, since this is an internal outfall and the wastestream is not subject to the steam electric guidelines. A water quality limit for pH will be applied at the final discharge point (Outfall 014) to the receiving water body.

5-Day Biochemical Oxygen Demand (BOD₅)

1. Form 2C Value: 13.9 mg/l daily maximum, 10.25 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 45 mg/l daily maximum.
3. Past DMR Data (3/90-2/91): 22.8 mg/l monthly average, 22.8 mg/l daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <2 mg/l.
8. Conclusion: Limitations of 30 mg/l monthly average and 45 mg/l daily maximum are adopted based on anti-backsliding. Past DMR data indicate compliance with limitations contained in the previous permit and conditions at this outfall are similar to those during the previous permit's term. Therefore, to be consistent with other steam electric facilities in South Carolina which have reduced monitoring requirements at sanitary sewerage outfalls, the monitoring frequency is reduced to 1/month. Monitoring by 24-hour composite sample, as in the previous permit, are maintained to be consistent with the monitoring type for TSS at this Outfall.

Total Suspended Solids (TSS)

1. Form 2C Value: 55.2 mg/l daily maximum, 29.1 mg/l long term average.
2. Previous Permit: 30 mg/l monthly average, 45 mg/l daily maximum.
3. Past DMR Data (3/90-2/91): 43.5 mg/l monthly average, 47.0 mg/l daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Limitations of 30 mg/l monthly average and 45 mg/l daily maximum are adopted based on anti-backsliding. Past DMR data and Form 2C data indicate exceedances of limitations during the previous permit's term. Therefore, the monitoring frequency is increased to 1/week. Monitoring by 24-hour composite, as in the previous permit, remains appropriate and is adopted.

Fecal Coliform

1. Form 2C Value: <1/100 ml.
2. Previous Permit: 200/100 ml monthly average, 400/100 ml daily maximum.
3. Past DMR Data (3/90-2/91): <1/100 ml monthly average, <1/100 ml daily maximum.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.

6. Human Health Consideration: Not applicable.
7. Detection limit: <2/100 ml.
8. Conclusion: The previous permit limits of 200/100 ml monthly average and 400/100 ml daily maximum are adopted based on anti-backsliding. Conditions at this outfall are similar to those during the previous permit's term. However, due to other steam electric facilities in South Carolina having a reduced frequency of monitoring at sanitary sewerage outfalls, the monitoring frequency is reduced to 1/month. Monitoring by grab sample, as in the previous permit, remains appropriate and is adopted.

Total Residual Chlorine

1. Form 2C Value: 3.5 mg/l daily maximum, 0.6 mg/l long term average.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: A limit for TRC will not be required at this outfall, since this is an internal outfall and the wastestream is not subject to the steam electric guidelines. A water quality limit for TRC will be applied at the final discharge point (Outfall 014) to the receiving water body.

Dissolved Oxygen

1. Form 2C Value: Not a Form 2C application parameter.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The SCDHEC waste load allocation dated 2/21/89 set forth recommendations for a dissolved oxygen limitation of 1.0 mg/l minimum and this limitation is adopted into the permit. This limit will be applied at the final discharge point (Outfall 014) to the receiving water body.

Outfall 012

Outfall 012 is an internal outfall which consists of storm water runoff from yard drains in the north/northwest area of the plant site and previously monitored house service water from Internal Outfalls 009A and 009B. No treatment is provided prior to discharge to the Broad River. Occasionally, chlorine is added

at Internal Outfalls 009A and 009B. Applicable effluent guidelines for this Outfall are the Steam Electric Point Source Category for existing sources, which provide the following limitations:

1. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 standard units to 9.0 standard units.
2. There shall be no discharge of PCBs.
3. Low volume wastes

Parameter	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Flow

1. Form 2C Value: 0.014 MGD average, 0.00288 MGD daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Monitoring requirements of 1/month by estimate are adopted. These requirements are consistent with other flow monitoring at other outfalls discharging low volume wastes. Monitoring shall be required by estimate until a primary flow measurement device is installed.

pH

1. Form 2C Value: 7.87 s.u. minimum, 8.09 s.u. maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 6.0 s.u. minimum, 9.0 s.u. maximum.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: The limit for pH will be 6.0 - 8.5 s.u., based on Water Quality Criteria. Sampling shall be performed once per month

by grab sample.

Total Suspended Solids (TSS)

1. Form 2C Value: 0.7 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 30.0 mg/l monthly average and 100.00 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: The discharge from Outfall 012 consists of low volume wastes from Outfalls 009A and 009B, and storm water runoff. Low volume wastes have total suspended solids limitations of 30 mg/l daily average and 100 mg/l daily maximum as per the Steam Electric Effluent Guidelines. Since the storm water runoff provides dilution, it must be accounted for via the following⁵:

	<u>Flow</u>	<u>30 day Average</u>	<u>Daily Maximum</u>
Total low volume wastes process flows	0.008 MGD	30 mg/l	100 mg/l
Yard drain flows	0.006 MGD	20 mg/l	30 mg/l
Total flows	0.014 MGD		

Using this data, the limitations at Outfall 012 are calculated as follows:

Total Suspended Solids Monthly Average Limit

$$\frac{0.008 (30) + 0.006 (20)}{0.014} = 25.7 \text{ mg/l (rounded to 26 mg/l)}$$

Total Suspended Solids Daily Maximum Limit

$$\frac{0.008 (100) + 0.006 (30)}{0.014} = 70 \text{ mg/l}$$

⁵ The procedures and limitations for flow weighted averaging calculations when regulated wastestreams are commingled are taken from the August 22, 1985, memo entitled "Guidance for NPDES Permits Issued to Steam Electric Power Plants." The TSS values of 20 mg/l monthly average and 30 mg/l daily maximum for the yard drain component of the discharge come from this memo.

Since no exceedances of these limits are expected, monitoring is established at a frequency of 1/month by grab sample to be consistent with other outfalls discharging low volume wastes at this facility.

Oil and Grease

1. Form 2C Value: 0.7 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: 15 mg/l monthly average and 20 mg/l daily maximum with adjustments for dilution.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <5 mg/l.
8. Conclusion: The discharge from Outfall 012 consists of low volume wastes from Outfalls 009A and 009B, and storm water runoff. Low volume wastes have oil and grease limitations of 15 mg/l daily average and 20 mg/l daily maximum as per the Steam Electric Effluent Guidelines. Since the storm water runoff provides dilution, it must be accounted for via the following⁶:

	<u>Flow</u>	<u>30 day Average</u>	<u>Daily Maximum</u>
Total low volume wastes process flows	0.008 MGD	15 mg/l	20 mg/l
Storm water flows	0.006 MGD	0 mg/l	0 mg/l
Total flows	0.014 MGD		

Using this data, the limitations at Outfall 012 are calculated as follows:

Oil and Grease Monthly Average Limit

$$\frac{0.008 (15) + 0.006 (0)}{0.014} = 8.6 \text{ mg/l (rounded to 9.0 mg/l)}$$

Oil and Grease Daily Maximum Limit

⁶ The procedures and limitations for flow weighted averaging calculations when regulated wastestreams are commingled are taken from the August 22, 1985, memo entitled "Guidance for NPDES Permits Issued to Steam Electric Power Plants." The oil and grease values of 0 mg/l monthly average and daily maximum for the yard drain component of the discharge come from this memo.

$$\frac{0.008 (20) + 0.006 (0)}{0.014} = 11.4 \text{ mg/l (rounded to 11.0 mg/l)}$$

Since no exceedances of these limits are expected, monitoring is established at a frequency of 1/month by grab sample to be consistent with other outfalls discharging low volume wastes at this facility.

Total Residual Chlorine

1. Form 2C Value: Not applicable.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 0.011 mg/l(13260) = 145.86 mg/l chronic,
0.019 mg/l(13260) = 251.94 mg/l acute
6. Total Residual Chlorine - from Internal Memorandum dated 5/24/84,
and 10/30/86.
Monthly Average = 0.5 mg/l; Daily Maximum 1.0 mg/l
7. Human Health Consideration: Not applicable.
8. Detection limit: <0.1 mg/l.
9. Conclusion: The regulation of chlorine is being considered at this outfall as a result of the addition of chlorine containing chemicals at Internal Outfalls 009A and 009B, which contributes to Outfall 012. The Water Quality based limits, after consideration for dilution in the Broad River, are quite high. A Department Internal Memo for Total Residual Chlorine establishes a maximum limit for TRC at the discharge point. The applicable limit is 0.5 mg/l as a monthly average and 1.0 mg/l as a daily maximum. There is no data available to evaluate possible exceedances of the limit. Since this discharge is intermittent, monitoring requirements of 2/month by grab sample are adopted. These monitoring requirements are consistent with those established at this outfall and other intermittently discharging outfalls.

Outfall 013

Outfall 013 discharges consist of storm water runoff from yard drains in the southeast area of the plant site. Overflows of lake water which has been filtered, demineralized, and further purified may also occur. No treatment is provided prior to discharge to the Broad River. Runoff from the yard drains may contain suspended solids. Based on Best Professional Judgement (BPJ), monitoring for Total Suspended Solids (TSS) and pH will be required to evaluate any potential impacts on water quality. Sampling shall be required twice per year during a discharge from this outfall.

Outfall 014

Outfall 014 has been created to represent the combined Internal Outfalls 005, 006A, 006B, 008, and 011 which consist of sanitary sewerage and low volume wastes discharged at an average rate of 0.1746 MGD (the sum of the Internal Outfalls' flows). Outfall 014 will be used to apply water quality-based limitations prior to discharge to Monticello Reservoir.

Flow

1. Form 2C Value: No average reported, 0.129 MGD daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Continuous flow monitoring will be required, since an in-line flow meter is used at this outfall.

pH

1. Form 2C Value: 7.26 s.u. minimum, 7.26 s.u. maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria(S.C. Regulation 61-69): The pH of the receiving waters shall be maintained between 6.0 and 8.5 standard units.
6. Human Health Consideration: Not applicable.
7. Detection Limit: Not applicable.
8. Conclusion: Since no dilution is provided by the receiving stream, limits equivalent to water quality, 6.0 s.u. minimum and 8.5 s.u. maximum, are adopted in the permit. Monitoring is established at a frequency of 1/month by grab sample. These requirements are consistent with those for outfalls established for water quality limit application purposes in steam electric permits in South Carolina.

Total Residual Chlorine

1. Form 2C Value: Reported as believed absent.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 0.011 mg/l chronic, 0.019 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: Not applicable.
7. Detection limit. <0.1 mg/l.
8. Conclusion: The regulation of chlorine is being considered at this outfall as a result of the addition of chlorine containing chemicals at Internal Outfalls 005, 006A, and 011, which contribute to Outfall

014. There is no dilution provided by the receiving stream. Therefore, water quality-based limits of 0.011 mg/l monthly average and 0.019 mg/l daily maximum (See Other Pollutants for a discussion of the derivation of these limits) are calculated. However, the State's achievable detection level for total residual chlorine is higher than water quality limitations. Therefore, the minimum detection level of <0.1 mg/l will be appropriate monthly average and daily maximum limits.

Since there is no data available to evaluate possible exceedances of water quality, monitoring shall be conducted 1/month by grab sample for a duration of one year. Monitoring shall be conducted 1/month by grab sample for a duration of 1 year. At the conclusion of this period, the permit limitations shall become effective and the monitoring requirements shall remain in effect if the data indicate that the effluent discharge concentrations are within 200% of the water quality-based limit. Where the data is outside of this range, limitations shall not be imposed and the monitoring requirements shall no longer be effective.

Boron

1. Form 2C Value: 0.19 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Boron was considered to be limited at this Outfall due to the addition of boron containing compounds at the Internal Outfalls 006A, 006B, and 008, which contribute to Outfall 014. EPA Gold Book criteria suggests a 0.75 mg/l limitation to protect crops during irrigation. State procedures provide the following formula for calculating water quality-based limits:

Limit = Water quality criteria/standard * dilution factor

Limit = 0.75 mg/l * 1 = 0.75 mg/l

Since the derived limit of 0.75 mg/l is more than 200% of the reported value of 0.19 mg/l, no limitations or monitoring requirements are imposed for this parameter at this time.

Chemical Oxygen Demand (COD)

1. Form 2C Value: 105 mg/l daily maximum.
2. Previous Permit: Not regulated.

3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: 0.01 mg/l.
8. Conclusion: COD was evaluated to be limited at this Outfall due to the addition of oxygen demanding pollutants such as morpholine and hydrazine at Internal Outfalls 006A, 006B, and 008. COD was reported in the Form 2C application in concentrations (105 mg/l) which are above typical levels for low volume wastes and sanitary sewerage. For example, Outfalls 009A and 009B (low volume waste discharges which receive no additions of hydrazine or morpholine) at this facility both have reported COD levels of 30 mg/l. Outfall 011 (a sanitary sewerage discharge) has a reported COD concentration of 15 mg/l. The cause of the high discharge concentration of COD at Outfall 014 has not been identified and it is unknown as to whether the value reported on the Form 2C is typical of discharges throughout the year. Therefore, monitoring requirements of 1/month by grab sample are imposed at this Outfall. After 1 year of monitoring has passed, the Permittee may petition SCDHEC to request that monitoring for this parameter be removed from this permit if data indicate no appreciable amounts of COD are discharged.

Sulfate

1. Form 2C Value: 12 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: Not applicable.
6. Human Health Consideration: Not applicable.
7. Detection limit: <0.01 mg/l.
8. Conclusion: Sulfate was evaluated to be limited at this Outfall due to the addition of sulfate containing compounds at Internal Outfalls 006A and 006B. Sulfate was reported in the Form 2C application in concentrations (12 mg/l) which were at the typical levels for the discharge of low volume wastes and sanitary sewerage. For example, Outfall 004 (a low volume wastestream which does not receive sulfate containing compounds) at this facility has a reported sulfate level of <5 mg/l. Outfall 011 (a sanitary sewerage discharge) has a reported sulfate concentration of 45 mg/l. However, Internal Outfalls 006A and 006B (low volume waste discharges which contribute to Outfall 014 and do receive sulfate containing compounds) at this facility have reported sulfate levels of 797 mg/l and 822 mg/l, respectively. Internal Outfalls 006A and 006B contribute more than 70% of the volume of the discharge to Outfall 014 (0.13 MGD out of 0.1746 MGD). Due to concerns that high levels of sulfate may be detected as a result of the discharges of Internal Outfalls 006A and

006B, monitoring requirements of 1/month by grab sample are imposed at this Outfall. After 1 year of monitoring has passed, the Permittee may petition SCDHEC to request that monitoring for this parameter be removed from this permit if data indicate no appreciable amounts of sulfates are discharged.

Ammonia

1. Form 2C Value: 2.26 mg/l daily maximum.
2. Previous Permit: Not regulated.
3. Past DMR Data (3/90-2/91): Not applicable.
4. Effluent Guidelines: Not applicable.
5. Water Quality Criteria: 2.1 mg/l chronic, 19.2 mg/l acute allowable freshwater instream waste concentration.
6. Human Health Consideration: Not applicable.
7. Detection limit: Not applicable.
8. Conclusion: The regulation of ammonia at this outfall is being considered as a result of the addition of ammonia containing chemicals at the Internal Outfalls 006A, 006B, and 008, which contribute to Outfall 014. There is no dilution provided by the receiving stream. Therefore, water quality-based limits of 2.1 mg/l monthly average and 4.2 mg/l daily maximum (See Other Pollutants for a discussion of the derivation of these limits) are calculated. State procedures require that permit limits be applied unless the derived limit is greater than the reported concentration by 200% or more. Since the reported concentration exceeds the derived limit, limitations of 2.1 mg/l monthly average and 4.2 mg/l daily maximum are imposed. Monitoring 1/month by grab sample are imposed.

D. Chemical Additives

1. Water Additives

- a. The following chemicals have been forecasted to be used as cooling water additives over the life of this permit:

Ammonia: 006A, 006B

Hydrazine: 003, 008

Morpholine: 008, 007, 006a, 003

Chlorine Compounds: 002, 008

Sodium Hydroxide: 003, 007

Sulfuric Acid: 003, 007

Boron Compounds: 003, 004, 007, 008

Hydrogen Peroxide: 003

Sodium Metasilicate: 003, 009A, 009B

Sodium Nitrate/Sodium Borate: 003, 006B, 008

Potassium Chromate, Potassium Hydroxide, Potassium Dichromate:
003

Duratek, D-261, D-230, D-70 (Sulfate containing resin): 003

Lithium Hydroxide: 003

Biocides

Betz CT-1: 002

Betz MS-200P (Zinc Sulfate): 006A, 008

Betz 30K (Tetrasodium Pyrophosphate): 006A, 008

Betz 1190 (Polymer): 006A, 008

- b. Biocides -- The facility shall notify the South Carolina Department of Health and Environmental Control in writing no later than (60) days prior to instituting use of any additional biocide or chemical used in the cooling system, 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. Quantities to be used;
3. Frequencies of use;
4. Proposed discharged concentration; and
5. EPA registration number if applicable.

2. Hazardous Substances

In letters dated June 14, 1988, May 30, 1989 (2 letters), and March 23, 1990, to SCDHEC, the Permittee identified the compounds in 1.a. above as being possible discharges from the facility. A discussion of the pollutants of concern follow:

pH limitations will regulate any discharges of sulfuric acid and sodium hydroxide.

Chlorine limitations have been considered at Outfalls 002, 012 and 014 (the final discharge point for Internal Outfalls 005, 006A, and 011).

Morpholine and hydrazine are of concern due to their oxygen demanding characteristics. A discussion of the regulation of these pollutants were provided at Outfalls 003, 004, 007 and 014 (the final discharge point of Internal Outfalls 006A, 006B, and 008).

Ammonia is added to the source waters for Outfalls 003, 004, 006A, 006B, and 008. A discussion of the regulation of ammonia is provided at Outfalls 003, 004, and 014 (the ultimate discharge point of Internal Outfalls 006A, 006B, and 008).

Boron containing compounds are added to the source waters for Outfalls 003, 004, 006A, 006B, and 008. Additionally, boron was noted at levels of concern at Outfall 007. A discussion of the regulation of boron is provided at Outfalls 003, 004, 007, and 014 (the ultimate discharge point of Internal Outfalls 006A, 006B, and 008).

Compounds containing zinc and sulfate are added at Outfalls 002, 003, and 006A. Discussions of the regulation of zinc and sulfate is provided at Outfalls 002, 003, and 014 (the ultimate discharge point of Internal Outfall 006A).

Compounds containing chromium are added at Outfall 003 and the discussion of the regulation of chromium is provided at Outfall 003.

Compounds containing copper are added at Outfall 005, 006A, and 006B and the discussion of the regulation of copper is provided at Outfall 014 (the ultimate discharge point of Internal Outfalls 005, 006A, and 006B).

E. Sludge Disposal

The Permittee will be required to obtain prior written approval for any sludge disposal activities at this facility.

F. Operator

The Permittee's present treatment system consists of sedimentation and neutralization. The highest classification of the operation of all treatment equipment is usually used to determine the operator requirement.

Based on the wastewater treatment system classification, an operator with a Grade B-Bio or higher certification is required to accept the responsibility of inspections made by lower grade operators.

G. Co-Treatment

Where various wastes are combined for treatment and discharge, 40 CFR 423.13(h) requires that the quantity of each pollutant or pollutant property not exceed the specified limitation for that waste source. Applicable effluent guidelines concentrations were flow weighted in calculating final effluent concentrations.

H. Toxicity Testing

Since the chemical specific approach does not address all specific chemicals and their interactions with other components in the wastestream, a more comprehensive testing requirement is needed. To ensure that water quality is not deteriorated, whole effluent toxicity testing is being required at Outfalls 001, 002, and 014 in accordance with procedures set out in The South Carolina Department of Health and Environmental Control Toxic Control Strategy for Wastewater Discharges, South Carolina Department of Health and Environmental Control, October 1990. These procedures require either acute or chronic toxicity testing based on whether a diffuser is used and the Instream Waste Concentration (IWC), which is calculated as follows:

IWC for Monticello Reservoir:

$$\begin{aligned}\text{IWC} &= (\text{Effluent flow} / (\text{7Q10 flow} + \text{Effluent flow})) \times 100 \\ &= (782.9386 / (0 + 782.9386)) \\ &= 100\%\end{aligned}$$

Based on State procedures, if a diffuser is not installed and the IWC is between 80% and 100%, chronic toxicity testing is required.

IWC for Broad River:

$$\begin{aligned}\text{IWC} &= (\text{Effluent flow} / (\text{7Q10 flow} + \text{Effluent flow})) \times 100 \\ &= (0.04744 / (629 + 0.04744)) \\ &= 0.01\%\end{aligned}$$

Based on State procedures, if a diffuser is not installed and the IWC is between 0% and 1%, acute toxicity testing is required.

Therefore, chronic toxicity screening at 100% effluent will be required to be conducted at a frequency of 1/month for 1 year at Outfalls 001, 002

(when discharging directly to Monticello Reservoir only), 014 and acute toxicity screening at 100% effluent will be required to be conducted at a frequency of 1/month for 1 year at Outfalls 003 and 012.

The procedures also set forth requirements that after 12 consecutive months of toxicity results which pass, the toxicity screening process will be terminated and a whole effluent toxicity limitation will be imposed. The Department may reduce the frequency of sampling if deemed appropriate.

The specific toxicity testing language and requirements are included in Part III of the permit.

K. Other Requirements

1. The Permittee shall continue to maintain a Best Management Practices (BMP) plan to identify and control the discharge of significant amounts of oils and the hazardous and toxic substances listed in 40 CFR Part 117 and Tables II and III of Appendix D to 40 CFR Part 122. The plan shall include a listing of all potential sources of spills or leaks of these materials, a method for containment, a description of training, inspection and security procedures, and emergency response measures to be taken in the event of a discharge to surface waters or plans and/or procedures which constitute an equivalent BMP. Sources of such discharges may include materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas. The BMP plan shall be developed in accordance with good engineering practices, shall be documented in narrative form, and shall include any necessary plot plans, drawings, or maps. The BMP plan shall be maintained at the plant site and shall be available for inspection by EPA and Department personnel.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
2600 Bull Street
Columbia, South Carolina 29201

FACT SHEET

APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
TO STATE WATERS

Application No. SC0030856 Date: 9/29/92

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

SCE&G/Virgil C Summer Nuclear Station
P.O. Box 88,
Jenkinsville, S.C. 29065

b. Description of Applicant's Operation

Nuclear Fuel Steam Electric Generation

c. Production Capacity of Facility

930 megawatts

d. Applicant's Receiving Waters

Monticello Reservoir and Broad River

For a sketch showing the location of the discharge(s), see Attachment A.

e. Description of Existing Pollution Abatement Facilities

A wastewater treatment system consisting of sedimentation, neutralization, and precipitation. A wastewater treatment plant for sanitary wastewater consisting of sedimentation, activated sludge, and disinfection. Two sanitary sewage treatment plants using sedimentation and disinfection. A radioactive wastewater processing system consisting of ion exchange and evaporation.

f. Description of Discharges (as reported by applicant)

Serial 001 - 014 -(See Rationale)

Pollutants which are present in significant quantities or which are subject to effluent limitations are as follows:

Effluent Characteristics
(See Rationale)

Reported Load

2. PROPOSED EFFLUENT LIMITATIONS

Serial 001 - 0015 -(See Part I.A.)

Effluent Characteristic
(See Part I.A.)

Discharge Limitation
(See Part I.A.)

3. MONITORING REQUIREMENTS

The applicant will be required to monitor regularly for flow and those parameters limited in Section 2 above with sufficient frequency to ensure compliance with the permit conditions. Frequency, methods of sampling, and reporting dates will be specified in the final permit.

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

(See Part I.B.)

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

(See Part III.A.)

6. WATER QUALITY STANDARDS AND EFFLUENT STANDARDS APPLIED TO THE DISCHARGE

This permit draft was written in conformance with EPA Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423), Best Professional Judgment, Standard Bureau Operating Procedures, and Water Quality Considerations.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Department of Health and Environmental Control proposes to issue an NPDES permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on DHEC's proposed determinations to the following address:

South Carolina Department of Health and Environmental Control
NPDES Administration
2600 Bull Street
Columbia, South Carolina 29201

All comments received prior to will be considered in the formulation of final determinations with regard to this application.

b. Public Hearing

The Department of Health and Environmental Control Commissioner may hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits. Public notice of such a hearing will be circulated in newspapers in the geographical area of the discharge and to those on the DHEC mailing list at least thirty days prior to the hearing.

Following the public hearing, the Commissioner may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue or deny the permit. Notice of issuance or denial will be circulated to those who participated in the hearing and to appropriate persons on the DHEC mailing list.

If the permit is issued, it will become effective the first of the month following date of issuance and will be the final action of DHEC unless an adjudicatory hearing is granted.

c. Adjudicatory Hearings

Any person may submit a request for an administrative adjudicatory hearing to consider the final permit and its conditions. If you wish to request an administrative adjudicatory hearing, such request must be made in accordance with Regulation 61-79, Volume 25, S.C. Code of Laws, 1976, as amended. As required by this regulation, two (2) copies of the request must be served on the South Carolina Board of Health and Environmental Control, 2600 Bull Street, South Carolina 29201, within fifteen (15) days following issuance of the permit. Service may be effected by personal delivery or by first class mail.

The following elements must, at a minimum, be included within the request:

1. A title indicating the nature of the proceeding and the parties involved;
2. The complete name and address of the party filing the pleading

and, if applicable, the organization(s) or interests which he represents;

3. If the requesting party is to be represented by counsel, the name and address of the attorney;
4. A clear and concise statement of the requesting party's affected interest;
5. A clear and concise statement of the issues upon which the request is based and, where applicable, the contested sections of the permit. (It should be noted that any uncontested portions of the permit will become effective according to its terms on the effective date specified in the permit).
6. A statement of the relief sought by the requesting party.

In the event that such a request is filed, the contested provisions of the permit will be stayed and will not become effective until the administrative review process is complete. All uncontested provisions of the permit will be considered issued and effective on the effective date set out in the permit and must be complied with by the facility. Final determination of permit conditions following an adjudicatory hearing will be in accordance with Regulation 61-72.

Information pertaining to adjudicatory matters may be obtained by contacting the Legal Office of the Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina or by calling 803/734-4910.

d. Issuance of the Permit when no Hearings are Held

If no public hearing or adjudicatory hearing is held, and, after review of the comments received, DHEC's determinations are substantially unchanged, the permit will issue and become effective the first of the month following date of issue. This will be the final action of the Department of Health and Environmental Control.

If no hearings are held, but there have been substantial changes, public notice of DHEC's revised determination will be made. Following termination of the 15-day comment period and will be the final action of Department of Health and Environmental Control, unless a public or adjudicatory hearing is granted.

BMP PLAN, REV. 2

FIGURE 1

