

#48

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

PERMIT

TO DISCHARGE WASTEWATER UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Duke Energy Corporation

is hereby authorized to discharge wastewater from a facility located at the

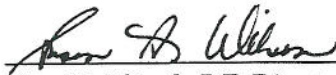
Plant Allen Steam Station
253 Plant Allen Road (NCSR 2525)
Belmont
Gaston County

to receiving waters designated as the Catawba and South Fork Catawba Rivers in the Catawba River Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV hereof.

This permit shall become effective **October 1, 2006**.

This permit and authorization to discharge shall expire at midnight on **May 31, 2010**.

Signed this day **September 11, 2006**.



for Alan W. Klimek, P.E. Director
Division of Water Quality
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

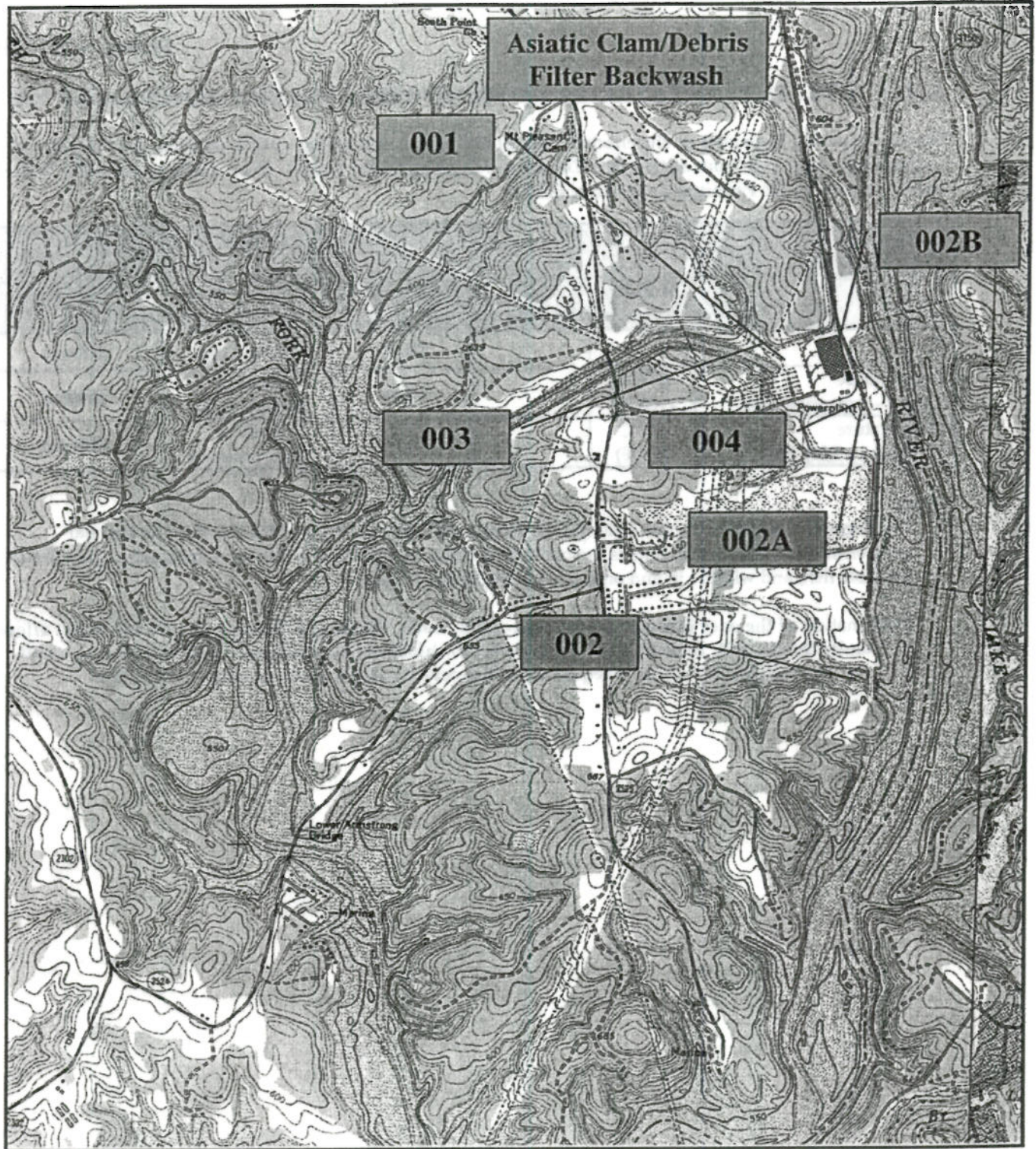
All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked. As of this permit issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions included herein.

Duke Energy Corporation is hereby authorized to:

1. Continue to discharge:
 - Once through cooling water (outfall 001)
 - Operate a septic tank and ash pond with pH adjustment and discharge domestic wastewater, stormwater runoff, ash sluice, water treatment system wastewaters, FGD system blowdown, and miscellaneous cleaning and maintenance wash waters (002).
 - Coal yard sump overflow (002A) and power house sump overflow (002B)
 - Miscellaneous equipment non-contact cooling and sealing water (003)
 - Miscellaneous non-contact cooling water, vehicle washwater, and intake screen backwash (004)

From a facility located at the Plant Allen Steam Station on Plant Allen Road (NCSR 2525), south of Belmont in Gaston County, and

2. Without adding detergents or chemicals of *any kind*, discharge Asiatic clam/debris filter backwash (of the intake filter screen) (see Part A.7); and
3. After receiving an Authorization to Construct from the Construction Grants and Loans Section, construct and operate a FGD wet scrubber wastewater treatment system discharging to the ash settling basin through internal outfall 005; and
4. Discharge from said treatment works at the location specified on the attached map into the Catawba River (outfalls 002, 002A, 002B and 004) and the South Fork Catawba River (outfalls 001 and 003) which are classified Class WS-V B waters, respectively, in the Catawba River Basin.



Duke Energy Corporation Allen Steam Station

State Grid/Quad: G14NE/Belmont **Permitted Flow:** Not limited
Receiving Streams: Catawba and South Fork Catawba Rivers
Stream Class: WS-V & B
Drainage Basin: Catawba River Basin **Sub-Basin:** 03-08-34
Latitude (001): 35° 11' 23" N **Longitude (001):** 81° 00' 45" W
Latitude (002): 35° 10' 30" N **Longitude (002):** 81° 00' 23" W
Latitude (002A): 35° 11' 34" N **Longitude (002A):** 81° 00' 22" W
Latitude (002B): 35° 11' 36" N **Longitude (002B):** 81° 00' 30" W
Latitude (004): 35° 11' 35" N **Longitude (004):** 81° 00' 22" W
Latitude (A. Clam): 35° 11' 36" N **Longitude(A. Clam):** 81° 00' 30" W

Map not to scale



North

Facility
Location



NPDES Permit No. NC0004979
Gaston County

A. (1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 001- Condenser Cooling Water (CCW). Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Daily	Pump Logs	Effluent
Temperature (June 1 – September 30) ¹	38.9 °C (102 °F)		Daily	Grab or Instantaneous	Effluent
Temperature (October 1 – May 31) ¹	35 °C (95 °F)		Daily	Grab or Instantaneous	Effluent

Notes:

1. The Regional Administrator has determined pursuant to Section 316(a) of the Act that the thermal component of the discharge assures the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the receiving body of water.

Chlorination of the once through condenser cooling water, discharged through outfall 001, is not allowed under this permit. Should Duke Power wish to chlorinate its condenser cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002 – ash pond effluent. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow				Weekly	Instantaneous or Estimate	Influent or Effluent
Oil and Grease	15.0 mg/l		20.0 mg/l	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/l		100.0 mg/l	Monthly	Grab	Effluent
Total Copper ²			1.0 mg/l	2/Month	Grab	Effluent
Total Iron ²			1.58 mg/l	Monthly	Grab	Effluent
Total Selenium ^{2,3}		31.0 µg/L		2/Month	Grab	Effluent
Total Selenium ^{2,4}		21.0 µg/L		2/Month	Grab	Effluent
Total Nitrogen (NO ₂ + NO ₃ + TKN)				Semi-annually	Grab	Effluent
Chronic Toxicity ¹				Quarterly	Grab	Effluent
pH ⁵				Monthly	Grab	Effluent

Notes:

1. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 24%. Tests shall be conducted in January, April, July and October (see Part A.(9.) for details)
2. Total metals are defined by 40 CFR 136. Any method specified by 40 CFR 136 is considered acceptable for analysis.
3. 31 µg/L selenium limit shall be in effect October 1, 2006 through September 30, 2009.
4. 21 µg/L selenium limit shall take effect October 1, 2009.
5. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

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

A. (3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002A)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002A – Coal Yard Sump Overflows. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Episodic	Estimate	Effluent ¹
pH			Episodic	Grab	Effluent
Oil and Grease ²	15.0 mg/l	20.0 mg/l	Episodic	Grab	Effluent
Total Suspended Solids ²	30.0 mg/l	100.0 mg/l	Episodic	Grab	Effluent
Fecal Coliform			Episodic	Grab	Effluent
Total Iron ³		1.0 mg/l	Episodic	Grab	Effluent

Notes:

1. Effluent sampling shall be conducted at a point upstream of discharge to the receiving stream.
2. Monthly average limits for total suspended solids and oil and grease only apply if the overflow occurs for more than 24 hours.
3. Sampling for iron is required only when TSS is reported as greater than 100 mg/L.

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

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" should be clearly written on the front of the DMR. Episodic sampling is required per occurrence when sump overflows occur for longer than one hour. All samples shall be of a representative discharge.

A. (4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002B)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002B – Power House Sump Overflows. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Episodic	Estimate	Effluent ¹
pH			Episodic	Grab	Effluent
Oil and Grease ²	15.0 mg/l	20.0 mg/l	Episodic	Grab	Effluent
Total Suspended Solids ²	30.0 mg/l	100.0 mg/l	Episodic	Grab	Effluent
Total Copper ³		1.0 mg/l	Episodic	Grab	Effluent
Total Iron ³		1.0mg/l	Episodic	Grab	Effluent

Notes:

1. Effluent sampling shall be conducted at a point upstream of discharge to the receiving stream.
2. Monthly average limits for total suspended solids and oil and grease only apply if the overflow occurs for more than 24 hours.
3. The limits for total copper and total iron only apply during a chemical metals cleaning.

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

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" should be clearly written on the front of the DMR. Episodic sampling is required per occurrence when sump overflows occur for longer than one hour. All samples shall be of a representative discharge.

A. (5.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 003)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 003 – miscellaneous equipment non-contact water and sealing water. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Estimate	Effluent

Chlorination of the once through cooling water, discharged through outfall 003, is not allowed under this permit. Should Duke Power wish to chlorinate its once through cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (6.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 004)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 004- miscellaneous non-contact cooling water, vehicle washwater, and intake screen backwash. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Estimate	Effluent
Oil and Grease	15.0 mg/l	20.0 mg/l	Quarterly	Grab	Effluent

Chlorination of the once through cooling water, discharged through outfall 004, is not allowed under this permit. Should Duke Power wish to chlorinate its condenser cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (7.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Internal Outfall 005)

During the period beginning upon submittal of an engineer's certification and lasting until permit expiration, the Permittee is authorized to discharge from internal outfall 005- treated FGD wet scrubber wastewater to ash settling basin. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location ¹
Flow	Monitor & Report		Monthly	Pump logs or similar readings	Effluent
Total Suspended Solids	Monitor & Report		Weekly	Grab	Effluent
Carbonaceous Oxygen Demand (COD)	Monitor & Report		Weekly	Grab	Effluent
Total Arsenic	Monitor & Report		Weekly	Grab	Effluent
Total Cadmium	Monitor & Report		Weekly	Grab	Effluent
Total Chromium	Monitor & Report		Weekly	Grab	Effluent
Chloride	Monitor & Report		Weekly	Grab	Effluent
Total Mercury	Monitor & Report		Weekly	Grab	Effluent
Total Nickel	Monitor & Report		Weekly	Grab	Effluent
Total Selenium	Monitor & Report		Weekly	Grab	Effluent
Total Silver	Monitor & Report		Weekly	Grab	Effluent
Total Zinc	Monitor & Report		Weekly	Grab	Effluent
Total Beryllium	Monitor & Report		Weekly	Grab	Effluent

Notes:

1. "Effluent" shall be defined as the discharge from the FGD wastewater treatment system prior to discharge to the ash settling basin.

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" shall be clearly written on the front of the DMR. All samples shall be of a representative discharge. DMRs for this outfall shall be submitted only after discharge commences from the FGD system.

Sampling is only required when this outfall is discharging.

A. (8.) SPECIAL CONDITION FOR THE DISCHARGE OF ASIATIC CLAM/DEBRIS FILTER BACKWASH

The permittee may backwash the intake filter for Unit 5 condenser cooling water on an as-needed basis. It is understood that this wash water will contain materials indigenous to the Catawba River such as Asiatic clams and light debris. As these are naturally occurring in the river environment, they may be discharged with no adverse affects to the receiving stream. The Permittee may not add any detergent, chemicals or other non-indigenous material to the wash water without explicit permission of the Division of Water Quality.

A. (9.) CHRONIC TOXICITY PASS/FAIL PERMIT LIMIT (QUARTERLY)

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of 24%.

The permit holder shall perform at a minimum, *quarterly* monitoring using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," Revised February 1998, or subsequent versions or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions. The tests will be performed *during the months of January, April, July and October*. Effluent sampling for this testing shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

The chronic value for multiple concentration tests will be determined using the geometric mean of the highest concentration having no detectable impairment of reproduction or survival and the lowest concentration that does have a detectable impairment of reproduction or survival. The definition of "detectable impairment," collection methods, exposure regimes, and further statistical methods are specified in the "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter code TGP3B for the pass/fail results and THP3B for the Chronic Value. Additionally, DWQ Form AT-3 (original) is to be sent to the following address:

**Attention: North Carolina Division of Water Quality
Environmental Sciences Section
1621 Mail Service Center
Raleigh, North Carolina 27699-1621**

Completed Aquatic Toxicity Test Forms shall be filed with the Environmental Sciences Branch no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Environmental Sciences Branch at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Quality indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an invalid test and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

#48

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In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Duke Energy Corporation

is hereby authorized to discharge wastewater from a facility located at the

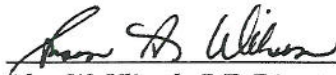
Plant Allen Steam Station
253 Plant Allen Road (NCSR 2525)
Belmont
Gaston County

to receiving waters designated as the Catawba and South Fork Catawba Rivers in the Catawba River Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV hereof.

This permit shall become effective **October 1, 2006**.

This permit and authorization to discharge shall expire at midnight on **May 31, 2010**.

Signed this day **September 11, 2006**.



Alan W. Klimek, P.E. Director
Division of Water Quality
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

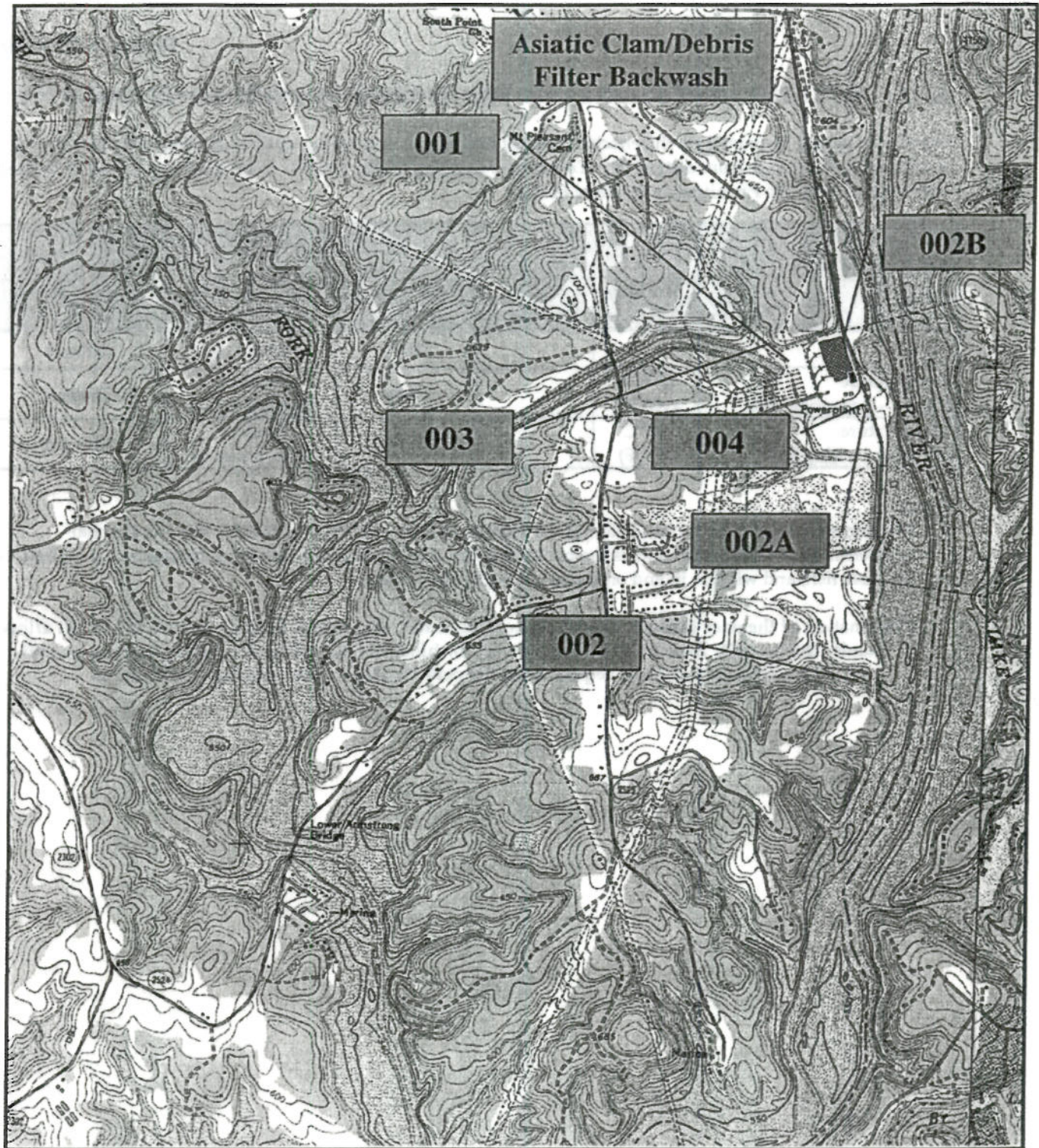
All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked. As of this permit issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions included herein.

Duke Energy Corporation is hereby authorized to:

1. Continue to discharge:
 - Once through cooling water (outfall 001)
 - Operate a septic tank and ash pond with pH adjustment and discharge domestic wastewater, stormwater runoff, ash sluice, water treatment system wastewaters, FGD system blowdown, and miscellaneous cleaning and maintenance wash waters (002).
 - Coal yard sump overflow (002A) and power house sump overflow (002B)
 - Miscellaneous equipment non-contact cooling and sealing water (003)
 - Miscellaneous non-contact cooling water, vehicle washwater, and intake screen backwash (004)

From a facility located at the Plant Allen Steam Station on Plant Allen Road (NCSR 2525), south of Belmont in Gaston County, and

2. Without adding detergents or chemicals of *any kind*, discharge Asiatic clam/debris filter backwash (of the intake filter screen) (see Part A.7); and
3. After receiving an Authorization to Construct from the Construction Grants and Loans Section, construct and operate a FGD wet scrubber wastewater treatment system discharging to the ash settling basin through internal outfall 005; and
4. Discharge from said treatment works at the location specified on the attached map into the Catawba River (outfalls 002, 002A, 002B and 004) and the South Fork Catawba River (outfalls 001 and 003) which are classified Class WS-V B waters, respectively, in the Catawba River Basin.



Duke Energy Corporation Allen Steam Station

State Grid/Quad:	G14NE/Belmont	Permitted Flow:	Not limited
Receiving Streams:	Catawba and South Fork Catawba Rivers		
Stream Class:	WS-V & B		
Drainage Basin:	Catawba River Basin	Sub-Basin:	03-08-34
Latitude (001):	35° 11' 23" N	Longitude (001):	81° 00' 45" W
Latitude (002):	35° 10' 30" N	Longitude (002):	81° 00' 23" W
Latitude (002A):	35° 11' 34" N	Longitude (002A):	81° 00' 22" W
Latitude (002B):	35° 11' 36" N	Longitude (002B):	81° 00' 30" W
Latitude (004):	35° 11' 35" N	Longitude (004):	81° 00' 22" W
Latitude (A. Clam):	35° 11' 36" N	Longitude(A. Clam):	81° 00' 30" W

Map not to scale



Facility
Location



NPDES Permit No. NC0004979
Gaston County

A. (1.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 001- Condenser Cooling Water (CCW). Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Daily	Pump Logs	Effluent
Temperature (June 1 – September 30) ¹	38.9 °C (102 °F)		Daily	Grab or Instantaneous	Effluent
Temperature (October 1 – May 31) ¹	35 °C (95 °F)		Daily	Grab or Instantaneous	Effluent

Notes:

1. The Regional Administrator has determined pursuant to Section 316(a) of the Act that the thermal component of the discharge assures the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the receiving body of water.

Chlorination of the once through condenser cooling water, discharged through outfall 001, is not allowed under this permit. Should Duke Power wish to chlorinate its condenser cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (2.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002 – ash pond effluent. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow				Weekly	Instantaneous or Estimate	Influent or Effluent
Oil and Grease	15.0 mg/l		20.0 mg/l	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/l		100.0 mg/l	Monthly	Grab	Effluent
Total Copper ²			1.0 mg/l	2/Month	Grab	Effluent
Total Iron ²			1.58 mg/l	Monthly	Grab	Effluent
Total Selenium ^{2,3}		31.0 µg/L		2/Month	Grab	Effluent
Total Selenium ^{2,4}		21.0 µg/L		2/Month	Grab	Effluent
Total Nitrogen (NO ₂ + NO ₃ + TKN)				Semi-annually	Grab	Effluent
Chronic Toxicity ¹				Quarterly	Grab	Effluent
pH ⁵				Monthly	Grab	Effluent

Notes:

1. Whole Effluent Toxicity shall be monitored by chronic toxicity (Ceriodaphnia) P/F at 24%. Tests shall be conducted in January, April, July and October (see Part A.(9.) for details)
2. Total metals are defined by 40 CFR 136. Any method specified by 40 CFR 136 is considered acceptable for analysis.
3. 31 µg/L selenium limit shall be in effect October 1, 2006 through September 30, 2009.
4. 21 µg/L selenium limit shall take effect October 1, 2009.
5. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

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

A. (3.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002A)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002A – Coal Yard Sump Overflows. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Episodic	Estimate	Effluent ¹
pH			Episodic	Grab	Effluent
Oil and Grease ²	15.0 mg/l	20.0 mg/l	Episodic	Grab	Effluent
Total Suspended Solids ²	30.0 mg/l	100.0 mg/l	Episodic	Grab	Effluent
Fecal Coliform			Episodic	Grab	Effluent
Total Iron ³		1.0 mg/l	Episodic	Grab	Effluent

Notes:

1. Effluent sampling shall be conducted at a point upstream of discharge to the receiving stream.
2. Monthly average limits for total suspended solids and oil and grease only apply if the overflow occurs for more than 24 hours.
3. Sampling for iron is required only when TSS is reported as greater than 100 mg/L.

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

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" should be clearly written on the front of the DMR. Episodic sampling is required per occurrence when sump overflows occur for longer than one hour. All samples shall be of a representative discharge.

A. (4.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002B)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 002B – Power House Sump Overflows. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Episodic	Estimate	Effluent ¹
pH			Episodic	Grab	Effluent
Oil and Grease ²	15.0 mg/l	20.0 mg/l	Episodic	Grab	Effluent
Total Suspended Solids ²	30.0 mg/l	100.0 mg/l	Episodic	Grab	Effluent
Total Copper ³		1.0 mg/l	Episodic	Grab	Effluent
Total Iron ³		1.0mg/l	Episodic	Grab	Effluent

Notes:

1. Effluent sampling shall be conducted at a point upstream of discharge to the receiving stream.
2. Monthly average limits for total suspended solids and oil and grease only apply if the overflow occurs for more than 24 hours.
3. The limits for total copper and total iron only apply during a chemical metals cleaning.

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

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" should be clearly written on the front of the DMR. Episodic sampling is required per occurrence when sump overflows occur for longer than one hour. All samples shall be of a representative discharge.

A. (5.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 003)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 003 – miscellaneous equipment non-contact water and sealing water. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Estimate	Effluent

Chlorination of the once through cooling water, discharged through outfall 003, is not allowed under this permit. Should Duke Power wish to chlorinate its once through cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (6.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 004)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from outfall 004- miscellaneous non-contact cooling water, vehicle washwater, and intake screen backwash. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Estimate	Effluent
Oil and Grease	15.0 mg/l	20.0 mg/l	Quarterly	Grab	Effluent

Chlorination of the once through cooling water, discharged through outfall 004, is not allowed under this permit. Should Duke Power wish to chlorinate its condenser cooling water, a permit modification must be requested and received prior to commencing chlorination.

A. (7.) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Internal Outfall 005)

During the period beginning upon submittal of an engineer's certification and lasting until permit expiration, the Permittee is authorized to discharge from internal outfall 005- treated FGD wet scrubber wastewater to ash settling basin. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location ¹
Flow	Monitor & Report		Monthly	Pump logs or similar readings	Effluent
Total Suspended Solids	Monitor & Report		Weekly	Grab	Effluent
Carbonaceous Oxygen Demand (COD)	Monitor & Report		Weekly	Grab	Effluent
Total Arsenic	Monitor & Report		Weekly	Grab	Effluent
Total Cadmium	Monitor & Report		Weekly	Grab	Effluent
Total Chromium	Monitor & Report		Weekly	Grab	Effluent
Chloride	Monitor & Report		Weekly	Grab	Effluent
Total Mercury	Monitor & Report		Weekly	Grab	Effluent
Total Nickel	Monitor & Report		Weekly	Grab	Effluent
Total Selenium	Monitor & Report		Weekly	Grab	Effluent
Total Silver	Monitor & Report		Weekly	Grab	Effluent
Total Zinc	Monitor & Report		Weekly	Grab	Effluent
Total Beryllium	Monitor & Report		Weekly	Grab	Effluent

Notes:

1. "Effluent" shall be defined as the discharge from the FGD wastewater treatment system prior to discharge to the ash settling basin.

All flows shall be reported on monthly DMRs. Should no flow occur during a given month, the words "no flow" shall be clearly written on the front of the DMR. All samples shall be of a representative discharge. DMRs for this outfall shall be submitted only after discharge commences from the FGD system.

Sampling is only required when this outfall is discharging.

A. (8.) SPECIAL CONDITION FOR THE DISCHARGE OF ASIATIC CLAM/DEBRIS FILTER BACKWASH

The permittee may backwash the intake filter for Unit 5 condenser cooling water on an as-needed basis. It is understood that this wash water will contain materials indigenous to the Catawba River such as Asiatic clams and light debris. As these are naturally occurring in the river environment, they may be discharged with no adverse affects to the receiving stream. The Permittee may not add any detergent, chemicals or other non-indigenous material to the wash water without explicit permission of the Division of Water Quality.

A. (9.) CHRONIC TOXICITY PASS/FAIL PERMIT LIMIT (QUARTERLY)

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of 24%.

The permit holder shall perform at a minimum, *quarterly* monitoring using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," Revised February 1998, or subsequent versions or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions. The tests will be performed *during the months of January, April, July and October*. Effluent sampling for this testing shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

The chronic value for multiple concentration tests will be determined using the geometric mean of the highest concentration having no detectable impairment of reproduction or survival and the lowest concentration that does have a detectable impairment of reproduction or survival. The definition of "detectable impairment," collection methods, exposure regimes, and further statistical methods are specified in the "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter code TGP3B for the pass/fail results and THP3B for the Chronic Value. Additionally, DWQ Form AT-3 (original) is to be sent to the following address:

Attention: North Carolina Division of Water Quality
Environmental Sciences Section
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Environmental Sciences Branch no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Environmental Sciences Branch at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Quality indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an invalid test and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

A. (10.) BIOCIDES CONDITION

The permittee shall not use any biocides except those approved in conjunction with the permit application. The permittee shall notify the Director in writing not later than ninety (90) days prior to instituting use of any additional biocide used in cooling systems which may be toxic to aquatic life other than those previously reported to the Division of Water Quality. Such notification shall include completion of Biocide Worksheet Form 101 and a map locating the discharge point and receiving stream. Completion of Biocide Worksheet Form 101 is not necessary for those outfalls containing toxicity testing. Division approval is not necessary for the introduction of a new biocide into an outfall currently being tested for toxicity.

A. (11.) SPECIAL CONDITIONS

The following special conditions are applicable to all outfalls regulated by NC0004979:

- There shall be no discharge of polychlorinated biphenyl compounds.
- It has been determined from information submitted that the plans and procedures in place at Allen Steam Station are equivalent to that of a BMP.
- The permittee shall report the presence of cenospheres observed in any samples.
- The applicant is permitted to discharge chemical metal cleaning wastes to the ash basin under the conditions outlined in the 1976 Riverbend Ash Basin Equivalency Demonstration and the 1994 Allen Steam Station permit application
- The permittee shall check the diked areas for leaks by a visual inspection and shall report any leakage detected
- If the permittee, after monitoring for at least six months, determines that he/she is consistently meeting the effluent limits contained herein, the permittee may request of the Director that the monitoring requirement be reduced to a lesser frequency.
- Nothing contained in this permit shall be construed as a waiver by the permittee or any right to a hearing it may have pursuant to State or Federal laws or regulations.
- Low volume waste is defined as follows (as per 40 CFR 423.11(b):
"Low volume wastes sources include, but are not limited to: wastewaters from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included."

A. (12.) SECTION 316 (B) OF CWA

The permittee shall comply with the Cooling Water Intake Structure Rule per 40 CFR 125.95.



Michael F. Easley, Governor
State of North Carolina

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director
Division of Water Quality

September 11, 2006

Mr. Michael Ruhe
Duke Energy Corporation
P.O. Box 1006
Mail Code EC11E
Charlotte, North Carolina 28201

2

Subject: Issuance of NPDES Permit
NC0004979
Allen Steam Station
Gaston County

Dear Mr. Ruhe:

Division personnel have reviewed and approved your application for renewal of the subject permit. Accordingly, we are forwarding the attached NPDES discharge permit. This permit is issued pursuant to the requirements of North Carolina General Statute 143-215.1 and the Memorandum of Agreement between North Carolina and the U.S. Environmental Protection Agency dated May 9, 1994 (or as subsequently amended).

This final permit contains no significant changes from the draft you were sent on July 5, 2006.

If any parts, measurement frequencies or sampling requirements contained in this permit are unacceptable to you, you have the right to an adjudicatory hearing upon written request within thirty (30) days following receipt of this letter. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings (6714 Mail Service Center, Raleigh, North Carolina 27699-6714). Unless such demand is made, this decision shall be final and binding.

Please note that this permit is not transferable except after notice to the Division. The Division may require modification or revocation and reissuance of the permit. This permit does not affect the legal requirements to obtain other permits which may be required by the Division of Water Quality or permits required by the Division of Land Resources, the Coastal Area Management Act or any other Federal or Local governmental permit that may be required.

If you have any questions concerning this permit, please contact Toya Fields at telephone number (919) 733-5083, extension 551.

Sincerely,


for Alan W. Klimek, P.E.

cc: Central Files
Mooresville Regional Office/Surface Water Protection
NPDES Unit
Aquatic Toxicology
Marshall Hyatt, EPA Region IV

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While EPA makes every effort to ensure that this web site remains current and contains the final version of the active permit, we cannot guarantee it is so. For example, there may be some delay in posting modifications made after a permit is issued. Also note that not all active permits are currently available electronically. Only permits and fact sheets for which the full text has been provided to Headquarters by the permitting authority may be made available. Headquarters has requested the full text only for permits as they are issued or reissued, beginning November 1, 2002.

Please contact the appropriate permitting authority (either a State or EPA Regional office) prior to acting on this information to ensure you have the most up-to-date permit and/or fact sheet. EPA recognizes the official version of a permit or fact sheet to be the version designated as such and appropriately stored by the respective permitting authority.

The documents are gathered from all permitting authorities, and all documents thus obtained are made available electronically, with no screening for completeness or quality. Thus, availability on the website does not constitute endorsement by EPA.

Flue Gas Desulfurization Wastewater Characteristics

Potential Parameters of Concern	Projected Average concentrations in FGD wastewater (µg/L)	Projected Concentrations after WWTS (µg/L)	Projected Average Concentrations at Outfall 002 (µg/L)	Applicable Water Quality Standards (µg/L)
Antimony	0.02	0.01	0.01	5.6 ^E
Arsenic	0.28	<0.14	0.14	10 ^C
Barium	4.9	<2.5	0.52	1000
Beryllium	0.035	<0.02	<0.0005	0.0068 ^C
Boron	20	10	1.54	750 ^E
Cadmium	0.07	0.035	<0.0005	15.0 ^A
COD	450	225	31	
Chloride	2997	1499	184	250000
Chromium	0.40	0.20	0.06	1022 ^A
Cobalt	0.37	0.18	<0.030	-
Copper	0.44	0.22	0.04	7.3 ^A
Fluoride	52.2	26.1	3.46	1800
Lead	0.30	0.15	0.02	33.8 ^A
Manganese	5.74	2.8	0.40	200
Mercury	0.35	0.0005	<0.0001	0.012
Molybdenum	0.43	0.21	0.07	-
Nickel	0.70	0.40	0.06	261 ^A
Selenium	6.9	0.05	0.01	56 ^A
Silver	0.07	0.03	<0.005	1.23 ^A
Sulfate	1500	750	142.1	250000
Temperature	133 °F	95 °F	Ambient	Narrative
Thallium	0.22	0.11	0.01	0.35 ^E
TSS	16000	15	10	-
Vanadium	0.21	0.11	0.01	24 ^E
Zinc	0.37	0.18	0.04	67 ^A

C= carcinogen

A= acute criteria

E= EPA criteria

Duke has received permit modifications at several other plants for the addition of FGD systems. Each of those has received monthly flow monitoring as well as weekly monitoring at an internal outfall (discharge to ash basin) for the following parameters:

- TSS
- Arsenic
- Cadmium
- Chromium
- Chloride
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

In addition, the following appear to be potential pollutants of concern at this facility and will also be monitored:

- Beryllium
- COD

Removal of Arsenic Limit

During the comment period, Duke was able to provide updated 30Q2 and QA values. The RPA was recalculated using 30Q2= 314 (minimum daily average release as defined in the FERC license) and QA = 2470 cfs (mean annual flow based on 1929-2003 data for mountain Island Hydro). Based on this data, there is no longer reasonable potential for an exceedance of arsenic water quality standards. The RPA yielded a maximum predicted concentration of 203.5 µg/L and an allowable concentration of 853 µg/L. The arsenic limit and monitoring requirements will be removed.

Construction of Flue Gas Desulfurization and Dry Ash Handling Systems

Duke plans to install two major pollution control systems at Allen Steam Station in 2009: a Dry Ash Handling system and a Flue Gas Desulfurization (FGD) system. The Dry Ash Handling system will decrease the flow and pollutant loading to the ash basin (Outfall 002). The FGD system will introduce an additional wastewater stream that will be treated by a dedicated wastewater treatment system (WWTS). Effluent from the WWTS will discharge to the ash basin, where additional treatment will occur prior to discharge. Once both systems are installed, the flow rate from the ash basin is expected to be reduced by approximately 50%.

Duke provided expected pollutant concentrations based primarily on models and the analysis of coal. In some situations, literature research was used along with analytical results from current FGD sites.

4.0 Proposed Schedule for Permit Issuance

Draft Permit to Public Notice: TBD
Permit Scheduled to Issue: TBD

5.0 State Contact Information

If you have any questions on any of the above information or on the attached permit, please contact Toya Fields at (919) 733-5083, extension 551.

Copies of the following are attached to provide further information on the permit development:

- Draft permit

NPDES Recommendation by:

Signature

Date

Regional Office Comments:

Regional Recommendation by:

Signature

Date

Reviewed and accepted by:

Regional Supervisor:

Signature

Date

NPDES Unit Supervisor:

Signature

Date

NCDENR/DWQ
FACT SHEET AMENDMENT

Duke Energy Corporation – Allen Steam Station
NC0004979

Facility Information			
(1.) Facility Name:	Allen Steam Station		
(2.) Permitted Flow (MGD):	No flow limit	(6.) County:	Gaston
(3.) Facility Class:	I	(7.) Regional Office:	Mooreville
(4.) Pretreatment Program:	N/A	(8.) USGS Topo Quad:	G14NE
(5.) Permit Status:	Renewal	(9.) USGS Quad Name:	Belmont
Stream Characteristics			
(1.) Receiving Stream:	Catawba / South Fork Catawba Rivers	(7.) Drainage Area (mi ²):	??/635
(2.) Sub-basin:	03-08-34	(8.) Summer 7Q10 (cfs):	95/124
(3.) Stream Index Number:	11-123.5	(9.) Winter 7Q10 (cfs):	95/227
(4.) Stream Classification:	WS-V B	(10.) 30Q2 (cfs):	314 ¹ /309
(5.) 303(d) Status:	Not listed	(11.) Average Flow (cfs):	2,470 ² /806
(6.) 305(b) Status:	-	(12.) IWC %:	24 (Outfall 002)

Notes:

- 30Q2 for the Catawba River has been defined as the minimum daily average release at Mountain Island Hydro.
- Average flow (QA) for the Catawba River has been defined as mean annual flow based on operations records from 1929 to 2003 at Mountain Island Hydro.

1.0 Proposed Changes Incorporated Into Permit Renewal

- Add language allowing the construction of the FGD system and the dry ash handling system.
- Add monitoring requirements at internal outfall 005 (treated FGD wet scrubber wastewater to ash settling basin).
- Remove arsenic limit and monitoring requirement due to lack of reasonable potential for levels of this parameter to cause an exceedance of water quality standards.
- Add 3-year compliance schedule for 21 µg/L selenium limit to coincide with the estimated completion date of the dry ash handling system.

2.0 Summary

Selenium Compliance Schedule

During the comment period, Duke Power and Division staff met to discuss several proposed changes to the draft permit. The primary point of concern involved the increase in IWC and the resulting change in permit limits (particularly selenium). Duke indicated that at this time they would have difficulty meeting the selenium limit, however they will be installing a dry ash handling system that is expected to cut flows in half. Since the IWC calculation is based on actual flows, a reduction in flow would decrease the IWC and therefore increase the allowable selenium limit. Duke has asked Division staff to allow 3 years for the construction of the treatment system before the 21 µg/L selenium limit takes effect. Until that time, the existing limit of 31 µg/L will remain in the permit.

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