UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 25 2014

CERTIFIED MAIL 7010 1060 0002 1705 4082
RETURN RECEIPT REQUESTED

Ms. Lynn J. Good
Vice Chairman, President and Chief Executive Officer
Duke Energy Corporation
550 South Tryon Street
Charlotte, North Carolina 28202-1803

Re: Information Request pursuant to 308 of the Clean Water Act

Dear Ms. Good:

Pursuant to Section 308 of the Clean Water Act (CWA), 33 U.S.C. § 1318, the U.S. Environmental Protection Agency hereby requests that Duke Energy Corporation, Duke Energy Carolinas, LLC, and/or Duke Energy Progress, Inc. (collectively, "Duke Energy") provide the information set forth in Enclosure A. Duke Energy is required to respond to this information request within 60 days of receipt of this letter. Please direct Duke Energy's response to:

Mr. Michael Hom
Environmental Engineer
United States Environmental Protection Agency
Clean Water Enforcement Branch
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Duke Energy's response should specifically reference the particular section and item number of the request and should be organized for the purpose of clarity. In addition, all information submitted must be accompanied by the following certification signed by a responsible Duke Energy official in accordance with 40 C.F.R. § 122.22:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Failure to comply with this information request may result in enforcement proceedings under Section 309 of the CWA, 33 U.S.C. § 1319, which could result in the judicial imposition of civil or criminal penalties or the administrative imposition of civil penalties. In addition, there is potential criminal liability for the falsification of any response to the requested information.

Duke Energy shall preserve, until further notice, all records (either written or electronic), which exist at the time of receipt of this letter that relate to any of the matters set forth in this letter. The term "records" shall be interpreted in the broadest sense to include information of every sort. The response to this information request shall include assurance that these record protection provisions were put in place, as required. No such records shall be disposed of until written authorization is received from EPA, Region 4.

If you believe that any of the requested information constitutes confidential business information, you may assert a confidentiality claim with respect to such information except for effluent data. Further details, including how to make a business confidentiality claim, are found in Enclosure B.

If you have questions regarding this notice and information request, please contact Mr. Hom at (404) 562-9748 or by e-mail at hom.michael@epa.gov or Ms. Laurie Ireland, Life Scientist, at (404) 562-9249 or by email at ireland.laurie@epa.gov. Legal inquiries should be directed to Mr. Matthew Hicks, Associate Regional Counsel at (404) 562-9670 or by email at hicks.matthew@epa.gov.

Sincerely,

Denisse D. Diaz, Chief
Clean Water Enforcement Branch
Water Protection Division

Enclosures

cc: Mr. Tom Reeder
North Carolina Department of Environment and Natural Resources

Mr. David Fountain
Duke Energy Corporation

Mr. David Buente, Jr.
Sidley Austin LLP

ENCLOSURE A

INFORMATION REQUEST PURSUANT TO SECTION 308 OF THE CLEAN WATER ACT

Instructions

1. Identify the person(s) responding to this Information Request.

2. Please provide a separate narrative response to each and every Question and subpart of a Question set forth in this Information Request.

3. Precede each answer with the text and the number of the question and its subpart to which the answer corresponds.

4. All documents submitted must contain a notation indicating the question and subpart of the question to which they are responsive.

5. In answering each Information Request question and subpart thereto, identify all documents and persons consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents.

6. If information not known or not available to you as of the date of submission of a response to this Information Request should later become known or available to you, you must supplement your response to the EPA. Moreover, should you find at any time after the submission of your response that any portion of the submitted information is false or misrepresents the truth, you must notify the EPA thereof as soon as possible.

7. For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the question to which it responds.

8. Where specific information has not been memorialized in a document, but is nonetheless responsive to a question, you must respond to the question with a written response.

9. If information responsive to this Information Request is not in your possession, custody or control, then identify the person from whom such information may be obtained.

10. If you have reason to believe that there may be persons able to provide a more detailed or complete response to any question or who may be able to provide additional responsive documents, identify such persons and the additional information or documents that they may have.

11. The EPA requests that all documents provided in an electronic format be compatible with PDF.

12. The EPA requests that all spreadsheet information be in electronic format and compatible with MS Excel.

13. If any Question relates to activities undertaken by entities other than the recipient of this Information Request, and to the extent that you have information pertaining to such activities, provide such information for each entity.

Definitions

14. All terms not defined herein shall have their ordinary meanings, unless such terms are defined in the Clean Water Act or its implementing regulations, in which case the statutory or regulatory definitions shall control.

15. Words in the masculine may be construed in the feminine if appropriate, and vice versa, and words in the singular may be construed in the plural if appropriate, and vice versa, in the context of a particular question or questions.

16. The terms "And" and "Or" shall be construed either disjunctively or conjunctively as necessary to bring within the scope of this Information Request any information which might otherwise be construed outside it scope.

17. The term "Identify" means, with respect to a natural person, to set forth the person's name, present or last known business address and business telephone number, present or last known home address and home telephone number, and present or last known job title, position or business.

18. The term "Identify" means, with respect to a document, to provide its customary business description; its date; its number, if any (invoice or purchase order number); the identity of the author, addressee and/or recipient; and substance of the subject matter.

19. The term "Identify" means, with respect to a corporation, partnership, business trust or other association or business entity (including a sole proprietorship), to set forth its full name, address, legal form (e.g., corporation, partnership, etc.), organization, if any, and a brief description of its business.

20. The term "Duke Energy" shall mean the entities of: Duke Energy Corporation; Duke Energy Carolinas, LLC; and/or Duke Energy Progress, Inc.

21. The term "You" and "Your" shall mean Duke Energy, and/or any of its agents, employees or contractors.

22. The term "NCDENR" shall mean the North Carolina Department of Environment and Natural Resources.

23. The term "NPDES" or "NPDES Permit" shall mean the State of North Carolina National Pollutant Discharge Elimination System Permit, issued pursuant to the Clean Water Act.

24. The term "stormwater" shall mean stormwater runoff, snow melt runoff, and surface runoff and drainage.

25. The term "seepage" shall mean the movement of water in a porous material and the water exiting at the visible surface of the material.

Questions

In answering each question below and subpart thereto, identify all documents consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents.

1. NC0003433 Cape Fear Steam Electric Generating Plant:

    a. Provide the reason(s) for the water drawdown of the West Ash Pond (aka 1978 Basin) and the East Ash Pond (aka 1985 Basin) during September 2013 through March 2014.

    b. In your March 28, 2014 response to the NCDENR March 20, 2014, Notice of Violation letter, you stated that:

        i. *Page 3 "...the pumping activities were part of necessary maintenance and repair of the risers in the Ash Basins..."*
            1. Why was it necessary to maintain and repair the risers?
            2. When did Duke Energy first discover that the risers needed maintenance and repair?
            3. Who at Duke Energy discovered that the risers needed maintenance and repair?
            4. Who conducted the maintenance and repair of the risers? Please provide the company name and the name of employees who performed the work.
            5. Did Duke Energy enter into any contracts for the maintenance and repair of the risers? If so, when? Please provide copies of any such contracts.
            6. Did Duke Energy receive a cost estimate for the maintenance and repair of the risers? If so, when? Please provide copies of the estimate(s).
            7. When were the risers maintained and repaired? Please provide the start and completion dates for each riser.
            8. Please provide documentation regarding the assessment of each riser and the maintenance and repairs conducted.
            9. In the last 10 years, has Duke Energy performed maintenance or repairs to risers at other facilities? If so, was it the same type of maintenance or repairs that were performed at the Cape Fear Ash Basins? Please provide the date and name of the facilities.
            10. Does Duke Energy have protocols, procedures, or plans for the maintenance or repair of risers?
            11. If so, were such protocols, procedures, or plans used to maintain or repair risers at Cape Fear or other facilities? Please provide the date and name of the facilities.
            12. What other options were considered for the maintenance and repair of the risers? For example, did Duke Energy consider other technologies such as cofferdams around the risers and dewatering the space between the cofferdam and risers to enable repairs?
            13. If other options were considered, describe the rationale for excluding such options.

ii. *Page 4 "...Duke Energy tested water during the time period when pumping occurred – on a voluntary, operational basis in October 2013; as part of semi-annual testing required by the Permit in November 2013; and again in February 2014..."*
   1. Provide: dates, times, and locations of each sampling event; laboratory bench sheets and sampling results.
   2. Were pumps running at the time of sampling? If not, how long had it been since the pumps were used?

iii. *Page 4 "...at the time when pumping activities began, the Ash Basins had not received any coal ash wastewater for many months..."* During the pumping activities time period of September 2013 through March 2014, identify other waste streams that discharged into the ash ponds, and each waste stream amount in gallons.

iv. *Page 5 "...Duke Energy carefully developed protocols and procedures to assure that all appropriate precautions would be taken during the process of lowering the water level in the Ash Basins."* Provide the protocols and procedures.

v. *Page 5 "...Duke Energy collected water samples between the internal and external outfall locations and conducted whole effluent toxicity (WET) test."*
   1. Provide: date, time and location of the samples; the type of WET test conducted, to include test species and testing protocol used; and the final laboratory report.
   2. Were pumps running at the time of sampling? If not, how long had it been since the pumps were used?

vi. *Page 5 "After careful deliberation, it became clear to Duke Energy that the safety of its repair crews would require a lowering of water levels in the Ash Basins."*
   1. Why was the lowering of water levels essential to the safety of the repair crews?
   2. What were the deliberations that led to the decision?

vii. *Page 6 "Lowering the level of water in the Ash Basins permitted Duke Energy's contractors to see clearly the condition of the leaking risers and provided a safe environment in which those contractors could work."*
   1. How did Duke Energy know the risers were leaking?
   2. What problem were the leaking risers causing that necessitated their maintenance or repair?
   3. Did Duke Energy confer with anyone at NCDENR concerning the need for repairs? If so, who and when? Please provide details of those discussions.

viii. *Page 7 "In developing its approach to the pumping activities for the necessary maintenance and repair project, Duke Energy made a point to float pump intake hoses so that they did not gather saturated ash sediment from the bottom of the Ash Basins, and gave clear instructions to personnel at the site that pumping was to stop if evidence of ash was seen in the flow."*

1. How many employees were observing pumping efforts? Were they continuously present during pumping?
2. Where were employees positioned to make these observations?
3. Did the employees observe intake water or water discharging from the pump? This assumes that one person cannot see both from the same location. If this is incorrect, please explain.
4. How did Duke Energy determine if solids or ash from the bottoms, edges, or floors of the ash basins was being pulled/pumped from the basins?
5. Did Duke Energy perform tests or sampling to verify that ash was not being brought into suspension and discharged? If so, please provide the results of such tests or sampling.
6. During the pumping efforts from September 2013 through March 2014, how many times were solids or ash determined to have been pulled/pumped from the ash basins? How was this determined, documented, and remedied?

ix. *Page 8 "...Duke Energy carefully evaluated feasible alternatives to its proposed maintenance and repair work."* Provide documentation (including any internal deliberation) of the other alternatives and why they were not selected.

x. *Page 8 "For safety reasons and in order to keep all access roads clear for the laboratory personnel, pumping activities were not commenced on February 5, 2014, until after the laboratory personnel had completed their work and departed the site."*
   1. Why couldn't laboratory personnel step over the hoses and walk to the sampling location?
   2. In the alternative, why couldn't Duke Energy temporarily remove the hoses to allow the laboratory personnel to pass and then replace the hoses and resume pumping once the road was clear?
   3. Did Duke Energy consider other alternatives that would have allowed sampling during the pumping event while still ensuring the safety of the laboratory personnel?

xi. *Page 10 "Once repairs have been completed, the water levels in the Ash Basins should return to previous conditions."*
   1. Describe the previous conditions and how the water level would return to normal.
   2. Have the pond water levels returned to previous conditions?

c. For the 1978 Basin pumping events and 1985 Basin pumping events, please provide an answer and any supporting documentation for the following:

   i. Was flow measured at Outfalls 001, 005, and 007 during pumping?

   ii. Were samples at Outfall 001 and Outfall 005 taken during pumping? If not, please provide an explanation, other than the explanation cited in Question 1(b)(x) above.

   iii. How did Duke Energy determine when to turn the pump on and off?

iv. What prevented the intake hose from reaching the coal ash/sediment on the bottom of the pond?

v. Where was the intake hose placed in relation to the pond surface? Did the intake hose remain at the pond surface during the entire pumping event?

vi. How far below of the top of the riser did the repair or maintenance occur?

vii. What was the lowest pond water level achieved during the pumping event in relation to the top of the riser?

viii. Where was the intake hose placed in relation to the riser's location within the pond?

ix. Were any operational samples or observation notes of sediment pickup taken by the Operator of Responsible Charge or others during the pumping events? If so, please provide any related data (to include chain of custody, bench sheets, and results).

x. Were pumps run less than 48 hours after a rain event?

d. For the risers that required repair and maintenance:

i. What was the estimated flow from the leaking riser(s)?

ii. Was any of the flow from the leaking riser(s) attributable to water flowing over the riser? If so, how much?

iii. Prior to the leak, what was the estimated flow from Outfalls 001 and 005?

iv. If samples were taken during the period that risers were leaking, did any such sampling results indicate that flow from the leaking riser would not meet permit limits?

v. Did sampling results indicate that flow from the leaking riser had a coal ash signature?

e. For the "Cape Fear Ash Pond Dewatering Levels" tables that Duke Energy provided to NCDENR, as seen in Enclosure C:

i. Please describe the columns/annotations on the pond pump logs.

ii. Where are the water levels measured within the pond?

iii. How are the water levels measured?

2. For the period from January 2009 through the present, provide the following information for the NPDES permitted facilities listed below: all Discharge Monitoring Reports (DMRs) that indicate effluent limitation noncompliance or failure to monitor pursuant to the permit; all notifications to NCDENR as per the NPDES permit provisions of Part II.E(7) through Part II.E(9); NCDENR response to reported noncompliance.

   a. NPDES NC0000396 Asheville Steam Electric Generating Plant
   b. NPDES NC0001422 L. V. Sutton Electric Plant
   c. NPDES NC0003417 H. F. Lee Steam Plant
   d. NPDES NC0003425 Roxboro Steam Electric Generating Plant
   e. NPDES NC0003433 Cape Fear Steam Electric Generating Plant
   f. NPDES NC0003468 Dan River Combined Cycle Station
   g. NPDES NC0004774 Buck Steam Station
   h. NPDES NC0004961 Riverbend Steam Station
   i. NPDES NC0004979 Plant Allen Steam Station
   j. NPDES NC0004987 Marshall Steam Station
   k. NPDES NC0005088 Cliffside Steam Station
   l. NPDES NC0005363 Weatherspoon Steam Electric Plant
   m. NPDES NC0024406 Belews Creek Steam Station
   n. NPDES NC0038377 Mayo Steam Electric Generating Plant

ENCLOSURE B

RIGHT TO ASSERT BUSINESS CONFIDENTIALITY CLAIMS
(40 C.F.R. Part 2)

Except for effluent data, you may, if you desire, assert a business confidentiality claim as to any or all of the information that the EPA is requesting from you. The EPA regulation relating to business confidentiality claims is found at 40 C.F.R. Part 2.

If you assert such a claim for the requested information, the EPA will only disclose the information to the extent and under the procedures set out in the cited regulations. If no business confidentiality claim accompanies the information, the EPA may make the information available to the public without any further notice to you.

40 C.F.R. § 2.203(b). **Method and time of asserting business confidentiality claim.** A business which is submitting information to the EPA may assert a business confidentiality claim covering the information by placing on (or attaching to) the information, at the time it is submitted to the EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as "trade secret," "proprietary," or "company confidential." Allegedly confidential portions of otherwise non-confidential documents should be clearly identified by the business, and may be submitted separately to facilitate identification and handling by the EPA. If the business desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state.

ENCLOSURE C

DUKE ENERGY. PROGRESS

Cape Fear Ash Pond Dewatering Levels

1978 Ash Pond

RAINFALL

Date	Pump Operation Times	Pond Level: Staff Gauge Reading (in)	Pond Level: Cumulative Drawdown (ft)	MAC 78-1: Measured Water Level (ft)	MAC 78-1: Cumulative Change (ft)	MAC 78-3: Measured Water Level (ft)	MAC 78-3: Cumulative Change (ft)	PZ-9: Measured Water Level (ft)	PZ-9: Cumulative Change (ft)	Pump Operation Time (Hours)	Notes
1-13-14	Start: 1100	9'2		14'8		16'8		5.400		10.5	
	End:	9.1½		14.7½		16.7½		5.300		15.4	
1-14-14	Start: 7.15	9.100		14.500		16.550		5.500		15.4	
	End: 4:30	8.9 9/10		14.500		16.600		5.400		24.2	
1-15-14	Start: 7.15	9.000		14.500		16.400		5.100		33.3	
	End: 4:30	8.800		14.500		16.500		5.400		33.4	
1-16-14	Start: 7:00	8.800		14.600		16.400		5.500		33.4	
	End: 4:30	8.600		14.500		16.650		5.500		42.5	
1-20/14	Start: 7:00	8.600		14.600		16.600		5.750		42.5	
	End: 4:00	8.400		14.400		16.550		5.800		51.6	
1-21-14	Start: 7:00	8.400		14.300		16.450		5.800		51.6	
	End: 1:00	8.2 9/10		16.200		16.350		5.750		57.2	
1-22-14	Start: 7:00	8.300		14.500		16.350		6.000		57.2	
	End 4:22	8.050		14.600		16.800		6.000		66.6	
1-23-14	Start: 9:05	8.050		14.900		17.100		6.150		66.6	
	End: 4:30	7.900		14.900		17.000		6.150		74.1	
1-27-14	Start: 7:00	7.800		14.650		16.450		6.300		74.1	
	End: 4:00	7.600		14.600		16.400		6.300		83.0	
1-28-14	Start: 7:00	7.600		15.100		17.200		6.550		83.0	
	End: 4:00	7.400		15.050		17.200		6.550		92.4	
1-29-14	Start: 9:35	7.400		15.150		17.300		6.600		92.4	SNOW 2.000
	End: 4:15	7.2½		15.150		17.250		6.500		99.3	
1-30-14	Start: 10:55	7.2½		15.250		17.400		6.550		99.3	
	End: 4:30	7.1½		15.200		17.300		6.500		104.8	
2-3-14	Start: 7:00	7.1		15.075		17.075		6.475		104.8	
	End: 4:30	6.9		15.200		17.230		6.400		114.4	

DUKE ENERGY

78 Pond

Cape Fear Ash Pond Dewatering Levels

Date	Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	Mac 78-1 Water Level (ft)	Mac 78-1 Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	Mac-78-3 Water Level (ft)	Mac-78-3 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-9 Water Level (ft)	PZ-9 Time Measured	Pump Time
2-4-14	Start 0700	6.9		15.300				17.500				6.475	7:45	
	End	6.8		15.275				17.150				6.050		
2-10-14	Start 10:40	6.7½		15.400				17.400				6.350		~~[illegible]~~
	End	6.6		15.350				17.460				6.300		126.4
2-11-14	Start 6:30	6.6		15.400				17.600				6.500		126.4
	End 4:05	6.4		15.400				17.600				6.500		136.0
2/12/14	Start	6.350		15.500				17.700				6.600		136.0
	End	?			SNOW							~~[illegible]~~		
2/17/14	Start 7:30	6.4 1/10		15.300				16.300				5.500		142.8
	End	6.300		15.250				16.400				5.400		150.1
2/18/14	Start 7:00	6.300		15.300				16.500				5.400		150.1
	End 3:30	6.100		15.300				16.500				5.350		158.0
2/19/14	Start 7:30	6.1½		15.200				16.500				5.250		158.0
	End 4:30	6.000		15.200				16.500				5.250		165.6
2/20/14	Start 6:30	6.000		15.250				16.800				5.300		165.6
	End 4:00	5.750		15.250	15.250			16.400				5.250		174.3
2/24/14	Start 6:30	5.950		15.250				16.900				5.300		174.3
	End 4:30	5.700		15.200				16.900				5.300		184.2
2/25/14	Start 6:30	5.700		15.250				17.00				5.400		184.2
	End 4:30	5.400		15.250				16.850				5.350		193.9
2/26/14	Start 6:30	5.450		15.150				16.900				5.40	oil chg	193.9
	End 4:30	5.200		15.000				16.800				5.40		202.7
2/27/14	Start 6:30	5.200		15.100				16.900				5.550		202.7
	End 4:00	5.000		15.000				16.850				5.550		210.5
3/3/14	Start 6:30	5.100		15.200				17.000				5.850		210.5
	End 4:00	5.000		15.200				17.200				5.800		217.0

[illegible] and [illegible] form and [illegible] copy to Dennis Chie. Copy will be routed to Scott Harris and Henry Gates.

DUKE ENERGY. PROGRESS

Cape Fear Ash Pond Dewatering Levels

1978 Ash Pond

Date	Pump Operation Times	Pond Level		MAC 78-1		MAC 78-3		PZ-9		Pump Operation Time (Hours)	Notes
		Staff Gauge Reading (in)	Cumulative Drawdown (ft)	Measured Water Level (ft)	Cumulative Change (ft)	Measured Water Level (ft)	Cumulative Change (ft)	Measured Water Level (ft)	Cumulative Change (ft)		
3/4/14	Start: 10:11	5.000		15.300		17.500		6.000		217.0	
	End: 4:00	4.850		15.200		17.400		5.900		222.4	
3/5/14	Start: 6:30	4.850		15.300		17.450		6.000		222.4	
	End: 4:30	4.650		15.300		17.350		6.000		229.9	oil sending unit
3/6/14	Start: 6:30	4.650		15.300		17.600		6.050		229.9	
	End: 3:00	4.500		15.300		17.600		6.050		235.9	
3/10/14	Start: 8:00	5.000		15.300		15.900		5.200		235.9	
	End: 6:30	4.800		15.300		15.900		5.250		242.2	
3/11/14	Start: 6:30	4.800		15.200		16.000		5.200		242.7	
	End:										
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DUKE ENERGY. PROGRESS

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date	Pump Operation Times	Pond Level		PZ-3S		PZ-3D		PZ-4		PZ-5		PZ-6		Pump HRS
		Water Level (ft)	Time Measured	Water Level (ft)	Time Measured	Water Level (ft)	Time Measured	Water Level (ft)	Time Measured	Water Level (ft)	Time Measured	Water Level (ft)	Time Measured	
3-10-14	Start: 0710	62.50	0720	3.350	7:18	3.050	7:18	7.800	7:10	.600	7:05	14.000	7:42	649.9
	End: 4:30	61.00	0700	3.350	6:10	3.050	6:10	7.800	6:15	.600	6:20	14.00	5:55	652.5
3-11-14	Start: 0700	61.00	0700	3.300	6:55	3.000	6:55	7.800	6:49	.600	6:40	13.650	7:10	657.5
	End:													
	Start:													
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NOTE: Please initial this tracking form and provide a copy to Dennis Cole. Copy will be routed to Scott Harris and Henry Gates.

DUKE ENERGY

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date		Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	
2/12/14	Start:	7:20	52.00	7:40	3.850	7:25	3.600	7:25	8.00	7:16	1.050	7:05	15.050	7:30	551.1
	End:	7:20	51.00	7:42	3.600	7:26	3.350	7:26	7.800	7:20	.800	7:15	14.600	7:33	
2/17/14	Start:	7:20	51.00	7:42	3.600	7:26	3.350	7:26	7.800	7:20	.800	7:15	14.600	7:33	556.1
	End:	4:30	52.50	4:35	3.600	4:30	3.350	4:20	7.800	4:33	.800	4:43	14.550	4:25	565.1
2/19/14	Start:	7:00	52.50	7:00	3.550	7:08	3.300	7:08	7.800	7:13	.750	6:55	14.500	7:03	565.1
	End:	4:30	5.400	4:15	3.500	4:05	3.300	4:05	7.750	4:10	.400	4:35	14.450	4:00	573.4
2/19/14	Start:	7:30	5.400	8:44	3.450	8:38	3.200	8:38	7.650	7:40	.400	7:30	14.400	8:30	573.4
	End:	3:50	5.500	4:30	3.450	4:20	3.200	4:20	7.650	4:25	.400	4:16	14.400	4:15	580.1
2/20/14	Start:		5.600	7:50	3.500	7:39	3.200	7:39	7.650	7:45	.700	7:21	14.300	7:30	580.1
	End:	4:15	5.625	4:26	4:400	4:20	3.250	4:20	7.800	4:24	.650	4:31	14.300	4:16	582.2
2/24/14	Start:	7:20	54.50	7:30	3.400	7:20	3.100	7:20	7.850	7:11	.750	7:00	14.100	7:22	587.
	End:	4:30	56.50	4:35	3.400	4:35	3.100	4:35	7.850	4:35	.750	4:38	14.100	4:30	596.1
2/25/14	Start:	7:10	56.50	7:20	3.500	7:08	3.200	7:09	7.900	7:05	.750	7:00	14.100	7:15	596.5
	End:	4:30	54.75	4:45	3.500	4:20	3.200	4:20	7.900	4:35	.750	4:25	14.100	4:30	601.4
2/26/14	Start:	7:20	54.75	7:40	3.450	7:30	3.150	7:30	7.900	7:25	.750	7:19	14.150	7:34	601.4
	End:	4:00	59.00	4:00	3.450	4:05	3.150	4:05	7.900	4:10	.750	4:20	14.150	4:15	610.0
2/27/14	Start:	7:35	59.00	7:35	3.450	7:20	3.200	7:20	7.950	7:15	.800	7:10	14.200	7:25	610.0
	End:	4:00	61.00	4:35	3.450	4:25	3.200	4:25	7.950	4:20	.800	4:13	14.200	4:30	618.5
3/3/14	Start:	7:20	60.75	7:30	3.550	7:15	3.250	7:15	8.000	7:10	.800	7:05	14.500	7:20	618.5
	End:	4:30	62.25	4:40	3.600	4:24	3.3000	4:24	8.050	4:30	.900	4:35	14.550	4:18	625.6
3/4/14	Start:	7:10	62.25	7:10	3.700	7:00	3.400	7:00	8.050	6:59	.950	6:50	16.600	7:18	625.6
	End:	4:30	62.75	4:30	3.650	4:15	3.400	4:15	8.000	4:20	.900	4:33	14.600	4:10	634.9
3/5/14	Start:	7:00	62.75	7:00	3.650	6:50	3.400	6:50	8.000	6:50	.900	6:45	14.600	7:00	634.9
	End:	2:30	64.00	4:05	3.650	3:55	3.400	3:55	8.050	4:00	.900	4:00	14.600	3:47	641.5
3/6/14	Start:	7:00	64.00	7:10	3.750	7:00	3.400	7:00	8.100	6:55	.950	6:50	16.650	7:05	641.5
	End:	3:00	62.50	3:00	3.750	4:10	3.400	4:10	8.100	4:15	.950	4:25	16.650	4:05	649.9

NOTE: Please fax this page/form and provide a copy to Dennis Cole. Copy will be routed to Scott Hamb and Henry Gates.

DUKE ENERGY

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date		Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	
1-15-14	Start:	7:45	35.00	8:44	3.400	8:34	3.150	8:34	7.800	8:41	0.775	9:12	14.00	8:29	438
	End:	4:20	36.05	4:14	3.400	4:25	3.200	4:25	7.800	4:29	0.850		14.050	4:20	446
1-16-14	Start:	7:20	36.00	7:29	3.500	7:20	3.200	7:20	7.850	7:26	0.800	7:10	14.000	7:43	446
	End:	4:30	37.75	4:35	3.475	4:28	3.200	4:28	7.850	4:30	.900	4:44	14.000	4:20	456
1-[illegible]-14	Start:	7:30	38.00	7:40	3.550	7:36	3.250	7:36	7.875	7:30	.900	7:23	14.100	7:40	456
	End:	4:30	39.75	4:40	3.500	4:21	3.250	4:21	7.900	4:26	.850	4:30	14.100	4:16	464
1-21-14	Start:	7:20	39.75	7:35	3.500	7:24	3.250	7:24	7.850	7:19	.850	7:10	14.200	7:28	464
	End:	4:30	41.00	4:45	3.450	4:30	3.20	4:30	7.900	4:33	.850	4:40	14.200	4:20	472
1-22-14	Start:	7:30	41.25	7:44	3.650	7:30	3.500	7:30	7.950	7:25	1.000	7:21	14.300	7:32	472
	End:	4:30	42.75	4:00	3.650	4:09	3.400	4:09	7.950	4:15	1.000	4:20	14.300	4:04	492
1-[illegible]-14	Start:	8:30	42.75	7:41	3.750	7:29	3.450	7:29	8.000	7:23	1.050	7:19	14.350	7:34	492
	End:	4:20	44.00	4:30	3.800	4:23	3.500	4:23	7.950	4:35	1.000	4:40	14.400	4:20	499
1-27-14	Start:	7:20	44.25	8:36	3.550	7:24	3.400	7:24	7.950	7:18	1.000	7:13	14.650	7:30	499
	End:	4:20	46.00	4:50	3.550	4:34	3.400	4:35	7.900	4:33	1.000	4:30	14.650	4:15	498
1-29-14	Start:	7:15	46.25	7:30	3.850	7:13	3.550	7:13	8.050	7:05	1.150	7:00	14.700	7:20	495
	End:	4:20	48.00	4:34	3.950	4:20	3.600	4:20	8.00	4:25	1.000	4:32	14.700	4:11	508
1-[illegible]-14	Start:	8:00	47.75	8:20	3.900	8:05	3.650	8:05	8.00	7:56	1.100	7:50	14.800	8:10	508
	End:	4:20	49.00	4:38	3.900	4:24	3.650	4:24	8.00	4:28	1.000	4:35	14.800	4:19	516
2-4-14	Start:	8:00	48.00	9:25	3.900	9:15	3.600	9:15	8.000	9:10	1.100	8:50	15.000	9:20	516.7
	End:				~~3.550~~	8	~~3.450~~	~~8:21~~					~~14.9~~		
2-5-14 *	Start:	10:15	49.00	10:15	3.550	8:21	3.450	8:20	7.800	8:27	.850	8:35	14.9	8:15	521.7
	End:				3.700	7:32	~~3.450~~	~~7:32~~	7.900	7:25	1.000	7:22	15.00	7:37	~~521.7~~
2-10-14	Start:	7:00	49.50	7:00	3.700	7:32	3.450	7:32	7.900	7:25	1.000	7:22	15.00	7:37	521.7
	End:	4:06	51.25	4:02	3.750	3:53	3.500	3:53	7.900	3:58	1.000	4:17	15.00	4:12	543.1
2-11-14	Start:	7:30	51.25	8:03	3.800	7:56	3.500	7:56	7.950	8:00	1.050	7:45	15.00	7:51	543.1
	End:	4:20	52.00	4:30	3.800	4:23	3.550	4:23	7.950	4:27	1.000		15.050	4:19	551.8

NOTE: Please [illegible] this form and provide a copy to Dennis Cole. Copy will be routed to Scott Harris and Henry Gates.

* STARTED LATE 2-5-14/WAITING FOR WATER SAMPLE TO BE TAKEN

DUKE ENERGY

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date		Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	Pump Hour B
12/12/13	Start:	10:30	28.75	7:30	4.200	7:39	4.025	7:39	8.200	7:35	1.200	7:26	15.450	7:45	367
	End:	4:00	29.50	4:00	4.200	4:20	4.050	4:20	8.200	4:25	1.200	4:32	15.450	4:12	372
12/18/13	Start:	8:50	28.75	8:50	4.050	8:23	3.950	8:23	8.100	7:27	1.250	8:34	15.200	8:14	372
	End:	2:15	29.75	2:15	4.100	3:05	3.900	3:05	8.100	3:10	1.250	3:15	15.175	2:57	376
12/19/13	Start:	8:45	29.75	8:45	4.050	7:31	3.900	7:31	8.100	7:25	1.200	7:18	15.200	7:35	376
	End:	3:30	31.00	3:30	4.100	4:01	3.900	4:01	8.100	3:56	1.200	3:52	15.200	4:06	383
12/23/13	Start:	8:06	3.000	8:06	4.000	7:36	3.800	7:36	7.900	7:31	1.100	7:25	15.400	7:45	383
	End:	4:00	3.050	4:00	3.900	4:19	3.7½	4:19	7.800	4:23	1.100	4:26	15.400	4:25	390
12/24/13	Start:	8:08	3.025	8:08	3.900	7:36	3.7½	7:36	7.850	7:31	1.050	7:25	15.300	7:41	390
	End:	3:30	3.125	3:30	3.900	3:48	7.7½	3:48	7.900	3:54	1.050	4:00	15.200	3:41	396
12/30/13	Start:	8:05	28.075	8:05	3.750	7:33	3.300	7:33	7.450	7:38	0.850	7:44	14.7½	7:25	396
	End:	9:00	28.075	2:30	7.750	4:48	3.300	2:48	7.450	2:40	0.850	2:50	14.750	2:45	396
12/31/13	Start:	8:30	28.75	8:30	3.600	7:23	3.400	7:23	7.850	7:16	0.900	7:10	14.600	7:30	396
	End:	10:30	29.25	3:15	3.600	3:22	3.400	3:22	7.850	3:25	0.900	3:31	14.600	3:00	398
1/6/14	Start:	9:30	29.00	10:00	3.450	9:48	3.200	9:47	7.800	9:45	.850	9:40	14.200	9:55	398
	End:	4:30	30.25	4:35	3.550	4:31	3.250	4:30	7.850	4:25	.950	4:20	14.200	4:35	404
1/7/14	Start:	10:39	30.25	10:39	3.800	10:10	3.450	10:10	8.000	10:00	1.100	9:59	14.300	10:16	404
	End:	4:20	31.50	4:24	3.800	4:06	3.500	4:06	7.950	4:12	1.000	4:19	14.300	3:58	409
1/8/14	Start:	11:15	31.25	11:15	3.800	10:56	3.550	10:56	8.000	10:51	1.050	10:45	14.300	11:02	409.4
	End:	4:30	32.25	4:15	3.800	4:30	3.550	4:30	8.000	4:25	1.050	4:20	14.300	4:35	415.0
1/9/14	Start:	9:15	32.50	9:32	3.800	9:16	3.550	9:16	8.000	9:11	1.000	9:00	14.400	9:24	415.0
	End:														
	Start:														
	End:														
	Start:														
	End:														

NOTE: Please mail this tracking form and provide a copy to Dennis Cole. Copy will be routed to Scott Harris and Henry Gates.

DUKE ENERGY

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date	Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	Pump Hours
11/13/13	Start 8:00	51 1/2	8:00	4.450	8:15	4.250	8:15	8.400	8:05	1.[illegible]	8:00	15.500	8:25	263.
	End 4:00	52 3/4	4:00	4.450	4:20	4.300	4:20	8.600	4:25	1.400	4:30	15.550	4:15	269.
11/14/13	Start 7:20	52 3/4	7:20	4.450	7:25	4.300	7:25	8.600	7:20	1.400	7:15	15.550	7:35	269.
	End 4:10	54 1/2	4:10	4.400	4:10	4.250	4:10	8.550	4:15	1.450	4:25	15.550	4:00	277.
11/18/13	Start 0600	55	0630	4.275	8:05	4.125	8:05	8.510	7:56	1.325	7:53	15.720	8:14	277.9
	End 4:20	56 1/2	4:00	4.250	4:09	4.100	4:10	8.500	4:15	1.300	4:25	15.700	4:00	288
11/19/13	Start 0600	57		4.400	7:53	4.200	7:53	8.600	8:00	1.400	8:05	15.700	7:48	296.
	End 4:10	16 1/4	4:00	4.400	4:25	4.250	4:25	8.600	4:30	1.450	4:35	15.700	4:19	297
11/20/13	Start 9:00	16 1/2	9:17	4.500	7:25	4.300	7:25	8.650	7:30	1.500	7:35	15.750	7:18	297.
	End 3:20	17 3/4	3:20	4.500	3:42	4.375	3:40	8.65	3:35	1.500	3:30	15.800	3:50	302.9
11/21/13	Start 8:50	18.00	8:30	4.500	8:40	4.325	8:40	8.650	8:35	1.500	8:35	15.800	8:45	302.9
	End 3:15	19 1/4	3:15	4.500	3:35	4.400	3:37	8.625	3:30	1.450	3:25	15.850	3:45	309.2
12/2/13	Start 0600	18 1/2	0600	4.100	8:12	4.000	8:10	8.300	8:04	1.200	8:00	15.400	8:15	309.2
	End 4:25	20.00	4:53	4.100	4:41	4.000	4:41	8.300	4:35	1.200	4:34	15.400	4:47	319.4
12/3/13	Start 6:15	20.50	6:15	4.200	7:42	4.000	7:42	8.350	7:37	1.300	7:33	15.450	7:49	319.4
	End 4:00	22.25	4:00	4.200	4:14	4.000	4:14	8.350	4:19	1.300	4:25	15.600	4:09	328.9
12/4/13	Start 6:30	22.75	6:30	4.200	7:43	4.050	7:43	8.350	7:49	1.300	7:52	15.500	7:38	329
	End 4:00	24.25	4:06	4.250	4:16	4.100	4:16	8.400	4:20	1.300	4:25	15.550	4:08	338.1
12/5/13	Start 8:19	24.50	8:18	4.300	7:27	4.100	7:27	8.400	7:19	1.300	7:17	15.600	7:31	338.1
	End 3:30	25.75	3:30	4.250	4:14	4.150	4:14	8.400	4:08	1.300	4:21	15.600	4:29	345.4
12/9/13	Start 7:59	25.25	7:59	4.30	7:46	4.150	7:45	8.400	7:49	1.300	7:53	15.800	7:39	345.4
	End 4:10	27.00	4:35	4.250	4:20	4.175	4:21	8.375	4:15	1.275	4:09	15.800	4:30	353.1
12/10/13	Start 7:25	26.00	7:35	4.100	7:32	4.000	7:32	8.100	7:18	1.150	7:12	15.425	7:29	353.1
	End 4:10	27.25	4:10	4.150	4:20	4.00	4:21	8.050	4:26	1.200	4:31	15.700	4:17	360.0
12/11/13	Start 7:10	27.25	7:30	4.200	7:29	4.050	7:29	8.150	7:20	1.250	7:13	15.600	7:28	360.0
	End 4:15	29.00	4:15	4.200	4:29	4.100	4:28	8.150	7:32			15.500	4:20	362.5

Staff adjusted

[illegible] this [illegible] form and provide a copy to Dennis Cox. Copy will be routed to Scott Harris and Henry Gates.

DUKE ENERGY

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

Date	Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	Pump Hours
10/22/13	Start 7:15	29.1/4	7:15	4.100	7:40	3.950	7:40	8.500	7:33	1.200	7:27	15.000	7:45	160.8
	End 16:00	30.3/4	16:00	4.100	16:29	3.950	16:29	8.500	16:23	1.200	16:17	15.050	16:38	169.5
10/23/13	Start 7:15	31.0	7:15	4.05	8:08	3.950	8:08	8.450	8:02	1.175	7:57	15.050	8:19	169.5
	End 16:00	32.3/4	16:00	4.100	16:28	3.900	16:28	8.500	16:24	1.250	16:18	15.100	16:35	178.4
10/24/13	Start 7:50	32.3/4	7:50	4.250	7:34	4.025	7:34	8.650	7:28	1.350	7:21	15.125	7:43	178.4
	End 14:00	34.0	14:00	4.250	14:29	4.050	14:29	8.600	14:24	1.325	14:20	15.150	14:37	184.4
10/28/13	Start 7:15	34.1/2	7:15	4.350	7:40	4.150	7:40	8.650	7:34	1.400	7:27	15.300	7:49	184.4
	End 16:00	36.3/4	16:00	4.350	16:30	4.175	16:30	8.650	16:25	1.400	16:20	15.300	16:37	193.3
10/29/13	Start 7:15	37.0	7:15	4.375	8:08	4.200	8:08	8.670	8:01	1.400	7:55	15.350	8:16	193.3
	End 16:00	38.1/4	16:00	4.375	16:34	4.210	16:34	8.675	16:27	1.400	16:22	15.350	16:42	202.2
10/30/13	Start 7:00	38.1/2	7:00	4.400	7:49	4.225	7:49	8.675	7:44	1.400	7:38	15.375	7:57	202.2
	End 16:00	40.1/4	16:00	4.350	16:28	4.225	16:28	8.650	16:23	1.350	16:19	15.375	16:34	211.3
10/31/13	Start 8:20	40.1/4	8:20	4.375	7:38	4.220	7:38	8.650	7:33	1.375	7:26	15.400	7:45	211.3
	End 14:00	41.1/2	14:00	4.375	14:41	4.200	14:41	8.625	14:34	1.350	14:29	15.400	14:48	217.0
11/4/13	7:30	40.1/2	7:30	4.425	7:53	4.200	7:53	8.560	7:46	1.375	7:28	15.050	8:01	217.0
		~~[illegible]~~		~~4.400~~	~~7:43~~	~~4.200~~	~~7:43~~	~~8.525~~	~~7:38~~	~~1.325~~	~~7:34~~	~~15.050~~	~~7:51~~	218.4
11/5/13	6:00	41.0	6:00	4.400	7:43	4.200	7:43	8.525	7:38	1.325	7:34	15.050	7:51	218.4
	End 16:00	43.0	16:00	4.350	16:29	4.210	16:29	8.510	16:24	1.300	16:19	15.075	16:36	228.6
11/6/13	Start 6:00	43.1/4	6:00	4.320	8:46	4.175	8:46	8.510	8:41	1.300	8:35	15.125	8:53	228.6
	End 16:00	44.3/4	16:00	4.275	16:30	4.150	16:30	8.470	16:26	1.225	16:20	15.150	16:36	238.5
11/7/13	Start 7:53	45.0	7:53	4.200	7:17	4.075	7:17	8.425	7:12	1.200	7:06	15.200	7:24	238.5
	End 14:30	46.1/4	14:30	4.175	15:29	4.050	15:29	8.425	15:26	1.200	3:20	15.200	15:38	244.2
11/11/13	Start 0600	47	0600	4.350	7:24	4.200	7:25	8.550	7:20	1.400	7:15	15.450	7:30	244.2
	End 4:00	49	4:10	4.30	4:15	4.200	4:16	8.500	4:21	1.35	4:26	15.50	4:05	254
	Start 7:15	49.1/4	7:20	4.250	7:35	4.150	7:35	8.550	7:25	1.30	7:15	15.50	7:40	254
		-1 1/4	4:20	4.150	4:05	4.150	4:05	8.550	4:15	1.400	4:20	15.50	4:00	263.0

DUKE ENERGY.

Cape Fear Ash Pond Dewatering Levels

1985 Ash Pond

	Date	Pump Operation Times	Pond Level Water Level (ft)	Pond Level Time Measured	PZ-3S Water Level (ft)	PZ-3S Time Measured	PZ-3D Water Level (ft)	PZ-3D Time Measured	PZ-4 Water Level (ft)	PZ-4 Time Measured	PZ-5 Water Level (ft)	PZ-5 Time Measured	PZ-6 Water Level (ft)	PZ-6 Time Measured	Pump Reading
RPM 1400	9/30	Start: 13:45	6"	13:45	3.90	12:53	3.70	12:54	8.40	12:56	N/A	N/A	14.20	12:50	65.4
		End: 15:45	6½"	16:07	3.90	16:11	3.70	16:12	8.40	16:07			14.20	16:16	67.3
RPM 1600	10/1	Start: 8:03	7"	8:03	3.90	07:48	3.70	07:49	8.40	07:45	1.1	07:39	14.30	07:54	67.3
		End: 16:00	8½	16:00	3.90	16:17	3.70	16:18	8.40	16:14	1.1	16:09	14.30	16:21	75.3
RPM 1600	10/2	Start: 0730	8¾	07:30	3.90	08:14	3.70	08:15	8.40	08:09	1.1	08:04	14.40	08:18	75.3
		End: [illegible]:55	10¼	16:00	3.95	16:25	3.70	16:24	8.45	16:20	1.15	16:14	14.40	16:30	83.6
RPM 1600	10/3	Start: 7:30	10½	7:30	3.95	7:40	3.75	7:40	8.45	7:38	1.15	7:35	14.50	7:45	83.6
		End: 3:35	12¼	3:35	3.95	3:59	3.8	4.00	8.45	3:55	1.15	3:50	14.50	4:05	91.4
3/4" RAIN	10/7/13	Start: 8:15	13¼	8:15	4.00	7:47	3.8	7:46	8.45	7:41	1.15	7:35	14.80	7:52	91.4
		End: 15:55	14.0	4:00	3.95	16:24	3.75	16:22	8.40	16:30	1.15	16:35	14.80	16:20	98.8
.4 RAIN RPM 1600	10/8/13	Start: 0730	14.0	7:30	4.00	7:34	3.80	7:35	8.45	7:30	1.20	7:25	14.65	7:40	98.8
		End: 4:00	15¾	4:12	4.00	4:04	3.80	4:03	8.45	4:10	1.18	4.20	14.55	4.00	107.3
	10/9/13	Start: 7:50	15¾	7:50	3.95	7:37	3.80	7:38	8.40	7:31	1.15	7:21	14.50	7:44	107.3
		End: 16:27	17.0	16:27	4.00	16:09	3.85	16:12	8.45	16:18	1.15	16:28	14.45	16:03	116.0
	10/10/13	Start: 7:[illegible]	18.0	7:20	3.95	7:32	3.80	7:33	8.40	7:25	1.10	7:16	14.45	7:38	116.0
		End: 14:37	19.5	14:37	3.95	15:05	3.80	15:04	8.35	14:59	1.10	14:53	14.45	15:12	123.2
2/10 RAIN RPM 1600	10/14/13	Start: 7:30	20.0	7:55	4.0	7:42	3.80	7:43	8.40	7:37	1.15	7:33	14.50	7:48	123.2
		End: 16:02	21.5	16:02	4.0	16:15	3.80	16:17	8.40	16:24	1.15	16:27	14.50	16:13	131.4
RPM 1600	10/15/13	Start: 8:10	22"	8:10	4.0	7:55	3.8	7:57	8.40	7:50	1.15	7:40	14.5	8:03	131.4
		End: 16:00	23½"	16:00	4.0	16:13	3.8	16:15	8.40	16:19	1.15	16:25	14.5	16:08	139.1
RPM 1600	10/16/13	Start: 6:50	24"	6:50	4.0	6:35	3.8	6:35	8.40	6:20	1.15	6:25	14.7	6:40	139.1
		End: 16:00	25¼	16:00	4.0	16:15	3.8	16:14	8.4	16:21	1.15	16:25	14.7	16:08	146.8
	10/17/13	Start: 7:50	25½	0755	4.0	7:38	3.8	7:38	8.40	7:35	1.15	7:30	14.8	7:35	146.7
		End: 15:45	26¼	16:27	4.0	16:18	3.8	16:19	8.40	16:11	1.15	16:05	14.8	16:23	152.5
	10/21/13	Start: 7:45	27¼	7:45	4.45	8:13	3.95	8:13	8.55	8:06	1.30	8:00	15.0	8:24	152.5
		End: 16:00	29.0	16:00	4.15	16:39	3.95	16:39	8.50	16:35	1.25	16:30	15.0	16:50	160.2

NOTE: Please initial this tracking form and provide a copy to Dennis Cole. Copy will be routed to Scott Harris and Harry Gates.

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Also Admitted in South Carolina

2014 OCT 20 14:03 CWEB

October 17, 2014

VIA FEDEX

Mr. Michael Hom
Environmental Engineer
United States Environmental Protection Agency
Clean Water Enforcement Branch
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: First Response of Duke Energy Corporation ("Duke Energy") to U.S. EPA's August 25, 2014 Request for Information Pursuant to Section 308 of the Clean Water Act

Dear Mr. Hom:

This letter, enclosed CD and the attached Responses and Objections constitute the first response of Duke Energy to the Request for Information ("RFI") from the U.S. Environmental Protection Agency ("EPA") dated August 25, 2014, addressed to Ms. Lynn J. Good of Duke Energy. Pursuant to the agreement reached between EPA and David Buente of Sidley Austin, we are submitting responses to question 1.

You will notice some gaps in the Bates numbers for documents that are referred to in this response. Those gaps are due to the fact that this response includes reference to some documents that were also referenced in Duke Energy's earlier responses to the July 31, 2014 EPA RFI. Rather than re-number those earlier referenced documents, we have used the previously assigned Bates numbers in this response. This, of course, results in some gaps in the series of Bates numbers for documents referred to in this response.

Thank you for your attention to these matters.

Sincerely,

WOMBLE CARLYLE SANDRIDGE & RICE
A Limited Liability Partnership

Richard Morton

REM/ngb
Enclosures

cc w/encl: Laurie Lindquist Ireland, EPA
Matthews Hicks, EPA
Denisse Diaz, EPA
Thomas Reeder, NCDENR
David Fountain, Duke Energy
Julie Ezell, Duke Energy
David Buente, Sidley Austin LLP
Sylvia Lowrance

First Responses and Objections of Duke Energy Corporation to
EPA's Section 308 Request for Information Dated August 25, 2014

I. General Objections

A. Duke Energy Corporation ("Duke Energy") objects to the Request for Information ("RFI #2")[1] from the U.S. Environmental Protection Agency ("EPA") dated August 25, 2014, to the extent that it seeks privileged information, including, but not limited to, documents and other information protected by the attorney-client privilege and/or work product doctrine.

B. Duke Energy objects to the requirement to provide a certification by a responsible Duke Energy official as unreasonable because it seeks to require a certification that is not required by 33 U.S.C. § 1318(a). Subject to and without waiving the foregoing objection, Duke Energy has provided a certification.

C. Duke Energy objects to Instruction No. 5 to the extent it seeks to require Duke Energy to identify "all . . . persons consulted, examined, or referred to in the preparation of each response" as vague, ambiguous, overly broad, and unreasonable, and to the extent it seeks privileged information. Subject to and without waiving the foregoing objection, Duke Energy will provide the names of the primary individuals consulted in the preparation of the responses.

D. Duke Energy further objects to Instruction No. 5 to the extent that it seeks to require Duke Energy to identify "all documents . . . consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents" to the extent it seeks to require Duke Energy to produce a copy of each document "consulted" or "examined" in the preparation of the response as vague, ambiguous, overly broad, and unreasonable, and to the extent it seeks privileged information. Duke Energy "consulted" and/or "examined" many documents in order to locate responsive material and does not intend to produce all such documents. Subject to and without waiving the foregoing objection and Objection A, above, Duke Energy will produce the documents primarily consulted in the preparation of the responses.

E. Duke Energy objects to Instruction No. 6 as unreasonable to the extent it seeks to impose a duty to supplement its responses with information that was not known to Duke Energy as of the date of RFI #2.

F. Duke Energy objects to Instruction No. 9 as unreasonable to the extent it seeks to require Duke Energy to speculate regarding persons who might have information responsive to RFI #2.

G. Duke Energy objects to Instruction No. 10 as unreasonable to the extent it seeks to require Duke Energy to speculate regarding persons who might provide "a more detailed or

[1] Duke Energy refers to EPA's Request for Information as "RFI #2" to distinguish it from EPA's initial Request for Information dated July 31, 2014.

complete response" to a question or who may have additional responsive documents or information.

H. Duke Energy objects to Instruction No. 13 as unreasonable to the extent it seeks to require Duke Energy to speculate regarding activities undertaken by entities other than Duke Energy.

I. Duke Energy objects to Definition No. 14 to the extent it seeks to apply all statutory and regulatory definitions to RFI #2. This requirement is vague, ambiguous and unreasonable. Duke Energy also objects to the definition of any term that is inconsistent with an existing statutory or regulatory definition of the same term.

J. Duke Energy objects to Definition No. 16, directing Duke Energy to construe "And" and "Or" either disjunctively or conjunctively as vague, ambiguous and unreasonable.

K. Duke Energy objects to Definition No. 17 as unreasonable to the extent it seeks home address and telephone information concerning employees. To the extent EPA wishes to contact any Duke Energy employee, EPA should contact Julie Ezell at (317) 838-1100.

L. Duke Energy objects to Definition No. 21 as unreasonable to the extent it seeks information outside the knowledge or control of Duke Energy.

M. Duke Energy objects to Definition No. 24 as vague, ambiguous and unreasonable.

N. Duke Energy objects to Definition No. 25 as vague, ambiguous and unreasonable.

O. Duke Energy objects to the introductory instruction under "Questions," to "identify all documents consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents," to the extent it seeks to require Duke Energy to produce a copy of each document "consulted" or "examined" in the preparation of the response as vague, ambiguous, overly broad, and unreasonable, and to the extent it seeks privileged information. Duke Energy "consulted" and/or "examined" many documents in order to locate responsive material and does not intend to produce all such documents. Subject to and without waiving the foregoing objection and Objection A, above, Duke Energy will produce the documents primarily consulted in the preparation of the responses.

II. Responses and Specific Objections

Subject to and without waiving the General Objections above or Specific Objections below, Duke Energy responds to Question 1 of RFI #2 as set forth below. Duke Energy reserves the right to supplement these responses.

1. *NC0003433 Cape Fear Steam Electric Generating Plant:*

   a. *Provide the reason(s) for the water drawdown of the West Ash Pond (aka 1978 Basin) and the East Ash Pond (aka 1985 Basin) during September 2013 through March 2014.*

   Response:

   The goal for water drawdown in both the 1978 Basin and 1985 Basin was to facilitate repairs to the riser pipes in both of those basins and, by effecting those repairs, achieve "no flow status" from those basins pending the eventual decommissioning of the Cape Fear ash basins. The risers at the 1978 and 1985 Basins were leaking water into outfalls 001 and 005, respectively.

   Duke Energy primarily consulted the following individuals in preparing this response:

   Larry Baxley

   Robin Bryson

   Toya Ogallo

   Danny Wimberly

   Issa Zazar

   Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03937 to EPARFI03938, EPARFI03962 to EPARFI03962, EPARFI03877 to EPARFI03887, EPARFI03898 to EPARFI03936, EPARFI03898 to EPARFI03936, and EPARFI03976 to EPARFI04075.

   b. *In your March 28, 2014 response to the NCDENR March 20, 2014, Notice of Violation letter, you stated that:*

      i. *Page 3 "...the pumping activities were part of necessary maintenance and repair of the risers in the Ash Basins..."*

         1. *Why was it necessary to maintain and repair the risers?*

   Response:

   The coal-fired power generation units at Cape Fear were shut down as of October 1, 2012. Coal ash was last sluiced to the Basins on November 8, 2012. However, both risers were leaking, as evidenced by the fact that there was still flow of water from internal outfalls 001 and 005 (for the 1978 Basin and 1985 Basin, respectively) even though the water level in both basins was below the

tops of the risers. In order to achieve "no flow" status, repairs to the risers were essential.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Robin Bryson

Toya Ogallo

Danny Wimberly

Issa Zazar

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03937 to EPARFI03938, EPARFI03962 to EPARFI03962, EPARFI03877 to EPARFI03887, EPARFI03898 to EPARFI03936, EPARFI03898 to EPARFI03936, EPARFI03963 to EPARFI03975 and EPARFI03976 to EPARFI04075.

2. *When did Duke Energy first discover that the risers needed maintenance and repair?*

Response:

The relevant employees do not recall specifically when this was "first discover[ed]." However, Duke Energy could not have realized the risers were leaking until after the Cape Fear plant was shut down on October 1, 2012, the last sluice lines were removed on November 8, 2012 and the water levels in the basins dropped below the tops of the risers thereafter.

During a March 27, 2013 site inspection, outside consultant AMEC, accompanied by Duke Energy employees Henry Gales, Macey Graham, Randall S. Harris and Larry Baxley, noted that the risers were leaking and memorialized this finding in a June 24, 2013 report.

However, Danny Wimberly and/or Larry Baxley may have been the among the first Duke Energy employees to realize that the risers were leaking at some point in time prior to the March 27, 2013 AMEC inspection. In a recent interview with the United States Attorney's Office, Duke Energy employee Larry Baxley reportedly stated that he requested repairs to the risers at Cape Fear as early as the Fall of 2010 or 2011. Duke Energy does not have direct knowledge of this interview. Duke Energy is continuing to inquire regarding this question.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Robin Bryson

Danny Wimberly

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03778 to EPARFI03780 and EPARFI03834 to EPARFI03869.

3. *Who at Duke Energy discovered that the risers needed maintenance and repair?*

Response:

Please see response to Question 1(b)(i)(2), above.

4. *Who conducted the maintenance and repair of the risers? Please provide the company name and the name of employees who performed the work.*

Response:

Glenn Underwater Services, Inc. was engaged to perform the necessary repair to the risers in both the 1978 and 1985 Basins. On information and belief, the Glenn Underwater employees involved in this work were John Trimboli, Caleb Beers, Alex Paxton and Stephen Rice. Kevin Brown of Duke Energy was involved in contracting with Glenn Underwater Services for this work.

Duke Energy primarily consulted the following individual in preparing this response:

Rick Glenn

Kevin Brown

Identifying information for this individual can be found in Appendix A to these responses. Documents relied upon are EPARFI03962 to EPARFI03962, EPARFI03898 to EPARFI03936.

5. *Did Duke Energy enter into any contracts for the maintenance and repair of the risers? If so, when? Please provide copies of any such contracts.*

Response:

Please see response to Question 1(b)(4), above.

6. *Did Duke Energy receive a cost estimate for the maintenance and repair of the risers? If so, when? Please provide copies of the estimate(s).*

Response:

Please see response to Question 1(b)(4), above.

7. *When were the risers maintained and repaired? Please provide the start and completion dates for each riser.*

Response:

Based on the Glenn Underwater Services Dive Plan, this work was commenced and completed on March 19, 2014. For a further response to this question, please see response to Question 1(b)(4), above.

8. *Please provide documentation regarding the assessment of each riser and the maintenance and repairs conducted.*

Specific Objections:

Duke Energy objects to the term "assessment" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that documentation regarding the assessment and repair of the risers is found in the March 18, 2014 Glenn Underwater Services Dive Plan. No Duke employees conducted any independent assessment or repair of the risers. For a further response to this questions, please see response to Question 1(b)(i)(4), above.

9. *In the last 10 years, has Duke Energy performed maintenance or repairs to risers at other facilities? If so, was it the same type of maintenance or repairs that were performed at the Cape Fear Ash Basins? Please provide the date and name of the facilities.*

Specific Objections:

Duke Energy objections to the term "same type" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that some repairs were reportedly made to the riser in the main portion of the ash basin at H. F. Lee in March 2004. Specifically, the top of the riser collapsed and was abandoned. A new stainless steel riser pipe was fabricated by Duke Energy and installed by divers (Glenn Underwater Services). Duke Energy is searching for documentation related to those operations and will supplement this response when such documents are located.

In addition, and at the direction of the North Carolina Department of Environment and Natural Resources, Division of Land Resources – Land Quality, Duke Energy has recently assessed and is formulating plans for repair to risers and or other spillway structures at the Sutton plant 1984 and 1971 ash basins, the Cape Fear plant 1970, 1978, 1956 and 1985 ash basins and the Roxboro plant West Ash Basin (South Rock Filter Dam).

Duke Energy primarily consulted the following individuals in preparing this response:

Christopher Keenan

Tim Russell

Kevin Brown

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03939 to EPARFI03952.

10. *Does Duke Energy have protocols, procedures, or plans for the maintenance or repair of risers?*

Response:

Duke Energy has no general protocols, procedures or plans for maintenance or repairs to risers, as maintenance and repair of risers is governed on an individual basis depending on the circumstances in any given situation. With regard to risers at the Cape Fear 1978 and 1985 basins, separate work plans and job hazard analyses ("JHAs") were prepared, reviewed and revised for each basin.

Duke Energy primarily consulted the following individuals in preparing this response:

Tim Russell

Identifying information for this individual can be found in Appendix A to these responses. Documents relied upon are EPARFI03811 to EPARFI03833, EPARFI03953 to EPARFI03956, EPARFI03870 to EPARFI03876.

11. *If so, were such protocols, procedures, or plans used to maintain or repair risers at Cape Fear or other facilities? Please provide the date and name of the facilities.*

Response:

Please see the response to Question 10, above.

12. *What other options were considered for the maintenance and repair of the risers? For example, did Duke Energy consider other technologies such as cofferdams around the risers and dewatering the space between the cofferdam and risers to enable repairs?*

Specific Objections:

Duke Energy objects to the term "options" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that it considered underwater repair to the risers without lowering the water levels in the 1978 and 1985 Basins, but rejected that possibility due to potential safety risks for the divers who would be doing the repair work.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Kevin Brown

13. *If other options were considered, describe the rationale for excluding such options.*

Response:

Please see the Specific Objections and response to Question 1(b)(i)(12), above.

ii. Page 4 *"...Duke Energy tested water during the time period when pumping occurred — on a voluntary, operational basis in October 2013; as part of semi-annual testing required by the Permit in November 2013; and again in February 2014..."*

1. *Provide: dates, times, and locations of each sampling event; laboratory bench sheets and sampling results.*

Response:

The NPDES Permit required semi-annual grab sampling at outfalls 001 and 005. Those sampling dates, times and results are shown on the amended Discharge Monitoring Reports. Whole Effluent Toxicity ("WET") testing was also conducted at outfalls 001 and 005 during the period of pumping from the basins, even though WET testing was not an NPDES permit requirement. The dates, times and sampling results for the WET testing are shown on the laboratory results.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Robin Bryson

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03749 to EPARFI03777, EPARFI03888 to EPARFI03897, EPARFI04076 to EPARFI04092.

2. *Were pumps running at the time of sampling? If not, how long had it been since the pumps were used?*

Response:

Comparing the laboratory documents referred to in the answer to Question 1(b)(ii)(1), above, with Enclosure C to RFI #2 shows that the pumps were running during some portion of the WET composite sampling from approximately 1:45 PM to 3:45 PM on September 30, 2013, 8:03 AM to 10 AM on October 1, 2013, 10:45 AM to 3:55 PM on October 2, 2013 and 7:30 AM to 10 AM on October 3, 2013. The pump intake and discharge lines were disconnected during semi-annual sampling conducted in accord with the NPDES permit. For a further response to this question, please see the response to Question 1(b)(x)(1) and (2), below.

iii. *Page 4 "...at the time when pumping activities began, the Ash Basins had not received any coal ash wastewater for many months..." During the pumping activities time period of September 2013 through March 2014, identify other waste streams that discharged into the ash ponds, and each waste stream amount in gallons.*

Specific Objections:

Duke Energy objections to the term "waste streams" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that Duke Energy has not quantified the number of gallons for other waste streams that discharge into the 1978 and 1985 Basins. However, according to Attachment C, Form 2C to the December 2, 2010 NPDES permit application, the 1978 Basin could have received indeterminate volumes of "Coal Pile Runoff," "Low Volume Wastes," and "Miscellaneous Wastes" as those terms are used in Attachment C, Form 2C. The 1985 Basin could have received indeterminate volumes of "Sanitary Waste Treatment Effluent" and "Miscellaneous Wastes," as those terms are used in Attachment C, Form 2C. Documents relied upon are EPARFI02001 to EPARFI02034.

Duke Energy primarily consulted the following individual in preparing this response:

Larry Baxley

Identifying information for this individual can be found in Appendix A to these responses. Documents relied upon are EPARFI02001-EPARFI02034.

iv. *Page 5 "...Duke Energy carefully developed protocols and procedures to assure that all appropriate precautions would be taken during the process of lowering the water level in the Ash Basins." Provide the protocols and procedures.*

Response:

Please see the JHAs, work plans, comments and revisions thereto at EPARFI03811 to EPARFI03833, EPARFI03953 to EPARFI03956, EPARFI03870 to EPARFI03876.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Dennis Cole

Identifying information for these individuals can be found in Appendix A to these responses.

v. *Page 5 "...Duke Energy collected water samples between the internal and external outfall locations and conducted whole effluent toxicity (WET) test."*

1. *Provide: date, time and location of the samples; the type of WET test conducted, to include test species and testing protocol used; and the final laboratory report.*

Response:

Please see the response to Question 1(b)(ii)(1), above.

2. *Were pumps running at the time of sampling? If not, how long had it been since the pumps were used?*

Response:

Please see the response to Question 1(b)(ii)(2), above.

vi. *Page 5 "After careful deliberation, it became clear to Duke Energy that the safety of its repair crews would require a lowering of water levels in the Ash Basins."*

1. *Why was the lowering of water levels essential to the safety of the repair crews?*

Response:

Duke Energy was concerned about the possibility of creating a condition of differential pressure resulting from any damage to the risers during the repair operations. The risers date to 1978 and 1985, respectively, and because they were leaking, were known to have integrity issues. Any breach in the risers during dive operations would have created the potential for an immediate and life-threatening condition of differential pressure for the divers. Differential pressures are locations under water where low pressure areas are in contact with high pressure areas. These conditions can be caused in numerous ways, including propeller wash and drainages that can pull a diver into underwater structures or machinery. At the 1978 and 1985 Basins, any disturbance of the risers could have caused loss of basin water through the risers that could have pulled divers into the risers or other equipment, resulting in serious injury or death. Lowering water level in the ponds greatly reduced the possibility of creating a risk of differential pressure.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Robyn Bryson

Rick Glenn

2. *What were the deliberations that led to the decision?*

Response:

Please see the response to Question 1(b)(vi)(1), above.

vii. *Page 6 "Lowering the level of water in the Ash Basins permitted Duke Energy's contractors to see clearly the condition of the leaking risers and provided a safe environment in which those contractors could work."*

1. *How did Duke Energy know the risers were leaking?*

Response:

Please see response to Question 1(b)(i)(1), above.

2. *What problem were the leaking risers causing that necessitated their maintenance or repair?*

Specific Objections:

Duke Energy objects to the term "problem" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds as follows:

The Cape Fear plant had been shut down since 2012 and Duke Energy planned to terminate the NPDES permit for that plant or, at the very least, ask that sampling requirements for outfalls 001 and 005 be suspended because, with the shutdown of the power generating units, there should not have been any discharge through outfalls 001 and 005. However, the basins need to continue to function efficiently for the estimated 2 to 3 years necessary to complete demolition and decommissioning. As long as the risers continue to leak, the basins cannot function efficiently. In addition, the leaking risers would make it impossible to terminate the NPDES permit or suspend sampling requirements from outfalls 001 and 005. Please see response to Question 1(a) as a further response to this question.

Duke Energy primarily consulted the following individuals in preparing this response:

Robin Bryson

Larry Baxley

Henry Gales

Danny Wimberly

3. *Did Duke Energy confer with anyone at NCDENR concerning the need for repairs? If so, who and when? Please provide details of those discussions.*

Response:

On or about August 14, 2014, Robin Bryson, Sr. Environmental Specialist for Duke Energy, contacted Mitch Hayes in the Raleigh Regional office of NCDENR via telephone. Ms. Bryson's conversation with Mr. Hayes is memorialized in an email of that date. Although this document references only the 1978 Basin, Ms. Bryson had a subsequent conversation with Mr. Larry Baxley to confirm that the conversation with Mr. Hayes had focused on both the 1978 and 1985 Basins. Mr. Baxley confirmed this in an email dated August 15, 2013.

Duke Energy primarily consulted the following individuals in preparing this response:

Larry Baxley

Robyn Bryson

Danny Wimberly

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03808 to EPARFI03810.

viii. *Page 7 "In developing its approach to the pumping activities for the necessary maintenance and repair project, Duke Energy made a point to float pump intake hoses so that they did not gather saturated ash sediment from the bottom of the Ash Basins, and gave clear instructions to personnel at the site that pumping was to stop if evidence of ash was seen in the flow."*

1. *How many employees were observing pumping efforts? Were they continuously present during pumping?*

Response:

Duke Energy primarily consulted the following individuals in preparing this response:

Ricky Ashley

Dennis Cole

David Daughtry

2. *Where were employees positioned to make these observations?*

Response:

The pumps were positioned on the berms near the risers and adjacent to the pumps and pump intakes. Mr. Ashley and Mr. Daughtry were positioned in their respective vehicles on the berms and near or adjacent to the pumps.

Duke Energy primarily consulted the following individuals in preparing this response:

Ricky Ashley

David Daughtry

3. *Did the employees observe intake water or water discharging from the pump? This assumes that one person cannot see both from the same location. If this is incorrect, please explain.*

The pumps were located such that Mr. Ashley and Mr. Daughtry could maintain continuous visual monitoring of the pump intakes from the location of the pumps themselves, but Duke Energy believes that the pump discharge points were not readily monitored from the areas near the pumps. Thus, Duke Energy believes the pump discharge points, which were located at the permitted discharge points, were monitored on a periodic basis.

Duke Energy primarily consulted the following individuals in preparing this response:

Ricky Ashley

David Daughtry

4. *How did Duke Energy determine if solids or ash from the bottoms, edges, or floors of the ash basins was being pulled/pumped from the basins?*

Specific Objections:

Duke Energy objects to the term "solids" as it is used in this question on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that Mr. Ashley and Mr. Daughtry visually monitored the pump intake points for turbidity in accord with the protocols set forth above as described in the response to Questions 1(b)(i)(10) and 1(b)(iv), above.

5. *Did Duke Energy perform tests or sampling to verify that ash was not being brought into suspension and discharged? If so, please provide the results of such tests or sampling.*

Response:

Duke Energy did not collect samples of water pumped from the basins for the purpose of analyzing those samples for total suspended solids. However, water near the pump intakes was monitored visually for signs of turbidity in accord with the protocols referenced in the responses to Questions 1(b)(i)(10) and 1(b)(iv), above. In addition, the amended Discharge Monitoring Reports for the relevant period show that water that leaked from the risers, which was lower in the column than the pump intake points (and therefore the water entering the risers through leaks was presumably more turbid), did not exceed NPDES permit limits for total suspended solids.

Duke Energy primarily consulted the following individuals in preparing this response:

Robin Bryson

Larry Baxley

Ricky Ashley

David Daughtry

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03888 to EPARFI03897.

6. *During the pumping efforts from September 2013 through March 2014, how many times were solids or ash determined to have been pulled/pumped from the ash basins? How was this determined, documented, and remedied?*

Response:

At no time were solids or ash determined to have been pulled/pumped from the basins. Please see the answer to Question 2(viii)(5), above.

ix. *Page 8 "...Duke Energy carefully evaluated feasible alternatives to its proposed maintenance and repair work." Provide documentation (including any internal deliberation) of the other alternatives and why they were not selected.*

Response:

Please refer to the response to Questions 1(a) and 1(b)(i), above.

x. *Page 8 "For safety reasons and in order to keep all access roads clear for the laboratory personnel, pumping activities were not commenced on February 5, 2014, until after the laboratory personnel had completed their work and departed the site."*

1. *Why couldn't laboratory personnel step over the hoses and walk to the sampling location?*

Response:

The sampling locations at outfalls 001 and 005 are remote from offices at the Cape Fear plant and are not easily accessed by foot. Access is best accomplished by vehicle, but even then vehicles must be negotiated around the top of the berm to be turned around and placement of the pump lines would have made this action impossible. Thus, the pump lines were removed from their connections with the pump to allow access for sampling personnel. This was done during NCDENR *inspection as well, so that NCDENR could access the outfalls and the remainder of the basins.*

2. *In the alternative, why couldn't Duke Energy temporarily remove the hoses to allow the laboratory personnel to pass and then replace the hoses and resume pumping once the road was clear?*

Response:

The pump operators did remove hoses from the pumps in order to allow access and then replaced those hoses and resumed pumping when sampling was complete. (See response to Question 1(b)(x)(1), above.) Sampling was typically conducted in the morning hours of the day. This is reflected in a note on the pumping logs to the effect that the pump operator "started late 2-5-14/waiting for water sample to be taken." Consequently, pumping did not commence on February 15, 2014 until 10:15 AM. See Enclosure C to this RFI #2.

Duke Energy primarily consulted the following individuals in preparing this response:

Ricky Ashley

David Daughtry

Larry Baxley

3. *Did Duke Energy consider other alternatives that would have allowed sampling during the pumping event while still ensuring the safety of the laboratory personnel?*

Response:

During the period of pumping at the basins, Duke Energy collected effluent samples at outfalls 001 and 005 in the manner those samples had been collected in previous years. See responses to Questions 1(b)(x)(1) and (2), above.

xi. *Page 10 "Once repairs have been completed, the water levels in the Ash Basins should return to previous conditions."*

1. *Describe the previous conditions and how the water level would return to normal.*

Specific Objections:

Duke Energy objects to the term "normal" as used in this question, on the grounds that it is vague and ambiguous and that it is not used in the cited language from Duke Energy's response to the NCDENR March 20, 2014 Notice of Violation.

Response:

Subject to and without waiving its objections, Duke Energy responds that the term "previous conditions" refers to water levels that are not influenced by leaking risers and which are, therefore, "normal."

2. *Have the pond water levels returned to previous conditions?*

Response:

As the risers have been repaired, water levels in the basins have returned to "previous conditions" in that they are not influenced by leaking risers.

c. *For the 1978 Basin pumping events and 1985 Basin pumping events, please provide an answer and any supporting documentation for the following:*

i. *Was flow measured at Outfalls 001, 005, and 007 during pumping?*

Response:

No; however, flow was measured at outfalls 001, 005 and 007 during the period of pumping activity, but not during the times when the pumps were operated.

Duke Energy primarily consulted the following individuals in preparing this response:

Robin Bryson

Larry Baxley

Henry Gales

ii. *Were samples at Outfall 001 and Outfall 005 taken during pumping? If not, please provide an explanation, other than the explanation cited in Question 1(b)(x) above.*

Response:

Please see the response to Question 1(b)(ii), above.

iii. *How did Duke Energy determine when to turn the pump on and off?*

Specific Objections:

Duke Energy objects to the term "determine" as used in this question on the grounds that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds that the pump operators would usually start the pumps at or near the beginning of their work day and shut the pumps down at the end of their work day. In the JHA and work plan, the pump operators were given instructions to shut the pumps down in response to certain events and circumstances.

Duke Energy primarily consulted the following individuals in preparing this response:

Dennis Cole

Ricky Ashley

David Daughtry

Identifying information for these individuals can be found in Appendix A to these responses. Documents relied upon are EPARFI03870 to EPARFI03876.

iv. *What prevented the intake hose from reaching the coal ash/sediment on the bottom of the pond?*

Response:

Using an orange float or buoy, the intake hoses were suspended just below water level in the basins. Documents relied upon are EPARFI03873 to EPARFI03876, EPARFI04093 to EPARFI04096.

v. *Where was the intake hose placed in relation to the pond surface? Did the intake hose remain at the pond surface during the entire pumping event?*

Response:

The intake hoses were placed one or two feet below the top of the water surface and remained there during the entire pumping period. Please see also the response to Question 1(b)(iv), above.

vi. *How far below of the top of the riser did the repair or maintenance occur?*

Response:

Duke Energy does not have information necessary to answer this question with reference to the tops of the risers. However, based on an interview with Rick Glenn of Glenn Underwater Services, repairs at the riser at the 1985 Basin were made 3 to 3.5 feet below the water level in March 2014 and repairs to the riser at the 1978 Basin were made 1 foot or less below the water level.

vii. *What was the lowest pond water level achieved during the pumping event in relation to the top of the riser?*

Response:

Duke Energy does not have information necessary to relate water levels to the tops of the risers. However, with reference to Enclosure C to this RFI #2, water level in the 1985 Basin was lowered by approximately 8 feet during the pumping period, while water level in the 1978 Basin was lowered approximately 4.4 feet

during the pumping period. It is unknown what portion of these lowered water levels is attributable to the pumping activity compared to how much is attributable to the leaking risers.

viii. *Where was the intake hose placed in relation to the riser's location within the pond?*

Response:

The intake hoses at each basin were placed near the risers. Documents relied upon are EPARFI03873 to EPARFI03876, EPARFI04093 to EPARFI04096.

Duke Energy primarily consulted the following individuals in preparing this response:

Dennis Cole

Ricky Ashley

David Daughtry

ix. *Were any operational samples or observation notes of sediment pickup taken by the Operator of Responsible Charge or others during the pumping events? If so, please provide any related data (to include chain of custody, bench sheets, and results).*

Response:

No. Please see the response to Question 1(b)(ii) and Enclosure C to RFI #2.

x. *Were pumps run less than 48 hours after a rain event?*

Response:

Yes, with reference to Enclosure C to this RFI #2.

d. *For the risers that required repair and maintenance:*

i. *What was the estimated flow from the leaking riser(s)?*

Response:

Based on revised Discharge Monitoring Reports, flow from the leaking risers was estimated variously at less than 0.1 MGD and 0.2 MGD. Documents relied upon are EPARFI03888 to EPARFI03897.

ii. *Was any of the flow from the leaking riser(s) attributable to water flowing over the riser? If so, how much?*

Response:

No. Please see the response to Question 1(b)(i)(1), above.

iii. *Prior to the leak, what was the estimated flow from Outfalls 001 and 005?*

Response:

Based on the December 2, 2010 NPDES Permit application, estimated average flow was 0.58 MGD and 0.66 MGD from outfalls 001 and 005, respectively. Documents relied upon are EPARFI02001 to EPARFI02034.

iv. *If samples were taken during the period that risers were leaking, did any such sampling results indicate that flow from the leaking riser would not meet permit limits?*

Response:

No. Documents relied upon are EPARFI03888 to EPARFI03897.

v. *Did sampling results indicate that flow from the leaking riser had a coal ash signature?*

Specific Objections:

Duke Energy objects to the term "coal ash signature" on the ground that it is vague and ambiguous.

Response:

Subject to and without waiving its objections, Duke Energy responds as follows:

With reference to the July 22, 2011 NPDES permit, outfalls 001 and 005 are required to be monitored only for the metals arsenic, selenium, iron and copper (iron and copper monitored only on discharge of metal cleaning waste) while outfall 007 is required to be monitored only for the metals chromium, arsenic, mercury, nickel and copper. Based on revised Discharge Monitoring Reports from the pumping period, there were no elevated levels for any of these metals. Documents relied upon are EPARFI03749 to EPARFI03777 and EPARFI03888 - EPARFI03897.

e. *For the "Cape Fear Ash Pond Dewatering Levels" tables that Duke Energy provided to NCDENR, as seen in Enclosure C:*

i. *Please describe the columns/annotations on the pond pump logs.*

Response:

With reference to Enclosure C to this RFI #2, the first four columns from the left of the pump logs record the date, the time the pump(s) were started and stopped, the water level(s) and the time that water level(s) were measured. The information on the far right of the pump logs is a running total of pump operation hours. The remaining columns relate to measurements of piezometers near the respective basins.

ii. *Where are the water levels measured within the pond?*

Response:

Staff gauges used to measure water level were set close to the risers in each of the 1978 and 1985 Basins.

Duke Energy primarily consulted the following individuals in preparing this response:

Dennis Cole

Ricky Ashley

David Daughtry

iii. *How are the water levels measured?*

Response:

The staff gauges were not referenced to sea level, the elevation at of the top of the risers or any other reference point. For the 1985 Basin, the water levels were measured in inches and quarters of inches. For the 1978 Basin, the water levels were measured in inches and tenths of inches. See Enclosure C to this RFI #2.

Appendix A

Identifying Information for Individuals Consulted

Name	Position	Employment Address	Telephone
Ricky Ashley	Fossil Material Handling Tech III/Cape Fear/Lee Ash Pond Closure Team	Cape Fear Plant Lands 500 CP&L Road Moncure, NC 27559	919-516-1984
Larry Baxley	EHS Construction Manager/Carolina East Gen Env	Weatherspoon Plant Lands 491 Power Plant Road Lumberton, NC 28358	910-272-7062
Kevin Brown	Engineer II/Plant Demolition & Retirement Program	Pinecrest Office 7001 Pinecrest Road Raleigh, NC 27613	919-881-3711
Robin R. Bryson	Sr. Environmental Specialist - Water Programs	Duke Energy NC Regional Headquarters 410 S. Wilmington St. Raleigh, NC 27601	919-546-3962
Dennis Cole	Supervisor Operations/Ash Pond Closure Team	Lee Plant Lands 1677 Old Smithfield Road Goldsboro, NC 27530	919-580-3913
David Daughtry	Fossil Material Handling Tech III/Cape Fear/Lee Ash Pond Closure Team		

Name	Position	Employment Address	Telephone
Henry Gales	Fossil IC&E Tech III/Cape Fear Demo Team	Cape Fear Plant Lands 500 CP&L Road Moncure, NC 27559	919-516-1982
Christopher Keenan	Lead Engineer/Geotech Engineering	Duke Energy 410 South Wilmington Street Raleigh, NC 27601	919-546-4793
Rick Glenn	President	Glenn Underwater Services, Inc. 5325 Marshall Air Drive, Charlotte, NC 28217	704-540-9777
Toya Ogallo	Environmental Spc II/NPDES Compliance	Duke Energy 410 South Wilmington Street Raleigh, NC 27601	919-546-6647
Tim Russell	Supervisor/Engineering/Engineering & Closure Planning	Duke Energy 526 South Church Street Charlotte, NC 28202	704-382-4945
Danny Wimberly	Supt Operations/Plant Demolition & Retirement Program	Cape Fear Plant Lands 500 CP&L Road Moncure, NC 27559	919-516-1980
Issa Zazar	Director/ Plant Demo and Retirement	Pinecrest Office 7001 Pinecrest Road Raleigh, NC 27613	919-881-3803

Name	Position	Employment Address	Telephone

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Harry Sideris
Senior Vice President – Environment, Health & Safety

Date: 10/17/14

Documents Produced
in Response to
Duke Energy's Responses and
Objections to EPA's Section 308 RFI #2 / Q#1
Dated August 25, 2014

October 17, 2014

EPARFI02001 – EPARFI02034
EPARFI03749 – EPARFI03780
EPARFI03808 – EPARFI03956
EPARFI03962 – EPARFI04096

Progress Energy

DEC 7 2010

December 2, 2010

Mr. Tom Belnick
Division of Water Quality
Surface Water Protection Section - NPDES
1617 Mail Service Center
Raleigh, NC 27699-1617

Subject: Carolina Power & Light Co. d/b/a Progress Energy Carolinas, Inc. (Progress Energy)
Cape Fear Steam Electric Plant, Chatham County
NPDES Wastewater Permit Number NC0003433
Permit Renewal Application

Dear Mr. Belnick:

The current NPDES wastewater permit for the Cape Fear Steam Electric Plant expires on July 31, 2011. By this correspondence, Progress Energy respectfully requests that NPDES Permit Number NC0003433 for the facility be reissued. Enclosed are the completed application forms with attachments, one signed original and two copies.

Progress Energy has submitted five modifications to the last NPDES permit application. Four of these application modifications added chemicals to Form 2C Attachment 4 and one modification included the option to use the plant access road to haul reclaimed coal ash off-site.

With re-issuance of the NPDES permit, Progress Energy requests the following:

(1) Outfall 001—Reduce the monitoring frequency for oil and grease, total suspended solids, and ammonia-N to semi-annually. Based on permit renewal sampling and years of compliance as evidenced by DMR data since September 2006, semi-annual monitoring should be sufficient to demonstrate compliance with the effluent limitations.

(2) Outfall 005—Reduce the monitoring frequency for oil and grease, total suspended solids, ammonia-N, and fecal coliform to semi-annually. Based on permit renewal sampling and DMR data, semi-annual monitoring should be sufficient to demonstrate compliance with the effluent limitations or characterization of the effluent.

(3) Outfall 007—Reduce the monitoring frequency for arsenic, chromium, mercury, and nickel. Based on permit renewal sampling and DMR data, semi-annual monitoring should be sufficient to characterize this effluent. All quarterly concentrations for these parameters have been less than the respective laboratory reporting limits since September 2006.

(4) Outfall 007—Reduce the monitoring frequency for selenium from weekly to monthly. Weekly selenium concentrations have been less than the weekly average discharge limitation of 5.6 μg/L since September 2006, except for one result reported for November 2009. This

Progress Energy Carolinas, Inc.
Cape Fear Steam Plant
500 CP&L Road
Moncure, NC 27559

value was documented to have been collected during at a time that did not reflect normal plant operations (DMR submittal for November 2009 dated December 16, 2009).

(5) Outfall 007—Reduce the monitoring frequency for total nitrogen and total phosphorus. Based on permit renewal sampling and DMR data, semi-annual monitoring should be sufficient to characterize this effluent. Since September 2006, quarterly concentrations for total nitrogen have ranged from 0.18 to 3.27 mg/L (average value 1.63 mg/L); concentrations for total phosphorus have ranged from < 0.05 to 0.28 mg/L (average value 0.012 mg/L).

(6) Outfall 007—Reduce the monitoring frequency for chronic toxicity testing. Based on the long history of compliance with quarterly monitoring and no expected changes in operations, annual monitoring should be sufficient to demonstrate compliance with the effluent limitations.

(7) Progress Energy Carolinas requests that the following condition be added to the renewed NPDES permit, replacing Item 7 Biocide Condition. The purpose of this condition is to formally recognize the guidance and understanding we have received from the Division in the past, and to allow this permit to be consistent with other recently reissued permits.

> BIOCIDE CONDITION
> "The permittee shall not discharge any biocides that have not been previously approved in conjunction with the permit application. For biocides not previously approved by the Division of Water Quality, the permittee shall notify the Director in writing prior to use of these biocides. Completion of Biocide Worksheet Form 101 is not necessary for those outfalls with toxicity testing requirements."

Thank you in advance for your consideration of the above requested items. If there are any questions regarding our requests or the enclosed application information, please contact Ms. Robin Bryson at (919) 362-3962.

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Sincerely,

Randy Cox, Plant Manager
Cape Fear Steam Electric Plant

RLC/rb
Enclosures
c: Robin Bryson via email

Please print or type in the unshaded areas only. Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F	NCD000830919		D

1 2 13 14 15

LABEL ITEMS	
I. EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
III. FACILITY NAME	
V. FACILITY MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in tha parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
	16	17	18		19	20	21
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
	22	23	24		25	26	27
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
	28	29	30		31	32	33
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
	34	35	36		37	38	39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	
	40	41	42		43	44	45

III. NAME OF FACILITY

C 1 SKIP Cape Fear Steam Electric Plant

15 16 - 29 30 69

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
C 2 Randy Cox, Plant Manager	919-774-5200
15 16 45	46 48 48 51 52 55

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX

C 3 500 CP&L Road

15 16 45

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C 4 Moncure	NC	27559
15 16 40	41 42	47 51

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

C 5 500 CP&L Road

15 16 45

B. COUNTY NAME

Chatham

46 70

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
C 6 Moncure	NC	27559	037
15 16 40	41 42	47 51	52 54

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
7 4911 (specify) Electric Power Services	7 (specify)
C. THIRD	**D. FOURTH**
7 (specify)	7 (specify)

VIII. OPERATOR INFORMATION

A. NAME: 8 Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

P (specify)

D. PHONE *(area code & no.)*: A 919-774-5200

E. STREET OR P.O. BOX: 4 500 CP&L Road

F. CITY OR TOWN	G. STATE	H. ZIP CODE	IX. INDIAN LAND
B Monure	NC	27559	Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	9 N	NC0003433	
D. PSD *(Air Emissions from Proposed Sources)*	9 P		
B. UIC *(Underground Injection of Fluids)*	9 U		
E. OTHER *(specify)*	9		(specify)
C. RCRA *(Hazardous Wastes)*	9 R		
E. OTHER *(specify)*	9		(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

The Cape Fear Steam Electric Plant is an electric generating facility consisting of two coal-fired units and four combined-cycle combustion turbines.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Randy Cox, Plant Manager	Randy L. Cox	12-7-2010

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (8-90)

EPARFI02004

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (*copy from Item I of Form 1*)
NCD000830919

Form Approved.
OMB No. 2040-0086.
Approval expires 3-31-98.

FORM **2C** NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
007	35	35	15	79	02	39	Unnamed tributary to Cape Fear River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (*list*)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (*list*)	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
007	Ash pond discharge	2.5 MGD	Sedimentation, neutralization	1-U	1-K
	Once-thru cooling flow w/ towers	254.8 MGD	Evaporation	1-F	
	Once-thru cooling flow w/o towers	193.4 MGD	Evaporation	1-F	
	Low volume wastes	0.07 MGD	Sedimentation, neutralization	1-U	1-K
	Coal pile runoff	0.05 MGD	Sedimentation	1-U	
	Storm water runoff	0.18 MGD	Sedimentation	1-U	
	Sanitary wastes	0.002 MGD	Oxidation, sedimentation,	2-B	1-U
			disinfection	2-F	
	See Attachment 3 for descriptions.				

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C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES (*complete the following table*) ☑ NO (*go to Section III*)

1. OUTFALL NUMBER (*list*)	2. OPERATION(s) CONTRIBUTING FLOW (*list*)	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK (*specify average*)	b. MONTHS PER YEAR (*specify average*)	a. FLOW RATE (*in mgd*)		B. TOTAL VOLUME (*specify with units*)		C. DURATION (*in days*)
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☑ YES (*complete Item III-B*) ☐ NO (*go to Section IV*)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (*or other measure of operation*)?

☐ YES (*complete Item III-C*) ☑ NO (*go to Section IV*)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (*list outfall numbers*)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (*complete the following table*) ☑ NO (*go to Item IV-B*)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (*or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

 CONTINUE ON PAGE 3

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V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Asbestos	Trace amounts in insulation		
Strontium	Trace amounts in coal		
Uranium	Trace amounts in coal		
Vanadium	Trace amounts in coal		
Zirconium	Trace amounts in coal		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☑ YES (*list all such pollutants below*) ☐ NO (*go to Item VI-B*)

The following substances may be present in coal:

- Antimony
- Arsenic
- Beryllium
- Cadmium
- Chromium
- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Silver
- Thallium
- Zinc

See Attachment 4 for other potential discharges not covered by analyses.

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VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☑ YES (*identify the test(s) and describe their purposes below*) ☐ NO (*go to Section VIII*)

As required by the current NPDES permit (effective September 1, 2006) chronic toxicity tests have been performed on a quarterly basis on the combined wastewater dicharge (Outfall 007). All tests have passed for the last three years.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☑ YES (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☐ NO (*go to Section IX*)

A. NAME	B. ADDRESS	C. TELEPHONE (*area code & no.*)	D. POLLUTANTS ANALYZED (*list*)
Tritest, Inc.	6701 Conference Drive Raleigh, NC 27607	919-834-4984	All pollutants

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (*type or print*)	B. PHONE NO. (*area code & no.*)
Randy Cox, Plant Manager	919-774-5200
C. SIGNATURE Randy L. Cox	D. DATE SIGNED 12-7-2010

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PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*): NCD000830919

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 007

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	2.4	2,346					1	mg/L	kg/d			
b. Chemical Oxygen Demand (*COD*)	10.7	10,465					1	mg/L	kg/d			
c. Total Organic Carbon (*TOC*)	6.55	6,406					1	mg/L	kg/d			
d. Total Suspended Solids (*TSS*)	5.6	5,477					1	mg/L	kg/d			
e. Ammonia (*as N*)	0.02	20					1	mg/L N	kg/d			
f. Flow	VALUE 256.9		VALUE 256.5		VALUE 219.2		252	MGD	N/A	VALUE		
g. Temperature (*winter*)	VALUE 27		VALUE 21		VALUE 19		103	°C		VALUE		
h. Temperature (*summer*)	VALUE 32		VALUE 30		VALUE 28		149	°C		VALUE		
i. pH	MINIMUM 7.2	MAXIMUM 7.8	MINIMUM 6.8	MAXIMUM 7.8			252	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		*											
b. Chlorine, Total Residual	X		< 0.1							mg/L				
c. Color	X		*											
d. Fecal Coliform	X		*											
e. Fluoride (16984-48-8)	X		*											
f. Nitrate-Nitrite (*as N*)	X		*											

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ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)	X		*											
h. Oil and Grease	X		6.8	6,650					1	mg/L	kg/d			
i. Phosphorus (as P), Total (7723-14-0)	X		*											
j. Radioactivity														
(1) Alpha, Total		X	*											
(2) Beta, Total		X	*											
(3) Radium, Total	X		*											
(4) Radium 226, Total	X		*											
k. Sulfate (*as SO_4*) (14808-79-8)	X		*											
l. Sulfide (*as S*)	X		*											
m. Sulfite (*as SO_3*) (14265-45-3)	X		*											
n. Surfactants	X		*											
o. Aluminum, Total (7429-90-5)	X		*											
p. Barium, Total (7440-39-3)	X		*											
q. Boron, Total (7440-42-8)	X		*											
r. Cobalt, Total (7440-48-4)	X		*											
s. Iron, Total (7439-89-6)	X		0.023	0.022					1	ug/L	kg/d			
t. Magnesium, Total (7439-95-4)	X		*											
u. Molybdenum, Total (7439-98-7)	X		*											
v. Manganese, Total (7439-96-5)	X		*											
w. Tin, Total (7440-31-5)	X		*											
x. Titanium, Total (7440-32-6)	X		*											

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EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
NCD000830919	007

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			< 3						2	ug/L				
2M. Arsenic, Total (7440-38-2)	X			< 3		< 3		< 3		5	ug/L				
3M. Beryllium, Total (7440-41-7)	X			< 2						2	ug/L				
4M. Cadmium, Total (7440-43-9)	X			< 2						2	ug/L				
5M. Chromium, Total (7440-47-3)	X			< 5		< 5		< 5		5	ug/L				
6M. Copper, Total (7440-50-8)	X			28.5	27.9	28.5	27.9	9.9	9.7	5	ug/L	kg/d			
7M. Lead, Total (7439-92-1)	X			< 5						2	ug/L				
8M. Mercury, Total (7439-97-6)	X			< 0.2		< 0.2		< 0.2		5	ug/L				
9M. Nickel, Total (7440-02-0)	X			< 5		< 5		< 5		5	ug/L				
10M. Selenium, Total (7782-49-2)	X			13.2	12.9	3.3	3.2	< 2		54	ug/L	kg/d			
11M. Silver, Total (7440-22-4)	X			< 10						2	ug/L				
12M. Thallium, Total (7440-28-0)	X			< 1						2	ug/L				
13M. Zinc, Total (7440-66-6)	X			27.8	27.2					2	ug/L	kg/d			
14M. Cyanide, Total (57-12-5)	X			< 0.005						1	mg/L				
15M. Phenols, Total	X			11.9	11.6					1	ug/L	kg/d			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Accrolein (107-02-8)	X			< 50						1			ug/L		
2V. Acrylonitrile (107-13-1)	X			< 50						1			ug/L		
3V. Benzene (71-43-2)	X			< 5						1			ug/L		
4V. Bis (*Chloro-methyl*) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)	X			< 5						1			ug/L		
6V. Carbon Tetrachloride (56-23-5)	X			< 5						1			ug/L		
7V. Chlorobenzene (108-90-7)	X			< 5						1			ug/L		
8V. Chlorodi-bromomethane (124-48-1)	X			< 5						1			ug/L		
9V. Chloroethane (75-00-3)	X			< 5						1			ug/L		
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	X			< 10						1			ug/L		
11V. Chloroform (67-66-3)	X			< 5						1			ug/L		
12V. Dichloro-bromomethane (75-27-4)	X			< 5						1			ug/L		
13V. Dichloro-difluoromethane (75-71-8)			X												
14V. 1,1-Dichloro-ethane (75-34-3)	X			< 5						1			ug/L		
15V. 1,2-Dichloro-ethane (107-06-2)	X			< 5						1			ug/L		
16V. 1,1-Dichloro-ethylene (75-35-4)	X			< 5						1			ug/L		
17V. 1,2-Dichloro-propane (78-87-5)	X			< 5						1			ug/L		
18V. 1,3-Dichloro-propylene (542-75-6)	X			< 5						1			ug/L		
19V. Ethylbenzene (100-41-4)	X			< 5						1			ug/L		
20V. Methyl Bromide (74-83-9)	X			< 10						1			ug/L		
21V. Methyl Chloride (74-87-3)	X			< 5						1			ug/L		

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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)	X			< 5						1	ug/L				
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			< 5						1	ug/L				
24V. Tetrachloro-ethylene (127-18-4)	X			< 5						1	ug/L				
25V. Toluene (108-88-3)	X			< 5						1	ug/L				
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			< 5						1	ug/L				
27V. 1,1,1-Trichloro-ethane (71-55-6)	X			< 10						1	ug/L				
28V. 1,1,2-Trichloro-ethane (79-00-5)	X			< 5						1	ug/L				
29V Trichloro-ethylene (79-01-6)	X			< 5						1	ug/L				
30V. Trichloro-fluoromethane (75-69-4)	X			< 5						1	ug/L				
31V. Vinyl Chloride (75-01-4)	X			< 5						1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X			< 10						1	ug/L				
2A. 2,4-Dichloro-phenol (120-83-2)	X			< 10						1	ug/L				
3A. 2,4-Dimethyl-phenol (105-67-9)	X			< 10						1	ug/L				
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			< 50						1	ug/L				
5A. 2,4-Dinitro-phenol (51-28-5)	X			< 50						1	ug/L				
6A. 2-Nitrophenol (88-75-5)	X			< 10						1	ug/L				
7A. 4-Nitrophenol (100-02-7)	X			< 10						1	ug/L				
8A. P-Chloro-M-Cresol (59-50-7)	X			< 10						1	ug/L				
9A. Pentachloro-phenol (87-86-5)	X			< 30						1	ug/L				
10A. Phenol (108-95-2)	X			< 10						1	ug/L				
11A. 2,4,6-Trichloro-phenol (88-05-2)	X			< 10						1	ug/L				

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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (*a*) Anthracene (56-55-3)			X												
6B. Benzo (*a*) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (*ghi*) Perylene (191-24-2)			X												
9B. Benzo (*k*) Fluoranthene (207-08-9)			X												
10B. Bis (*2-Chloro-ethoxy*) Methane (111-91-1)			X												
11B. Bis (*2-Chloro-ethyl*) Ether (111-44-4)			X												
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)			X												
13B. Bis (*2-Ethyl-hexyl*) Phthalate (117-81-7)			X												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (*a,h*) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Di-chloro-benzene (541-73-1)			X												

 CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131 -11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (*as Azo-benzene*) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B Hexachloro-ethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitro-sodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Enosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

 CONTINUE ON PAGE V-9

EPARFI02016

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
NCD000830919	007

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

*Pollutant may be present in coal ash.

Please print or type in the unshaded areas only.

EPA ID Number (*copy from Item 1 of Form 1*)
NCD000830919

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

FORM 2F NPDES

EPA

U.S. Environmental Protection Agency
Washington, DC 20460

Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number (*list*)	B. Latitude			C. Longitude			D. Receiving Water (*name*)
SW-001	35	35	50	79	2	55	Shaddox Creek
SW-002	35	35	41	79	2	48	Shaddox Creek
SW-003	35	35	35	79	2	40	Tributary to Shaddox Creek
SW-008	35	34	58	79	3	0	Cape Fear River

II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
None					

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage of disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

 Continue on Page 2

EPARFI02018

Continued from the Front

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
SW-001	0 acre	10 acres			
SW-002	1 acre	9 acres			
SW-003	0 acre	2 acres			
SW-008	0 acre	56 acres			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Outfalls SW-001 and SW-008 would discharge storm water from abandoned ash ponds that have not been used for more than 35 years. These areas are now covered with vegetation. Previously, NCDENR concurred that it would take greater than a 25-year storm event to have storm water discharge from the existing stand pipes in these inactive ash ponds.

Outfall SW-002 discharges storm water from along the east side of a railroad spur that receives coal shipments to the plant. Two pipes direct flow from this less than one acre area into a field. A collection point within the field discharges into Shaddox Creek. Approximately one acre of impervious surface, including a roadway and a gravelled employee parking lot, also drain to this collection point. No herbicides nor fertilizers are applied to the field.

Outfall SW-003 discharges storm water from along the south side of the entrance road. This small, grass-lined area is not located near any industrial processes at the plant site nor is it located near any portion of the site where coal or other chemical are unloaded. No herbicides nor fertilizers are applied in this area.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
SW-001	None.	1-U
SW-002	Rock filter dam at outfall pipe.	4-A
SW-003	None.	4-A
SW-008	None.	1-U

V. Nonstormwater Discharges

A. I certify under penalty of law hat the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or From 2E application for the outfall.

Name and Official Title (*type or print*)	Signature	Date Signed
Danny Hedgepeth, Environmental Spec.	Danny Hedgepeth	12/7/10

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

On an annual basis, the Cape Fear Plant ORC conducts a visual inspection of all storm water outfalls during an extended period of dry weather. This visual inspection serves to ensure that there are no nonstorm water discharges from the permitted storm water outfalls. Certification statements are signed, dated, and maintained onsite in the SWPPP.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

There have been no leaks or spills of toxic or hazardous pollutants at the facilty in the last three years.

 Continue on Page 3

Continued from Page 2

EPA ID Number *(copy from Item 1 of Form 1)*
NCD000830919

VII. Discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☑ Yes *(list all such pollutants below)* ☐ No *(go to Section IX)*

Elements that may be present in coal at the plant:

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes *(list all such pollutants below)* ☑ No *(go to Section IX)*

IX. Contract Analysis Information

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☑ Yes *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ No *(go to Section X)*

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
Tritest, Inc.	6701 Conference Drive Raleigh, NC 27607	919-834-4984	All except pH, FAC, and TRC

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title *(Type Or Print)*	B. Area Code and Phone No.
Randy Cox, Plant Manager	919.774.5200
C. Signature Randy L. Cox	D. Date Signed 12-7-2010

EPARFI02020

EPA ID Number (*copy from Item 1 of Form 1*)	
NCD000830919	Outfall SW-002

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	5.5 mg/L	N/A			1	
Biological Oxygen Demand (BOD5)	3.6 mg/L	*			1	
Chemical Oxygen Demand (COD)	48.6 mg/L	*			1	
Total Suspended Solids (TSS)	4.8 mg/L	*			1	
Total Nitrogen	1.62 mg/L	*			1	
Total Phosphorus	0.17 mg/L	*			1	
pH	Minimum 6.3	Maximum 6.3	Minimum	Maximum	1	

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
pH	6.3 SU	N/A			1	Natural environmental processes
TSS	4.8 mg/L	*			1	Erosion, settled dust/debris
Oil & Grease	5.5 mg/L	N/A			1	May be present in coal along rail
Temperature	22 degrees C	N/A			1	Ambient
TRC	0.05 mg/L	N/A			1	Chlorination process at plant
Copper, Total	0.007 mg/L	*			1	May be present in coal along rail
Iron, Total	0.382 mg/L	*			1	May be present in coal along rail
Arsenic, Total	< 3 ug/L	*			1	May be present in coal along rail
Mercury	2.41 ng/L	*			1	May be present in coal along rail
Selenium, Total	< 2 ug/L	*			1	May be present in coal along rail
Chromium, Total	< 5 ug/L	*			1	May be present in coal along rail
Nickel, Total	< 5 ug/L	*			1	May be present in coal along rail
Phosphorus, Tot	0.17 mg/L	*			1	Natural environmental processes
Ammonia-N	< 0.02 mg/L N	*			1	Natural environmental processes
Nitrate-Nitrite	0.38 mg/L N	*			1	Natural environmental processes
Kjeldahl-N	1.24 mg/L	*			1	Natural environmental processes
Nitrogen, Total	1.62 mg/L	*			1	Natural environmental processes
Fecal coliform	4950 CFU/100ml	*			1	Natural environmental processes
						*Composite samples not taken, by
						permission of NCDWQ.

EPARFI02021

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Aluminum	---					May be present in coal along rail
Antimony	---					May be present in coal along rail
Beryllium	---					May be present in coal along rail
Boron	---					May be present in coal along rail
Bromide	---					May be present in coal along rail
Cadmium	---					May be present in coal along rail
Lead	---					May be present in coal along rail
Magnesium	---					May be present in coal along rail
Manganese	---					May be present in coal along rail
Molybdenum	---					May be present in coal along rail
Silver	---					May be present in coal along rail
Thallium	---					May be present in coal along rail
Tin	---					May be present in coal along rail
Zinc	---					May be present in coal along rail

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
09/26/2010 thru 09/28/2010	2,160 minutes	3.0 inches	768 hours	2 gallons/minute	1,440 gallons

7. Provide a description of the method of flow measurement or estimate.

Storm water flow was timed with a stopwatch as it filled a bucket to a known volume to measure flow from outfall.

EPARFI02022

VII. Discharge information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	< 5 mg/L	N/A			1	
Biological Oxygen Demand (BOD5)	9.3 mg/L	*			1	
Chemical Oxygen Demand (COD)	67 mg/L	*			1	
Total Suspended Solids (TSS)	35.2 mg/L	*			1	
Total Nitrogen	1.99 mg/L	*			1	
Total Phosphorus	0.69 mg/L	*			1	
pH	Minimum 5.8	Maximum 5.8	Minimum	Maximum	1	

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
pH	5.8 SU	N/A				Natural environmental processes
TSS	35.2 mg/L	*				Erosion, settled dust/debris
Oil & Grease	< 5 mg/L	N/A				May be present in coal along rail
Temperature	22 degrees C	N/A				Ambient
TRC	0.05 mg/L	N/A				Chlorination process at plant
Copper, Total	0.006 mg/L	*				May be present in coal along rail
Iron, Total	0.855 mg/L	*				May be present in coal along rail
Arsenic, Total	< 3 ug/L	*				May be present in coal along rail
Mercury	5.53 ng/L	*				May be present in coal along rail
Selenium, Total	2.52 ug/L	*				May be present in coal along rail
Chromium, Total	< 5 ug/L	*				May be present in coal along rail
Nickel, Total	< 5 ug/L	*				May be present in coal along rail
Phosphorus, Tot	0.69 mg/L	*				Natural environmental processes
Ammonia-N	0.26 mg/L N	*				Natural environmental processes
Nitrate-Nitrite	< 0.02 mg/L N	*				Natural environmental processes
Kjeldahl-N	1.99 mg/L	*				Natural environmental processes
Nitrogen, Total	1.99 mg/L	*				Natural environmental processes
Fecal coliform	1710 CFU/100mL	*				Natural environmental processes
						*Composite samples not taken, by
						permission of NCDWQ.

EPARFI02023

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Aluminum	---					May be present in coal along rail
Antimony	---					May be present in coal along rail
Beryllium	---					May be present in coal along rail
Boron	---					May be present in coal along rail
Bromide	---					May be present in coal along rail
Cadmium	---					May be present in coal along rail
Lead	---					May be present in coal along rail
Magnesium	---					May be present in coal along rail
Manganese	---					May be present in coal along rail
Molybdenum	---					May be present in coal along rail
Silver	---					May be present in coal along rail
Thallium	---					May be present in coal along rail
tin	---					May be present in coal along rail
Zinc	---					May be present in coal along rail

Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
09/26/2010 thru 09/28/2010	2,160 minutes	3.0 inches	768 hours	1 gallons/minute	720 gallons

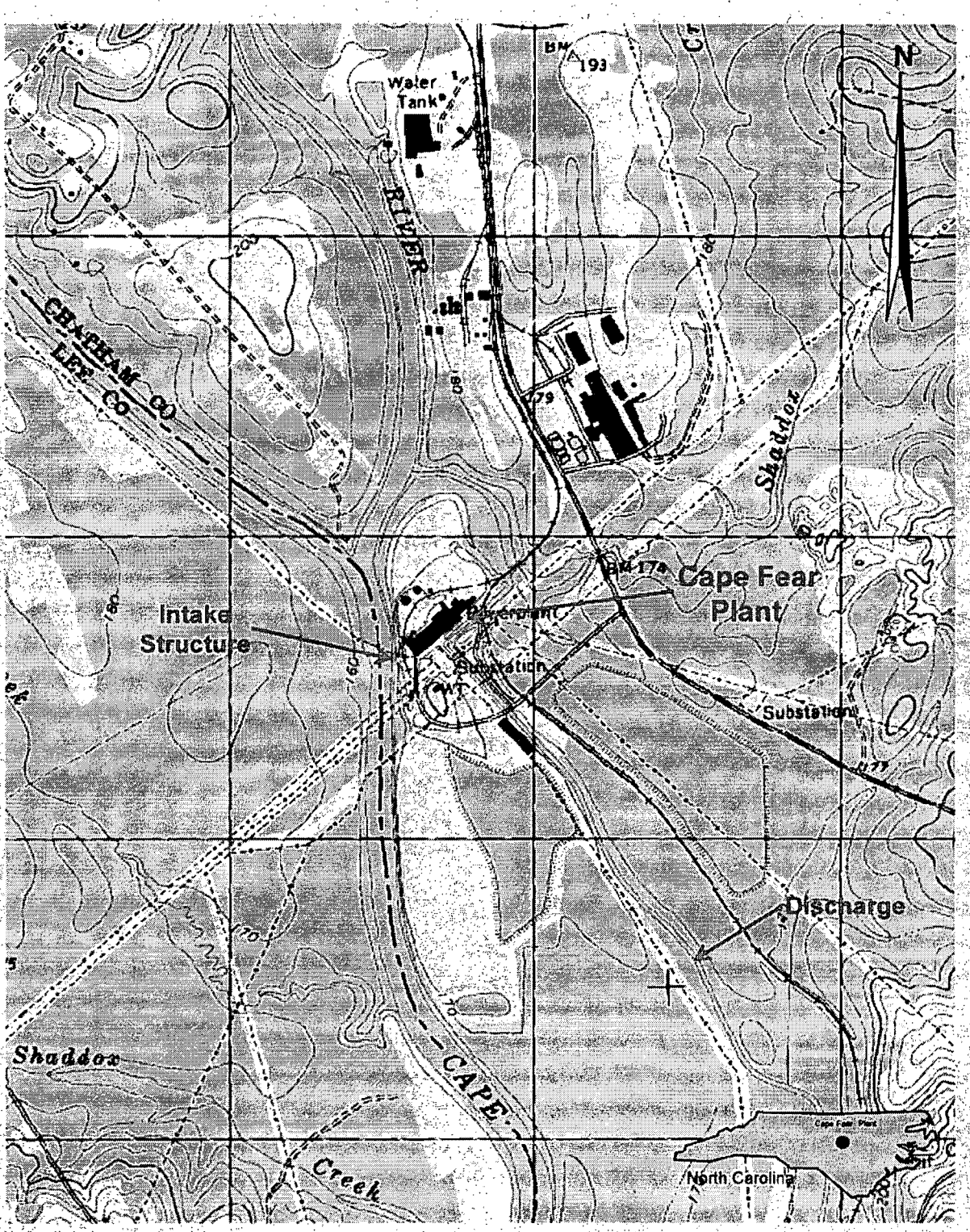
7. Provide a description of the method of flow measurement or estimate.

Storm water flow was timed with a stopwatch as it filled a bucket to a known volume to measure flow from outfall.

EPARFI02024

Attachment 1

Form 1 - Item XI Topographic Map

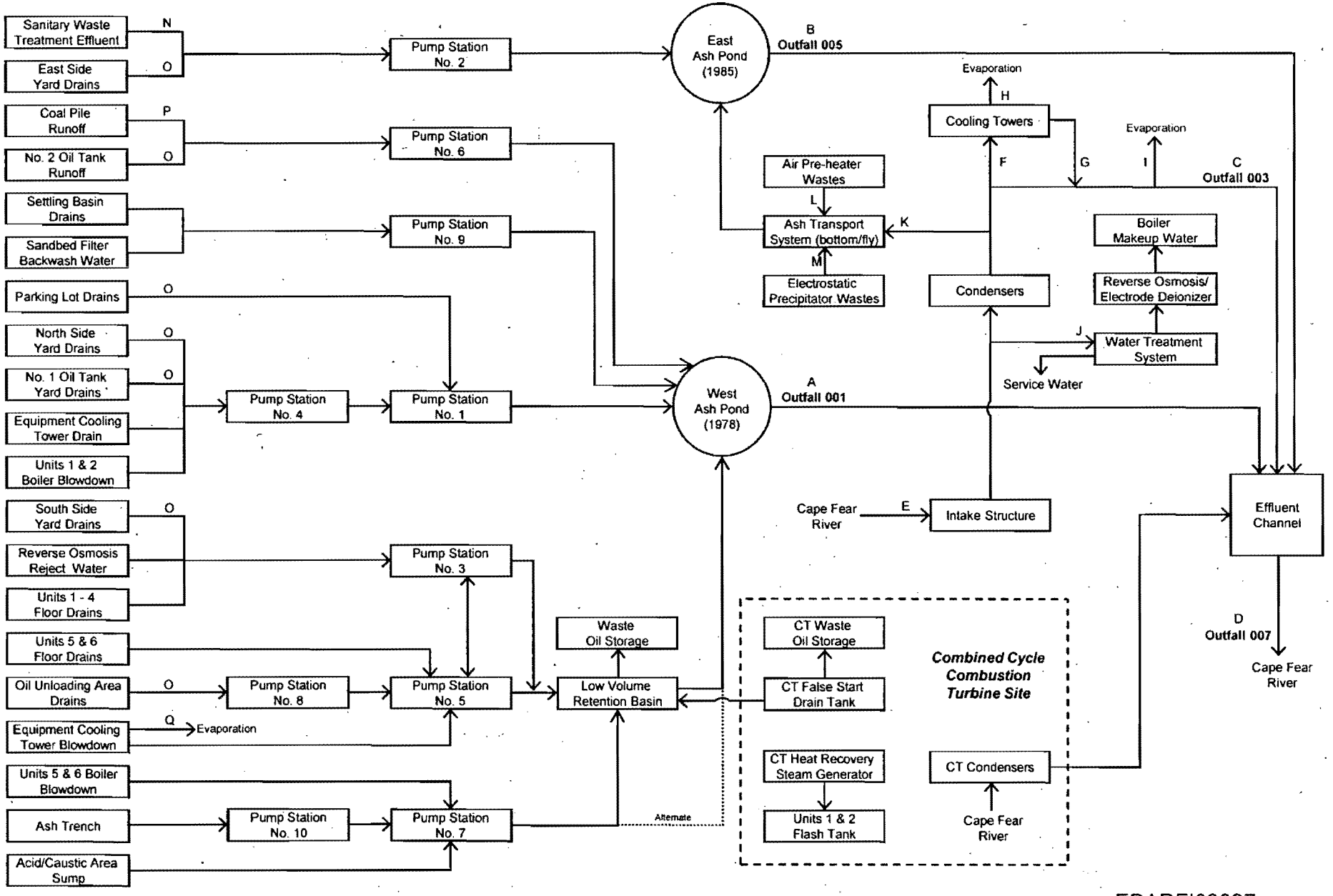


Attachment 2

Form 2C - Item II-A Line Drawing Flows

Flows	Estimated Average Flow	Comments
A	0.58 MGD	Outfall 001 – West ash pond effluent to effluent channel
B	0.66 MGD	Outfall 005 – East ash pond effluent to effluent channel
C	182.8 MGD *(w/o towers)* 269.0 MGD *(w/ towers)*	Outfall 003 – Once through cooling water to effluent channel
D	183.4 MGD *(w/o towers)* 269.7 MGD *(w/ towers)*	Outfall 007 – Discharge to tributary of the Cape Fear River
E	183.4 MGD *(w/o towers)* 278.4 MGD *(w/ towers)*	Cape Fear River intake
F	0 MGD *(w/o towers)* 277.8 MGD *(w/ towers)*	Water to cooling tower
G	0 MGD *(w/o towers)* 269.0 MGD *(w/ towers)*	Cooling water from cooling tower
H	0 MGD *(w/o towers)* 8.657 MGD *(w/ towers)*	Evaporation
I	0.001 MGD	Evaporation
J	0.140 MGD	Boiler water makeup supply
K	0.51 MGD	Ash transport system
L	4,000,000 gallons/event	Air preheater washing
M	50,000 gallons/event	Electrostatic precipitator washing
N	0.002 MGD	Sanitary waste
O	0.052 MGD	Storm water, average rainfall – 50% runoff
P	0.004 MGD	Coal pile runoff, average rainfall – 50% runoff
Q	0.001 MGD	Equipment cooling tower evaporation

Attachment 2 Form 2C Item II-A Line Drawing



EPARFI02027

Attachment 3

Form 2C - Item II-B Description of Operations Contributing Wastewater

The Cape Fear Steam Electric Plant is a coal-fired steam cycle electric generating plant with two units. Two heat recovery boilers and four Internal Combustion (IC) Turbines are also located on the plant site. Water is withdrawn from the Cape Fear River as required.

Chemical constituents contained in the discharges from this plant will, in part, be representative of the naturally-occurring chemical quality of the intake water and will also have chemical constituents of such quality and quantity associated with similar discharges for fossil generating facilities of this size, type, and in the geographical location. Either all or part of the elements listed on the Periodic Table, either singularly or in any combination, may from time to time be contained in the discharge.

All wastewater discharges join the effluent channel prior to the combined outfall (Outfall 007). Components of the discharges are described below. Also, four storm water outfalls have been identified at the plant site and are described below.

Outfall 007 Combined Wastewater Discharge

This outfall contains all waste stream flows including West Ash Pond discharge, once-through cooling water, and East Ash Pond discharge. Outfall 007 is located in the effluent channel approximately 250 feet downstream of the last internal outfall. The effluent channel becomes an unnamed tributary which flows to the Cape Fear River.

West Ash Pond (1978 Pond) Discharge – Internal Outfall 001
The West Ash Pond currently receives coal pile runoff, settling basin drains, No. 2 fuel oil tank runoff, sand bed filter backwash, parking lot drains, equipment cooling tower blowdown and drain, boiler blowdown, oil unloading area drains, demineralizer regenerate, various yard and floor drains, ash trench drain, and miscellaneous low volume wastes. This pond may also receive bottom and fly ash either by ash transport system waters or by truck. The ash pond provides treatment by sedimentation, oxidation, neutralization, equalization, and adsorption. Descriptions of the individual waste streams are below.

Coal Pile Runoff

Storm water runoff from the coal pile is collected in drainage ditches that surround the coal pile. The drainage ditches are routed to the West Ash Pond for treatment. During maintenance activities, sludges removed from catch basins, sumps, etc. may be transported to the West Ash Pond for disposal.

Low Volume Wastes

The low volume wastes retention basin receives various plant process wastes streams. Comingled waste from this basin flows to the West Ash Pond.

Surface water is withdrawn from the Cape Fear River is treated with a Reverse Osmosis (RO) unit and an electrodeionization unit for use in some plant processes including boiler water make up. On rare occasions, vendor supplied equipment may be used for this purpose. RO reject water and the cleaning solutions wastes from this system are routed to the low volume wastes retention basin. Filter backwash from this system flows directly to the West Ash Pond.

Boiler blowdown and drainage (Units 5 & 6) and wastes from the equipment cooling tower and its associated heat exchangers may contain minute quantities of treatment chemicals. The small quantities of these low volume wastes are sent to the low volume wastes retention basin. Boiler blowdown and drainage from the heat recovery boilers flow directly to the West Ash Pond.

Dry Ash Stacking/Reclamation

From time to time fly ash and bottom ash will be excavated and stacked within dry areas of the diked boundary of the West Ash Pond.

In the event a practicable market becomes available, Progress Energy may exercise the option of reclaiming ash from the ash pond system. In consideration of the scope of such an operation, no additional discharges are expected to result from ash reclamation efforts. Best management practices are established for these activities and are included in the Storm Water Pollution Prevention Plan. During ash removal projects, trucks are filled within the confines of the ash pond boundary. The trucks travel along a graveled on-site roadway before exiting the site via the plant access road.

Coal Ash from East Ash Pond

From time to time fly ash and bottom ash may be sluiced or transported from the East Ash Pond to the West Ash Pond.

Coal Mill Rejects

Coal mill rejects are dense material made of coal, limestone, and pyrite found in coal that cannot be ground by the mills to the desired size for burning in boilers. The rejects are typically retained within the coal pile area. They may also be segregated into an isolated area of the West Ash Pond above the water line and buried under a thick layer of ash. No change in the nature of the discharge to the effluent channel is anticipated.

Miscellaneous Wastes

Plant area floor and yard drains are routed to the West Ash Pond and include equipment drainage, wash down water, and rainfall runoff. Drains from areas likely to contain oil-filled equipment or storage are routed to the low volume wastes retention basin which contains an oil/water separator. Waste oil is disposed of according to the appropriate regulations.

Internal combustion turbine facility false start drain tanks may be discharged into the low volume wastes retention basin.

Cooling tower basin sludge; residuals from the low volume wastes retention basin and the coal pile ditch; ash trench materials; circulating water tunnel sediment; boiler, electrostatic precipitator, and associated appurtenances vacuuming sediments; sludge from catch basins, sumps, etc.; and other miscellaneous low volume wastes from plant process may also be transported to the West Ash Pond.

<u>Once-through Cooling Water – Internal Outfall 003</u>

Once-through condenser cooling water for the coal fired units and heat recovery units is withdrawn from the Cape Fear River, passed through the condenser, and discharged directly into the effluent channel. Some cooling is accomplished in the effluent channel. When the temperature at Outfall 007 approaches 32°C, cooling towers are placed in service in once-through mode to keep the channel water at or below 32°C. If 32°C or less cannot be maintained by once-through cooling mode, operation is either shifted to closed cycle cooling tower mode or the plant operation is modified such that the temperature remains below 32°C. Normally the cooling towers are placed in service in once-through mode during the months of June through September.

<u>East Ash Pond (1985 Pond) – Internal Outfall 005</u>

The East Ash Pond receives ash transport waters (bottom and fly ash), runoff from yard drains, air preheater washes, electrostatic precipitator washes, spent sandblast material, sewage treatment plant effluent, and miscellaneous low volume wastes. Coal mill rejects may be buried in the East Ash Pond. The ash pond provides treatment by sedimentation, oxidation, neutralization, equalization, and adsorption. Descriptions of the individual waste streams are below.

Ash Sluice Water

Fly ash and bottom ash from both units are hydraulically conveyed by an ash sluice pipeline to the ash pond. As needed, alum is added to the ash sluice influent to aid settling.

A Rotamix® system is used to inject urea into Units 5 and 6. In the boiler, the ammonia/urea will react with NOx to form water vapor and nitrogen. The system is designed to minimize any ammonia formation and ammonia slip. Any unreacted ammonia adsorbed on the fly ash from this system will be carried to the ash pond via ash sluice water.

Dry Ash Stacking/Reclamation

From time to time fly ash and bottom ash will be excavated and stacked within dry areas of the diked boundary of the East Ash Pond.

In the event a practicable market becomes available, Progress Energy may exercise the option of reclaiming ash from the ash pond system. In consideration of the scope of such an operation, no additional discharges are expected to result from ash reclamation efforts. Best management practices are established for these activities and are included in the Storm Water Pollution Prevention Plan. During ash removal projects, trucks are filled within the confines of the ash pond boundary. The trucks travel along a graveled on-site roadway before exiting the site via the plant access road.

Coal Ash from West Ash Pond

From time to time fly ash and bottom ash may be sluiced or transported from the West Ash Pond to the East Ash Pond.

Sanitary Waste Treatment Effluent

Sanitary wastes are treated at an extended aeration package plant prior to discharge to the East Ash Pond which provides secondary treatment for the effluent. Flow from the plant is dependent upon fluctuating demand due to variations in the number of personnel onsite. The effluent from the plant is disinfected prior to discharge into the ash pond. When needed, residuals are disposed of off-site by a licensed contract disposal firm.

Air Pre-heater Washes

The air pre-heaters are washed approximately once every five years. An estimated 4,000,000 gallons of wastewater is produced for each wash and is discharged to the East Ash Pond via the ash sluice pipelines.

Electrostatic Precipitators

The electrostatic precipitators are washed approximately once every five years. Approximately 50,000 gallons of wastewater is produced and is discharged to the East Ash Pond via the ash sluice pipelines.

Spent Sandblast Material

The interior of the boiler is sandblasted approximately once every five years. Approximately 2,000 pounds of spent sandblast material is produced. This material is discharged to the East Ash Pond via the ash sluice pipelines.

Coal Mill Rejects

Coal mill rejects are dense material made of coal, limestone, and pyrite found in coal that cannot be ground by the mills to the desired size for burning in boilers. The rejects are typically retained within the coal pile area. The rejects may also be segregated into an isolated area of the East Ash Pond above the water line and buried under a thick layer of ash. No change in the nature of the discharge to the effluent channel is anticipated.

Miscellaneous Wastes

Cooling tower basin sludge; residuals from the low volume wastes retention basin and coal pile retention basin; ash trench materials; circulating water tunnel sediment; boiler, electrostatic precipitator, and associated appurtenances vacuuming sediments; sludge from catch basins, sumps, etc.; and other miscellaneous low volume wastes from plant process may also be transported to the East Ash Pond.

Outfalls SW-1, SW-2, SW-3, and SW-8 – Storm Water

Outfall SW-1 and Outfall SW-8 discharge storm water from inactive ash ponds. Discharges of storm water from these outfalls are rare. Outfall SW-1 discharges directly into the Cape Fear River and Outfall SW-8 discharges into Shaddox Creek which flows into the Haw River just above the confluence with the Deep River which forms the Cape Fear River.

Storm water collected along the railroad track between the plant entrance road and the plant site combines with the drainage of an open field which is directed via Outfall SW-2 into Shaddox Creek that flows into the Haw River just above the confluence with the Deep River. During periods of heavy rainfall, Shaddox Creek backs up into the field.

Storm water collected along the roadside swell beside the plant entrance road is directed via Outfall SW-3 towards drainages that go to Shaddox Creek.

Other Wastes

Chemical Metal Cleaning Wastes
The boilers, or other heat exchanger surfaces, are chemically cleaned every eight to ten years. The cleaning solution and its rinses are stored on-site for disposal by evaporation in an operating unit's boiler. Typical cleanings would result in a waste of approximately 700,000 gallons. Should evaporation not be used, the wastewater can be treated by neutralization and precipitation prior to being conveyed to the West Ash Pond, or to the East Ash Pond, or other means of disposal.

Internal Combustion Turbine Condensate
Operation of the internal combustion turbine generation facility may produce various condensate waters and water from equipment and tank drains. These wastewaters are discharged directly to the effluent channel.

Herbicide Usage in the Treatment System Ponds
Herbicides may be used as needed to control nuisance aquatic vegetation. These herbicides are applied by licensed applicators, or persons under the immediate supervision of a licensed applicator, in accordance with the manufacturer's instructions.

Attachment 4

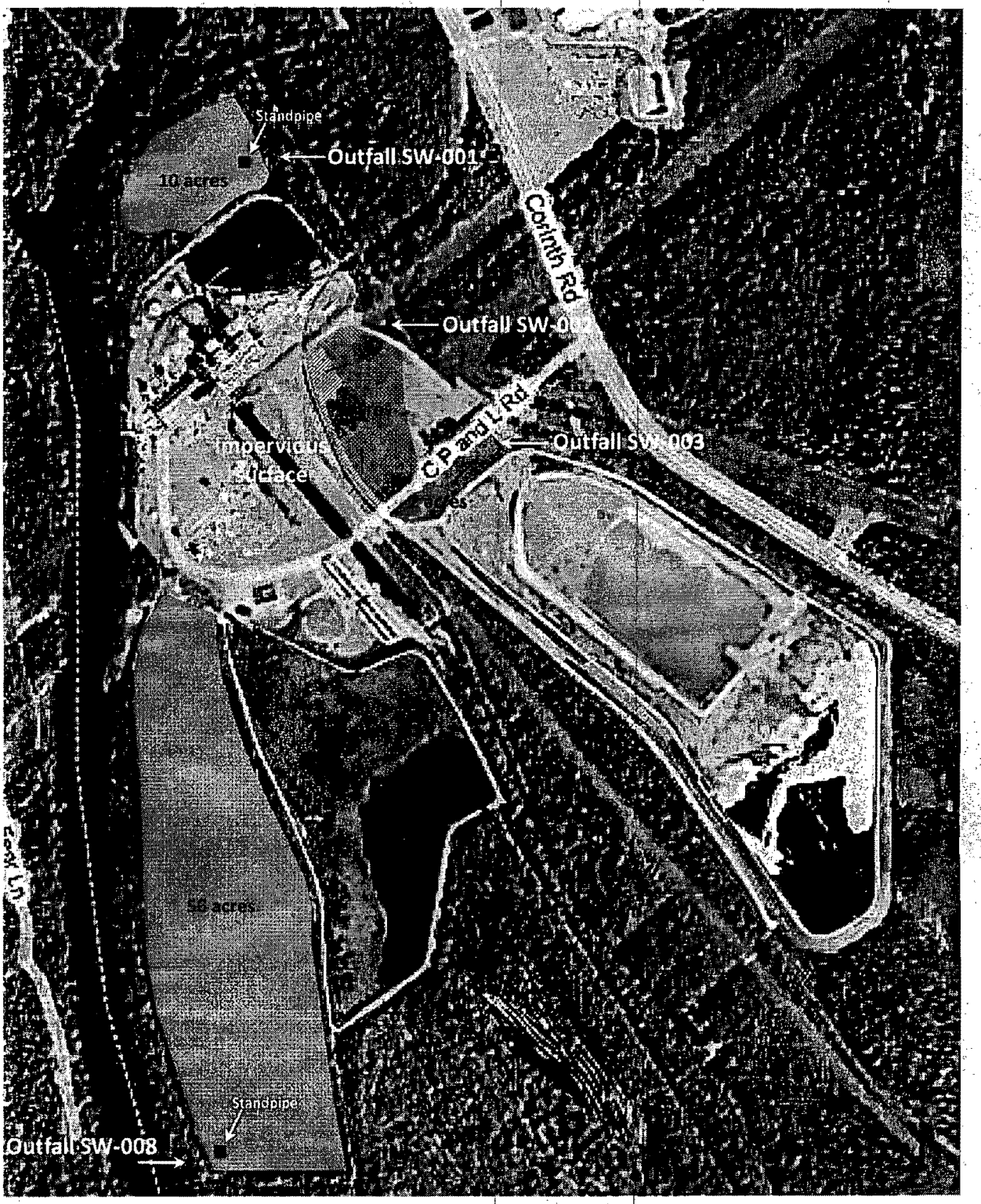
Form 2C - Item VI Potential Discharges Not Covered by Analysis

Chemical	Estimated Quantity (per year)	Frequency	Purpose
Aluminum sulfate	11,200 gals	Continuous	Water treatment flocculent
Aluminum chlorohydrate	3,300 gals	As required	Water treatment coagulant
GEBetz Spectrus OX103 (1-bromo-3-chloro-5,5-dimethylhydantoin)	5,400 lbs	Continuous	Biofouling control
Calcium hypochlorite	300 lbs	Continuous	Biofouling control in sewage treatment
Sanuril 115 (calcium hypochlorite and 1-bromo-3-chloro-5,5-dimethylhydantoin)	100 lbs	Continuous	Biofouling control in sewage treatment
AB Cutrine Plus (copper carbonate, triethanolamine, monoethanolamine)	4 gals	As required	Algae control in ash ponds
Cygent Plus (alkyl hydroxypoly oxyethylene, d'limonene)	2 gals	As required	Algae control in Ash Ponds
VITEC 3000 (proprietary)	55 gals	As required	Antiscalant
Steamate PAS3040 (proprietary)	350 gals	As required	Oxygen scavenger; passivating agent
GEBetz Steamate PAS3040 (hydroquinone)	350 gals	As required	Oxygen scavenger; passivating agent
GEBetz Steamate NA0240 (morpholine)	110 gals	Continuous	pH control in condensate
Sodium hydroxide	35,500 lbs	Continuous	pH control
Caustic soda (anhydrous)	150 gals	As required	pH control
GEBetz Optisperse HP9410 (monosodium phosphate)	80 lbs	As required	Solids dispersant in boiler, pH control
Disodium phosphate	105 lbs	As required	Solids dispersant in boiler, pH control
Trisodium phosphate	500 lbs	Continuous	Solids dispersant in boiler, pH control
Sodium polyphosphate	100 lbs	As required	Solids dispersant in boiler, pH control
Dianodic DN2126 (phosphoric acid, potassium hydroxide, 1-H-benzotriazole, methyl tolyltriazole)	560 gals	Continuous	Corrosion inhibitor
Aqueous urea (50%)	300,000 gals	Continuous	NOx control during ozone months
Citric acid (50%)	8,500 gals/ event	Every 8–10 years	Boiler cleaning
Sodium nitrite	2,500 lbs/ event	Every 8–10 years	Boiler cleaning

Chemical	Estimated Quantity (per year)	Frequency	Purpose
Ammonium bicarbonate	650 lbs/ event	Every 8–10 years	Boiler cleaning
Soda ash	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Ammonium persulfate	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Ammonium bifluoride	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Sodium bromate	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Hydrochloric acid	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Ethylenediaminetetraacetic acid (EDTA)	88,500 lbs	Every 8–10 years	Boiler cleaning, if needed
ChelClean 675 (proprietary)	Varies/event	Every 8–10 years	Boiler cleaning, if needed
Renewz (sodium hydroxide, potassium silicate)	6 gals	As required	Condenser coil cleaning
TC-X10 Plus (sodium hydroxide)	55 gals	As required	Steam cleaning
RoClean L403 (proprietary)	200 gals	As required	RO membrane cleaning
RoClean P111 (proprietary)	200 gals	As required	RO membrane cleaning
RoClean P303A (proprietary)	200 gals	As required	RO membrane cleaning
20 Degree Baume Muriatic Acid (hydrochloric acid)	5 gals	As required	RO membrane cleaning
Morton softener salt	20,000 lbs	As required	RO softener regeneration
Cargill salt	500 lbs	As required	EDI cleaning
CI 38B (Alum) (aluminum chlorohydrate)	3,300 gals	As required	TSS control in ash pond
Laundry detergent (e.g., Tide)	100 boxes	As required	Laundry cleaner
Bleach	12 gals	As required	Laundry cleaner
Weed herbicide (e.g., Roundup)	5 gals	As required	Weed killer treatment
Ant pesticide (e.g., hydramethylnon inerts)	5 lbs	As required	Ant killer treatment
Alkyl alcohol	Variable	As required	Freeze conditioning agent
Propylene glycol	Variable	As required	Freeze conditioning agent
Calcium chloride	Variable	As required	Freeze conditioning agent
Diethylene glycol	Variable	As required	Freeze conditioning agent
Glycerin	Variable	As required	Freeze conditioning agent

Attachment 5

Form 2F - Item III Site Drainage Map



RECEIVED
JUL 28 2011
CAPE FEAR PLANT

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

July 22, 2011

Mr. Randy Cox, Plant Manager
Carolina Power and Light
d/b/a/ Progress Energy Carolinas, Inc.
Cape Fear Steam Electric Plant
500 CP&L Road
Moncure, North Carolina 27559

Subject: Issuance of NPDES
Permit NC0003433
Cape Fear Steam Electric Plant
Chatham County
Facility Class I

Dear Mr. Cox:

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 October 15, 2007 (or as subsequently amended).

The final permit contains the following significant changes from the Draft Permit:

- The following condition was added for the Outfall 003 in response to EPA request per 40 CFR 423.13 (d)(1): "There shall be no detectable amounts of the 126 priority pollutants in the discharge due to the addition of chemicals added for maintenance".
- The quarterly Fecal Coliform monitoring was added to the Outfall 007 in response to the request from the Division of Water Resources and due to the close proximity of the Outfall 007 to the City of Sanford water supply intake.

This final permit maintains the following changes contained in the Draft Permit:

- The stormwater portion of the permit has been deleted. The Division will issue a separate stormwater permit for this facility.
- A weekly average limit for Se has been removed from the permit based on a statistical analysis of the effluent data. A monitoring frequency for Se has been reduced to quarterly due to the removal of the limit (Outfall 007).
- Monitoring frequencies for oil and grease, total suspended solids, ammonia nitrogen, and fecal coliforms were reduced to semi-annually based on the review of the effluent data and in response to your request (Outfall 005).
- Monitoring frequencies for oil and grease, total suspended solids, and ammonia nitrogen were reduced to semi-annually based on the review of the effluent data and in response to your request (Outfall 001).

1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6492 \ Customer Service: 1-877-623-6748
Internet: www.ncwaterquality.org
An Equal Opportunity \ Affirmative Action Employer

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- Groundwater monitoring was added to the permit. Please see Special Condition A. 9.
- The special condition A. 10. entitled "Section 316 (b) of CWA" was added to the permit in accordance with the new EPA requirements.
- The special condition A. 11. entitled "Structural Integrity Inspections of Ash Pond Dam" was added to the permit in accordance with the new EPA requirements.
- The special condition A. 12. entitled "Ash Pond Closure" was added to the permit to prepare for the upcoming decommissioning of the facility.
- The special condition A. 13. entitled "Fish Tissue Monitoring Near Ash Pond Discharge" was added to the permit in accordance with the Division permitting policy for coal-fired power plants.

The Division cannot grant your request to change the wording in the Special Condition A. (10). This is a standard language that has been approved by EPA and has been used in other permits.

The Division cannot grant your request to change the wording in the Special Condition A. (11). This is a standard language that has been approved by EPA and has been used in other permits.

The Division cannot grant your request to change the wording in the Special Condition A. (12). This is a standard language that has been approved by EPA and has been used in other permits. The requirement has no language regarding the "finalized" closure plan.

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 Sergei Chernikov at telephone number (919) 807-6393.

Sincerely,

Coleen H. Sullins

cc: Central Files
NPDES Files
Raleigh Regional Office / Surface Water Protection Section
Aquatic Toxicology Unit (e-copy)
EPA Region IV (e-copy)

1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
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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 provisions 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,

Carolina Power and Light d/b/a/ Progress Energy Carolinas, Inc.

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

Cape Fear Steam Electric Generating Plant
500 CP&L Road
Moncure
Chatham County

to receiving waters designated as an unnamed tributary to the Cape Fear River (outfalls 001, 003, 005, 007) in the Cape Fear River Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II and III hereof.

This permit shall become effective September 1, 2011.

This permit and authorization to discharge shall expire at midnight on July 31, 2016.

Signed this day July 22, 2011.

Coleen H. Sulins, 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, and as of this 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.

Progress Energy Carolinas, Inc. is hereby authorized to:

1. Continue to operate the following systems located at the **Cape Fear Steam Electric Generating Plant** at 500 CP&L Road near Moncure in Chatham County:

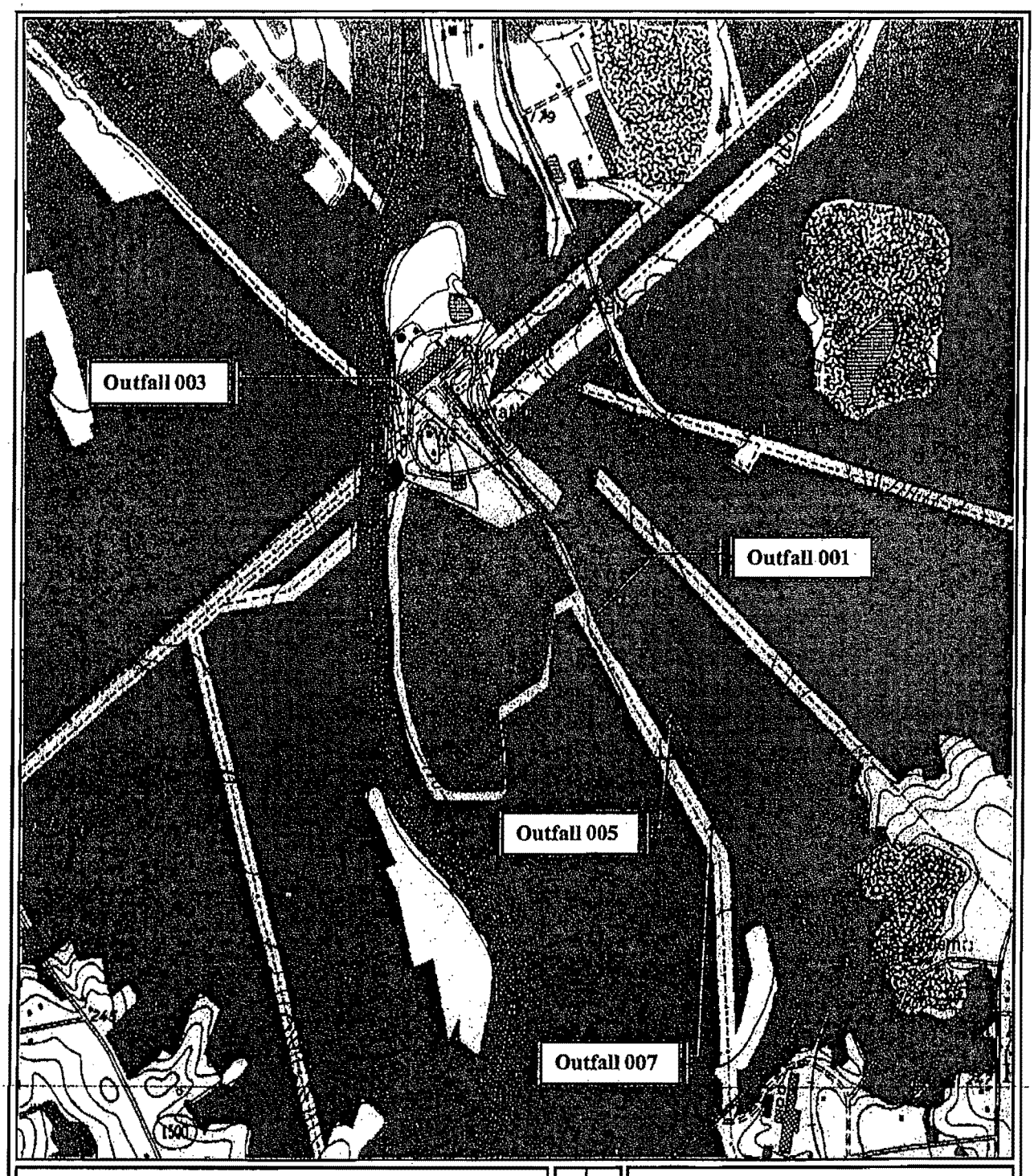
   - **West Ash Pond (Internal Outfall 001).** This outfall discharges the following treated wastewaters to outfall 007; ash sluice waters (bottom and fly), coal pile runoff, No. 2 fuel oil tank runoff, settling basin drains, sand bed filter backwash, parking lot drains, equipment cooling tower blowdown and drain, boiler blowdown, metal cleaning waste, oil unloading area drains, softener regenerate, demineralizer regenerate, acid/caustic sump wastewater, yard and floor drains, and ash trench drain wastewater.

   - **Once-Through Cooling Water and Stormwater (Internal Outfall 003).**

   - **East Ash Pond (Internal Outfall 005).** This outfall discharges the following wastewaters to outfall 007; ash sluice waters (bottom and fly), runoff from yard drains, air preheater washes, electrostatic precipitator washes, metal cleaning wastes, spent sandblast material, and treated sanitary wastewater.

   - **Combined Wastewater to the Cape Fear River (Outfall 007).** This outfall is a combination of all internal outfalls.

2. Discharge from said treatment works and/or outfalls into an unnamed tributary to the Cape Fear River classified WS-IV waters in the Cape Fear River Basin.



Progress Energy, Cape Fear - NC0003433

USGS Quad Name: Moncure
Receiving Stream: UT Cape Fear River, UT Shaddox Creek
Stream Class: WS-IV
Subbasin: Cape Fear - 030607

North

Facility Location

Not to SCALE

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 **Internal Outfall 001 (Ash Sluice, low volume wastewater, stormwater, metal cleaning waste, and coal pile runoff from the West Ash Pond to Outfall 007)**. Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Pump Logs	Influent or Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Semi-annually	Grab	Effluent
Total Suspended Solids	30.0 mg/L	100.0 mg/L	Semi-annually	Grab	Effluent
Total Arsenic			Semi-annually	Grab	Effluent
Total Selenium			Semi-annually	Grab	Effluent
Ammonia-Nitrogen			Semi-annually	Grab	Effluent
Total Iron	1.0 mg/L	1.0 mg/L	Once per discharge of metal cleaning waste	Grab	Effluent
Total Copper	1.0 mg/L	1.0 mg/L	Once per discharge of metal cleaning waste	Grab	Effluent

NOTES:

1. Metal Cleaning Waste means any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

Samples taken in compliance with the monitoring requirements listed above shall be taken prior to mixing with other sources of wastewater.

Sampling during the discharge of metal cleaning wastes will be determined based on the time the metal cleaning wastes enter the ash pond and the detention time of the ash pond.

There shall be no discharge of polychlorinated biphenyls.

A. 2. 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 **Internal Outfall 003 (Once-Through Cooling Water and Stormwater to Outfall 007).** Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Daily	Pump Logs or similar readings	Influent or Effluent

NOTES:
Samples taken in compliance with the monitoring requirements listed above shall be taken prior to mixing with other sources of wastewater.

There shall be no discharge of polychlorinated biphenyls.

This permit prohibits the use of any chemicals used for maintenance of the once-through cooling system that contain chromium, zinc, or copper.

This permit prohibits the use of chlorine, or chlorine-containing compounds, in the once-through cooling system.

There shall be no detectable amounts of the 126 priority pollutants in the discharge due to the addition of chemicals added for maintenance.

A. 3. Effluent Limitations and Monitoring Requirements (Outfall 005)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from **Internal Outfall 005 (Ash Sluice, Sanitary Wastewater, Low Volume Wastewater, Stormwater, and Metal Cleaning Waste[1] from the East Ash Pond to Outfall 007).** Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Weekly	Pump Logs	Influent or Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Semi-annually	Grab	Effluent
Total Suspended Solids	30.0 mg/L	100.0 mg/L	Semi-annually	Grab	Effluent
Total Arsenic			Semi-annually	Grab	Effluent
Total Selenium			Semi-annually	Grab	Effluent
Fecal Coliform			Semi-annually	Grab	Effluent
Ammonia-Nitrogen			Semi-annually	Grab	Effluent
Total Iron	1.0 mg/L	1.0 mg/L	Once per discharge of metal cleaning waste	Grab	Effluent
Total Copper	1.0 mg/L	1.0 mg/L	Once per discharge of metal cleaning waste	Grab	Effluent

NOTES:

1. Metal Cleaning Waste means any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

Samples taken in compliance with the monitoring requirements listed above shall be taken prior to mixing with other sources of wastewater.

Sampling during the discharge of metal cleaning wastes will be determined based on the time the metal cleaning wastes enter the ash pond and the detention time of the ash pond.

There shall be no discharge of polychlorinated biphenyls.

A. 4. Effluent Limitations and Monitoring Requirements (Outfall 007)

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge from **Outfall 007 (Combined Wastewaters and Stormwater from Outfalls 001, 003, and 005).** Such discharges shall be limited and monitored by the Permittee as specified below:

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD			Daily	Instantaneous	Effluent
Total Chromium (µg/L)			Quarterly	Composite	Effluent
Total Arsenic (µg/L)			Quarterly	Composite	Effluent
Total Selenium (µg/L)			Quarterly	Composite	Effluent
Total Mercury (µg/L)[2]			Quarterly	Composite	Effluent
Total Nickel (µg/L)			Quarterly	Composite	Effluent
Total Copper (µg/L)			Quarterly	Composite	Effluent
Total Nitrogen (NO_2+NO_3+TKN) (mg/L)			Quarterly	Composite	Effluent
Total Phosphorus (mg/L)			Quarterly	Composite	Effluent
Fecal Coliform (geometric mean)			Quarterly	Grab	Effluent
Temperature		32°C	Daily	Grab	Effluent
pH	Between 6.0 and 9.0 Standard Units		Daily	Grab	Effluent
Chronic Toxicity[3]			Quarterly	Composite	Effluent

NOTES:

1. Effluent sampling point shall be located on the discharge canal at the point of discharge into the unnamed tributary to the Cape Fear River.
2. Effluent samples must be analyzed by an EPA-approved low level mercury analysis method (1631).
3. Chronic Toxicity (*Ceriodaphnia*) Pass/Fail at 90%; February, May, August, November. See condition A. 5. of this permit.

There shall be no discharge of polychlorinated biphenyls.

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

A. 5. Chronic Toxicity 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 90 %.

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* February, May, August, and November. 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: Environmental Sciences Section
North Carolina Division of Water Quality
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Environmental Sciences Section 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 Section 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. 6. Intake Screen Backwash

The discharge of intake screen backwash is permitted without limitations or monitoring requirements.

A. 7. Biocide 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 a Biocide Worksheet 101 is not necessary for the introduction of a new biocide into an outfall currently being tested for toxicity.

A. 8. Domestic Wastewater Treatment Plant

The domestic wastewater treatment plant shall be properly operated and maintained to ensure treatment of sanitary effluent to secondary standards.

A. 9. Groundwater Monitoring Well Construction and Sampling

The permittee shall conduct groundwater monitoring to determine the compliance of this NPDES permitted facility with the current groundwater Standards found under 15A NCAC 2L .0200. The monitoring shall be conducted in accordance with the Sampling Plan approved by the Division.

A. 10. Section 316 (b) of CWA

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

A. 11. Structural Integrity Inspections of Ash Pond Dam

The facility shall meet the dam design and dam safety requirements per 15A NCAC 2K.

A. 12. Ash Pond Closure

The facility shall prepare an Ash Pond Closure Plan in anticipation of the facility closure. This Plan shall be submitted to the Division one year prior to the closure of the facility.

A. 13. Fish Tissue Monitoring Near Ash Pond Discharge

The facility shall conduct fish tissue monitoring once during the permit term and submit the results with the NPDES permit renewal application. The objective of the monitoring is to evaluate potential uptake of pollutants by fish tissue near the Ash Pond discharge. The parameters analyzed in fish tissue shall be arsenic, selenium, and mercury. The monitoring shall be conducted in accordance with the Sampling Plan approved by the Division.

PART II
STANDARD CONDITIONS FOR NPDES PERMITS

Section A. Definitions

2/Month
Samples are collected twice per month with at least ten calendar days between sampling events. These samples shall be representative of the wastewater discharged during the sample period.

3/Week
Samples are collected three times per week on three separate calendar days. These samples shall be representative of the wastewater discharged during the sample period.

Act or "the Act"
The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 USC 1251, et. seq.

Annual Average
The arithmetic mean of all "daily discharges" of a pollutant measured during the calendar year. In the case of fecal coliform, the geometric mean of such discharges.

Arithmetic Mean
The summation of the individual values divided by the number of individual values.

Bypass
The known diversion of waste streams from any portion of a treatment facility including the collection system, which is not a designed or established or operating mode for the facility.

Calendar Day
The period from midnight of one day until midnight of the next day. However, for purposes of this permit, any consecutive 24-hour period that reasonably represents the calendar day may be used for sampling.

Calendar Week
The period from Sunday through the following Saturday.

Calendar Quarter
One of the following distinct periods: January through March, April through June, July through September, and October through December.

Composite Sample
A sample collected over a 24-hour period by continuous sampling or combining grab samples of at least 100 ml in such a manner as to result in a total sample representative of the wastewater discharge during the sample period. The Director may designate the most appropriate method (specific number and size of aliquots necessary, the time interval between grab samples, etc.) on a case-by-case basis. Samples may be collected manually or automatically. Composite samples may be obtained by the following methods:

(1) Continuous: a single, continuous sample collected over a 24-hour period proportional to the rate of flow.
(2) Constant time/variable volume: a series of grab samples collected at equal time intervals over a 24 hour period of discharge and combined proportional to the rate of flow measured at the time of individual sample collection, or
(3) Variable time/constant volume: a series of grab samples of equal volume collected over a 24 hour period with the time intervals between samples determined by a preset number of gallons passing the sampling point. Flow measurement between sample intervals shall be determined by use of a flow recorder and totalizer, and the preset gallon interval between sample collection fixed at no greater than 1/24 of the expected total daily flow at the treatment system, or
(4) Constant time/constant volume: a series of grab samples of equal volume collected over a 24-hour period at a constant time interval. Use of this method requires prior approval by the Director. This method may

only be used in situations where effluent flow rates vary less than 15 percent. The following restrictions also apply:

- Influent and effluent grab samples shall be of equal size and of no less than 100 milliliters
- Influent samples shall not be collected more than once per hour.
- Permittees with wastewater treatment systems whose detention time < 24 hours shall collect effluent grab samples at intervals of no greater than 20 minutes apart during any 24-hour period.
- Permittees with wastewater treatment systems whose detention time exceeds 24 hours shall collect effluent grab samples at least every six hours; there must be a minimum of four samples during a 24-hour sampling period.

Continuous flow measurement
Flow monitoring that occurs without interruption throughout the operating hours of the facility. Flow shall be monitored continually except for the infrequent times when there may be no flow or for infrequent maintenance activities on the flow device.

Daily Discharge
The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants measured in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. The "daily discharge" concentration comprises the mean concentration for a 24-hour sampling period as either a composite sample concentration or the arithmetic mean of all grab samples collected during that period. (40 CFR 122.2)

Daily Maximum
The highest "daily discharge" during the calendar month.

Daily Sampling
Parameters requiring daily sampling shall be sampled 5 out of every 7 days per week unless otherwise specified in the permit. Sampling shall be conducted on weekdays except where holidays or other disruptions of normal operations prevent weekday sampling. If sampling is required for all seven days of the week for any permit parameter(s), that requirement will be so noted on the Effluent Limitations and Monitoring Page(s).

DWQ or "the Division"
The Division of Water Quality, Department of Environment and Natural Resources.

EMC
The North Carolina Environmental Management Commission

EPA
The United States Environmental Protection Agency

Facility Closure
Cessation of all activities that require coverage under this NPDES permit. Completion of facility closure will allow this permit to be rescinded.

Geometric Mean
The Nth root of the product of the individual values where N = the number of individual values. For purposes of calculating the geometric mean, values of "0" (or "< [detection level]") shall be considered = 1.

Grab Sample
Individual samples of at least 100 ml collected over a period of time not exceeding 15 minutes. Grab samples can be collected manually. Grab samples must be representative of the discharge (or the receiving stream, for instream samples).

Hazardous Substance
Any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Instantaneous flow measurement
A measure of flow taken at the time of sampling, when both the sample and flow will be representative of the total discharge.

Monthly Average (concentration limit)
The arithmetic mean of all "daily discharges" of a pollutant measured during the calendar month. In the case of fecal coliform, the geometric mean of such discharges.

Permit Issuing Authority
The Director of the Division of Water Quality.

Quarterly Average (concentration limit)
The average of all samples taken over a calendar quarter.

Severe property damage
Substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage excludes economic loss caused by delays in production.

Toxic Pollutant:
Any pollutant listed as toxic under Section 307(a)(l) of the CWA.

Upset
An incident beyond the reasonable control of the Permittee causing unintentional and temporary noncompliance with permit effluent limitations and/or monitoring requirements. An upset does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Weekly Average (concentration limit)
The arithmetic mean of all "daily discharges" of a pollutant measured during the calendar week. In the case of fecal coliform, the geometric mean of such discharges.

Section B. General Conditions

1. Duty to Comply
   The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application [40 CFR 122.41].

   a. The Permittee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

   b. The CWA provides that any person who violates section[s] 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402 (a) (3) or 402 (b) (8) of the Act, is subject to a civil penalty not to exceed $37,500 per day for each violation. [33 USC 1319 (d) and 40 CFR 122.41 (a) (2)]

   c. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. [33 USC 1319 (c) (1) and 40 CFR 122.41 (a) (2)]

   d. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal

penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. [33 USC 1319 (c) (2) and 40 CFR 122.41 (a) (2)]

e. Any person who *knowingly* violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions. [40 CFR 122.41 (a) (2)]

f. Under state law, a civil penalty of not more than $25,000 per violation may be assessed against any person who violates or fails to act in accordance with the terms, conditions, or requirements of a permit. [North Carolina General Statutes § 143-215.6A]

g. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $37,500. Penalties for Class II violations are not to exceed $16,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $177,500. [33 USC 1319 (g) (2) and 40 CFR 122.41 (a) (3)]

2. Duty to Mitigate
The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit with a reasonable likelihood of adversely affecting human health or the environment [40 CFR 122.41 (d)].

3. Civil and Criminal Liability
Except as provided in permit conditions on "Bypassing" (Part II. C. 4), "Upsets" (Part II. C. 5) and "Power Failures" (Part II. C. 7), nothing in this permit shall be construed to relieve the Permittee from any responsibilities, liabilities, or penalties for noncompliance pursuant to NCGS 143-215.3, 143-215.6 or Section 309 of the Federal Act, 33 USC 1319. Furthermore, the Permittee is responsible for consequential damages, such as fish kills, even though the responsibility for effective compliance may be temporarily suspended.

4. 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 NCGS 143-215.75 et seq. or Section 311 of the Federal Act, 33 USC 1321. Furthermore, the Permittee is responsible for consequential damages, such as fish kills, even though the responsibility for effective compliance may be temporarily suspended.

5. 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 [40 CFR 122.41 (g)].

6. Onshore or 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.

7. Severability
The provisions of this permit are severable. If any provision 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 [NCGS 150B-23].

8. Duty to Provide Information
The Permittee shall furnish to the Permit Issuing Authority, within a reasonable time, any information which the Permit Issuing Authority may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Permit Issuing Authority upon request, copies of records required by this permit [40 CFR 122.41 (h)].

9. Duty to Reapply
If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit [40 CFR 122.41 (b)].

10. Expiration of Permit
The Permittee is not authorized to discharge after the expiration date. In order to receive automatic authorization to discharge beyond the expiration date, the Permittee shall submit such information, forms, and fees as are required by the agency authorized to issue permits no later than 180 days prior to the expiration date. Any Permittee that has not requested renewal at least 180 days prior to expiration, or any Permittee that does not have a permit after the expiration and has not requested renewal at least 180 days prior to expiration, will subject the Permittee to enforcement procedures as provided in NCGS 143-215.6 and 33 USC 1251 et. seq.

11. Signatory Requirements
All applications, reports, or information submitted to the Permit Issuing Authority shall be signed and certified [40 CFR 122.41 (k)].

a. All permit applications shall be signed as follows:
   (1) For a corporation: by a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (a) a president, secretary, treasurer or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures .
   (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
   (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official [40 CFR 122.22].

b. All reports required by the permit and other information requested by the Permit Issuing Authority shall be signed by a person described in paragraph a. above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   (1) The authorization is made in writing by a person described above;
   (2) The authorization specified 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, operator of a well or well field, superintendent, a position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
   (3) The written authorization is submitted to the Permit Issuing Authority [40 CFR 122.22]

c. Changes to authorization: If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative [40 CFR 122.22]

d. Certification. Any person signing a document under paragraphs a. or b. of this section shall make the following certification [40 CFR 122.22]. NO OTHER STATEMENTS OF CERTIFICATION WILL BE ACCEPTED:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

12. Permit Actions
This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition [40 CFR 122.41 (f)].

13. Permit Modification, Revocation and Reissuance, or Termination
The issuance of this permit does not prohibit the permit issuing authority from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by the laws, rules, and regulations contained in Title 40, Code of Federal Regulations, Parts 122 and 123; Title 15A of the North Carolina Administrative Code, Subchapter 2H.0100; and North Carolina General Statute 143-215.1 et. al.

14. Annual Administering and Compliance Monitoring Fee Requirements
The Permittee must pay the annual administering and compliance monitoring fee within thirty days after being billed by the Division. Failure to pay the fee in a timely manner in accordance with 15A NCAC 2H.0105 (b) (2) may cause this Division to initiate action to revoke the permit.

Section C. Operation and Maintenance of Pollution Controls

1. Certified Operator
Upon classification of the permitted facility by the Certification Commission, the Permittee shall employ a certified water pollution control treatment system operator in responsible charge (ORC) of the water pollution control treatment system. Such operator must hold a certification of the grade equivalent to or greater than the classification assigned to the water pollution control treatment system by the Certification Commission. The Permittee must also employ one or more certified Back-up ORCs who possess a currently valid certificate of the type of the system. Back-up ORCs must possess a grade equal to (or no more than one grade less than) the grade of the system [15A NCAC 8G.0201].

The ORC of each Class I facility must:

- Visit the facility as often as is necessary to insure proper operation of the treatment system; the treatment facility must be visited at least weekly
- Comply with all other conditions of 15A NCAC 8G.0204.

The ORC of each Class II, III and IV facility must:

- Visit the facility as often as is necessary to insure proper operation of the treatment system; the treatment facility must be visited at least five days per week, excluding holidays
- Properly manage and document daily operation and maintenance of the facility
- Comply with all other conditions of 15A NCAC 8G.0204.

Once the facility is classified, the Permittee shall submit a letter to the Certification Commission designating the operator in responsible charge:

a. Within 60 calendar days prior to wastewater being introduced into a new system
b. Within 120 calendar days of:
   - Receiving notification of a change in the classification of the system requiring the designation of a new ORC and back-up ORC
   - A vacancy in the position of ORC or back-up ORC.

2. Proper Operation and Maintenance
The Permittee shall at all times provide the operation and maintenance resources necessary to operate the existing facilities at optimum efficiency. 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 also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the Permittee to install and operate backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit [40 CFR 122.41 (e)].

NOTE: Properly and officially designated operators are fully responsible for all proper operation and maintenance of the facility, and all documentation required thereof, whether acting as a contract operator [subcontractor] or a member of the Permittee's staff.

3. Need to Halt or Reduce not a Defense
It shall not be a defense for a 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 condition of this permit [40 CFR 122.41 (c)].

4. Bypassing of Treatment Facilities
   a. Bypass not exceeding limitations [40 CFR 122.41 (m) (2)]
   The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs b. and c. of this section.
   b. Notice [40 CFR 122.41 (m) (3)]
      (1) Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass; including an evaluation of the anticipated quality and effect of the bypass.
      (2) Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in Part II. E. 6. (24-hour notice).
   c. Prohibition of Bypass
      (1) Bypass from the treatment facility is prohibited and the Permit Issuing Authority may take enforcement action against a Permittee for bypass, unless:
         (A) Bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
         (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         (C) The Permittee submitted notices as required under Paragraph b. of this section.
      (2) Bypass from the collection system is prohibited and the Permit Issuing Authority may take enforcement action against a Permittee for a bypass as provided in any current or future system-wide collection system permit associated with the treatment facility.
      (3) The Permit Issuing Authority may approve an anticipated bypass, after considering its adverse effects, if the Permit Issuing Authority determines that it will meet the three conditions listed above in Paragraph c. (1) of this section.

5. Upsets
   a. Effect of an upset [40 CFR 122.41 (n) (2)]: An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph b. of this condition 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.

b. Conditions necessary for a demonstration of upset: Any Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;

(2) The Permittee facility was at the time being properly operated; and

(3) The Permittee submitted notice of the upset as required in Part II. E. 6. (b) of this permit.

(4) The Permittee complied with any remedial measures required under Part II. B. 2. of this permit.

c. Burden of proof [40 CFR 122.41 (n) (4)]: The Permittee seeking to establish the occurrence of an upset has the burden of proof in any enforcement proceeding.

6. Removed Substances
Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be utilized/disposed of in accordance with NCGS 143-215.1 and in a manner such as to prevent any pollutant from such materials from entering waters of the State or navigable waters of the United States. The Permittee shall comply with all existing Federal regulations governing the disposal of sewage sludge. Upon promulgation of 40 CFR Part 503, any permit issued by the Permit Issuing Authority for the utilization/disposal of sludge may be reopened and modified, or revoked and reissued, to incorporate applicable requirements at 40 CFR 503. The Permittee shall comply with applicable 40 CFR 503 Standards for the Use and Disposal of Sewage Sludge (when promulgated) within the time provided in the regulation, even if the permit is not modified to incorporate the requirement. The Permittee shall notify the Permit Issuing Authority of any significant change in its sludge use or disposal practices.

7. Power Failures
The Permittee is responsible for maintaining adequate safeguards (as required by 15A NCAC 2H.0124) to prevent the discharge of untreated or inadequately treated wastes during electrical power failures either by means of alternate power sources, standby generators or retention of inadequately treated effluent.

Section D. Monitoring and Records

1. Representative Sampling
Samples collected and measurements taken, as required herein, shall be characteristic of the volume and nature of the permitted discharge. Samples collected at a frequency less than daily shall be taken on a day and time that is characteristic of the discharge over the entire period the sample represents. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Permit Issuing Authority [40 CFR 122.41 (j)].

2. Reporting
Monitoring results obtained during the previous month(s) shall be summarized for each month and reported on a monthly Discharge Monitoring Report (DMR) Form (MR 1, 1.1, 2, 3) or alternative forms approved by the Director, postmarked no later than the last calendar day of the month following the completed reporting period.

The first DMR is due on the last day of the month following the issuance of the permit or in the case of a new facility, on the last day of the month following the commencement of discharge. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the following address:

NC DENR / Division of Water Quality / Surface Water Protection Section
ATTENTION: Central Files
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

3. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected 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 is 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 10% from the true discharge rates throughout the range of expected discharge volumes. Flow measurement devices shall be accurately calibrated at a minimum of once per year and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. The Director shall approve the flow measurement device and monitoring location prior to installation.

Once-through condenser cooling water flow monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacturer's pump curves shall not be subject to this requirement.

4. Test Procedures
Laboratories used for sample analysis must be certified by the Division. Permittees should contact the Division's Laboratory Certification Section (919 733-3908 or http://portal.ncdenr.org/web/wq/lab/cert) for information regarding laboratory certifications.

Facilities whose personnel are conducting testing of field-certified parameters only must hold the appropriate field parameter laboratory certifications.

Test procedures for the analysis of pollutants shall conform to the EMC regulations (published pursuant to NCGS 143-215.63 et. seq.), the Water and Air Quality Reporting Acts, and to regulations published pursuant to Section 304(g), 33 USC 1314, of the CWA (as amended), and 40 CFR 136; or in the case of sludge use or disposal, approved under 40 CFR 136, unless otherwise specified in 40 CFR 503, unless other test procedures have been specified in this permit [40 CFR 122.41].

To meet the intent of the monitoring required by this permit, all test procedures must produce minimum detection and reporting levels that are below the permit discharge requirements and all data generated must be reported down to the minimum detection or lower reporting level of the procedure. If no approved methods are determined capable of achieving minimum detection and reporting levels below permit discharge requirements, then the most sensitive (method with the lowest possible detection and reporting level) approved method must be used.

5. Penalties for Tampering
The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR 122.41].

6. Records Retention
Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR 503), the Permittee shall retain records of all monitoring information, including:

- all calibration and maintenance records
- all original strip chart recordings for continuous monitoring instrumentation
- copies of all reports required by this permit
- copies of all data used to complete the application for this permit

These records or copies shall be maintained for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time [40 CFR 122.41].

7. Recording Results
For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information [40 CFR 122.41]:

a. The date, exact place, and time of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

8. Inspection and Entry
The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Director), upon the presentation of credentials and other documents as may be required by law, to;

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location [40 CFR 122.41 (i)].

Section E 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.

2. Planned Changes
The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility [40 CFR 122.41 (l)]. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 122.29 (b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42 (a) (l).

c. The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

3. Anticipated Noncompliance
The Permittee shall give advance notice to the Director of any planned changes to the permitted facility or other activities that might result in noncompliance with the permit [40 CFR 122.41 (l) (2)].

4. Transfers
This permit is not transferable to any person without approval from the Director. The Director may require modification or revocation and reissuance of the permit to document the change of ownership. Any such action may incorporate other requirements as may be necessary under the CWA [40 CFR 122.41 (l) (3)].

5. Monitoring Reports
Monitoring results shall be reported at the intervals specified elsewhere in this permit [40 CFR 122.41 (l) (4)].

a. Monitoring results must be reported on a Discharge Monitoring Report (DMR) (See Part II. D. 2) or forms provided by the Director for reporting results of monitoring of sludge use or disposal practices.

b. If the Permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of the data submitted on the DMR.

6. Twenty-four Hour Reporting
   a. The Permittee shall report to the Director or the appropriate Regional Office any noncompliance that potentially threatens public health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance, and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR 122.41 (l) (6)].
   b. The Director may waive the written report on a case-by-case basis for reports under this section if the oral report has been received within 24 hours.
   c. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

7. Other Noncompliance
   The Permittee shall report all instances of noncompliance not reported under Part II. E. 5 and 6. of this permit at the time monitoring reports are submitted. The reports shall contain the information listed in Part II. E. 6. of this permit [40 CFR 122.41 (l) (7)].

8. Other Information
   Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information [40 CFR 122.41 (l) (8)].

9. Noncompliance Notification
   The Permittee shall report by telephone to either the central office or the appropriate regional office of the Division as soon as possible, but in no case more than 24 hours or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:
   a. Any occurrence at the water pollution control facility which results in the discharge of significant amounts of wastes which are abnormal in quantity or characteristic, such as the dumping of the contents of a sludge digester; the known passage of a slug of hazardous substance through the facility; or any other unusual circumstances.
   b. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate wastewater treatment such as mechanical or electrical failures of pumps, aerators, compressors, etc.
   c. Any failure of a pumping station, sewer line, or treatment facility resulting in a by-pass without treatment of all or any portion of the influent to such station or facility.

   Persons reporting such occurrences by telephone shall also file a written report within 5 days following first knowledge of the occurrence.

10. Availability of Reports
    Except for data determined to be confidential under NCGS 143-215.3 (a)(2) or Section 308 of the Federal Act, 33 USC 1318, all reports prepared in accordance with the terms shall be available for public inspection at the offices of the Division. 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 NCGS 143-215.1 (b)(2) or in Section 309 of the Federal Act.

11. Penalties for Falsification of Reports
    The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $25,000 per violation, or by imprisonment for not more than two years per violation, or by both [40 CFR 122.41].

12. Annual Performance Reports

Permittees who own or operate facilities that collect or treat municipal or domestic waste shall provide an annual report to the Permit Issuing Authority and to the users/customers served by the Permittee (NCGS 143-215.1C). The report shall summarize the performance of the collection or treatment system, as well as the extent to which the facility was compliant with applicable Federal or State laws, regulations and rules pertaining to water quality. The report shall be provided no later than sixty days after the end of the calendar or fiscal year, depending upon which annual period is used for evaluation.

The report shall be sent to:

NC DENR / Division of Water Quality / Surface Water Protection Section
ATTENTION: Central Files
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

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PART III
OTHER REQUIREMENTS

Section A. Construction

The Permittee shall not commence construction of wastewater treatment facilities, nor add to the plant's treatment capacity, nor change the treatment process(es) utilized at the treatment plant unless the Division has issued an Authorization to Construct (AtC) permit. Issuance of an AtC will not occur until Final Plans and Specifications for the proposed construction have been submitted by the Permittee and approved by the Division.

Section B. Groundwater Monitoring

The Permittee shall, upon written notice from the Director, conduct groundwater monitoring as may be required to determine the compliance of this NPDES permitted facility with the current groundwater standards.

Section C. Changes in Discharges of Toxic Substances

The Permittee shall notify the Permit Issuing Authority as soon as it knows or has reason to believe (40 CFR 122.42):

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels";

   (1) One hundred micrograms per liter (100 µg/L);

   (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   (3) Five times the maximum concentration value reported for that pollutant in the permit application.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels";

   (1) Five hundred micrograms per liter (500 µg/L);

   (2) One milligram per liter (1 mg/L) for antimony;

   (3) Ten times the maximum concentration value reported for that pollutant in the permit application.

Section D. Evaluation of Wastewater Discharge Alternatives

The Permittee shall evaluate all wastewater disposal alternatives and pursue the most environmentally sound alternative of the reasonably cost effective alternatives. If the facility is in substantial non-compliance with the terms and conditions of the NPDES permit or governing rules, regulations or laws, the Permittee shall submit a report in such form and detail as required by the Division evaluating these alternatives and a plan of action within 60 days of notification by the Division.

Section E. Facility Closure Requirements

The Permittee must notify the Division at least 90 days prior to the closure of any wastewater treatment system covered by this permit. The Division may require specific measures during deactivation of the system to prevent adverse impacts to waters of the State. This permit cannot be rescinded while any activities requiring this permit continue at the permitted facility.

PART IV
SPECIAL CONDITIONS FOR MUNICIPAL FACILITIES

Section A. Definitions

In addition to the definitions in Part II of this permit, the following definitions apply to municipal facilities:

Indirect Discharge or Industrial User
Any non-domestic source that discharges wastewater containing pollutants into a POTW regulated under section 307(b), (c) or (d) of the CWA. [40 CFR 403.3 (i) and (j)]

Interference
Inhibition or disruption of the POTW treatment processes; operations; or its sludge process, use, or disposal which causes or contributes to a violation of any requirement of the POTW's NPDES Permit or prevents sewage sludge use or disposal in compliance with specified applicable State and Federal statutes, regulations, or permits. [15A NCAC 2H.0903 (b) (13)]

Pass Through
A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or with discharges from other sources, causes a violation, including an increase in the magnitude or duration of a violation, of the POTW's NPDES permit, or of an instream water quality standard. [15A NCAC 2H.0903 (b) (23)]

Publicly Owned Treatment Works (POTW)
A treatment works as defined by Section 212 of the CWA, owned by a State or local government entity. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW. The term also means the local government entity, or municipality, as defined in section 502(4) of the CWA, which has jurisdiction over indirect discharges to and the discharges from such a treatment works. [15A NCAC 2H.0903 (b) (27)]

"Significant Industrial User" or "SIU"
An industrial user that discharges wastewater into a publicly owned treatment works and that [15A NCAC 2H.0903 (b) (34)]:

(a) discharges an average of 25,000 gallons or more per day of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewaters) or;
(b) contributes more than 5 percent of the design flow of the POTW treatment plant or more than 5 percent of the maximum allowable headworks loading of the POTW treatment plant for any pollutant of concern, or;
(c) is required to meet a national categorical pretreatment standard, or;
(d) is, regardless of Parts (a), (b), and (c) of this definition, otherwise determined by the POTW, the Division, or the EPA to have a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement or POTW's receiving stream standard, or to limit the POTW's sludge disposal options.

Section B. Publicly Owned Treatment Works (POTWs)

All POTWs are required to prevent the introduction of pollutants into the POTW which will interfere with the operation of the POTW, including interference with its use or disposal of municipal sludge, or pass through the treatment works or otherwise be incompatible with such treatment works. [40 CFR 403.2]

All POTWs must provide adequate notice to the Director of the following [40 CFR 122.42 (b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger, regardless of the means of transport, which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and
2. Any substantial change in the volume or character of pollutants being introduced by an indirect discharger as influent to that POTW at the time of issuance of the permit.

3. For purposes of this paragraph, adequate notice shall include information on (1) the quality and quantity of effluent introduced into the POTW, and (2) any anticipated impact that may result from the change of the quantity or quality of effluent to be discharged from the POTW.

Section C. Municipal Control of Pollutants from Industrial Users.

1. Effluent limitations are listed in Part I of this permit. Other pollutants attributable to inputs from industries using the municipal system may be present in the Permittee's discharge. At such time as sufficient information becomes available to establish limitations for such pollutants, this permit may be revised to specify effluent limitations for any or all of such other pollutants in accordance with best practicable technology or water quality standards.
2. Prohibited Discharges
   a. Under no circumstances shall the Permittee allow introduction of pollutants or discharges into the waste treatment system or waste collection system which cause or contribute to Pass Through or Interference as defined in 15A NCAC 2H.0900 and 40 CFR 403. [40 CFR 403.5 (a) (1)]
   b. Under no circumstances shall the Permittee allow introduction of the following wastes in the waste treatment or waste collection system [40 CFR 403.5 (b)]:
      (1) Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
      (2) Pollutants which cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges;
      (3) Solid or viscous pollutants in amounts which cause obstruction to the flow in the POTW resulting in Interference;
      (4) Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a Discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;
      (5) Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW Treatment Plant exceeds 40°C (104°F) unless the Division, upon request of the POTW, approves alternate temperature limits;
      (6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;
      (7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
      (8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.
   c. The Permittee shall investigate the source of all discharges into the POTW, including slug loads and other unusual discharges, which have the potential to adversely impact the permittee's Pretreatment Program and/or the operation of the POTW.

      The Permittee shall report such discharges into the POTW to the Director or the appropriate Regional Office. Any information shall be provided orally within 24 hours from the time the Permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the discharge, the investigation into possible sources; the period of the discharge, including exact dates and times; and if the discharge has not ceased, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance,
3. With regard to the effluent requirements listed in Part I of this permit, it may be necessary for the Permittee to supplement the requirements of the Federal Pretreatment Standards (40 CFR, Part 403) to ensure compliance by the Permittee with all applicable effluent limitations. Such actions by the Permittee may be necessary regarding some or all of the industries discharging to the municipal system.
4. The Permittee shall require any Industrial User discharging to the POTW to meet Federal Pretreatment Standards developed under Section 307(b) of the Act as amended (which includes categorical standards and

specific local limits, best management practices and narrative requirements). Prior to accepting wastewater from any Significant Industrial User, the Permittee shall either develop and submit to the Division a new Pretreatment Program or a modification of an existing Pretreatment Program, for approval as required under section D below as well as 15A NCAC 2H.0907 (a) and (b). [40 CFR 122.44 (j) (2)]

5. This permit shall be modified, or alternatively, revoked and reissued, to incorporate or modify an approved POTW Pretreatment Program or to include a compliance schedule for the development of a POTW Pretreatment Program as required under Section 402 (b) (8) of the CWA and implementing regulations or by the requirements of the approved State pretreatment program, as appropriate.

Section D. Pretreatment Programs

Under authority of sections 307 (b) and (c) and 402 (b) (8) of the CWA and implementing regulations 40 CFR 403, North Carolina General Statute 143-215.3 (14) and implementing regulations 15A NCAC 2H.0900, and in accordance with the approved pretreatment program, all provisions and regulations contained and referenced in the Pretreatment Program Submittal are an enforceable part of this permit. [40 CFR 122.44 (j) (2)]

The Permittee shall operate its approved pretreatment program in accordance with Section 402 (b) (8) of the CWA, 40 CFR 403, 15A NCAC 2H.0900, and the legal authorities, policies, procedures, and financial provisions contained in its pretreatment program submission and Division approved modifications thereof. Such operation shall include but is not limited to the implementation of the following conditions and requirements. Terms not defined in Part II or Part IV of this permit are as defined in 15A NCAC 2H.0903 and 40 CFR 403.3.

1. Sewer Use Ordinance (SUO)
   The Permittee shall maintain adequate legal authority to implement its approved pretreatment program. [15A NCAC 2H.0905 and .0906; 40 CFR 403.8 (f) (1) and 403.9 (b) (1), (2)]

2. Industrial Waste Survey (IWS)
   The permittee shall implement an IWS consisting of the survey of users of the POTW, as required by 40 CFR 403.8 (f) (2) (i-iii) and 15A NCAC 2H.0905 [also 40 CFR 122.44 (j) (1)], including identification of all industrial users that may have an impact on the POTW and the character and amount of pollutants contributed to the POTW by these industrial users and identification of those industrial users meeting the definition of SIU. The Permittee shall submit a summary of its IWS activities to the Division at least once every five years, and as required by the Division. The IWS submission shall include a summary of any investigations conducted under paragraph C.2.c. of this Part.

3. Monitoring Plan
   The Permittee shall implement a Division-approved Monitoring Plan for the collection of facility specific data to be used in a wastewater treatment plant Headworks Analysis (HWA) for the development of specific pretreatment local limits. Effluent data from the Plan shall be reported on the DMRs (as required by Part II, Section D; and Section E.5.). [15A NCAC 2H.0906 (b) (2) and .0905]

4. Headworks Analysis (HWA) and Local Limits
   The Permittee shall obtain Division approval of a HWA at least once every five years, and as required by the Division. Within 180 days of the effective date of this permit (or any subsequent permit modification) the Permittee shall submit to the Division a written technical evaluation of the need to revise local limits (i.e., an updated HWA or documentation of why one is not needed) [40 CFR 122.44]. The Permittee shall develop, in accordance with 40 CFR 403.5 (c) and 15A NCAC 2H.0909, specific Local Limits to implement the prohibitions listed in 40 CFR 403.5 (a) and (b) and 15A NCAC 2H.0909. Pursuant to 40 CFR 403.5, local limits are enforceable Pretreatment Standards as defined by 40 CFR 403.3(1).

5. Industrial User Pretreatment Permits (IUP) & Allocation Tables
   In accordance with NCGS 143-215.1, the Permittee shall issue to all significant industrial users, permits for operation of pretreatment equipment and discharge to the Permittee's treatment works. These permits shall contain limitations, sampling protocols, reporting requirements, appropriate standard and special conditions, and compliance schedules as necessary for the installation of treatment and control technologies to assure that their wastewater discharge will meet all applicable pretreatment standards and requirements. The Permittee shall maintain a current Allocation Table (AT) which summarizes the results of the HWA and the limits from

all IUPs. Permitted IUP loadings for each parameter cannot exceed the treatment capacity of the POTW as determined by the HWA. [15A NCAC 2H.0909, .0916, and .0917; 40 CFR 403.5, 403.8 (f) (1) (iii); NCGS 143-215.67 (a)]

6. Authorization to Construct (AtC)
The Permittee shall ensure that an Authorization to Construct permit (AtC) is issued to all applicable industrial users for the construction or modification of any pretreatment facility. Prior to the issuance of an AtC, the proposed pretreatment facility and treatment process must be evaluated for its capacity to comply with all Industrial User Pretreatment Permit (IUP) limitations. [15A NCAC 2H.0906 (b) (6) and .0905; NCGS 143-215.1 (a) (8)]

7. POTW Inspection & Monitoring of their IUs
The Permittee shall conduct inspection, surveillance, and monitoring activities as described in its Division approved pretreatment program in order to determine, independent of information supplied by industrial users, compliance with applicable pretreatment standards. [15A NCAC 2H .0908(d); 40 CFR 403.8(f)(2)(v)] The Permittee must:

   a. Inspect all Significant Industrial Users (SIUs) at least once per calendar year; and
   b. Sample all Significant Industrial Users (SIUs) at least twice per calendar year for all permit-limited pollutants, once during the period from January 1 through June 30 and once during the period from July 1 through December 31, except for organic compounds which shall be sampled at least once per calendar year; For the purposes of this paragraph, "organic compounds" means the types of compounds listed in 40 CFR 136.3(a), Tables IC, ID, and IF, as amended.

8. IU Self Monitoring and Reporting
The Permittee shall require all industrial users to comply with the applicable monitoring and reporting requirements outlined in the Division-approved pretreatment program, the industry's pretreatment permit, or in 15A NCAC 2H .0908. [15A NCAC 2H .0906(b)(4) and .0905; 40 CFR 403.8(f)(1)(v) and (2)(iii); 40 CFR 122.44(j)(2) and 40 CFR 403.12]

9. Enforcement Response Plan (ERP)
The Permittee shall enforce and obtain appropriate remedies for violations of all pretreatment standards promulgated pursuant to section 307(b) and (c) of the Clean Water Act (40 CFR 405 et. seq.), prohibitive discharge standards as set forth in 40 CFR 403.5 and 15A NCAC 2H .0909, and specific local limitations. All remedies, enforcement actions and other, shall be consistent with the Enforcement Response Plan (ERP) approved by the Division. [15A NCAC 2H .0906(b)(7) and .0905; 40 CFR 403.8(f)(5)]

10. Pretreatment Annual Reports (PAR)
The Permittee shall report to the Division in accordance with 15A NCAC 2H .0908. In lieu of submitting annual reports, Modified Pretreatment Programs developed under 15A NCAC 2H .0904 (b) may be required to submit a partial annual report or to meet with Division personnel periodically to discuss enforcement of pretreatment requirements and other pretreatment implementation issues.

For all other active pretreatment programs, the Permittee shall submit two copies of a Pretreatment Annual Report (PAR) describing its pretreatment activities over the previous twelve months to the Division at the following address:

NC DENR / Division of Water Quality / Surface Water Protection Section
Pretreatment, Emergency Response, and Collection Systems (PERCS) Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

These reports shall be submitted according to a schedule established by the Director and shall contain the following:

a.) Narrative

A brief discussion of reasons for, status of, and actions taken for all Significant Industrial Users (SIUs) in Significant Non-Compliance (SNC);

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b.) Pretreatment Program Summary (PPS)

A pretreatment program summary (PPS) on specific forms approved by the Division;

c.) Significant Non-Compliance Report (SNCR)

The nature of the violations and the actions taken or proposed to correct the violations on specific forms approved by the Division;

d.) Industrial Data Summary Forms (IDSF)

Monitoring data from samples collected by both the POTW and the Significant Industrial User (SIU) in SNC. These analytical results must be reported on Industrial Data Summary Forms (IDSF) or other specific format approved by the Division;

e.) Other Information

Copies of the POTW's allocation table, new or modified enforcement compliance schedules, public notice of SIUs in SNC, and any other information, upon request, which in the opinion of the Director is needed to determine compliance with the pretreatment implementation requirements of this permit;

11. Public Notice

The Permittee shall publish annually a list of Significant Industrial Users (SIUs) that were in Significant Non-Compliance (SNC) as defined in the Permittee's Division-approved Sewer Use Ordinance with applicable pretreatment requirements and standards during the previous twelve month period. This list shall be published within four months of the applicable twelve-month period. [15A NCAC 2H .0903(b)(35), .0908(b)(5) and .0905 and 40 CFR 403.8(f)(2)(viii)]

12. Record Keeping

The Permittee shall retain for a minimum of three years records of monitoring activities and results, along with support information including general records, water quality records, and records of industrial impact on the POTW. [15A NCAC 2H .0908(f); 40 CFR 403.12(o)]

13. Funding and Financial Report

The Permittee shall maintain adequate funding and staffing levels to accomplish the objectives of its approved pretreatment program. [15A NCAC 2H .0906(a) and .0905; 40 CFR 403.8(f)(3), 403.9(b)(3)]

14. Modification to Pretreatment Programs

Modifications to the approved pretreatment program including but not limited to local limits modifications, POTW monitoring of their Significant Industrial Users (SIUs), and Monitoring Plan modifications, shall be considered a permit modification and shall be governed by 40 CFR 403.18, 15 NCAC 2H .0114 and 15A NCAC 2H .0907.

Progress Energy

December 13, 2012

File No.: 12520-R

Ms. Bethany A. Georgoulias
Stormwater Permitting Unit
North Carolina Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

Subject: Carolina Power & Light Co. d/b/a Progress Energy Carolinas, Inc. (Progress Energy), a Subsidiary of Duke Energy Inc.
Cape Fear Steam Electric Plant (NPDES NC0003433/NCS000550 draft)
NPDES Storm Water Permit Application Withdrawal

Dear Ms. Georgoulias:

Progress Energy is hereby withdrawing the Cape Fear Steam Electric Plant NPDES Form 2F Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity submitted to Mr. Tom Belnick on December 2, 2010. This power plant has ceased all categorical industrial activity and no longer requires authorization to discharge storm water.

The submitted Form 2F application requested authorization to discharge storm water from four outfalls: SW-001, SW-002, SW-003, and SW-008. As acknowledged in the draft individual storm water permit, there are no discharges from Outfalls SW-001 and SW-008 (inactive ash basins) for events less than a 25 year/24 hour storm, thus, these outfalls are not subject to storm water permitting. No more coal is being delivered to the power plant thus authorization for the drainage area along the rail spur, which discharges via Outfall SW-002, is no longer required. A de minims amount of coal remains along this short spur but this insignificant amount of material is not expected to cause any environmental impact. The ash sluice line crossing the swell at Outfall SW-003 is no longer in use. The line was rinsed and portions of the piping were removed on November 8, 2012, the last categorical activity to be ceased at the power plant.

Progress Energy Carolinas, Inc.
Cape Fear Steam Plant
500 CP&L Road
Moncure, NC 27559

Because no categorical industrial activity is currently conducted at the Cape Fear Steam Electric Plant, no authorization for the discharge of storm water associated with industrial activity is required. Therefore, Progress Energy believes that the current NPDES storm water permitting requirements are no longer applicable. Please respond with concurrence of our understanding by either a letter to me at the power plant address or an email to Ms. Robin Bryson, Environmental Specialist in our corporate office, at robin.bryson@pgnmail.com.

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Sincerely,

Danny Wimberly

Danny Wimberly
Acting Plant Manager
Cape Fear Steam Electric Plant

DW/rb

cc: Larry Baxley
Henry Gales
John Velte

bc: Robin Bryson

From: Bryson, Robin R.
Sent: Wednesday, August 14, 2013 3:13 PM
To: Baxley, Larry
Subject: Cape Fear Ash Ponds

I contacted Mitch Hayes (RRO) to discuss the 1978 ash pond issue. He said that temporary piping from the ash pond to the discharge outfall will be fine. He understood that this action is part of a repair plan to fix the existing standpipe. All NPDES permit requirements would still be in place, i.e., flow and semiannual chemistry sampling.

I suggest you put a copy of this email in your files ☺.

Robin R. Bryson
Sr. Environmental Specialist
Environmental Services, NPDES Compliance
External 919-546-3962
Internal 8-770-3962

Document ID: 0.7.2370.835053

From: Baxley, Larry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=larry.baxley>
To: Gales III, Henry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=henry.gales>
Cc: Wimberly, Danny </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=danny.wimberly>; Graham, Macey </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=macey.graham>; Cole, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=dennis.cole>
Bcc:
Subject: RE: Cape Fear Ash Ponds
Date: Thu Aug 15 2013 08:21:30 EDT
Attachments: image001.png

Pumping of the 85 is fine. The discharge pipe from the pump can be placed in the vault at the outside toe of the dike and continue the normal effluent flow path. I have discussed this with Danny and Robin.

lcb

From: Gales III, Henry
Sent: Thursday, August 15, 2013 8:18 AM
To: Baxley, Larry
Subject: RE: Cape Fear Ash Ponds

What does this mean for the 85 pond? Pumping ok or not?

From: Baxley, Larry
Sent: Thursday, August 15, 2013 8:16 AM
To: Wimberly, Danny; Graham, Macey; Gales III, Henry
Subject: FW: Cape Fear Ash Ponds

From: Bryson, Robin R.
Sent: Wednesday, August 14, 2013 3:13 PM
To: Baxley, Larry
Subject: Cape Fear Ash Ponds

I contacted Mitch Hayes (RRO) to discuss the 1978 ash pond issue. He said that temporary piping from the ash pond to the discharge outfall will be fine. He understood that this action is part of a repair plan to fix the existing standpipe. All NPDES permit requirements would still be in place, i.e., flow and semiannual chemistry sampling.

I suggest you put a copy of this email in your files J.

Robin R. Bryson
Sr. Environmental Specialist
Environmental Services, NPDES Compliance

External 919-546-3962
Internal 8-770-3962

Document ID: 0 7 2370 835081

From: Brown, Kevin </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=kevind.brown>
To: Cole, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=dennis.cole>
Cc: Wimberly, Danny </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=danny.wimberly>; Baxley, Larry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=larry.baxley>; Ashby, Tony </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=tony.ashby>
Bcc:
Subject: RE: De-Watering
Date: Fri Aug 16 2013 13:03:15 EDT
Attachments:

Unfortunately I have to be in Kannapolis Tuesday.

I spoke briefly with John Toepfer regarding this effort and he indicated that dewatering the pond would benefit us as we go for closure down the road. He also indicated that bringing the water level down in both the 78 and 85 ponds would be good for us.

I think the key person with regards to where we set the pump discharge would be Robin Bryson. I'm going to summarize your previous emails and send them to John and Robin so they can comment.

From: Cole, Dennis
Sent: Friday, August 16, 2013 6:29 AM
To: Brown, Kevin
Cc: Wimberly, Danny; Baxley, Larry; Ashby, Tony
Subject: RE: De-Watering

My plan would be to set the suction line on a flotation device in the pond (a lot of water before we will need to dig) and secure the discharge line into the pipe on the outside of the dike. I like to stay away from the risers as much as possible due to age and condition. We have some prep work and discussion that I plan to have before we actually start pumping. I want to make sure we have clear agreement from Environmental and Dam Safety that we are doing the right things before we move water. I plan to go early Tuesday morning if possible to CF to look at everything if you can join me.

Dennis Cole
Fuel Handling Supervisor
Lee Plant
919 580 3938
Cell-919 920 8361

From: Brown, Kevin
Sent: Thursday, August 15, 2013 8:50 PM
To: Cole, Dennis
Cc: Wimberly, Danny; Baxley, Larry
Subject: RE: De-Watering

Just to make sure I'm visualizing this correctly. Are we going to set up the pump on the dike with the suction in the basin and the discharge in the riser pipe?

My only concern would be when we approach the bottom of the water and possibly pump ash material into the canal. Is there a fabric that we could use on either end when we get to that point? Since we've got days before we could reach that due to our pumping rate, we have some time.

Thanks for working on this Dennis.

From: Cole, Dennis
Sent: Thursday, August 15, 2013 9:10 AM
To: Brown, Kevin
Cc: Wimberly, Danny; Baxley, Larry
Subject: De-Watering

Kevin, as discussed last week, we plan to start de-watering at CF plant next week. I will write a simple work plan to present to you, Larry Baxley and Danny prior to beginning.
1- to remain in compliance with current permitting, we will pump from the current weir location of the clear pond into the concrete drain discharge culvert where we are currently discharging
2- We will place a staff gauge to ensure level drops no more than one foot per day
3- We will try to ensure hoses are connected to minimize leakage and do not cause damage to dikes.

Is there any other recommendations or concerns that you are aware of.

Dennis Cole
Fuel Handling Supervisor
Lee Plant
919 580 3938
Cell-919 920 8361

Document ID: 0 7 2055 1889685

From: Cole, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=dennis.cole>

To: Baxley, Larry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=larry.baxley>; Wimberly, Danny </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=danny.wimberly>; Harris, Randall Scott </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=rsharri (365805)86d>; Earp, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=dennis.earp>

Cc: Zarzar, Issa </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=issa.zarzar>; Ashby, Tony </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=tony.ashby>; Graham, Macey </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=macey.graham>

Bcc:

Subject:

Date: Mon Aug 19 2013 16:31:22 EDT

Attachments: Cape Fear Dewatering JHA.docx
CF Ash Pond dewatering Work Plan.docx

Attached are both the JHA and the Work Plan for beginning to dewater at the Cape Fear Ash (Clear) Pond. I am sure we will add to it as we go. Please let me know if there are items you see already that need to be included.

Dennis Cole

Fuel Handling Supervisor
Lee Plant

919 580 3938

Cell-919 920 8361

Document ID: 0:7:2055:1889685-000001
Owner: Cole, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt) /cn=recipients/cn=dennis.cole>
Filename: Cape Fear Dewatering JHA.docx
Last Modified: Mon Aug 19 16:31:22 EDT 2013

Power Operations Group
JHA (Job Hazard Analysis) Form

Project/Task/Activity Title: Ash Pond Dewatering Activities	**Unit/System/Equipment Cape Fear Clear Pond (Ash polishing pond)**	**Date: 8/16/2013**	**( ) Revised (x) New**
Company/Organization: Duke Energy	**Analyzed by: Dennis Cole**	**Supervisor review/approval: Dennis Cole**	**Safety review/approval:**
Plant/Location: Cape Fear/Moncure	**Comments: Job will consist of staging pump and equipment for the purpose of lowering the water level in the ash pond polishing pond to assist with natural dewatering. This scope may also include operating the excavator. Great caution should be taken when operating around dikes and slopes.**		

DETAILED PROJECT, TASK, ACTIVITY DESCRIPTION	HAZARD DESCRIPTION (Review types of hazards. Anticipate error traps and foresee consequences.)	CONTROLS OR PROTECTIVE MEASURES (Evaluate defenses. Consider engineering, administrative controls and PPE)	RECOMMENDED HPI TOOLS
1. Communication/Assessment	Violation of Safety and Environmental regulations Lack of site Familiarity	Notify Plant management and environmental specialist upon arrival and prior to beginning any work. Provide them a verbal description of planned work activities Walk/Drive around area to identify safety or environmental risk Authorization to perform from Dam Safety Authorization to perform from Environmental	Procedure Use QV&V
2. Selecting PPE	Failure to anticipate the risk	Wear proper shoes for dikes Take precaution against the heat Take precaution against the insects, snakes & ticks Check for dust in the area (spoggles if needed) Spray for ticks, mosquitoes prior to starting	STAR Observation
3. Positioning Equipment on dike	Excavator too close to edge of slope Pump on edge of dike Hoses not secured Hoses leaking	Allow safe distance from the dike edge Use spotter if available Chock wheels on pump Secure hoses to prevent the risk of whipping personnel or dike	STAR Procedure Use

4. Fabricating and installing a staff gauge in Polishing Pond	Working from a boat Falling from the boat Dropping tools	Life Vest are required Throw Buoy should be on location Do not exceed weight limit in boat Use tie off for tools Have a means of communication with someone at plant while in the boat Someone should be present on the dike while employees are in the water.	STAR OV&V Procedure Use
5. Pump Set up	Insecure hose Slippery areas Heavy lifting and body position Pump rolls/moves Pinch points	Verify good connections and secure with safety latch Watch ground conditions Use proper body position and use "buddy system" Wear gloves when possible	STAR Clear Communication
6. Pump Operation	Moving parts Noise Water discharge Slips/trips	Avoid standing or working near the moving parts Avoid loose clothing and comply with no jewelry policy Avoid a body position that places you in a unsafe position should a hose come loose Use Caution when working on slopes	STAR
Pump Daily Shutdown	Slippery areas Tripping Hazards Oil Leaks Unsecured Equipment	Barricade Area Clearly identify hose and equipment that pose a tripping Hazard Place a barrier underneath the pump Chock wheels and ensure equipment cannot roll Make sure hose is not left in a siphon possible position	STAR
7.			

8.			

Document ID: 0.7.2055.1889685-000002
Owner: Cole, Dennis </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt) /cn=recipients/cn=dennis.cole>
Filename: CF Ash Pond dewatering Work Plan.docx
Last Modified: Mon Aug 19 16:31:22 EDT 2013

Work Plan /Dewatering Cape Fear (Clearing) Ash Pond

Goal 1:	Measures of Effectiveness:
Lower the water level in the clear pond to promote and speed natural dewatering	Pond water level drops one foot per day

Objectives	Activities Planned to Meet Objectives	Detail Comments
Perform all task Safely	Notify Plant management and site environmental specialist on arrival and brief as needed. Perform Safety Orientation with all employees Review JHA Conduct Pre Job Briefing Wear all PPE Assess area where work will be performed Verify water level. Limit Cell Phone Use	Danny Wimberly/Macy Graham/Larry Baxley Equipment Operation only. Minimum PPE= Hard Hat, Safety Glasses, Safety Shoes, Gloves if working with hands, Not allowed when driving. Exit work area when phones are in use. Use caution to ensure water is contained inside of approved area
Pre Checks	Water level will be read and recorded daily. Water level must not be lowered more than one foot per day. Check equipment oil and fuel **Ensure Dam Safety approval has been acquired** **Ensure Environmental approval has been received.** Check to ensure all pipe joints are tight and secured	Verify Staff Gauge Level Check oil levels in pump and any mobile equipment in use. Scott Harris Larry Baxley No uncontained leaks
Fabricate and install a staff gauge for tracking daily pumping progress.	Construct a simple staff gauge Use plant boat to install Install close to weir location near pumping activity. Should be visible from pump operation.	Foot and inches Two men present Life jackets required Throw -Buoy should be present

	Level should not exceed one foot per day-(24 hours)	**Record and document start and finish reading daily.**
Positioning equipment	Position pump near edge of dike (Chock Wheels) Suction line should be near but not on or in the discharge pipe within the weir. Suction Line should be on a float to prevent sediment from being pulled in. Discharge Line is to be placed inside of the drain on the outside of the dike. Grating should be removed and the pipe secured.	All connections should be checked, wrapped and taped or a barrier placed beneath the connections if necessary to prevent spillage.
Staging Material	Have oil s spill kit available at pump site.	**Pads and boom**
Securing the work area	Barricade the area	**Identify/establish risk and traffic patterns to ensure safety**
Pumping down water	Pump down water using portable pump. Water should be pumped directly into the current discharge piping. Run discharge hose into the piping. Allow discharge water to follow normal path.	All discharge activities should simulate normal discharge and not exceed more than one foot of drop in 24 hours.
Monitoring	Pump Operator should stay with the pump the first half day to identify the risk level of leaving unattended one hour intervals. If no issues are identified, pump can be left and monitored on a one hour revisit.	Check for leaks Check water level Check for cloudy discharge-STOP if water becomes stained or appears to contain sediment. Check pump fuel level and oil pressure.
Condition Change	Look for cloudy discharge or sediment in outflow.	Check suction to make sure it is floating and hasn't fallen to the bottom. TSS will still need to be monitored.
Shutdown Activities @ end of day	Document the water level at end of day. Position Equipment in safe area and Shut down properly Leave area clean and ready for next day	Swimming pools or plastic/canvas barrier should be underneath all equipment not located in containment.

	Barriers will be required under all equipment not located in a containment when shutdown for the day.		

Document ID: 0.7.2055.1889695

From: Harris, Randall Scott
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=rsharri (365805)86d>

To: Cole, Dennis </o=dukeenergy/ou=exchange
administrative group
(fydibohf23spdlt)/cn=recipients/cn=dennis.cole>

Cc: Baxley, Larry
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=larry.baxley>; Wimberly,
Danny </o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=danny.wimberly>; Earp,
Dennis </o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=dennis.earp>; Zarzar, Issa
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=issa.zarzar>; Ashby, Tony
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=tony.ashby>; Graham, Macey
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=macey.graham>; Taylor, Henry
</o=dukeenergy/ou=first administrative
group/cn=recipients/cn=bhtaylo>; Russell, Tim
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=tmrusse>; Toepfer, John
</o=dukeenergy/ou=exchange administrative group
(fydibohf23spdlt)/cn=recipients/cn=john.toepfer>

Bcc:

Subject: Cape Fear - Ash Pond Dewatering

Date: Tue Aug 20 2013 07:24:02 EDT

Attachments: Cape Fear Dewatering JHA.docx
CF Ash Pond dewatering Work Plan.docx

Dennis,

I will have Henry Taylor forward this information to Geosyntec to get their thoughts on the dewatering plan, but I do not see anything that really stands out based on a quick review. I am also forwarding this information to John Toepfer in the Environmental Group, and is our Dam Safety point of contact with the state, to make sure he is OK with beginning this work.

Do you have a timeframe when you would like to begin the dewatering? When we spoke on the phone you had indicated that it would probably be later towards the end of the year. It would also be a good idea to indicate which pond is being dewatered. I assume you are talking about the 1985 Ash Pond.

Based on the field work recently performed by Geosyntec, it would also be a good idea to begin dewatering activities in the 1978 Pond. My suggestion is to start with the 1985 Pond, since it has the most water, and see how the plan works. You can then move to the 1978 Pond and begin dewatering there.

I will contact you later regarding any additional comments I have on the dewatering plan you provided.

Thanks,

R. Scott Harris, P.E.

Senior Geotechnical Engineer

Central Engineering & Services

Duke Energy

Office: 980.373.9308

Mobile: 704.560.6012

From: Cole, Dennis
Sent: Monday, August 19, 2013 4:31 PM
To: Baxley, Larry; Wimberly, Danny; Harris, Randall Scott; Earp, Dennis
Cc: Zarzar, Issa; Ashby, Tony; Graham, Macey
Subject:

Attached are both the JHA and the Work Plan for beginning to dewater at the Cape Fear Ash (Clear) Pond. I am sure we will add to it as we go. Please let me know if there are items you see already that need to be included.

Dennis Cole

Fuel Handling Supervisor
Lee Plant

919 580 3938

Cell-919 920 8361

Document ID: 0 7 2055 1889695-000001

Owner: Harris, Randall Scott </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=rsharri (365805)86d>

Filename: Cape Fear Dewatering JHA.docx

Last Modified: Tue Aug 20 07:24:02 EDT 2013

Power Operations Group
JHA (Job Hazard Analysis) Form

Project/Task/Activity Title: Ash Pond Dewatering Activities	**Unit/System/Equipment Cape Fear Clear Pond (Ash polishing pond)**	**Date: 8/16/2013**	**( ) Revised (x) New**
Company/Organization: Duke Energy	**Analyzed by: Dennis Cole**	**Supervisor review/approval: Dennis Cole**	**Safety review/approval:**
Plant/Location: Cape Fear/Moncure	**Comments: Job will consist of staging pump and equipment for the purpose of lowering the water level in the ash pond polishing pond to assist with natural dewatering. This scope may also include operating the excavator. Great caution should be taken when operating around dikes and slopes.**		

DETAILED PROJECT, TASK, ACTIVITY DESCRIPTION	HAZARD DESCRIPTION (Review types of hazards. Anticipate error traps and foresee consequences.)	CONTROLS OR PROTECTIVE MEASURES (Evaluate defenses. Consider engineering, administrative controls and PPE)	RECOMMENDED HPI TOOLS
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3. Positioning Equipment on dike	Excavator too close to edge of slope Pump on edge of dike Hoses not secured Hoses leaking	Allow safe distance from the dike edge Use spotter if available Chock wheels on pump Secure hoses to prevent the risk of whipping personnel or dike	STAR Procedure Use

EPARFI03825

4. Fabricating and installing a staff gauge in Polishing Pond	Working from a boat Falling from the boat Dropping tools	Life Vest are required Throw Buoy should be on location Do not exceed weight limit in boat Use tie off for tools Have a means of communication with someone at plant while in the boat Someone should be present on the dike while employees are in the water.	STAR OV&V Procedure Use
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Pump Daily Shutdown	Slippery areas Tripping Hazards Oil Leaks Unsecured Equipment	Barricade Area Clearly identify hose and equipment that pose a tripping Hazard Place a barrier underneath the pump Chock wheels and ensure equipment cannot roll Make sure hose is not left in a siphon possible position	STAR
7.			

EPARFI03826

8.			

EPARFI03827

Document ID: 0.7.2055.1889695-000002

Owner: Harris, Randall Scott </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=rsharri (365805)86d>

Filename: CF Ash Pond dewatering Work Plan.docx

Last Modified: Tue Aug 20 07:24:02 EDT 2013

Work Plan /Dewatering Cape Fear (Clearing) Ash Pond

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	Level should not exceed one foot per day-(24 hours)	Record and document start and finish reading daily.	
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Securing the work area	Barricade the area	**Identify/establish risk and traffic patterns to ensure safety**	
Pumping down water	Pump down water using portable pump. Water should be pumped directly into the current discharge piping. Run discharge hose into the piping. Allow discharge water to follow normal path.	All discharge activities should simulate normal discharge and not exceed more than one foot of drop in 24 hours.	
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Condition Change	Look for cloudy discharge or sediment in outflow.	Check suction to make sure it is floating and hasn't fallen to the bottom. TSS will still need to be monitored.	
Shutdown Activities @ end of day	Document the water level at end of day. Position Equipment in safe area and Shut down properly Leave area clean and ready for next day	Swimming pools or plastic/canvas barrier should be underneath all equipment not located in containment.	

	Barriers will be required under all equipment not located in a containment when shutdown for the day.		

Document ID: 0.7.2331.1303930

From: Bryson, Robin R. </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=robin.bryson>
To: Brown, Kevin </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=kevind.brown>; Toepfer, John </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=john.toepfer>
Cc: Baxley, Larry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=larry.baxley>
Bcc:
Subject: RE: Cape Fear ash pond
Date: Wed Aug 21 2013 10:06:20 EDT
Attachments:

I've been in discussions about this issue with various people, almost one a time. Let's do a quick phone call conference so everybody can hear the same thing and voice concerns at the same time.

I'm open this week except Friday between 10:30-12:00 and next week on Wednesday morning.

——Original Message——
From: Brown, Kevin
Sent: Wednesday, August 21, 2013 9:58 AM
To: Bryson, Robin R.; Toepfer, John
Subject: Cape Fear ash pond

We are looking to pump down the 85 and 78 ash ponds at Cape Fear. We are going to stay below the 1 ft/day maximum withdrawal rate. Dennis's plan is to discharge into the concrete structure at the toe of the 85 pond. I do not know about the 78 pond. Are there any NPDES or other issues with this? The circ pumps will maintain flow during this.

Thanks
Kevin

Sent with Good (www.good.com)

Document ID: 0 7 233 1 1304640

From: Bryson, Robin R. </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=robin.bryson>
To: Brown, Kevin </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=kevind.brown>; Toepfer, John </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=john.toepfer>
Cc:
Bcc:
Subject: RE: Cape Fear ash pond
Date: Fri Aug 23 2013 07:29:24 EDT
Attachments:

I'm going to Cape Fear on Monday morning to discuss this project with Larry, Dennis, etc. You?

-----Original Message-----
From: Brown, Kevin
Sent: Wednesday, August 21, 2013 9:58 AM
To: Bryson, Robin R.; Toepfer, John
Subject: Cape Fear ash pond

We are looking to pump down the 85 and 78 ash ponds at Cape Fear. We are going to stay below the 1 ft/day maximum withdrawal rate. Dennis's plan is to discharge into the concrete structure at the toe of the 85 pond. I do not know about the 78 pond. Are there any NPDES or other issues with this? The circ pumps will maintain flow during this.

Thanks
Kevin

Sent with Good (www.good.com)

June 24, 2013

Mr. Randall S. Harris
Duke Energy
EC11J / PO Box 1006
Charlotte, North Carolina 28201-1006

Subject: **REPORT OF 2013 LIMITED (ANNUAL) FIELD INSPECTION ASH POND DIKES AND BUCKHORN DAM DUKE ENERGY PROGRESS - CAPE FEAR PLANT CHATHAM COUNTY, NORTH CAROLINA AMEC PROJECT NO. 6468-13-1042 (06)**

Dear Mr. Harris:

On March 27, 2013, Mr. Scott Auger of AMEC Environment & Infrastructure, Inc. (AMEC) visited the Cape Fear Plant to perform a limited annual field inspection of the Ash Pond Dikes and the Buckhorn Dam. This letter report summarizes the observations during the current inspection and provides recommendations for any follow-up actions. Photograph location plan drawings and representative photographs for conditions observed are included in Appendix A.

Effective January 1, 2010, regulatory authority for dams at Progress Energy's fossil power plants in North Carolina was placed under the jurisdiction of the North Carolina Department of Environment and Natural Resources, Division of Energy, Mineral & Land Resources, Land Quality Section, Dams Program (NCDENR Dams Program). The dams and dikes covered by this inspection report are included in the NCDENR Dams Program inventory as follows:

State ID No.	State Dam Name	State Hazard Potential Description
CHATH-022	Buckhorn Dam	Low
CHATH-075	Cape Fear 1956 Ash Pond (inactive)	High
CHATH-076	Cape Fear 1963 Ash Pond (inactive	High
CHATH-077	Cape Fear 1970 Ash Pond (Inactive)	High
CHATH-078	Cape Fear 1978 Ash Pond	High
CHATH-079	Cape Fear 1985 Ash Pond	High

Inspection activities were coordinated at the plant by Mr. Larry Baxley for Duke Energy. Mr. Randall S. Harris of the Duke engineering staff participated in the inspection. Mr. Macey Graham and Mr. Henry Gales from the plant maintenance staff also participated in the inspection. The site visit started with an orientation discussion and pre-job safety briefing provided by Mr. Baxley. The field inspection activities generally included review of available records and a driving/walking reconnaissance of the Ash Pond dikes and the east abutment area of the Buckhorn dam. The weather condition during the site visit was

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generally clear and cool. There was no significant rainfall within 24 hours prior to the inspection visit.

The last 5-year independent consultant inspection was performed by AMEC in 2011 and an annual independent consultant inspection was performed in 2012.

SUMMARY

The observations from the current inspection are generally consistent with the previous (2012) independent consultant annual inspection and the 2011 5-year Independent Consultant Inspection report. The status for addressing previous recommendations dating back to the 2011 5-year Independent Consultant Inspection report is included under the field inspection results.

The greatest overall site condition change is that the plant is now permanently retired from service. We understand that plant decommissioning will include the demolition and removal of most plant structures. Duke Energy indicated that the permanent closure of the ash pond areas will be included with plant decommissioning. The need for follow-up maintenance or repair work to address the conditions noted for this inspection should be evaluated by Duke Energy in conjunction with planning for plant decommissioning.

The inspection results and any new recommendations for this report are summarized as follows:

1956 Ash Pond

There was no indication of recent slide activity or instability of the dike observed for the 1956 Ash Pond dikes. Consistent with past inspections, the dike crest is uneven in many locations and overgrown with trees and brush. The exterior slopes for the enclosure dikes on the east, north, and west sides are generally uneven and overgrown with trees and brush. The interior of the pond was not impounding water at the time of the inspection and is overgrown with trees and brush. The existing discharge outlet structure(s) within the pond are covered by plates and are believed to be inoperable.

There are no new recommendations for follow-up action from the current inspection.

1963, 1970, and 1978 Ash Ponds

These Ash Pond areas continue to be inactive with the exception of plant stormwater inflow for the 1978 Ash Pond. The dikes generally appear to be stable and in satisfactory condition. Consistent with the 2012 inspection, the skimmer for the discharge outlet structure in the 1978 Ash Pond appeared to be damaged and is in need of repair. It should be noted that the water level within the 1978 Ash Pond is below the overflow level for the discharge riser pipe; however, we did observe a trickle of flow at the discharge outlet pipe indicating some minor leakage. We also observed an area of interior slope damage from "beaching" type erosion at the south end of the 1978 Ash Pond dike. This area of slope damage is associated with undermining along the toe of slope in this area from wave action. The slope damage should be repaired as a routine maintenance

activity consistent with previous recommendation AP-2011-7. We do not believe the area of interior slope damage represents an immediate concern for dike stability or integrity.

1985 Ash Pond

This 1985 Ash Pond and associated interior ash storage area is no longer actively used for ash disposal operations now that the plant is permanently retired from service. Ash material has been stockpiled within the interior ash storage area in the general configuration of the ash restacking plan. The Ash Pond dikes and appurtenant discharge outlet structure generally appear to be in satisfactory condition and are properly maintained.

There are no new recommendations for follow-up action from the current inspection.

Buckhorn Dam

The concrete gravity spillway section of the dam had overflow at the time of the inspection. The spillway section of the dam had an accumulation of debris along the crest consistent with previous inspections. The spillway dam generally appeared to be intact with no apparent indications of significant damage or breaching. The appurtenant east abutment structure appeared to be structurally sound and in satisfactory condition. The west abutment on the west side was not visited for the current inspection, but was observed to be in good condition from the 2011 inspection.

The earth embankment section on the east side of the spillway generally appeared to be stable. Consistent with observations from past inspections, the embankment slopes on the upstream side are steep, uneven and heavily overgrown with trees and brush. The crest of the earth embankment section is rutted but generally appeared to be stable.

There were no observations of significant change in the condition of cracks or open joints for the concrete abutment compared with previous reports. In addition, there were no observations of significant change in the condition of cracks for ashlar paving on the crest and slopes.

During the current inspection, we observed that construction was in progress near the dam for installation of a large diameter pipeline associated with the Western Wake Regional Wastewater Effluent Outfall Pipeline Project. The new outfall for the pipeline will be constructed downstream from the dam. We do not have sufficient information to evaluate whether construction activities such as blasting could have a potential impact on the dam. We recommend that plant personnel monitor the construction work during routine inspections for potential impact on the dam.

RECORDS

During 2009, temporary piezometers were installed to support review of dike stability for the 1978 and 1985 Ash Pond and 1978 Ash Pond. The piezometer water level readings are not actively monitored by the plant or by AMEC during inspections. We have

previously recommended that the temporary piezometers be abandoned by a well driller licensed in North Carolina.

There are currently no other active piezometers or other monitoring instrumentation for the Ash Pond dikes and Buckhorn Dam.

Mr. Baxley reported that routine inspections are still performed by plant personnel for the 1978 Ash Pond, 1985 Ash Pond, and Buckhorn Dam in accordance with Progress Energy Procedure No. EVC-CFRC-00021, Rev. 1, dated 09/09, Cape Fear Plant Dam and Dike Inspection. Routine inspections are performed on a monthly basis with written reports maintained consistent with the current procedure.

We understand that routine plant inspections are also performed for the inactive 1956, 1963 and 1970 Ash Ponds as part of the NPDES permit compliance review at least quarterly.

Mr. Harris advised that Duke Energy is currently reviewing procedures for performing routine inspection and maintenance of fossil plant dams and dikes.

ACTIVITIES SINCE 2012 INSPECTION

Plant personnel continue to provide routine maintenance cutting to control brush and tree growth on the slopes for the 1978 and 1985 Ash Pond dikes, and on the east dike slopes for the 1963/1970 Ash Pond Area. Brush and tree growth has also been cut along the upper portion of the west dike slopes for the 1963/1970 ash pond area. The dike slopes for the 1956 Ash Pond have not been included in the Ash Pond maintenance cutting. There has been no recent maintenance cutting for vegetation for the embankment section of the Buckhorn Dam.

1956 ASH POND FIELD OBSERVATIONS

Photograph Location Plan Drawing No. AP1 and representative photographs for observations associated with 1956 Ash Pond are provided in Appendix A. The photographs are organized as follows:

- Photographs 1 and 2 –West dike.
- Photographs 3 and 4 – North dike.
- Photographs 5 to 7 – East dike.
- Photograph 8 – Plant flood control levee on south side of pond area.
- Photograph 9 – Risers for discharge outlet structure.

The pond area is formed by dikes along the north, west and east sides, and the plant flood protection levee along the south side. For orientation purposes in this report, the dike section adjacent to the Haw River is identified as the north dike.

A walking inspection was performed around the entire length of the dike crest starting at the southeast corner near the coal yard area. The dike crest is uneven in many locations and overgrown with trees and brush. The dike crest is especially uneven and narrow at

the southwest end of the Ash Pond area. (Reference Photographs 1 - 7 for representative views of dike crest)

The exterior slopes along the north and west sides of the ash pond area are generally uneven and overgrown with trees and brush (Photographs 1 – 4). The exterior slope for the east dike generally appeared to have a more regular configuration (Photographs 5 and 6). Consistent with previous reports, old slumps and scarps were observed toward the west end of the north dike (Photograph 2). There was no indication of recent slide activity or instability of the dike in this area. The exterior slope at the northeast corner appears to have fairly deep surface erosion features possibly associated with active animal trails. Ash fill adjacent to the west and north dikes is near the crest of the dike which could potentially allow storm water to be released in this area (Photograph 4).

During 2012, plant personnel completed clearing and re-grading the exterior slope of the flood protection levee adjacent to the coal pile area. The re-graded dike slopes have been seeded and mulched in this area for erosion protection (Photograph 8).

The toe of the dike was not checked during the current inspection.

The interior of the 1956 Ash Pond is overgrown with trees and brush. There was no standing water observed at the time of the inspection. The ash fill is essentially level with the dike crest on the west side (Photograph 3), and slopes down toward the south and east side toward the discharge outlet risers (Photograph 7).

The original discharge outlet for the 1956 Ash Pond is located near southeast corner and consists of three riser pipes. Steel plates are currently provided to cover the top of the riser pipes (Photograph 9). The riser pipes have been previously described as being 30 inches in diameter, and the discharge pipe was reported to be about 2 feet in diameter. The discharge pipe was previously reported as being mostly filled with debris and soil. The outlet pipe was not observed during the current inspection. The capability of the Ash Pond to contain an appropriate design storm without overtopping is unknown at this time.

There are no previous recommendations for remedial action or repair from the 2012 Independent Consultant Inspection Report.

1963 AND 1970 ASH POND DIKE FIELD OBSERVATIONS

Photograph Location Plan Drawing No. AP2 and representative photographs for observations associated with 1963 and 1970 Ash Pond are provided in Appendix A. The photographs are organized as follows:

- Photographs 10 to 17 – West dike.
- Photographs 18 to 22 - East dike.
- Photograph 23 - Area of standing water at south end of pond area.
- Photograph 24 and 25 – Discharge outlet structure.

The 1963 and 1970 Ash Pond areas continue to be inactive with the only inflow provided by direct rainfall. The interior portion of the Ash Pond is overgrown with trees and brush.

The dike crest generally appeared to be stable with no indications of significant settlement or displacement. A few isolated ruts were observed along the west dike adjacent to the river. Also, the dike driving path near the discharge outlet structure at the south end of the pond area is soft and rutted from vehicle traffic consistent with past inspections. Photographs 10, 14, 16, 18, 19, and 21 provide representative views of the dike crest.

The exterior slopes on the west side adjacent to the river appeared to be uneven and overgrown with trees and brush; however, plant personnel have cut brush and small trees along the upper portion of the slopes. There were no new indications of significant erosion damage or apparent slope instability observed. The toe of the slope was not walked during the current inspection except as noted (Photographs 10, 14, and 16).

In February, 2012, an area of apparent seepage flow was observed at the toe of the west dike for the inactive 1963 Ash Pond. As requested by Progress Energy, AMEC visited the site and investigated the seepage condition as described in the AMEC report dated February 22, 2012. The AMEC report indicated the presence of silty fines suggesting that some soil particles have been washed out over time by continuing seepage. The AMEC report concludes that given the apparent age of the seepage and presence of clear flow, the condition is interpreted as a non-emergency situation. Placement of a weir plate for monitoring of the flow was recommended as a follow-up action; however, the weir plate has not been installed. During the current inspection, the seepage flow appeared to be clear and generally consistent with the description previously reported (Photographs 12 and 13).

The dike crest and exterior slope at the south end of the pond area was lowered in the 1970's. Trees and brush are present on the upper portion of the slope. The lower portion of the slope is clear of vegetation and susceptible to surface erosion (Photograph 18)

The exterior slope on the east side of the pond area is generally clear of vegetation and in good condition (Photographs 19 and 21).

The level of ash fill is close to the dike crest at the north end of the pond area and generally slopes toward the discharge outlet structure at the south end of the pond. The interior slopes have been cleared of brush and trees for the east and west dikes. The interior slopes appear to be stable and in satisfactory condition (Photographs 11, 15, 17, 20, and 22).

There was no standing water observed in the interior portion of the Ash Pond with the exception of the southeast corner (Photograph 23).

The discharge structure for the entire ash pond area consists of a steel box and outlet pipe. The discharge structure appeared to be in satisfactory condition and capable of releasing flow to the adjacent river. Small trees and brush previously observed to be growing in the approach channel have been cut and removed. A steel screen cover has been placed on top of the riser box to keep out debris. There was no standing water observed around or within the discharge structure. There was also no seepage or flow observed at the end of discharge pipe at the river. The discharge end of the pipe was clear of obstructions and the slope appeared to be in satisfactory condition with no

significant erosion. Plant personnel could not recall when the discharge outlet structure last released flow (Photographs 24 and 25).

The status for addressing the previous recommendations is summarized as follows:

Ref No.	Recommendations	Recommended Implementation Schedule	Current Status
AP-2012-1	1963 Ash Pond - Follow-up is recommended for installation of a weir plate to provide a more reliable method for assessment of the seepage condition at toe of the 1963 Ash Pond.	Review with ash pond closure planning	Monitoring weir has not been installed.
AP-2011-1	1963 & 1970 Ash Ponds – The dikes should remain in the regular inspection program until Progress Energy completes declassification of the impoundment.	Review with ash pond closure planning	Routine inspection program is currently being maintained.

1978 ASH POND FIELD OBSERVATIONS

Photograph Location Plan Drawing No. AP2 and representative photographs for observations associated with the 1978 Ash Pond are provided in Appendix A. The photographs are organized as follows:

- Photograph 26 to 28 – North dike.
- Photographs 29 to 32 – East dike.
- Photograph 33 – Erosion damage for interior slope at south end of east dike.
- Photographs 34 and 35 – South dike.
- Photographs 36 to 38 – Discharge outlet structure.

The water level was below the crest of the riser at the time of inspection. The water level elevation could not be reliably determined from the staff gage on the skimmer because of the tilted condition to the skimmer. It was reported that the amount of plant storm water inflow has decreased significantly since shutdown of the plant. Plant personnel have cleared and are maintaining a channel within the ash pond area to carry flow from storm water discharge piping. The point of discharge for the stormwater drainage at the northwest corner of the pond area was checked and does not appear to have the potential for undermining the dike (Photograph 26).

A walking/driving inspection was conducted of the entire crest. The dike crest appeared to be in satisfactory condition with no indications of excessive settlement or displacement. The exterior slopes generally appeared to be stable and in satisfactory condition. Brush and small trees have been cleared to the toe of slope. Adequate grass cover is present for erosion protection. Photographs 27, 29, 31, and 34 provide representative views of the dike crest and exterior slope.

The toe of dike was not inspected during the current inspection. The toe was last inspected in 2012 and no indication of seepage was observed.

The capped and abandoned pipe through the north dike crest adjacent to the cooling towers was checked and appeared unchanged.

As previously reported, an animal trail was observed on the exterior slope adjacent to the discharge canal; however, there were no obvious signs of beaver activity or active animal burrows.

The interior slope for the dike generally appeared to be stable and in satisfactory condition with the exception of beaching erosion discussed separately. Brush and trees have been cleared from the interior slope. Adequate grass cover was present for erosion protection (Photograph 28 and 30).

Because of the low pond level, we were able to more closely observe the "beaching" type erosion condition caused by wave action on the interior slopes as noted in previous inspections. Consistent with previous inspections, we observed "beaching" type erosion for the east and south dikes in the area of standing water. The "beaching" erosion was especially noticeable along the south dike at the time of the inspection. At one localized area, the erosion damage is fairly deep at the water line and extends over half the distance up the slope (Photograph 33). In response to previous inspection reports, plant personnel have implemented maintenance repairs at localized areas that experience damage from "beaching" erosion. The recommended repair consists of filling with crushed stone or riprap placed on geotextile (filter fabric) material. Maintenance repair of localized areas of significant "beaching" erosion damage should continue. (Photographs 32, and 35)

The skimmer for the discharge outlet structure appeared to be tilted and in a deteriorated condition (Photographs 36 and 37). Previous inspection reports have recommended periodically checking the condition of the discharge riser by boat. The outlet end of the discharge pipe appeared to be in good condition with a slight trickle of flow observed (Photograph 38). Since the pond water level is below the riser crest, the slight trickle of flow may indicate leakage in the riser or discharge pipe. The area immediately below the discharge outlet pipe was checked for seepage; however, the slight trickle of flow made it practically impossible to confirm whether seepage is present. The riprap provided below the discharge pipe appeared to be adequate for preventing undermining of the slope.

The drain pipe provided for seepage collection at the toe of slope of the north dike near the cooling towers was checked during the inspection. The discharge flow appeared to be clear and was not obstructed. The plant should continue to inspect and clean out the drain pipe as a routine maintenance activity (Photograph 39).

In the fall of 2009, piezometers were installed at selected cross-sections along the crest of the 1978 Ash Pond Dike. The water levels in the temporary piezometers were not checked during the current inspection. The temporary piezometers were intended for use in obtaining data for the dike stability analysis and were not provided for long-term performance monitoring of the dike. We continue to recommend that the piezometers be permanently abandoned by a well driller licensed in North Carolina.

The discharge canal slope below the east dike was checked during the current inspection. Flow is being maintained in the discharge canal even though the plant is not in operation. The riprap repair area for the canal slope was stable and in good condition. Areas with steep banks and possible undermining were observed adjacent to the riprap repair. The slope above the steep bank appeared to be stable and there is no apparent concern for the ash pond dike at this time (Photograph 40).

The status for addressing the previous recommendations that are still open items is summarized as follows:

Ref No.	Recommendations	Recommended Implementation Schedule	Current Status
AP-2012-2	1978 Ash Pond - The damaged skimmer for the discharge outlet structure should be repaired.	Review with ash pond closure planning	No repair provided to current inspection date.
AP-2012-3	1978 Ash Pond - We recommend the temporary piezometers be abandoned by a well driller licensed in North Carolina.	Review with ash pond closure planning	Piezometers not abandoned to current inspection date.
AP-2011-3	1978 Ash Pond - The plant should periodically provide a closer inspection of the riser pipe using a boat for access. If possible, the inspection should be scheduled on an annual basis.	Review with ash pond closure planning	Inspection has not been performed to current inspection date.
AP-2011-4	1978 Ash Pond – The outlet for the PVC drain pipe at the north dike should be regularly cleared of silt and rust colored deposits. Confirm that flow is clear with routine inspection.	Routine maintenance	Pipe was open and flow appeared to be clear from current inspection observation.
AP-2011-7	1978 Ash Pond – Localized undermined areas from beaching erosion on the interior slopes should be filled with stone	Routine maintenance	Areas of beaching erosion observed during current inspection.
AP-2011-8	1978 Ash Pond – Monitor the riprap at the outlet end of the discharge pipe and provide repairs as needed.	Routine inspection and maintenance	Riprap appeared to be in satisfactory condition.

1985 ASH POND FIELD OBSERVATIONS

Photograph Location Plan Drawing No. AP3 and representative photographs for observations associated with the 1985 Ash Pond are provided in Appendix A. For orientation purposes in this report, the north dike is located adjacent to the plant access road, west dike adjacent to the railroad, and east dike adjacent to SR 1916. The photographs are organized as follows:

- Photographs 42 to 48 – West dike.
- Photograph 49 – Southwest corner of pond.
- Photographs 50 to 52 – East dike.
- Photograph 53 – North dike.

- Photographs 54 to 60 – Discharge outlet structure and channel leading to canal.

There is no longer any ash sluice discharge into ash pond area because of the permanent shutdown of the plant. We understand that a small amount of storm water inflow is periodically released into the pond area. There was no inflow observed at the time of the inspection. The water level was below the crest of the riser at the time of inspection and noticeably lower along the interior slopes. There is no staff gage or other means to accurately determine the water level elevation.

A walking inspection was performed along the toe for most of the west dike, the north end of the east dike and the north dike. The crest and exterior slopes were inspected by observing conditions from a slowly moving vehicle.

The dike crest appeared to be in satisfactory condition with no indications of excessive settlement or displacement. The exterior slopes generally appeared to be stable and in good condition. Vegetation on the exterior slopes had been cut prior to the inspection. The grass cover generally appeared to be satisfactory for the exterior slopes to minimize the potential for surface erosion. During the current inspection, the standing water beyond the toe of the south dike appeared to be more extensive than previously observations. From discussions with plant personnel, we understand that beaver activity may be causing water to back up in this area. There was no immediate concern for impact on the dike but this condition should be monitored during routine inspections. Action should be taken if the standing water backs up onto the toe of the dike at any location. Photographs 41, 47, 50, 52 and 53 provide representative views of the dike crest and exterior slope.

As noted in the 2012 inspection, riprap has been placed in the drainage swale along the west dike (adjacent to the railroad tracks) north of the culvert pipes under the tracks (Photograph 43). This area is the location of an original site drainage feature prior to construction of the Ash Pond and an area where possible seepage has been observed along the toe of the dike. Wet conditions were observed in the drainage swale at the toe of the dike north of the riprap. The two culvert pipes under the tracks appear to be sufficiently clear to pass drainage flow (Photograph 44). The culvert pipe on the right side (facing the track) appears to be blocked by debris accumulation. The culvert pipes should be checked during routine inspections and cleared if necessary to maintain flow.

Consistent with previous inspections, an extended area of possible seepage was observed emerging from the toe of the west dike slope south of the culvert pipes under the railroad tracks (beyond area of riprap placement for swale). The possible seepage had the appearance of soft/wet ground that extends slightly up the slope. There was no indication of any significant flow, boils or migration of fine soil associated with the area of possible seepage (Photograph 45 and 46). The drainage swale between the railroad culvert pipes and the discharge outlet pipe appeared to be poorly draining with some standing water.

During the 2012 inspection, a wet area was observed along the toe on the east side of the Ash Pond adjacent to SR 1916. This wet area appeared unchanged during the current inspection. A wet area was also observed below the north dike near the access ramp consistent with the previous inspection. The possible seepage and wet areas along the

toe should continue to be checked periodically with routine inspections and in conjunction with the independent consultant inspection activities.

Maintenance repairs have been provided for localized conditions noted from the previous inspection as follows:

- Localized erosion gullies were observed near the crest of the dike on the exterior slope adjacent to the access ramp at the northwest corner of the Ash Pond.
- Wheel ruts were observed on the upper portion of the exterior slope near the northeast corner of the Ash Pond possibly from mowing operations.

In the fall of 2009, a temporary piezometer was installed at the crest of the dike on the west side of the 1985 Ash Pond (near the train tracks). The water level in the temporary piezometer was not checked during the current inspection. The temporary piezometer was intended for use in obtaining data for the dike stability analysis and was not provided for long-term performance monitoring of the dike. Therefore, we continue to recommend that the piezometer be permanently abandoned by a well driller licensed in North Carolina.

Since 1991, inspection reports have noted unusual erosion features along the exterior slope of the west dike (parallel to the railroad track). The 2001 inspection report indicated that the erosion features are likely the result of shallow, internal erosion from surface runoff, and possibly the presence of dispersive clays. It has also been suggested that the erosion could be associated with a loose layer of organic material placed on the slope during construction. The erosion features are not believed to be related to internal seepage through the dike. In April, 2007, MACTEC (now AMEC) provided a more detailed follow-up inspection of the erosion features to assist Progress Energy with identifying the most significant areas of erosion damage. Progress Energy has since implemented an on-going maintenance program to fill the eroded areas with crushed stone material. There were no new areas of concern for slope damage observed for the current inspection.

The interior of the north ash pond area is mostly filled with ash deposits. The exposed interior slopes in this area are stable and in good condition. The interior slopes for the area of remaining standing water at the south end of the pond also appear to be in satisfactory condition. There was no significant undermining of the slope observed for this area. Vegetation growing in the riprap appears to be under control (Photographs 42, 48, 49 and 51).

The discharge riser appeared to be clear of obstructions, and the skimmer was in place (Photograph 54). As previously noted, the water level appeared to be below the crest level of the riser pipe. However, we could hear sounds of a trickle of flow from the collection basins on the downstream side of the dike. This could indicate some slight leakage into the riser or discharge outlet pipe.

The discharge outlet pipe releases flow into a concrete channel leading to the plant discharge canal (Photograph 57 and 58). The discharge channel was partially blocked by debris and vegetation (Photograph 59). The plant should continue to routinely maintain the channel by removal of cattail growth, vegetation and debris. The end of the channel at

the plant discharge canal has been undermined by erosion but is not believed to require repair at this time (Photograph 60).

A culvert pipe is present at the south end of the drainage swale on the west side and runs beneath the Ash Pond discharge pipe. Consistent with previous inspections, the inlet end of the concrete culvert pipe is cracked but appears to be serviceable. The outlet end appeared to be in good condition. The inlet and outlet ends of this pipe should continue to be cleared of brush and debris as required to maintain a free flowing condition. Undermining of this drainage pipe could potentially lead to displacement of the Ash Pond discharge pipe. There was no change in the condition of this pipe for the current inspection (Photographs 55 & 56).

The status for addressing the previous recommendations is summarized as follows:

Ref No.	Recommendations	Recommended Implementation Schedule	Current Status
AP-2012-4	1985 Ash Pond - We recommend the temporary piezometers be abandoned by a well driller licensed in North Carolina.	Review with ash pond closure planning	No repair provided to current inspection date.
AP-2012-5	1985 Ash Pond - We recommend marking the locations of possible seepage along the dike toe after a period of extended dry weather. The possible seepage locations should continue to be checked periodically with routine inspection and in conjunction with the independent consultant inspection activities.	Routine inspection activity.	No change in condition observed during current inspection.
AP-2011-9	1985 Ash Pond - The plant should periodically provide a closer inspection of the riser pipe using a boat for access. If possible, the inspection should be scheduled on an annual basis.	Routine inspection activity	Trickle of flow observed possibly from leakage around riser.
AP-2011-10	1985 Ash Pond - The plant should continue to clean out the discharge channel as a routine maintenance activity. In addition, the plant should maintain riprap material at the end of the discharge channel for stabilization and to prevent further erosion damage. This should be considered as a routine maintenance activity and should be reviewed annually.	Routine maintenance activity	Vegetation and debris observed partially blocking channel.
AP-2011-11	1985 Ash Pond – The trees taking root in the riprap on the interior slopes should be cut as part of regular maintenance	Routine maintenance	Vegetation appeared to have been cut and is under control.
AP-2011-12	1985 Ash Pond – The current mowing program appears to be effective and should be continued. Small trees growing on exterior slopes should be cut as part of routine maintenance.	Routine maintenance	Plant is continuing with maintenance cutting on slopes.

Ref No.	Recommendations	Recommended Implementation Schedule	Current Status
AP-2011-13	1985 Ash Pond – Erosion features on the west dike (parallel to railroad track) should be filled with gravel to minimize potential for further damage.	Routine maintenance	No new areas of erosion were observed.

BUCKHORN DAM FIELD OBSERVATIONS

Photograph Location Plan Drawing No. BD1 and representative photographs for observations associated with the Buckhorn Dam are provided in Appendix A. The photographs are organized as follows:

- Photograph 61 and 62 – East abutment and crest of spillway section of dam.
- Photographs 63 to 65 – Concrete abutment section and retaining walls.
- Photograph 66 – Ashlar paving on crest of east abutment.
- Photographs 67 to 69 – Crest and slopes for east abutment.

The Buckhorn Dam is a concrete gravity structure with an earthen embankment section on the east side located on the Cape Fear River (Photograph 61). This dam falls under the inspection and maintenance responsibility of the Cape Fear Plant.

The flow conditions at the time of inspection precluded a detailed examination of the overflow sections of the dam. The inspection was limited to the Chatham County (east) abutment. From field observation of the USGS staff gage (Cape Fear River at Buckhorn Dam 02102178) located upstream from the dam, the gage reading was around 1.83 feet at the time of inspection. The staff gage datum is reported to be at Elevation 156.49 feet (NAVD88). For a staff gage reading of 1.83 feet, the corresponding observed water level is at Elevation 158.32 feet (NAVD88). The crest of the spillway portion of the dam is reported to be at Elevation 158.7 feet (NGVD). Based on the National Geodetic Survey (NGS) VERTCON conversion program, the difference between NAVD88 and NGVD datum is -0.751 feet. Therefore, the crest of the spillway is at Elevation 157.95 feet (NAVD88). At the time of the inspection, the observed reservoir water level corresponds to a depth of 0.37 feet or 4.44 inches over the crest of the dam (158.32 ft – 157.95 ft = 0.37 ft).

Consistent with past inspections, an accumulation of logs and other debris was observed at the point of the "direction change" near the center of the dam (Photograph 62). Logs and floating debris were also observed across the entire length of the spillway. The logs and floating debris trapped on the crest of the spillway are not considered an immediate concern for spillway adequacy or dam safety. The debris accumulation is generally removed with high flow over the spillway and is not considered unusual based on past observations.

The pattern of water flow over the spillway and along the toe did not indicate the presence of significant flow disruptions possibly caused by structural damage. It should be noted that flow disruptions are difficult to observe along the crest with logs and other debris present. Photographs of the crest were enlarged and reviewed for indications of flow

disruption. Review of the enlarged photographs also did not indicate significant or unusual flow disruptions.

In 2010, Glenn Underwater Service performed an underwater inspection for Progress Energy along the upstream crest and toe of the Buckhorn Dam. The Glenn underwater inspection report was reviewed by AMEC in the 2012 5-year Independent Consultant report. The potential requirements for follow-up action are discussed as follows:

- The underwater inspection report provided limited information on the extent of silt and debris accumulation in the reservoir upstream from the dam. However, reservoir storage is not a dam safety consideration because the spillway is uncontrolled and run of river. As part of the planning for plant decommissioning, Duke Energy should evaluate whether there are operational or regulatory drivers that would require further review of reservoir silt and debris accumulation.
- The underwater inspection report does not indicate that significant undermining has occurred or voids are present along the toe of the dam. No immediate repair work appears to be warranted.
- For the upstream side of the dam, the most significant concern reported appears to be associated with spalling on the upstream side of the dam that runs almost continuously along the interface (joint) between the original concrete and the concrete cap. From our review, we do not believe this is a condition that requires consideration of immediate repair work.

The concrete abutment structure on the Chatham County (east) side of the dam appeared to be structurally sound, stable and in satisfactory condition. Cracks and offsets for the structure on the top were filled with grout during 2011, which provides an opportunity to check for movement. Hairline cracking of the grout material was observed during the current inspection (Photograph 63). The cracking is likely associated with thermal expansion and contraction of the structure.

The concrete retaining walls on the upstream and downstream side of the abutment appear to be in satisfactory condition (Photographs 64 and 65). Riprap placed to repair undermining of the toe of the downstream retaining wall appeared to still be in place.

The embankment section closest to the spillway on the Chatham County side has ashlar (cement/rock) paving over the slope and crest (Photograph 66). Past inspections have noted some hollow-sounding spots in the paving, along with cracking along the crest in the paving. Grout repairs have been provided for open cracks on the crest of the ashlar pavement. For the current inspection, it appears that hairline cracks are present in the grout repairs consistent with the abutment observations.

The slope areas for the earthen embankment are all heavily overgrown with trees and brush. There is also a thick mat of kudzu over slope sections during the summer growing season (Photographs 67, 68, and 69). At the time of this inspection, the kudzu was dormant which allowed a closer inspection of the slopes. The upstream slopes generally appeared to be stable but were uneven with scarps and steep banks present. We continue to recommend routine maintenance to control vegetation on slopes consistent with the ash pond areas. Maintenance of vegetation should include efforts to eradicate

the kudzu. After completion of maintenance clearing, the slopes should be reseeded and mulched as needed for surface erosion protection.

The access road along the embankment crest was rutted and should be repaired by filling with crushed stone as a routine maintenance activity to prevent water collecting.

We also observed that construction was in progress near the dam for installation of a large diameter pipeline associated with the Western Wake Regional Wastewater Effluent Outfall Pipeline Project. The new outfall will be constructed downstream from the dam. We do not have sufficient information to evaluate whether construction activities such as blasting could have a potential impact on the dam. We recommend that plant personnel monitor the construction work during routine inspections for potential impact on the dam.

Duke Energy should review the long-term requirements for maintenance and repair of the Buckhorn Dam when planning for the permanent retirement of the plant. This will be especially important considering that the Buckhorn Dam is remote from the plant site and is accessible by the public.

The status for addressing the previous recommendations is summarized as follows:

Ref No.	Recommendations	Recommended Time for Implementation	Current Status
BD-2011-1	For the earth embankment section on the east side of the spillway, maintenance cutting should be performed for brush and trees on the embankment slope. In addition, application of herbicides or other methods to eradicate or control kudzu growth on the ashlar pavement and earth embankment slopes should be performed regularly.	Routine maintenance activity.	No maintenance of vegetation has been performed.
BD-2011-2	For the earth embankment section on the east side of the spillway, check slope during the growing season to identify areas of sparse vegetation. Provide reseeding and mulching for areas of sparse vegetation as needed for erosion protection.	Routine inspection and maintenance activity.	No maintenance has been performed.
BD-2011-3	In follow-up to the 2010 Glenn underwater inspection, provide further engineering review to determine whether repair of the upstream spalling condition is required to maintain the structural integrity of the dam.	Review with plant retirement planning.	Immediate repair not required.
BD-2011-4	In follow-up to the 2010 Glenn underwater inspection, obtain reservoir soundings in a controlled manner and provide an engineering review of results.	Review with plant retirement planning.	Immediate action on survey not required.

AMEC is pleased to continue assisting Progress Energy with inspections of the Ash Pond dam at the Cape Fear Plant. Please contact us if you have any questions about this report.

Sincerely,

AMEC Environment & Infrastructure, Inc.

NORTH CAROLINA PROFESSIONAL SEAL 8169 ENGINEER RICHARD S. AUGER

Richard S. Auger, P.E.
Senior Engineer
Registered, North Carolina 008169
(Responsible Engineer)

J. Allan Tice, P.E.
Senior Principal Engineer
Registered, North Carolina 006428
(Reviewer)

RSA/rsa

Cc: Mr. Larry Baxley (w/a)

APPENDICES

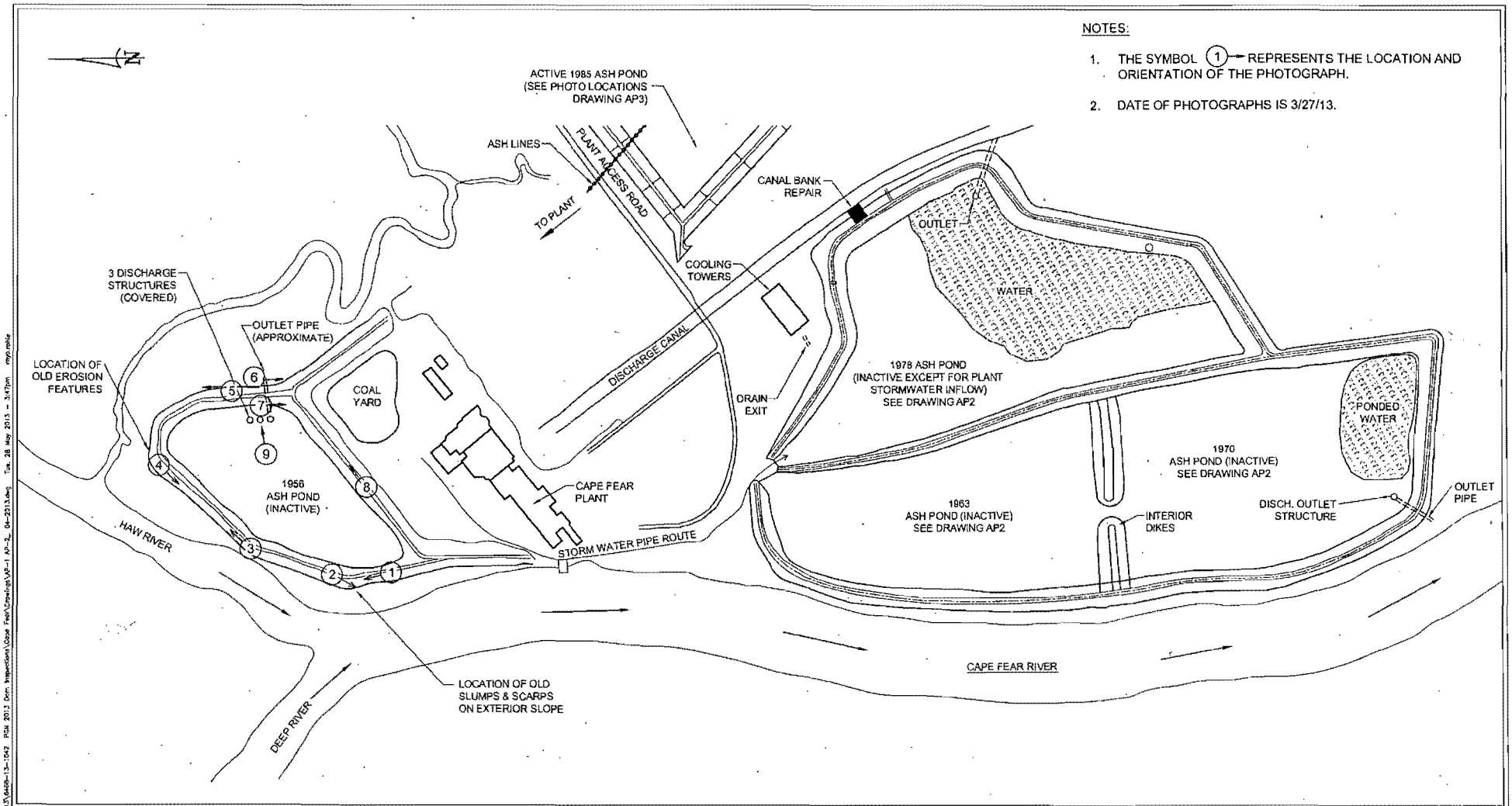
Appendix A – Photograph Location Plan Drawings and Photographs

Appendix A – Photograph Location Plan Drawings and Photographs

- Photograph Location Plan Drawing AP1 – 1956 Ash Pond
- Photographs – 1956 Ash Pond
- Photograph Location Plan Drawing AP2 – 1963, 1970 and 1978 Ash Ponds
- Photographs - 1963, 1970 and 1978 Ash Ponds
- Photograph Location Plan Drawing AP3 – 1985 Ash Pond
- Photographs – 1985 Ash Pond
- Photograph Location Plan Drawing BD1 – Buckhorn Dam
- Photographs – Buckhorn Dam

NOTES:

1. THE SYMBOL (1) REPRESENTS THE LOCATION AND ORIENTATION OF THE PHOTOGRAPH.
2. DATE OF PHOTOGRAPHS IS 3/27/13.



amec

AMEC Environment & Infrastructure, Inc.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA

PHOTOGRAPH LOCATION PLAN
1956 ASH POND
CAPE FEAR STEAM ELECTRIC PLANT
CHATHAM COUNTY, NORTH CAROLINA

DRAWN: R.R.	DATE: MAY, 2013	DRAWING	
DFT CHECK: RSA	SCALE: N.T.S.	AP1	
APPROVAL: 6/24/2013	JOB No.: 6468-13-1042(06)		

REFERENCE:

P:\Energy\Projects\Progress Energy\2013\6468-13-1042 PGN 2013 Dam Inspections\Cape Fear\Drawings\AP-1 AP-2_ 06-2013.dwg Tue, 28 May 2013 - 3:47pm mayo.mike

EPARFI03852

Appendix A – Photographs
2013 Cape Fear Limit (Annual) Dam Inspections
1956 Ash Pond Photographs

1. 1956 Ash Pond – Crest and exterior slope of west dike near flood protection levee. Note level of ash fill in relation to the dike crest on the right side of photo.

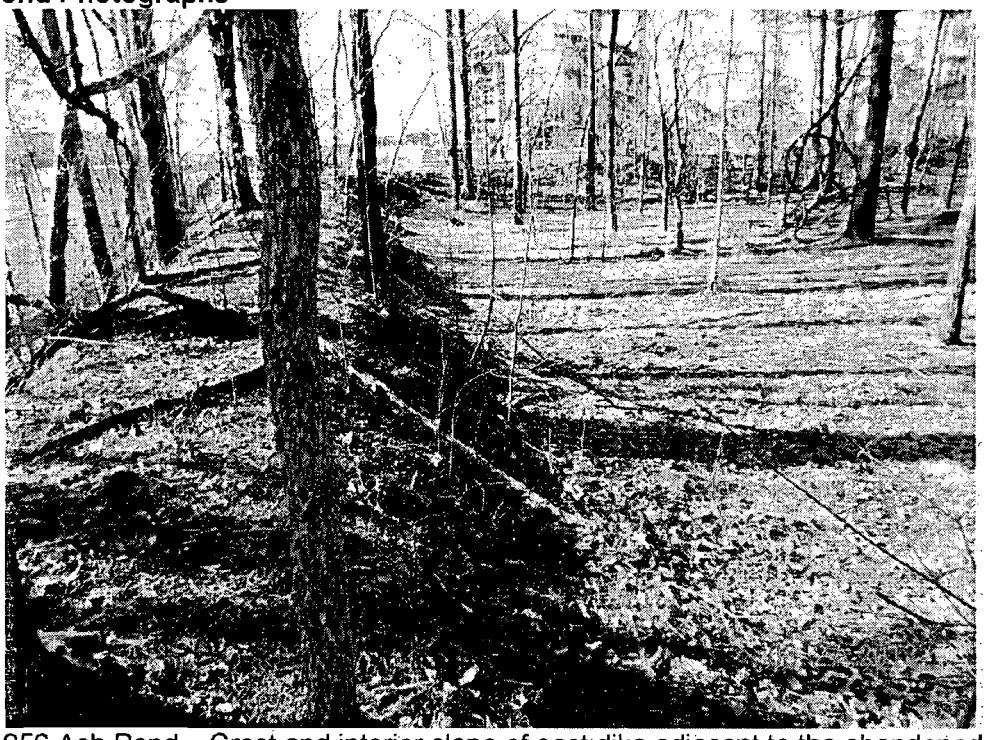
2. 1956 Ash Pond – Crest and exterior slope of west dike in area of old slumps and scarps.

3. 1956 Ash Pond – Crest and exterior slope of north dike adjacent to Haw River. Note level of ash fill in relation to dike crest on the right side of photo.

4. 1956 Ash Pond – Crest and exterior slope near northwest corner of the pond area. Note level of ash fill in relation to dike crest on left side of photo.

5. 1956 Ash Pond – Crest and exterior slope of east dike adjacent to the abandoned discharge outlet structure (looking north).

6. 1956 Ash Pond – Exterior slope of east dike adjacent to the abandoned discharge outlet structure (looking south).



7. 1956 Ash Pond – Crest and interior slope of east dike adjacent to the abandoned discharge outlet structure. Note level of ash fill in relation to dike crest.

8. 1956 Ash Pond – Slope of flood control levee adjacent to the plant coal yard area. Note seeding provided for slope after completion of area grading in 2012.

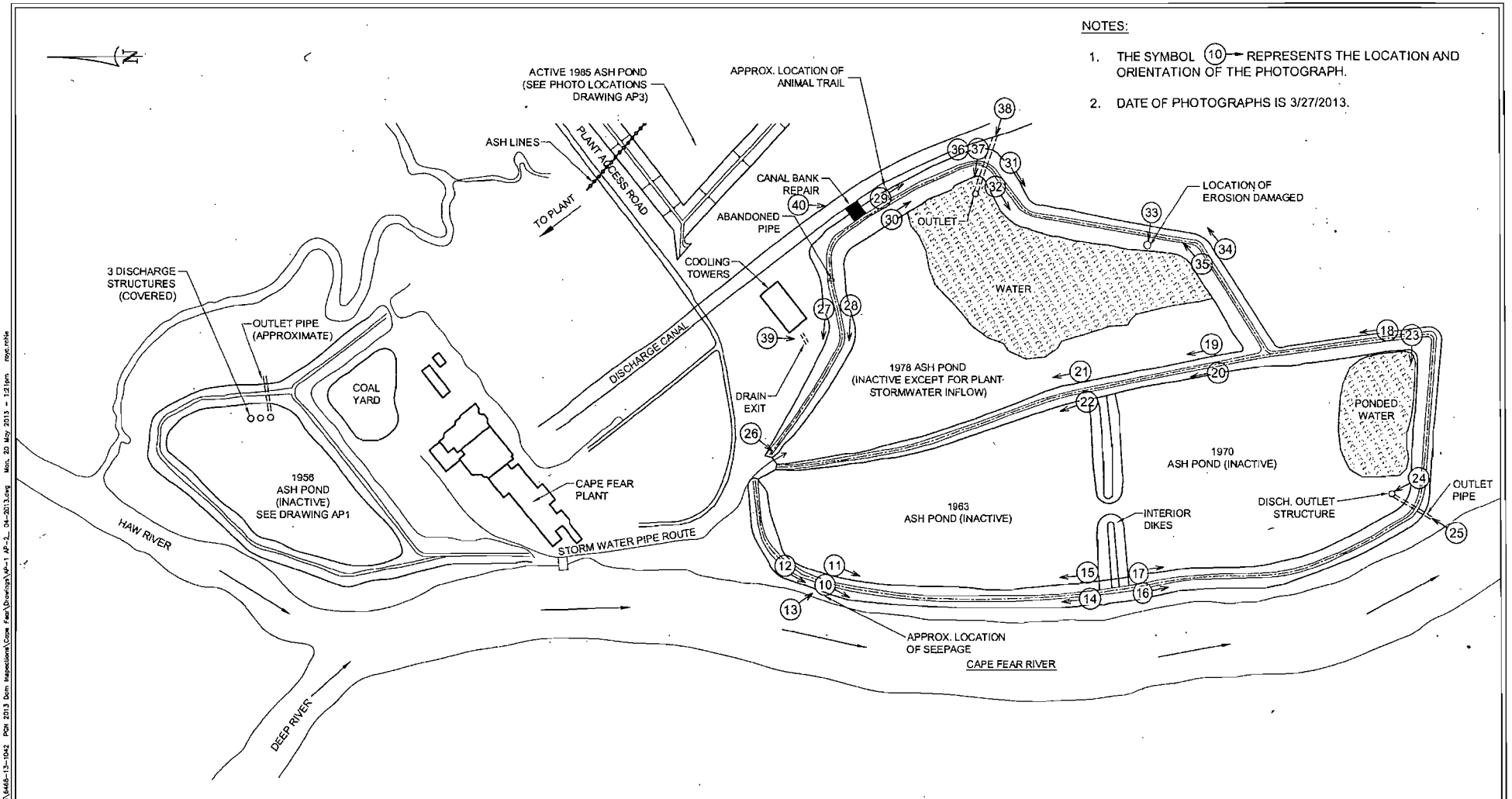
EPARFI03856

9. 1956 Ash Pond – Discharge outlet structures shown with cover plates.

EPARFI03857

NOTES:

1. THE SYMBOL (10) → REPRESENTS THE LOCATION AND ORIENTATION OF THE PHOTOGRAPH.
2. DATE OF PHOTOGRAPHS IS 3/27/2013.



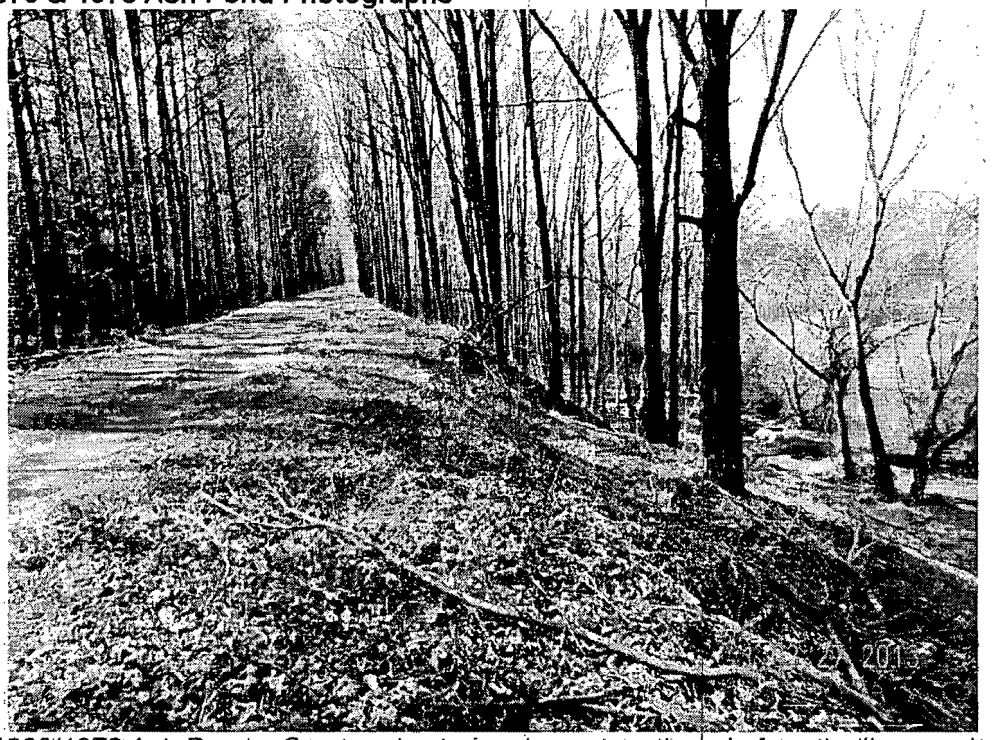
amec AMEC Environment & Infrastructure, Inc. 4021 STIRRUP CREEK DRIVE, SUITE 100 DURHAM, NORTH CAROLINA	PHOTOGRAPH LOCATION PLAN 1963, 1970 & 1978 ASH POND CAPE FEAR STEAM ELECTRIC PLANT CHATHAM COUNTY, NORTH CAROLINA	DRAWN: R.R. DFT CHECK: RSA APPROVAL: 6/24/2013	DATE: MAY, 2013 SCALE: N.T.S. JOB No.: 6468-13-1042(06)

DRAWING AP2

REFERENCE:

P:\Energy\Projects\Progress Energy\2013\6468-13-1042 PGN 2013 Dam Inspections\Cape Fear\Drawings\AP-1 AP-2_04-2013.dwg Mon, 20 May 2013 - 1:21pm roye.rehie

EPARFI03858



10. 1963/1970 Ash Pond – Crest and exterior slope at north end of south dike near location of seepage at toe.

11. 1963/1970 Ash Pond – Crest and interior of pond area at north end of west dike. Note extensive tree growth and level of ash in relation to dike crest.

EPARFI03859

12. 1963/1970 Ash Pond – Exterior slope and toe of west dike near location where seepage has been observed.

13. 1963/1970 Ash Pond – View of seepage flow emerging at toe of west dike.

EPARFI03860

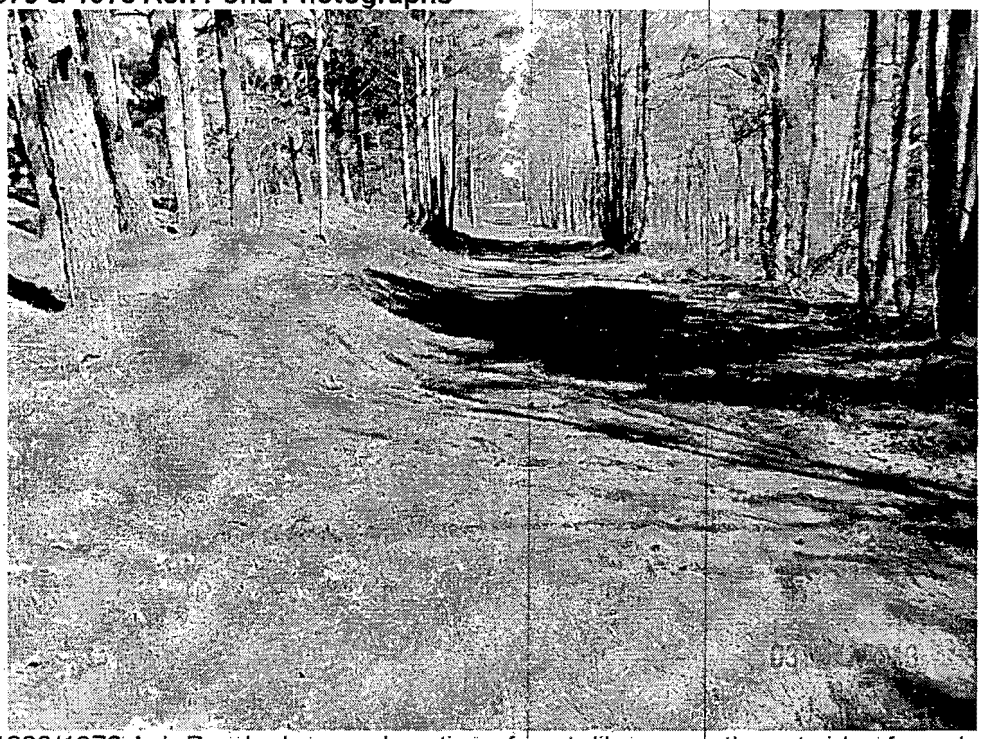
14. 1963/1970 Ash Pond – Crest and exterior slope of west dike near interior separator dike.

15. 1963/1970 Ash Pond – Crest and interior slope of west dike near interior separation dike. Note extensive tree growth and level of ash deposits relative to crest.

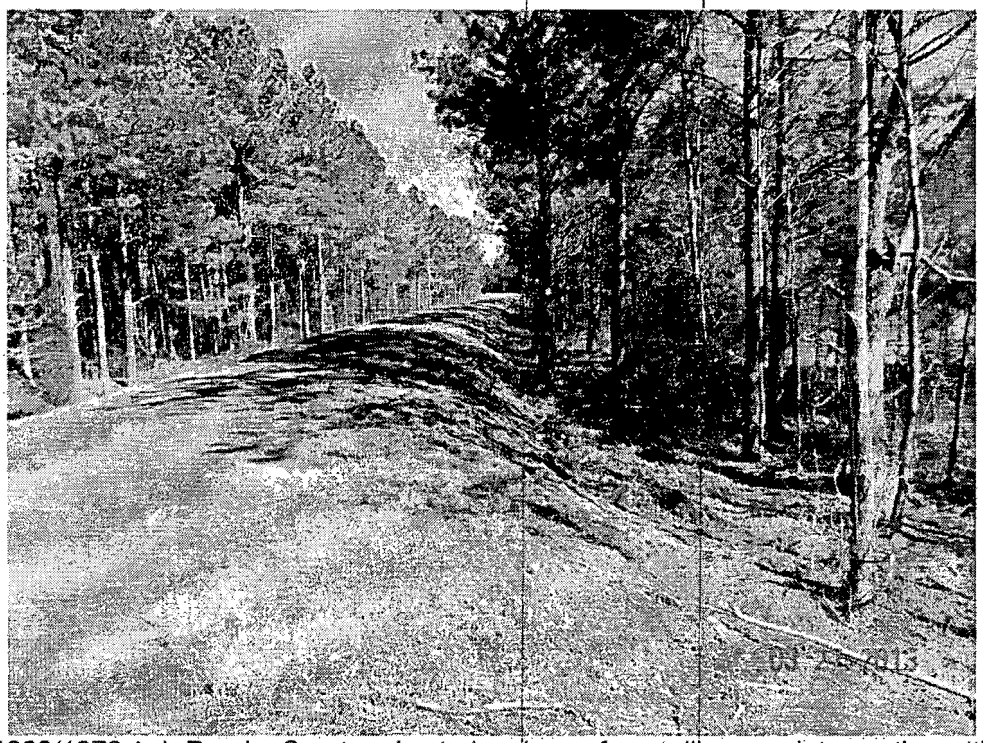
16. 1963/1970 Ash Pond – Crest and exterior slope of west dike near interior separator dike.

17. 1963/1970 Ash Pond – Crest and interior slope of west dike near junction with interior separator dike. Note extensive tree growth and level of ash deposits relative to crest.

EPARFI03862

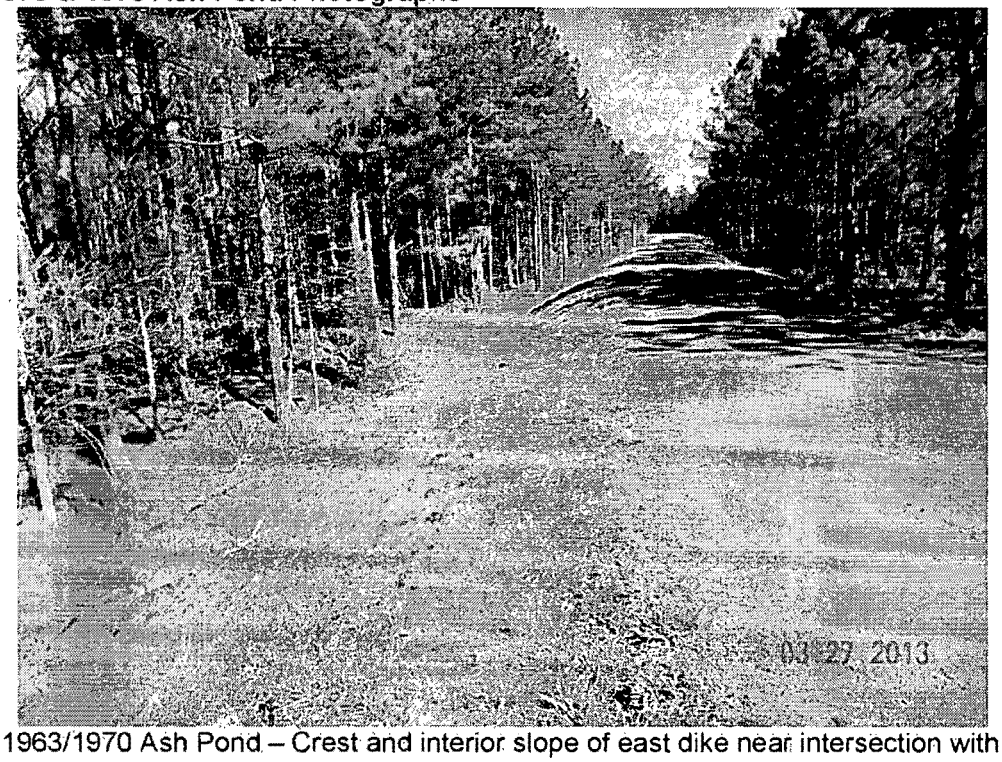


18. 1963/1970 Ash Pond – Lowered section of east dike on southwest side of pond area.

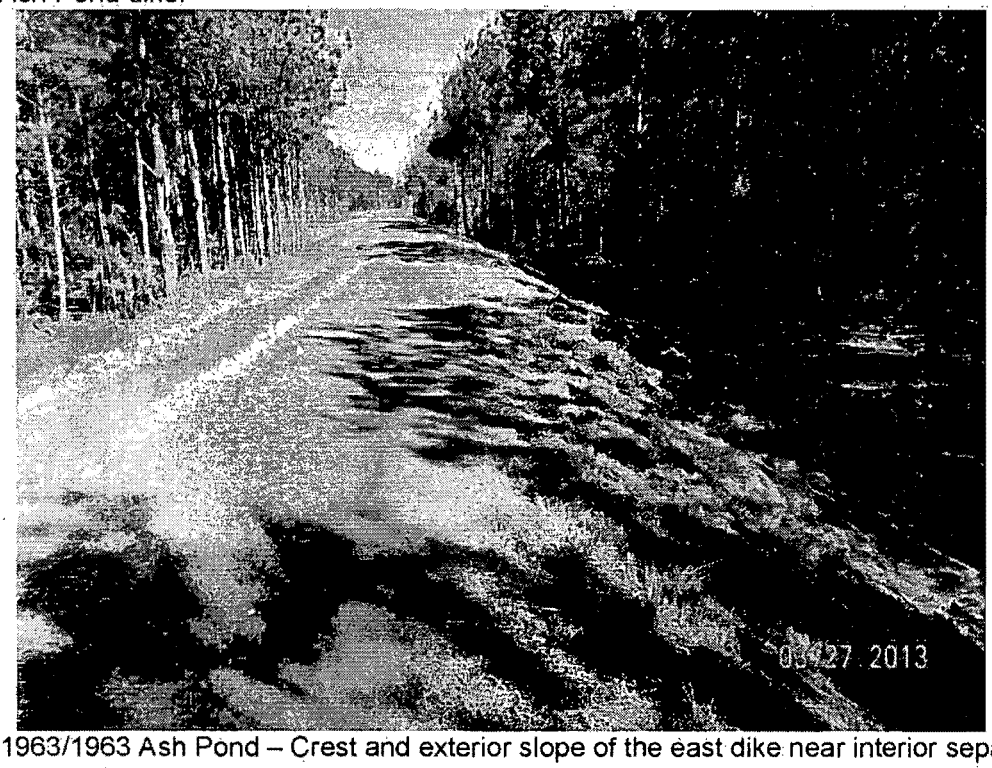


19. 1963/1970 Ash Pond – Crest and exterior slope of east dike near intersection with 1978 Ash Pond dike. (1978 Ash Pond area is on right side of photo)

EPARFI03863



20. 1963/1970 Ash Pond – Crest and interior slope of east dike near intersection with 1978 Ash Pond dike.



21. 1963/1963 Ash Pond – Crest and exterior slope of the east dike near interior separation dike. (1978 Ash Pond is on right side of photo.)

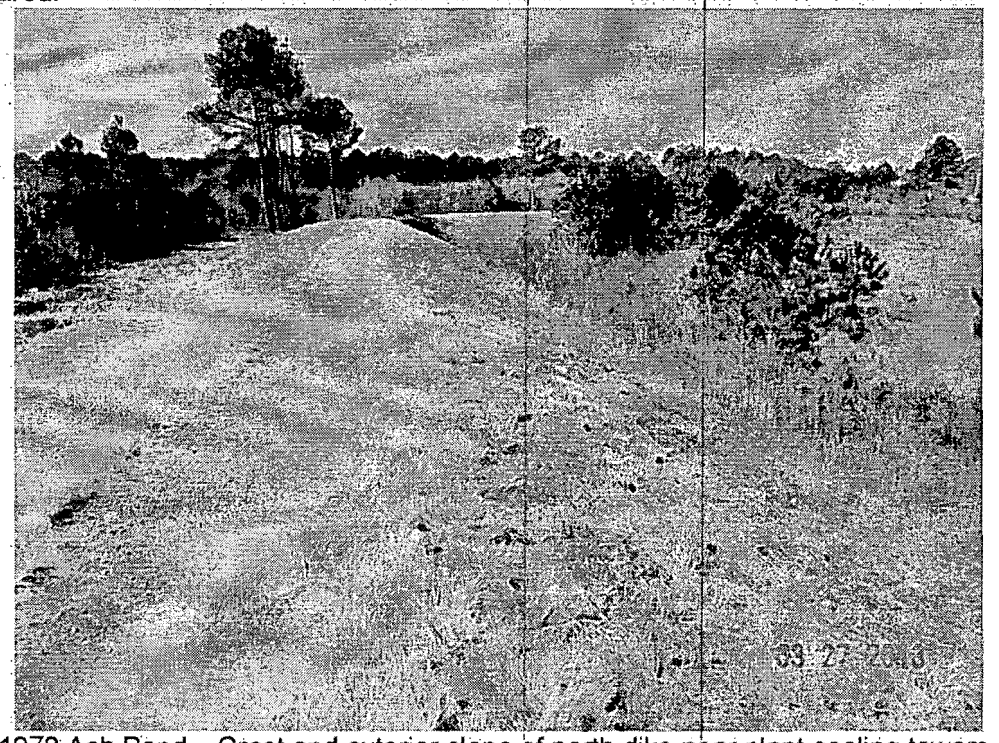
22. 1963/1970 Ash Pond – Crest and interior slope of the east dike near interior separation dike.

23. 1963/1970 Ash Pond – Area of standing water at south end of pond area.

24. 1963/1970 Ash Pond – Discharge outlet structure and channel leading to pond area. Note that channel is clear of trees, brush and debris.

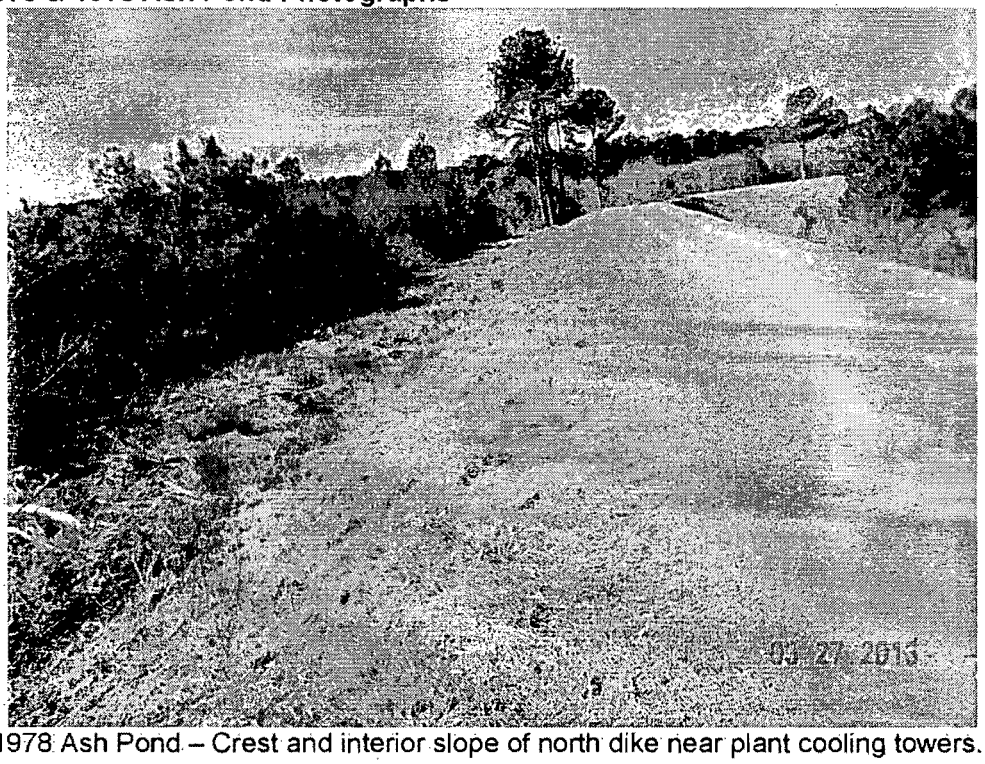
25. 1963/1970 Ash Pond – Discharge outlet pipe at Cape Fear River.

26. 1978 Ash Pond – Location of stormwater discharge pipes at northwest corner of pond area.

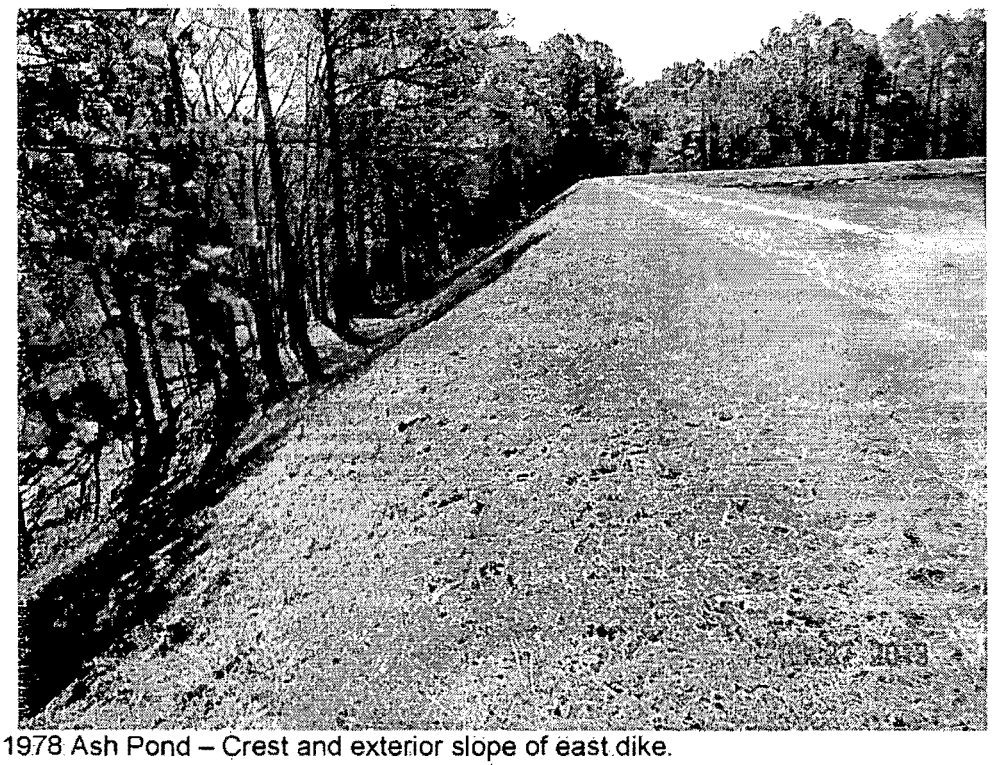


27. 1978 Ash Pond – Crest and exterior slope of north dike near plant cooling towers .

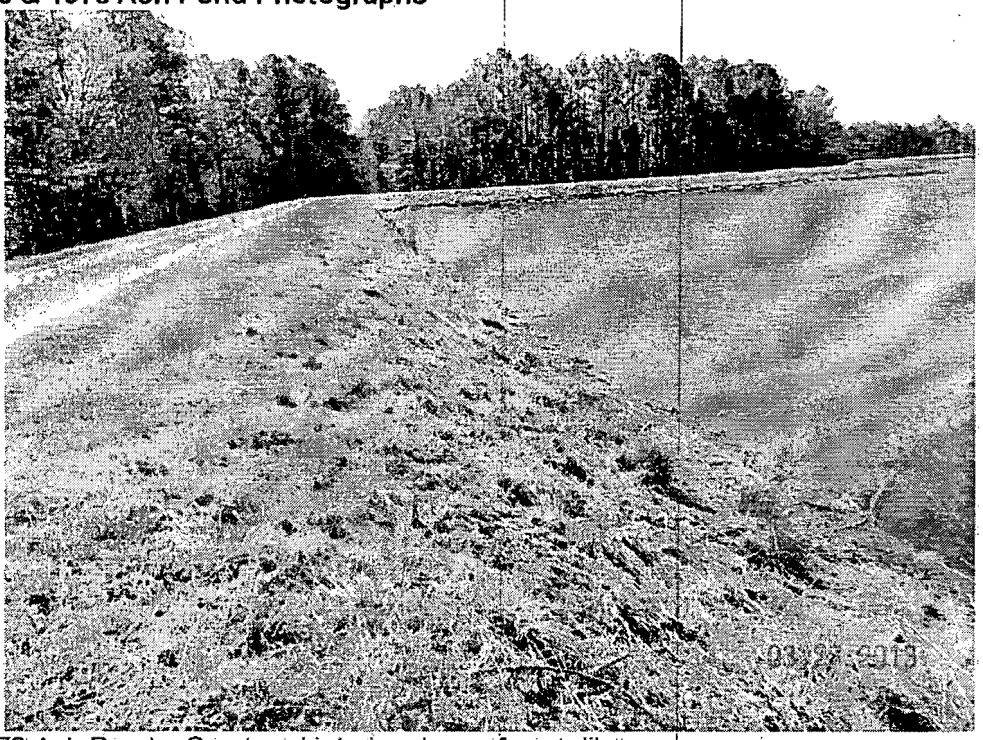
EPARFI03867



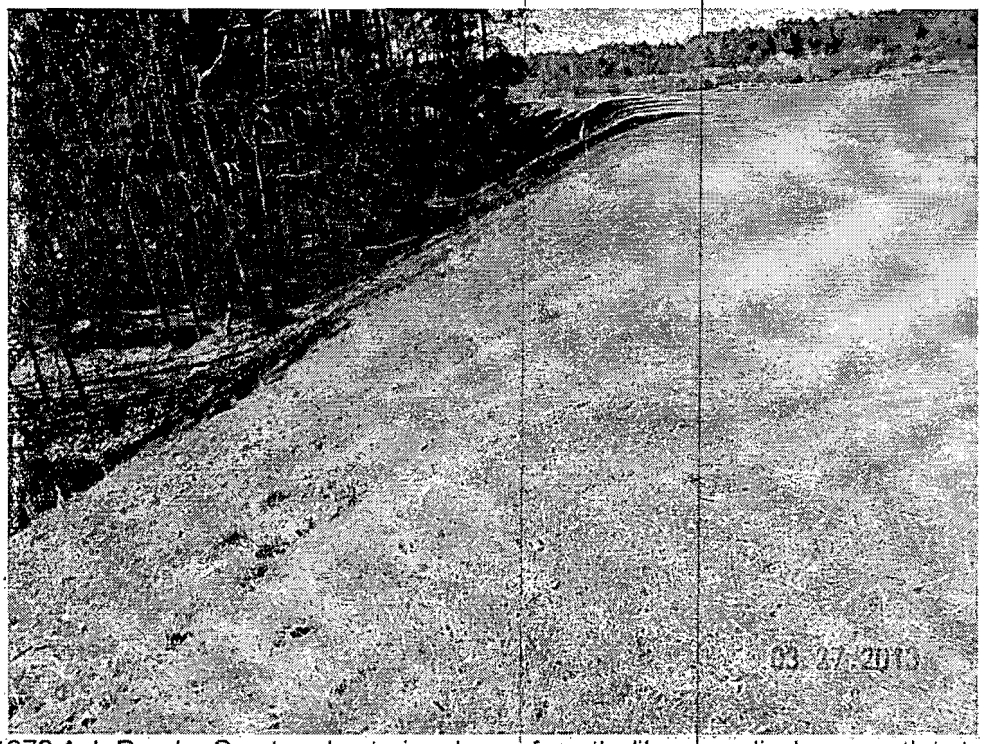
28. 1978 Ash Pond – Crest and interior slope of north dike near plant cooling towers.



29. 1978 Ash Pond – Crest and exterior slope of east dike.



30. 1978 Ash Pond – Crest and interior slope of east dike.



31. 1978 Ash Pond – Crest and exterior slope of south dike near discharge outlet structure.

EPARFI03869

EPARFI03870

Power Operations Group
JHA (Job Hazard Analysis) Form

Project/Task/Activity Title: Ash Pond Dewatering Activities	**Unit/System/Equipment** Cape Fear 1978 Inactive Ash Pond	**Date:** 1/02/2014	( ) Revised (x) New
Company/Organization: Duke Energy	**Analyzed by:** Dennis Cole	**Supervisor review/approval:** Dennis Cole	**Safety review/approval:**
Plant/Location: Cape Fear/Moncure	**Comments:** Job will consist of staging pump and equipment for the purpose of lowering the water level in the 1978 inactive ash pond to assist with natural dewatering. This scope may also include operating the excavator. Great caution should be taken when operating around dikes and slopes.		

DETAILED PROJECT, TASK, ACTIVITY DESCRIPTION	HAZARD DESCRIPTION (Review types of hazards. Anticipate error traps and foresee consequences.)	CONTROLS OR PROTECTIVE MEASURES (Evaluate defenses. Consider engineering, administrative controls and PPE.)	RECOMMENDED HPI TOOLS
1. Communication/Assessment	Violation of Safety and Environmental regulations Lack of site Familiarity	Notify Plant management and environmental specialist upon arrival and prior to beginning any work. Provide them a verbal description of planned work activities Walk/Drive around area to identify safety or environmental risk Authorization to perform from Dam Safety Authorization to perform from Environmental	Procedure Use QV&V
2. Selecting PPE	Failure to anticipate the risk	Wear proper shoes for dikes Take precaution against the heat Take precaution for icy or slippery conditions in cold weather Take precaution against the insects, snakes & ticks Check for dust in the area (spoggles if needed) Spray for ticks, mosquitoes prior to starting	STAR Observation
3. Positioning Equipment on dike	Excavator too close to edge of slope Pump on edge of dike Hoses not secured Hoses leaking	Allow safe distance from the dike edge Use spotter if available Chock wheels on pump Observe dike conditions to prevent damage from operating equipment Secure hoses to prevent the risk of whipping personnel or dike	STAR Procedure Use

DETAILED PROJECT, TASK, ACTIVITY DESCRIPTION	HAZARD DESCRIPTION (Review types of hazards. Anticipate error traps and foresee consequences.)	CONTROLS OR PROTECTIVE MEASURES (Evaluate defenses. Consider engineering, administrative controls and PPE.)	RECOMMENDED HPI TOOLS
4. Fabricating and installing a staff gauge in Polishing Pond	Working from a boat Falling from the boat Dropping tools	Life Vest are required Throw Buoy should be on location Do not exceed weight limit in boat Use tie off for tools Have a means of communication with someone at plant while in the boat Someone should be present on the dike while employees are in the water.	STAR OV&V Procedure Use
5. Pump Set up	Insecure hose Slippery areas Heavy lifting and body position Pump rolls/moves Pinch points	Verify good connections and secure with safety latch Watch ground conditions Use proper body position and use "buddy system" Wear gloves when possible	STAR Clear Communication
6. Pump Operation	Moving parts Noise Water discharge Slips/trips	Avoid standing or working near the moving parts Avoid loose clothing and comply with no jewelry policy Avoid a body position that places you in a unsafe position should a hose come loose Use Caution when working on slopes	STAR
Pump Daily Shutdown	Slippery areas Tripping Hazards Oil Leaks Unsecured Equipment	Barricade Area Clearly Identify hose and equipment that pose a tripping Hazard Place a barrier underneath the pump Chock wheels and ensure equipment cannot roll Make sure hose is not left in a siphon possible position	STAR
7.			

EPARFI03871

DETAILED PROJECT, TASK, ACTIVITY DESCRIPTION	HAZARD DESCRIPTION (Review types of hazards. Anticipate error traps and foresee consequences.)	CONTROLS OR PROTECTIVE MEASURES (Evaluate defenses. Consider engineering, administrative controls and PPE.)	RECOMMENDED HPI TOOLS
8.			

EPARFI03872

Work Plan /Dewatering Cape Fear 1978 Ash Pond

Goal 1: Lower the water level in the Ash pond to promote and speed natural dewatering	Measures of Effectiveness: Pond water level drops a maximum of one foot per day Compliance with all safety and environmental procedures & regulations is maintained.

Objectives	Activities Planned to Meet Objectives	Detail Comments
Perform all task Safely	Notify Plant management and site environmental specialist on arrival and brief as needed. Perform Safety Orientation with all employees Review JHA Conduct Pre Job Briefing Wear all PPE Assess area where work will be performed Verify water level. Watch/treat for the prevention of Ticks/Insects, wasp, snakes etc… Limit Cell Phone Use	Danny Wimberly/Macy Graham/Larry Baxley Equipment Operation only Minimum PPE= Hard Hat, Safety Glasses, Safety Shoes, Gloves if working with hands, **Use Personal Floatation Devices when working in a boat on the water.** Not allowed when driving. Exit work area when phones are in use. **Use caution to ensure water is contained inside of approved area**
Pre Checks	Water level will be read and recorded daily. Water level must not be lowered more than one foot per day. Check to make sure there are no cenospheres in the area being pumped. If there are, suspend pumping until wind directions changes and water is clear. Check equipment oil and fuel **Ensure Environmental approval has been received.** Check to ensure all hose joints are tight and secured **Read and Document water level readings in PZ-78-1 and PZ-78-3 piezometers at the beginning and the end of each shift.** **Take a picture of the upstream**	Verify Staff Gauge Level Check oil levels in pump and any mobile equipment in use. Suspend pumping until water is clear of cenospheres Larry Baxley Place containment or barrier underneath all pipe joints **Piezometer readings should be taken and documented at the same time as the staff gauge. All readings should be taken at the same time each**

Pump Equipment Capabilities	**slope on each side of the pump at beginning and end of shift.** CD150M Dri-Prime Pump 6" Suction and delivery connections Max Head-154' Max operating speed-2200 RPM Max Capacity-2277 USGPM	**day (+/- 3 hours)** Spec. Sheet attached
Fabricate and install a staff gauge for tracking daily pumping progress	**Construct a simple staff gauge** **Use plant boat to install** **Install close to weir location near pumping activity. Should be visible from pump operation.** **Level should not exceed one foot per day-(24 hours)**	**Foot and inches** **Two men present** **Life jackets required** **Throw -Buoy should be present** **Record and document start and finish reading daily.**
Positioning equipment	Position pump near edge of dike.(Chock Wheels) **Avoid placing equipment too close as it may cause cracking at the edge.** Suction line should be near but not on or in the discharge pipe within the weir. Suction Line should be on a float to prevent sediment from being pulled in. Discharge Line is to be run from the ash pond straight to the canal. The drain line should be secured to the rail post on the existing walkway to the canal. A splash block shall be constructed from rip/rap or other material to prevent erosion at the canal. Place a secondary containment for potential fuel and oil leaks under all equipment.	All connections should be checked, wrapped and taped or a barrier placed beneath the connections if necessary to prevent spillage. Use CAUTION when working near the weir and piping. This **should not** be disturbed. Construct with plastic and wood or use plastic pool if available.
Staging Material	Have oil spill kit available at pump site.	**Pads and boom**
Securing the work area	Barricade the area	**Identify/establish risk and traffic patterns to ensure safety**
Monitoring Operations	Pump Operator should stay in the area with the pump at all times when pump is operating. Monitor to ensure that pump suction stays off the bottom. Monitor for leaks. Monitor for changes in dike conditions. Monitor for cenospheres	Check for leaks Check water level Check for cloudy discharge-**STOP** if water becomes stained or appears to contain sediment. Check pump fuel level and oil pressure

	Monitor water levels Monitor equipment	
Recordkeeping	**Record and document water level readings at the start and conclusion of activities daily. Record total pump run time for the day in hours and quarterly amounts.** **Example: 4.75 hours run time on a particular date.** **Read and Document water level readings in PZ-78-1 and PZ-78-3 piezometers at the beginning and the end of each shift.** **Operational Samples should be taken by the Plant ORC and analyzed for TSS(total suspended solids and oil/grease)**	**Documented daily water level readings to be given to CF Plant personnel at least weekly.** **Pump total run times to be given to CF Operator of Responsible Charge for NPDES purposes and monthly DMR reporting.** **Piezometer readings should be taken and documented at the same time as the staff gauge. All readings should be taken at the same time each day (+/- 3 hours)** **Henry Gales**
Pumping down water	Pump down water using portable pump. Water should be pumped directly into the current discharge canal area. Run discharge hose into a splash block at canal. Allow discharge water to follow normal path. All hoses should be secured to prevent whipping	All discharge activities should simulate normal discharge and not exceed more than one foot of drop in 24 hours. **Any deviation from this plan should result in pumping operation shutdown and assessment of conditions prior to restarting.**
Condition Change	Look for cloudy discharge or sediment in outflow.	Check suction to make sure it is floating and hasn't fallen to the bottom. TSS will still need to be monitored.
Shutdown Activities @ end of day	Document the water level at end of day. Position Equipment in safe area and Shut down properly and make sure hose ends are out of the water. DRAIN PUMPS DAILY Leave area clean and ready for next day Barriers will be required under all equipment not located in a containment when shutdown for the day.	Swimming pools or plastic/canvas barrier should be underneath all equipment not located in containment.

Anticipated Equipment to be Used on the Dam for Dewatering Activities: Note: The following weight limits of equipment used on the dam: Weight of Tracked Equipment < 40 tons Weight of Service Vehicles < 10,000 pounds Weight of Rubber Tired Equipment < 17 tons per axle	Please note that we **cannot change (i.e., cut it, lower it, etc.)** the riser structure without having a permit from Dam Safety to do so, which we do not want to do, if possible.	

Document ID: 0.7.3304.12991

From: Stewart, Wanda </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=wanda.stewart>

To: Zarzar, Issa </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=issa.zarzar>; Brown, Kevin </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=kevind.brown>; Wimberly, Danny </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=danny.wimberly>; Baxley, Larry </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=larry.baxley>

Cc:

Bcc:

Subject:

Date: Fri Mar 21 2014 12:30:34 EDT

Attachments: FileViewer.aspx.pdf

Cape Fear contract

Document ID: 0.7.3304.12991-000001
Owner: Stewart, Wanda </o=dukeenergy/ou=exchange administrative group (fydibohf23spdlt)/cn=recipients/cn=wanda.stewart>
Filename: FileViewer.aspx.pdf
Last Modified: Fri Mar 21 12:30:34 EDT 2014

DUKE ENERGY. PROGRESS

Glenn Underwater Services, Inc.
5325 Marshall Air Drive
Charlotte, NC 28217

Attn: Richard L. Glenn
rickglenn@glenndiving.com

CONTRACT NO. 94055
WORK AUTHORIZATION NO. 057
EFFECTIVE JANUARY 21, 2014

This Work Authorization is entered into by and between Progress Energy Service Company, LLC, not in its individual capacity, but solely as agent for **Duke Energy Progress, Inc., formerly known as Progress Energy Carolinas, Inc.** (hereinafter "Owner") and **Glenn Underwater Services, Inc.,** (hereinafter "Contractor") under the terms of the above referenced Contract.

In consideration for the monies to be paid by Owner to Contractor as specified herein, and subject to the terms and conditions of the above referenced Contract, Contractor agrees to perform the following work (hereinafter "Work") and to furnish all labor, tools, materials, equipment, transportation, and supervision necessary therefor:

Contractor shall provide abdonment and leak sealing further described in Contractor's Quote No. 2013-837NC (Attachment A) at Owner's Cape Fear Plant as directed by Owner's Designated Representative.

Mr. Kevin Brown, (919-418-3956), KevinD.brown@duke-energy, is appointed as Owner's Designated Representative for the administration of this Work Authorization.

All Work shall be performed as directed by Owner's Designated Representative.

The Work shall start on or about January 27, 2014 and shall be completed no later than December 31, 2014. Actual dates of Work performance shall be coordinated by Owner's Designated Representative.

Upon satisfactory completion of performance by Contractor of the Work described above, Owner will pay Contractor, as full compensation for the Work performed under this Work Authorization a lump sum amount of ninety seven thousand two hundred thirty dollars ($97,230.00).

Invoices for Work performed under this Work Authorization should be emailed to Kevin Brown at kevind.brown@duke-energy.com. Each invoice must contain the contract number.

Employment Taxes and Contributions

Contractor assumes exclusive liability for all contributions, taxes or payments required to be made under the applicable federal and state Unemployment Compensation Act, Social Security Acts and all amendments, and by all other current or future acts, federal or state, requiring payment by the Contractor on account of the person hired, employed or paid by Contractor for Work performed under this Contract.

Property Taxes

Owner shall be solely responsible for any ad valorem, property, license, privilege, excise, or similar taxes lawfully imposed on property owned by Owner. Contractor and its Subcontractors shall be solely responsible for any ad valorem, property, license, privilege, excise or similar taxes lawfully imposed on property owned by Contractor and its Subcontractors, respectively that is used for but not incorporated into the Work.

Sales and Use Taxes

Contractor assumes exclusive liability for all sales, use or privilege taxes applicable to any materials, supplies, equipment or tools purchased, rented, leased, used or otherwise consumed by Contractor in conjunction with the performance of the Work.

Contractor shall invoice the sale of tangible personal property separately from the provision of labor or services. Tangible personal property includes materials, parts or other property that Contractor installs, incorporates, furnishes or otherwise supplies for Owner's use or consumption that becomes the property of Owner. Invoices for tangible personal property sold to Owner shall contain a note stating, "Property Transferred to Owner."

Owner holds a NC Form E-595 Direct Pay Permit for Sales and Use Taxes on Tangible Personal Property (Permit Number 00007) with the state of North Carolina (Attachment B). Owner holds a SC Form ST-9 Exemption Certificate Direct Pay Permit (certificate No. 1289532-000) with the state of South Carolina. These certificates require Owner to remit sales, use or privilege tax on purchases of all property, except real property, directly to the State Departments of Revenue and the appropriate certificate is hereby furnished to Contractor for use on this Contract only. Therefore, Contractor shall not include sales, use or privilege tax in the Contract price or on its invoices to Owner for tangible personal property sold to Owner.

Contractor shall supply a partial release of lien with each invoice related to the authorized Work, or affidavits that all bills for materials and labor have been paid and receipts showing the payment of these bills. Failure or refusal by Contractor to comply with such request shall excuse Owner from making any further payments to Contractor until Contractor does comply. Owner reserves the right to pay any outstanding obligations of Contractor for labor and materials used in the authorized Work by a check made payable jointly to Contractor and Contractor's vendors, subcontractors or employees. Any payment made in this manner shall apply as a payment to Contractor under this Contract. Owner may deduct from any payment any amounts owed to Owner by Contractor.

Each invoice shall indicate materials furnished and delivered to the site. The invoice shall include a statement or be accompanied by time sheets showing each employee's name, classification, hours worked, applicable rate of compensation to Contractor. If any special equipment has been used, the invoice must also specify the equipment used, hours of usage, and rate of reimbursement for use. In support of the plant retirement project, Contractor shall email to Owner's DR, their safety hours worked on the project on a weekly basis by EOB each Tuesday.

Subject to the above conditions and all conditions set forth in the above-reference Contract, all payments, excluding final payment, will be made not later than forty-five (45) days after receipt of Contractor's invoice. Final payment shall be made not later than forty-five (45) days after receipt of Contractor's invoice and all of the following have been completed:

(1) All Work has been completed and accepted, including outstanding punch list items, final cleanup, testing, demobilization, and receipt of all required documentation by Owner.

(2) A correct invoice covering the Work has been presented to Owner.

(3) A properly executed Final Release upon work completion from Contractor, included as Attachment C to this Work Authorization, together with any other requested affidavits or receipts, have been provided to Owner.

Contractor, Contractor's employees, and employees of Contractor's subcontractor(s) performing Work under this Contract shall comply with Owner's Code of Ethics. Owner will make the Code of Ethics available to Contractor in order for Contractor to provide a copy to any employee with (i) a presence for a single period of 15 calendar days or more upon property owned or leased by Owner (except right-of ways) or any of Owner's subsidiaries or affiliates and/or (ii) access to Owner's business critical infrastructure and/or (iii) security badge access to Owner facilities. Each such employee shall sign an Acknowledgment Form (Attachment D) in substantially the form set forth by Owner. Contractor shall retain the signed forms for Owner audit purposes for the term of the Contract plus one (1) year. The audit right provided herein shall not be restricted by any other audit provisions of the Contract. Contractor shall not be required to obtain signatures on Acknowledgement Forms for those employees assigned to Owner sites exclusively to provide storm support.

Contractor, Contractor's employees, and employees of Contractor's subcontractor(s) performing Work under this Contract are obligated to comply with all applicable laws and regulations and with all applicable health, safety and security rules, programs and procedures. The Owner Code of Ethics identifies principles concerning lawful and ethical conduct that must be followed by Contractor's employees in the performance of Work. The Code of Ethics also provides for an AlertLine reporting mechanism that enables the reporting of suspected violations of law and of the Code of Ethics as a part of Owner's program to prevent and detect violations of law and criminal or unethical conduct.

As required by the Insurance Section of the Contract, before any Work is performed and before any invoices are paid for Work performed under this Work Authorization, written proof of compliance with the insurance requirements of the above-referenced Contract must be on file with Owner on a certificate executed by an authorized representative of Contractor's insurer and identified by the Owner Contract number.

If any conflicts exist between the provisions of this Work Authorization and the provisions of the Contract under which this Authorization is let, or any Amendment to this Contract, the provisions of this Work Authorization shall govern the Work described above. All other items in the Contract or Contract Amendments remain unaffected by this Work Authorization.

This Work Authorization and the Contract, as amended, embody the entire agreement between Owner and Contractor for the Work described above. The parties shall not be bound by or liable for any statement, writing, representation, promise, inducement or understanding not set forth within this document, itself. No changes, modifications, or amendments of any terms and conditions of this Work Authorization are valid or binding unless agreed to by both parties in writing and signed by their authorized agents.

Owner and Contractor acknowledge that contract, work authorization and amendment documents requiring signatures may be transmitted electronically. Owner and Contractor stipulate that if this Work Authorization is transmitted electronically, the electronic transmittal of the original execution signatures shall be treated as original signatures and given the same legal effect as an original signature.

All other terms in the Contract or Contract Amendments remain unchanged.

This Work Authorization shall become effective only after receipt and execution by an authorized representative of Owner.

The parties execute this Contract by their signature or the signature of their authorized agents.

By signing below, the person executing this Contract for the Contractor warrants and represents that he or she is fully authorized to sign this Contract on behalf of the Contractor, and that by virtue of his or her signature, the Contractor is fully bound by the terms and conditions of this Contract. Upon request of Owner, Contractor agrees to supply evidence satisfactory to Owner that the person signing this Contract on behalf of the Contractor is authorized to execute this Contract. The parties execute this Contract by their signature or the signature of their authorized agents.

GLENN UNDERWATER SERVICES, INC.	DUKE ENERGY BUSINESS SERVICES, LLC as agent for DUKE ENERGY PROGRESS, INC.
By:	By:
Name (printed): RICHARD L. GLENN	Name: Jenny Williams
Title: PRESIDENT	Title: Associate Sourcing Specialist
Date: 1-22-2014	Date: 1/21/2014

Contractor named above is appointed as the person to whom all official correspondence to Contractor concerning this Contract should be directed.

This Work Authorization shall become effective only after receipt and execution by an authorized representative of Owner.

The parties execute this Contract by their signature or the signature of their authorized agents.

By signing below, the person executing this Contract for the Contractor warrants and represents that he or she is fully authorized to sign this Contract on behalf of the Contractor, and that by virtue of his or her signature, the Contractor is fully bound by the terms and conditions of this Contract. Upon request of Owner, Contractor agrees to supply evidence satisfactory to Owner that the person signing this Contract on behalf of the Contractor is authorized to execute this Contract. The parties execute this Contract by their signature or the signature of their authorized agents.

GLENN UNDERWATER SERVICES, INC.	**DUKE ENERGY BUSINESS SERVICES, LLC** as agent for **DUKE ENERGY PROGRESS, INC.**
By: _____	By: Jenny Williams
Name (printed): _____	Name: Jenny Williams
Title: _____	Title: Associate Sourcing Specialist
Date: _____	Date: 1/21/2014

Contractor named above is appointed as the person to whom all official correspondence to Contractor concerning this Contract should be directed.

Attachment A

Glenn Underwater Services, Inc.
5325 Marshall Air Drive
Charlotte, NC 28217
P: 704-540-9777 F: 704-540-7707
www.glenndiving.com

Project Estimate

October 22, 2013

Duke Energy

Proposal for Abandonment of Intakes and Leak Sealing

Cape Fear Steam Plant

2013-837NC

Quote Valid for: 90 Days

Client Contact: Kevin Brown

ESTIMATE DETAILS				
Item	Qty.	Description	Rate	Sub-total
		Cape Fear Abdonment and Leak Sealing		**$97,230.00**
		Includes:		
A		**Isolation of 1-4 Intake Tunnels**		
		Divers Seal Upstream Sluice Gates - Dewater Intake		
		Construct Two Intake Bulkheads & Pump Concrete in the dry (10' & 5' Daimeter Pipes)		
B		**1-4 Discharge Point Bulkheads**		
		Divers seal bulkheads		
C		**Cooling Tower Discharge Line: 120"**		
		Construct Bulkhead at Entrance into Discharge Canal		
D		**Ashpond Riser Repairs**		
		Chemical Grout Injection to Seal Riser Pipes at Ash Ponds		
		** Cost includes engineered drawings of bulkheads.*		
		Estimated Total		**$97,230.00**

Attachment B

E-595

1-02

Direct Pay Permit
for Sales and Use Taxes on Tangible Personal Property

North Carolina Department of Revenue

Permit Number: **00007**

Issue Date: **December 6, 2000**
Corrected and Reissued: September 3, 2003

Issued To: **Carolina Power & Light Company dba Progress Energy Carolinas, Inc.**

Address: **P. O. Box 1551, Raleigh, North Carolina 27602**

This permit is issued under N.C.G.S. 105-164.27A. It certifies that the North Carolina Department of Revenue has issued a direct pay permit to the business named on the permit. The permit authorizes a retail or wholesale merchant to whom it is presented to sell tangible personal property to the business named on the permit without collecting sales or use tax on the sale, if the sale is within the scope of the permit. Bulletin 46-1 of the Sales and Use Tax Technical Bulletins lists the taxes that are not subject to the direct pay permit. The business named on this permit has assumed responsibility for the direct payment of tax on all purchases that are within the scope of the permit.

A vendor to whom this permit is presented must keep a record of the permit in its files. The record can be in paper or electronic form.

If the Secretary of Revenue cancels or revokes this permit, the permit is no longer valid. When a taxpayer's permit is cancelled or revoked, a vendor must collect sales and use tax on sales made to taxpayer after the effective date of the cancellation or revocation. A taxpayer whose permit is cancelled or revoked is required to notify its vendors of the cancellation or revocation and the effective date of the action.

Issued By: _____
Director of Sales and Use Tax Division
North Carolina Department of Revenue

Attachment C

CONTRACTOR'S LIEN WAIVER AND RELEASE UPON FINAL PAYMENT

Owner: Progress Energy Carolinas, Inc., 410 S. Wilmington Street, Raleigh, NC 27601
Contract No.: _____
Project Description: _____
Project Location: _____
Contractor: _____

Upon receipt by Contractor of a payment from Owner in the sum of _____ ($_____) for Invoice Number_____ , Dated _____, and when the payment has been endorsed and paid by the bank upon which it is drawn, Contractor will be paid in full for all Work performed (including all labor, services, equipment or materials furnished) to, or for the benefit of the Contract described above, and does hereby waive and release any right to a mechanic's lien, stop notice, bond right or any right against a labor or material bond on the job Contractor has on or relating to the Contract described above.

Contractor certifies that all labor, materials and services furnished and all taxes (including state and federal payroll taxes) and insurances payable, by or through Contractor, in connection with performance of the Contract (and any changes thereto) have been paid in full, and Contractor agrees to defend, indemnify and hold Owner, and all of their officers, agents, employees, assigns, or heirs harmless from and against any liens, claims, demands, penalties, losses, costs, liability, damages, and/or legal costs in any manner whatsoever arising out of labor, services, or materials performed, furnished, or rendered under or pursuant to or in respect of the performance of said Work. Contractor acknowledges any continuing applicability of the Contract according to its terms, including without limitation any guarantee, indemnity or warranty provisions contained therein.

By its signature hereon the Contractor represents and warrants that it is not entitled to request additional compensation and/or for additional time to perform its obligations under the Contract (and any changes thereto) and hereby waives any such request(s).

Effective this _____ day of _____, 20__.

(Corporate Seal)

_____
Contractor's Name

_____
By

_____
Title

_____

_____

_____
Address

(If the Contractor is a corporation, the following Certificate shall be executed).

I, _____, certify that I am the _____of the Corporation executing this Release and Certificate; that _____who signed this Release and Certificate on behalf of Contractor was then _____ of said Corporation; that said Release and Certificate was duly signed for and on behalf of said Corporation by authority of its governing body, and is within the scope of its corporate powers.

STATE OF _____)
§
COUNTY OF _____)

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
Notary Public In and For Said State

Attachment D

Contract Employee
Code of Ethics Acknowledgment Form

Please go to the following website to review the Progress Energy Code of Ethics prior to signing this Acknowledgment Form. Hard copies are available upon request.

https://www.progress-energy.com/investors/corpgov/codeofethics.asp

I have read the Progress Energy Code of Ethics. I understand that the principles stated in the Code of Ethics represent those of Progress Energy as they relate to the work I perform as an independent contractor (or as an employee of an independent contractor of Progress Energy), and that violating those principles, or the legal and regulatory requirements applicable to my work may result in disciplinary action by my employer. I agree to abide by and support the legal and regulatory requirements applicable to my work. I understand that if I have questions concerning appropriate ethics or relevant legal and regulatory requirements, I should consult with my supervisor.

_____
Signature of Contract Employee

_____
Name of Contract Employee

_____
Date

_____
Contractor Organization

Contractor shall maintain completed forms. Do not return completed forms unless they are specifically requested by Owner.

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 005 Month Sept Year 2013

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed Person (s) Collecting Samples Henry Gales Malcom K Long

Mail ORIGINAL and ONE COPY to:
ATTN: Central Files
N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

(x)
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

By This Signature, I Certify That This Report Is Accurate And Complete To The Best Of My Knowledge.
Because of documented variations in precision and bias of EPA procedures, it is not possible to absolutely certify the precise accuracy of the data contained in this DMR.

Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1												
2												
3	0.2											
4												
5												
6												
7												
8												
9												
10	0.2											
11												
12												
13												
14												
15												
16	0.2											
17												
18												
19												
20												
21												
22												
23												
24	0.2											
25												
26												
27												
28												
29												
30	0.068											
31												
Average	0.2											
Maximum	0.2											
Minimum	0.068											
Comp. (C) Grab (G)	N/A	G	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements [X]
All monitoring data and sampling frequencies do NOT meet permit requirements [ ]

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Issa J. Zarzar
Permittee (Please print or type)

Signature of Permittee** Date

7001 Pinecrest Road, Raleigh, NC 27613 (919) 881-3803 July 31, 2016
Permittee Address Phone Number Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204
** If signed by other than the permittee; delegation of signatory authority must be on file with the state per 15A NCAC 2B .0506 (b) (2) (D).
The monthly average for fecal coliform is to be reported as a GEOMETRIC mean. Use only designated units in the reporting facility's permit for reporting data.

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 005 Month Oct Year 2013

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed Person (s) Collecting Samples Henry Gales Malcom K Long

Mail ORIGINAL and ONE COPY to:
ATTN: Central Files
N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

(x)
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

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Because of documented variations in precision and bias of EPA procedures, it is not possible to absolutely certify the precise accuracy of the data contained in this DMR.

Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1	0.288											
2	0.299											
3	0.281											
4												
5												
6												
7	0.266											
8	0.306											
9	0.313											
10	0.259											
11												
12												
13												
14	0.295											
15	0.277											
16	0.281											
17	0.202											
18												
19												
20												
21	0.299											
22	0.313											
23	0.320											
24	0.216											
25												
26												
27												
28	0.320											
29	0.320											
30	0.328											
31	0.205											
Average	0.284											
Maximum	0.328											
Minimum	0.202											
Comp (C)/Grab (G)	N/A	G	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements: [X]
All monitoring data and sampling frequencies do NOT meet permit requirements: [ ]

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who mange the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Issa J. Zarzar
Permittee (Please print or type) Signature of Permittee** Date

7001 Pinecrest Road, Raleigh, NC 27613 (919) 881-3803 July 31, 2016
Permittee Address Phone Number Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204.
** If signed by other than the permittee, delegation of signatory authority must be on file with the state per 15A NCAC 2B .0506 (b) (2) (D).
The monthly average for fecal coliform is to be reported as a GEOMETRIC mean. Use only designated units in the reporting facility's permit for reporting data.

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 005 Month Nov Year 2013
Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham
Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625
Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab
Check If ORC has Changed Person (s) Collecting Samples Henry Gales Malcom K Long

Mail ORIGINAL and ONE COPY to:
ATTN: Central Files
N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

(x)
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

By This Signature, I Certify That This Report Is Accurate And Complete To The Best Of My Knowledge.
Because of documented variations in precision and bias of EPA procedures, it is not possible to absolutely certify the precise accuracy of the data contained in this DMR.

Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1												
2												
3												
4	0.050											
5	0.367											
6	0.356											
7	0.205											
8												
9												
10												
11	0.353											
12	0.324											
13	0.216											
14	0.320											
15												
16												
17												
18	0.364											
19	0.324											
20	0.212											
21	0.227											
22												
23												
24												
25												
26	0.200											
27												
28												
29												
30												
31												
Average	0.271											
Maximum	0.367											
Minimum	0.050											
Comp.(C)/Grab(G)	N/A	C	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements ☒
All monitoring data and sampling frequencies do NOT meet permit requirements ☐

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Issa J. Zarzar
Permittee (Please print or type) Signature of Permittee** Date

7001 Pinecrest Road, Raleigh, NC 27613 (919) 881-3803 July 31, 2016
Permittee Address Phone Number Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204
** If signed by other than the permittee: delegation of signatory authority must be on file with the state per 15A NCAC 2B .0506 (b) (2) (D).
The monthly average for fecal coliform is to be reported as a GEOMETRIC mean. Use only designated units in the reporting facility's permit for reporting data.

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 | Discharge No. 005 | Month Dec | Year 2013

Facility Name Cape Fear Steam Electric Plant | Class P/C I | County Chatham

Operator In Responsible Charge Henry Gales | Grade P/C I | Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed | Person (s) Collecting Samples Henry Gales Larry C Baxley

Mail ORIGINAL and ONE COPY to:
ATTN: Central Files
N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

(x)
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

By This Signature, I Certify That This Report Is
Accurate And Complete To The Best Of My Knowledge.
Because of documented variations in precision and bias of EPA procedures, it is not possible to absolutely certify the precise accuracy of the data contained in this DMR.

Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1												
2	0.367											
3	0.342											
4	0.331											
5	0.263											
6												
7												
8												
9	0.277											
10	0.248											
11	0.270											
12	0.198											
13												
14												
15												
16	0.200											
17												
18	0.189											
19	0.232											
20												
21												
22												
23	0.288											
24	0.270											
25	H											
26	0.200											
27												
28												
29												
30	0.036											
31	0.072											
Average	0.237											
Maximum	0.367											
Minimum	0.036											
Comp. (C)/Grab (G)	N/A	G	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)

All monitoring data and sampling frequencies meet permit requirements [X]

All monitoring data and sampling frequencies do NOT meet permit requirements [ ]

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Issa J. Zarzar
Permittee (Please print or type)

Signature of Permittee** Date

7001 Pincrest Road, Raleigh, NC 27613 | (919) 881-3803 | July 31, 2016
Permittee Address | Phone Number | Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204
** If signed by other than the permittee, delegation of signatory authority must be on file with the state per 15A NCAC 2B .0506 (b) (2) (D).
The monthly average for fecal coliform is to be reported as a GEOMETRIC mean. Use only designated units in the reporting facility's permit for reporting data.

EPARFI03891

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 001 Month Jan Year 2014

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed Person (s) Collecting Samples Henry Gales Larry C Baxley

Mail ORIGINAL and ONE COPY to:
ATTN: Central Files
N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

(x)
(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

By This Signature, I Certify That This Report Is Accurate And Complete To The Best Of My Knowledge.
Because of documented variations in precision and bias of EPA procedures, it is not possible to absolutely certify the precise accuracy of the data contained in this DMR.

Date	Operator Arrival Time 2400 Clock Hrs	Operator Time On Site Hrs	* ORC On Site Y/B/N	50050 Flow Effluent Daily Rate MGD	00556 Oil & Grease mg/L	00530 Total Suspended Solids mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L			
1			H											
2	6:30	10	Y	0.100										
3	6:30	10	Y											
4														
5														
6	7:00	10	Y	0.100										
7	7:00	10	Y											
8	7:00	10	Y											
9	7:00	10	Y											
10	6:30	10	Y											
11														
12														
13	7:00	10	Y	0.294										
14	7:00	10	Y	0.528										
15	7:00	10	Y	0.546										
16	7:00	10	Y	0.546										
17	6:30	10	N											
18														
19														
20	6:00	10	Y	0.546										
21	7:00	10	Y	0.336										
22	7:00	10	Y	0.564										
23	7:00	10	Y	0.450										
24	6:30	10	Y											
25														
26														
27	7:00	10	Y	0.534										
28	7:00	10	Y	0.564										
29	7:00	10	Y	0.414										
30	7:00	10	Y	0.330										
31	7:00	10	Y											
Average				0.418										
Maximum				0.564										
Minimum				0.100										
Comp (C)/Grab (G)				N/A	G	G	G	G	G	G	G			
Monthly Limit				N/A	15.0	30.0			1.0	1.0				

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements [X]
All monitoring data and sampling frequencies do NOT meet permit requirements [ ]

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Issa J. Zarzar
Permittee (Please print or type) Signature of Permittee** Date

7001 Pincrest Road, Raleigh, NC 27613 (919) 881-3803 July 31, 2016
Permittee Address Phone Number Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204
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EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 | Discharge No. 005 | Month Jan | Year 2014

Facility Name Cape Fear Steam Electric Plant | Class P/C I | County Chatham

Operator In Responsible Charge Henry Gales | Grade P/C I | Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed | Person (s) Collecting Samples Henry Gales Larry C Baxley

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Raleigh, NC 27699-1617

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Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1	H											
2	0.200											
3												
4												
5												
6	0.212											
7	0.205											
8	0.187											
9												
10												
11												
12												
13	0.100											
14												
15	0.288											
16	0.360											
17												
18												
19												
20	0.288											
21	0.288											
22	0.360											
23	0.252											
24												
25												
26												
27	0.324											
28	0.360											
29												
30	0.313											
31												
Average	0.267											
Maximum	0.360											
Minimum	0.100											
Comp. (C) Grab (G)	N/A	G	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)

All monitoring data and sampling frequencies meet permit requirements [X]

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7001 Pincrest Road, Raleigh, NC 27613 | (919) 881-3803 | July 31, 2016
Permittee Address | Phone Number | Permit Exp. Date

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EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 007 Month Jan Year 2014

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed Person (s) Collecting Samples Henry Gales Larry C Baxley

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Raleigh, NC 27699-1617

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(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

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Date	50050 Flow Effluent Daily Rate MGD	00010 Temperature °C	00400 pH Units	TGP3B Chronic Toxicity (P/F)	01002 Total Arsenic ug/L	01034 Total Chromium ug/L	01042 Total Copper ug/L	71900 Total Mercury ng/L	01067 Total Nickel ug/L	00625 TKN mg/L	00630 Nitrate-Nitrite mg/L	00600 Total Nitrogen mg/L	01027 Total Phosphorus mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL
1	H		H												
2	0.300	7	6.9												
3	0.300	8	6.8												
4															
5															
6	0.312	7	6.8												
7	0.205	6	6.7												
8	0.187	5	6.9												
9	0.300	5	6.9												
10	0.300	5	7.0												
11															
12															
13	0.394	5	6.9												
14	0.528	6	6.6												
15	0.834	7	6.8												
16	0.906	7	6.7												
17	0.300	7	6.8												
18															
19															
20	0.834	6	6.6												
21	0.624	6	6.9												
22	0.924	7	6.8												
23	0.702	5	6.8												
24	0.300	6	6.9												
25															
26															
27	0.858	5	6.6												
28	0.924	5	6.8												
29	0.414	5	6.8												
30	0.643	5	6.7												
31	0.300	5	6.9												
Average	0.518	6													
Maximum	0.924	8	7.0												
Minimum	0.187	5	6.6												
Comp. (C)/Grab (G)	N/A	G	G	C	C	C	C	G	C	C	C	C	C	C	G
Monthly Limit	N/A	32	6.0-9.0	P/F@90%											

Facility Status: (Please Check one of the following)

All monitoring data and sampling frequencies meet permit requirements ☒

All monitoring data and sampling frequencies do NOT meet permit requirements ☐

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Issa J. Zarzar
Permittee (Please print or type)

Signature of Permittee** Date

7001 Pinecrest Road, Raleigh, NC 27613
Permittee Address

(919) 881-3803
Phone Number

July 31, 2016
Permit Exp. Date

* ORC must visit facility and document visitations of facility as required per 15A NCAC 8G .0204

** If signed by other than the permittee, delegation of signatory authority must be on file with the state per 15A NCAC 2B .0506 (b) (2) (D).

The monthly average for fecal coliform is to be reported as a GEOMETRIC mean. Use only designated units in the reporting facility's permit for reporting data.

EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 | Discharge No. 001 | Month Feb | Year 2014

Facility Name: Cape Fear Steam Electric Plant | Class P/C I | County Chatham

Operator In Responsible Charge: Henry Gales | Grade P/C I | Phone (919) 774-4625

Certified Laboratories: (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

Check If ORC has Changed: | Person (s) Collecting Samples: Henry Gales, Larry C Baxley

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N.C. Div. Of Water Quality
1617 Mail Services Center
Raleigh, NC 27699-1617

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(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

By This Signature, I Certify That This Report Is
Accurate And Complete To The Best Of My Knowledge.
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Date	Operator Arrival Time 2400 Clock	Operator Time On Site	* ORC On Site	50050 Flow Effluent Daily Rate	00556 Oil & Grease	00530 Total Suspended Solids	00610 Ammonia Nitrogen	01002 Total Arsenic	01042 Total Copper	01045 Total Iron	01147 Total Selenium			
	Hrs	Hrs	Y/B/N	MGD	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	ug/L			
1														
2														
3	7:00	10	Y	0.576										
4	6:00	10	Y		ND	ND	ND	1.80			1.20			
5	7:00	10	Y											
6	7:00	10	Y											
7	7:00	10	Y											
8														
9														
10	7:00	10	Y	0.100										
11	7:00	10	Y	0.576										
12	7:00	10	Y	0.408										
13	7:00	10	Y											
14	7:00	10	Y											
15														
16														
17			N	0.438										
18	6:00	10	Y	0.474										
19			N	0.456										
20	7:00	10	Y	0.522										
21	7:00	10	Y											
22														
23														
24	7:00	10	Y	0.594										
25	7:00	10	Y	0.582										
26	7:00	10	Y	0.528										
27	7:00	10	Y	0.468										
28			N											
29														
30														
31														
Average				0.5				1.8			1.2			
Maximum				0.6				1.8			1.2			
Minimum				0.1				1.8			1.2			
Comp (C)/Grab (G)				N/A	G	G	G	G	G	G	G			
Monthly Limit				N/A	15.0	30.0			1.0	1.0				

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements [X]
All monitoring data and sampling frequencies do NOT meet permit requirements [ ]

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Issa J. Zarzar
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7001 Pincrest Road, Raleigh, NC 27613 | (919) 881-3803 | July 31, 2016
Permittee Address | Phone Number | Permit Exp. Date

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EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 005 Month Feb Year 2014

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

Certified Laboratories (1) Pace Analytical (2) Environmental Testing Solutions, LLC (3) Cape Fear Plant Lab

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Raleigh, NC 27699-1617

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(SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE

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Date	50050 Flow Effluent Daily Rate MGD	00530 Total Suspended Solids mg/L	00556 Oil & Grease mg/L	00610 Ammonia Nitrogen mg/L	01002 Total Arsenic ug/L	01042 Total Copper mg/L	01045 Total Iron mg/L	01147 Total Selenium ug/L	31613 Fecal Coliform cfu/100 mL			
1												
2												
3	0.100											
4	0.180	4.2	ND	ND	27.3			57	ND			
5												
6												
7												
8												
9												
10	0.324											
11	0.313											
12	0.162											
13												
14												
15												
16												
17	0.317											
18	0.299											
19	0.238											
20	0.259											
21												
22												
23												
24	0.342											
25	0.176											
26	0.310											
27	0.306											
28												
29												
30												
31												
Average	0.256	4.200			27.300			56.900				
Maximum	0.342	4.200			27.300			56.900				
Minimum	0.100	4.200			27.300			56.900				
Comp. (C)/Grab (G)	N/A	G	G	G	G	G	G	G	G			
Monthly Limit	N/A	30.0	15.0			1.0	1.0					

Facility Status: (Please Check one of the following)
All monitoring data and sampling frequencies meet permit requirements ☒
All monitoring data and sampling frequencies do NOT meet permit requirements ☐

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Permittee Address Phone Number Permit Exp. Date

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EFFLUENT- AMENDED DMR

NPDES Permit No. NC0003433 Discharge No. 007 Month Feb Year 2014

Facility Name Cape Fear Steam Electric Plant Class P/C I County Chatham

Operator In Responsible Charge Henry Gales Grade P/C I Phone (919) 774-4625

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1															
2															
3	0.676	6	6.6												
4	0.180	7	6.8	Pass	11.70	0.38	1.80	1.40	7.10	0.25	0.06	0.31	ND	25.80	27
5	0.200	7	6.7												
6	0.200	6	6.8												
7	0.200	6	6.9												
8															
9															
10	0.424	6	6.8												
11	0.889	7	6.8												
12	0.570	5	6.9												
13	0.200	5	6.8												
14	0.200	5	6.9												
15															
16															
17	0.755	6	6.5												
18	0.773	6	6.7												
19	0.694	6	6.6												
20	0.781	7	6.7												
21	0.200	8	6.8												
22															
23															
24	0.936	9	6.7												
25	0.758	9	6.9												
26	0.838	9	6.7												
27															
28															
29															
30															
31															
Average	0.526	7			11.70	0.38	1.80	1.40	7.10	0.25	0.06	0.31		25.80	27
Maximum	0.936	9	6.9		11.70	0.38	1.80	1.40	7.10	0.25	0.06	0.31		25.80	27
Minimum	0.180	5	6.5		11.70	0.38	1.80	1.40	7.10	0.25	0.06	0.31		25.80	27
Comp. (C)/Grab (G)	N/A	G	G	C	C	C	C	G	C	C	C	C	C	C	G
Monthly Limit	N/A	32	6.0-9.0	P/F@90%											

Facility Status: (Please Check one of the following)

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Cape Fear Steam Plant

Dive Operations Plan

Dive Date: March 19, 2014

Repair of Riser Joints
Ash Ponds

For
Duke Energy

Submitted

March 18, 2014

Glenn Underwater Services, Inc.

Glenn Underwater Services, Inc.
5325 Marshall Air Drive
Charlotte, NC 28217
P: 704.540.9777 F: 704.540.7707
www.glenndiving.com

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Dive Operations Plan
Ash Pond Riser Pipe Joint Repair
Cape Fear Steam Plant

Submitted To:

DUKE ENERGY®

Date Submitted: **March 18, 2014**

Prepared by:

Richard Glenn, President
Glenn Underwater Services, Inc.

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EPARFI03900

1.0 INTRODUCTION

Glenn Underwater Services, Inc. (GUS) has developed the following Dive Operations Plan in accordance with GUS's Corporate Safety Program, Duke Energy's Dive Operation Procedures, and the Association of Diving Contractors Consensus for Commercial Diving Operations. The plan will cover diving operations to be conducted in association with **the joint repairs to the riser pipes in the ash ponds at the Cape Fear Steam Plant. The dive will begin March 19, 2014.**

2.0 SPECIFIC DIVE INFORMATION

Dive Site	Cape Fear Steam Plant	
Dive Location	Riser Pipes (2- Ash Ponds)	
Dive Dates:	March 19, 2014	
Dive Platform	From shore	
Max. Depth (fsw)	15'	
Planned Decompression	No	
Decompression Table	30'	US Navy (See Appendix A for table)
Maximum Dive Time (each diver)	30' / 371 (minutes)	
Water Elevation (full pond)	182'	
Distance to Waterline from Deck	0'	
Anticipated Water Temp	58 F	
Anticipated Air Temp	62 F	
Anticipated Visibility	1-2 feet	

3.0 SPECIFIC WORK TASKS

Divers to prepare joint underwater for application of Adeka P-201 hydrophilic caulk

1. Pressure wash joint area at 6" width around entire radius of concrete riser;
2. Apply with caulk gun Adeka P-201 in entire joint opening and smooth to fill all voids;
3. Apply Carboline A-788 Splash zone epoxy over joint at a 5" width.
4. Final inspection of exposed surfaces of pipe to identify any areas of leakage to repair.
5. Remove Spillway & Unit(s) LOTO, gate to remain operational during sealing.

EPARFI03901

Dive Locations

4.0 DIVE TEAM

The minimum dive team shall be manned in accordance with the requirements established in the Association of Diving Contractors Consensus Standards for Commercial Diving Operations. The team shall consist of one (1) Dive Supervisor Record Keeper (1) Diver(s), and one (1) Standby Diver, and one (1) Tender.

Personnel:

1. John Trimboli (Supervisor/Record keeper)[1]
2. Caleb Beers (Diver)
3. Alex Paxton (Diver)
4. Stephen Rice (Tender)

See Attachment D for Diver Certs

4.1 Dive Supervisor Duties

Include but are not limited to the following:

- Preparation of the diving inspection;

EPARFI03902

- Ensuring the overall safety of the crew and the dive operation;
- Evaluate qualifications of dive team members;
- Initiation and verification of any applicable equipment tag out;
- Inspection of equipment;
- Conduct all briefings;
- Completion of all tasks as specified in contract documents in a timely manner;
- Assure all required records are maintained and completed.

4.2 Diver Duties

Include but are not limited to the following:

- Training and/or experience in the performance of the assigned task;
- Assure dive equipment is in good condition;
- Perform assigned task in a safe and efficient manner;
- Continuously report progress and conditions to topside;
- Perform as a Standby Diver and/or Tender as necessary.

4.3 Standby Diver Duties

Include but are not limited to the following:

- Be qualified as a diver;
- Assure dive equipment is in good condition.

4.4 Tender Duties

Include but are not limited to the following:

- Be qualified as a diver;
- Assure dive equipment is in good condition;
- Tend diver's umbilical;
- Tend air system and required equipment;
- Maintain equipment;
- Perform as a diver and/or standby diver as necessary.

4.5 Timekeeper's Duties

Include but are not limited to the following:

- Be qualified as a diver;
- Maintain diving logs, equipment and safety records;
- Operation of diver radios;
- Monitoring diver's air gauge;
- Monitoring diver's depth gauge.

EPARFI03903

The Glenn Underwater Services, Inc. crew has been outlined below for the purpose of these documents. In the event this crew changes, the site supervisor for Duke Energy shall be contacted to review the revision.

- Dive Supervisor/Record Keeper
- Diver
- Standby Diver
- Tender

5.0 DIVING MODE

Surface supplied air will be utilized in all aspects of this project. Divers will wear both Superlite 37 and 17's with hard-wire communication system. The air system consists of a 27cu.ft per/min diesel air compressor plumbed inline to a 30 gallon volume tank with air manifold and pneumo system. High-pressure air cylinder(s) (2,250 psi) will be plumbed directly into the manifold as the primary source of emergency air with the diver also wearing a 50 cu.ft. bailout bottle as a backup emergency air system. In the event of a loss of main air, the radio operator can instantly turn a valve to supply the diver with a large supply of emergency air.

6.0 ACTIVITY HAZARD ANALYSIS

All underwater work will be performed by divers utilizing the Surface Supplied Air diving mode. The act of working underwater inherently presents a certain degree of danger. Situations that might arise from a diving standpoint are anticipated and subsequent emergency action is planned for. These situations will be covered in the Emergency Management Plan section of this document. This section will cover the potential hazards associated with the specific diving tasks related to the referenced scope of work.

7.0 SITE SPECIFIC HAZARDS

If a diving incident occurs the standby diver would enter the water and assist retrieval of the diver. The diver will be lifted onto the deck with assistance from support personnel. The diver would be placed on a stretcher and taken to the powerhouse. This process would also be carried out for any person topside that would be injured too.

8.0 RELATED HAZARDS

Recommended Controls:

1. The dive supervisor, diver and site team, prior to commencing dive operations must evaluate environmental conditions. Diver will immediately

EPARFI03904

inform topside personnel of any change in conditions so the topside team (tender) can monitor umbilical and divers vitals closely;

2. Dive staff must be thoroughly briefed and debriefed on work site structure. Diver must properly orient himself in relationship to equipment and structural components. All personnel must be aware of possible hazards with leakage. In the event that the diver is injured, the Dive Supervisor will immediately contact emergency medical personnel and Duke Energy's personnel;
3. Dive station and immediate topside work zone will be kept organized and free from extraneous equipment and construction materials. Diver will be tightly tended and assisted by the topside support personnel when entering and exiting the water;
4. To prevent hypothermia the diver will be utilizing a hot water dive system. Heat is supplied by a diesel-fired burner capable of 250,000 BTU. A manual fuel pressure adjustment has been added that enables divers to maintain a constant water temperature when the system is in use. The variation in temperature is maintained at plus or minus one degree. GUS uses an adjustable high temperature shut-off to shut down automatically should the water temperature become too warm.
5. Divers will be working at depths of up to approximately 33-feet;
6. Divers will be monitored topside real-time with helmet mounted video;
7. Each member of the GUS Dive Team will wear a reflective safety vest while on-site for the duration on the work shift. This vest is part of the PPE that is required to be worm at all times;
8. All fuel shall be stored on-site in safety cans placed in spill containment at all times, with fire extinguishers located nearby.

9.0 EQUIPMENT TO BE USED

Standard Equipment

325 Diesel Compressor
Generator (w/GFIC)
Volume Tanks and Filters
Emergency Air Backup
(2) Surface Supplied Helmets

(2) Divers Umbilical's – 2
Emergency Rescue Package

Divers Two Way Communication
Tools

Site Specific Equipment

Hot Water Dive System (cold H20 temp)

INSPECTION REQUIREMENTS

EPARFI03905

1. Oil lubricated compressors shall be equipped with high temperature, equipment failure, and carbon monoxide continuous monitoring alarm system. All alarm systems shall be designed so the dive supervisor will be made aware of all hazardous conditions. All systems will be calibrated daily or before use if not used daily. A record of the results of the testing shall be maintained.
2. The diving air compressor is required to be tested for air quality every six months and to meet the standards set for in OSHA regulations, 29 CFR 1910, Subpart T.

3. The diver's umbilical shall be tested in accordance with procedures set forth in OSHA regulations, 29 CFR 1910, Subpart T. Testing documentation is kept in equipment logs and is available upon request.

4. The two-way communications radio will be checked to assure that it is functional and has a fully charged battery and is connected to a primary power supply (115v).

5. Volume tank and filters will be bled periodically. Filters will be changed every 3 months of continuous use or every 6 months during storage.

6. Verify that all hoses, seals, and connections are in proper working order and that no leaks or signs of damage are apparent. Lubricate and rinse moving parts to insure that tools are working properly and efficiently.

10.0 DIVING PARAMETERS

The estimated duration of each dive will vary dependent upon activity. There will be only one diver in the water during any diving operation. All topside safety checks and checklists will be completed and logged prior to the commencement of operations.

Dives will be documented for each working dive. Voice communications will be maintained at all time; loss of communications will result in immediate recovery of the diver.

The dive plan, safe practices manual, hazard analysis and emergency information will be available to team members on site at all times. Work may be stopped by any individual who finds an unsafe condition and will not continue until the unsafe condition has been corrected.

Divers will wait at least 12 hours before flying after any dive. This interval should be extended to 24 hours following multiple days of repetitive dives.

EPARFI03906

11.0 DIVING OPERATIONS

All diving operations will be conducted in strict accordance with Glenn Underwater Services, Inc. Safe Practices Manual for Commercial Diving Operations and the OSHA regulations for Commercial Diving Operations, Association of Diving Contractors, and the Consensus Standards for Commercial Diving Operations.

12.0 EMERGENCY MANAGEMENT PLAN

12.1 EMERGENCY NUMBERS

The nearest telephone to the dive station will be located prior to any diving operations. A cellular phone will also be considered. Emergency telephone numbers posted at the dive station will include but not be limited to:

Nearest Hyperbaric Facility
Local Fire / Rescue
Nearest Helicopter Emergency Service
Local Hospital
Diver's Alert Network

13.0 RESCUE PROTOCOL

13.1 UNCONSCIOUS DIVER

15.1.1 The GLENN UNDERWATER SERVICES, INC. Dive Supervisor will coordinate the rescue effort.

15.1.2 Instruct standby diver(s) to assist in extraction, if needed. Standby diver(s) will be recovered as soon as conditions permit. Standby divers will be continuously monitored during diver extraction.

15.1.3 Diver will be removed from the water. GLENN UNDERWATER SERVICES, INC. tenders will shackle diver into lifting device and assist in bringing him up the ladder.

15.1.4 GLENN UNDERWATER SERVICES, INC. personnel trained and qualified in administering CPR and basic First Aid, will remove the diver's helmet and check for breathing and pulse. If breathing is absent but pulse is present, start mouth-to-mouth ventilation while removing the dive suit. If breathing and pulse are absent, remove suit and begin CPR.

15.1.5 When the medical team arrives, they shall take charge. Providing the diver's condition is not a dive-related medical problem, the GLENN

EPARFI03907

UNDERWATER SERVICES, INC. dive team supervisor or his designee shall remain in charge of supervising medical treatment. GLENN UNDERWATER SERVICES, INC. personnel will assist as necessary.

15.1.6 The local ambulance will transport injured diver to the appropriate medical facility under the supervision of the Emergency Medical Team or the Designated GLENN UNDERWATER SERVICES, INC. personnel.

13.2 RECOMPRESSION CHAMBER

15.2.1 Notify Divers Alert Network (D.A.N.) at 919-684-8121. They will help arrange for air transportation as required.

A. Refer to D.A.N. information sheet posted at dive station.

15.2.2 Emergency Medical Team will transport diver on oxygen. The GLENN UNDERWATER SERVICES, INC. diver supervisor or his designee will accompany the ambulance.

13.3 LOSS OF AIR

In the event of loss of main air:

15.3.1 Shift diver to emergency air;

15.3.2 Remove diver from water according to normal procedures;

15.3.3 Remove diver's helmet;

15.3.4 Contact Dive supervisor and resolve cause of loss of air.

13.4 FOULED DIVER

15.4.1 Have diver clear himself immediately before continuing work;

15.4.2 If the diver cannot clear himself, have standby diver clear the diver.

13.5 FOULED DIVER UNCONSCIOUS OR INCAPACITATED

15.5.1 Standby diver(s) will clear fouled diver, shackle him to the lifting device and assist him to the surface.

15.5.2 Refer to Section 13.1.4

14.0 DIVE PROCEDURES

Dive procedure checklists and equipment certifications are contained in Glenn Underwater Services, Inc., Corporate Safe Practices Manual for Commercial Diving Operations. Copies of these documents are kept at the dive station at all times.

EPARFI03908

15.0 ALTERATIONS TO THE PLAN

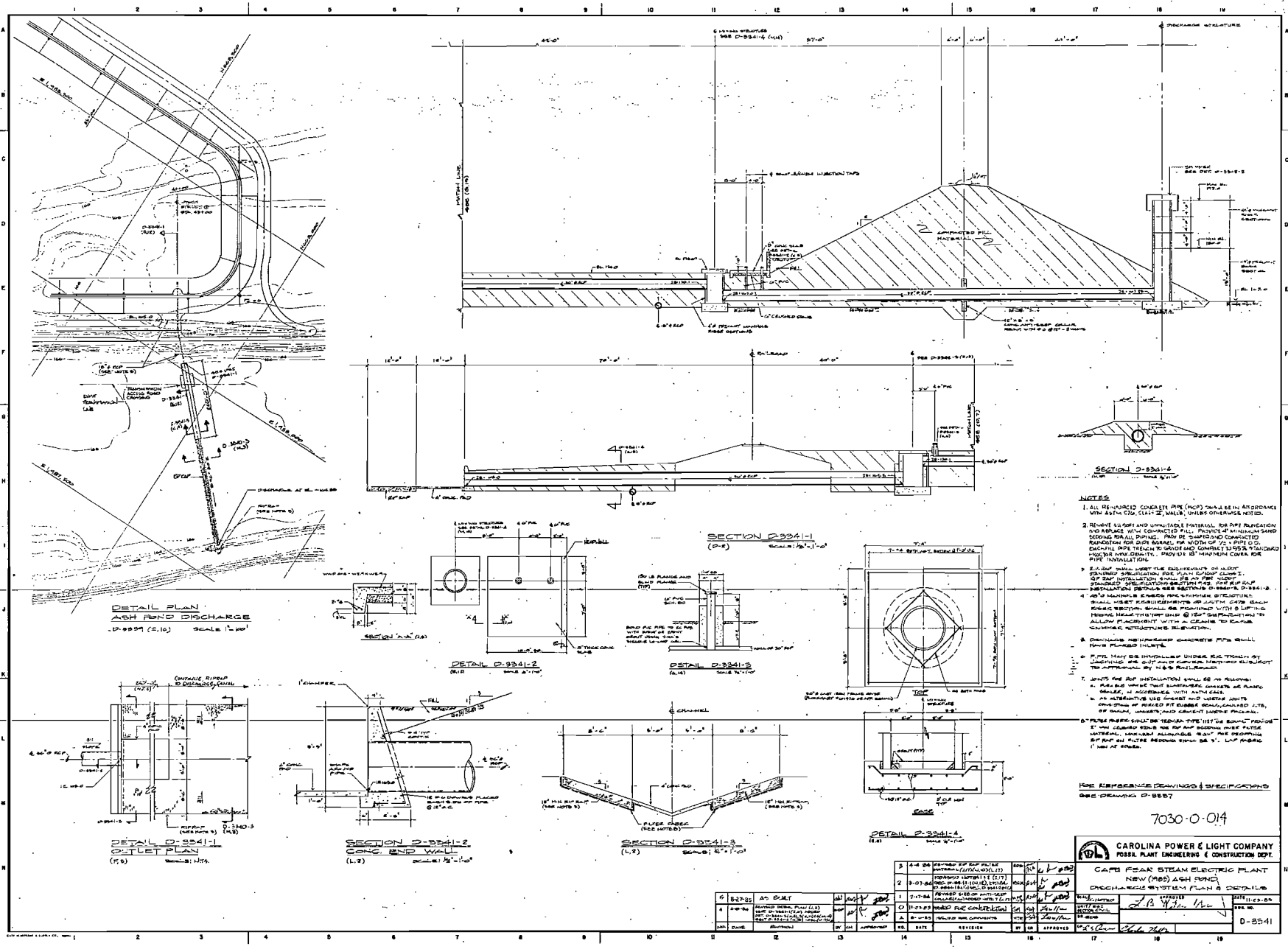
If for any reason the dive plan is altered in mission, depth, personnel, or equipment, the Site Safety Supervisor for **Duke Energy/Cape Fear – James Hailey** shall be contacted in order that he may review any revision prior to actual operation.

EPARFI03909

Attachment A

Drawings

EPARFI03910



EPARF103911

Attachment B

Site Specific Emergency Information

EPARFI03912

EMERGENCY INFORMATION & PHONE LIST

Cedar Creek Hydro Station – Spillway Gate Bulkhead

(To Be Posted in Visible Location at Dive Station)

CLOSEST CHAMBER:	*** 919.684.9111
AMBULANCE:	911
POLICE:	911
HOSPITAL:	Central Carolina Hospital 1135 Carthage St Sanford, NC 27330 919-774-2100
USCG:	N/A
FIRE:	911
HELICOPTER:	911
SITE SAFETY:	Dispatch
SITE SUPERVISOR:	James Hailey

DIVERS ALERT NET (DAN) 919-684-9111

KIM GISSENDANNER 843-412-8830

GLENN UNDERWATER SERVICES, INC 704-540-9777

MISC. NAMES & NUMBERS:

RICHARD GLENN – (704) 996 -1326

***DIVERS ALERT NETWORK WILL BE CONTACTED FIRST FOR AVAILABLE HYPERBARIC CHAMBER

EPARFI03913

Attachment C

Equipment Certs

EPARFI03914

LAB ON LOCALE

Portable Gas Analysis System

GCBA
GULF COAST BREATHING AIR

281-449-6730 fax 281-449-8738
9702 B Wallisville Rd. • Houston, TX 77013

Customer Name	**Glenn Underwater Services**
Test Date / Technician	01/08/14 3:38:13 PM / Luis Torres
Lot Number	
Compressor Make	Quincy 325
Compressor Serial Number	QB0911300029
Sample Pressure	40
Test Standard	**CGA E (G-7.1, '04)**

Analytes	Sample	Standard	Accuracy
Oxygen (%)	**21.0**	20 - 22	+/- 2%
Carbon Dioxide (ppm)	**238.8**	1000	+/- 2%
Carbon Monoxide (ppm)	**<1**	10	+/- 2%
Methane (ppm)	**<1**	25	+/- 2%
Nitrogen Dioxide (ppm)	**<1**	na	+/- 2%
Sulfur Dioxide (ppm)	**<1**	na	+/- 2%
Dewpoint (F)	**-68.5**	na	+/- 2%
Oil/Particles (mg/m3)	**Pass**	5	+/- 2%
Odor	**None**	None	+/- 2%
Results	**Sample Meets Standard**		

Test performed by Lawrence Factor, Inc. for Gulf Coast Breathing Air - LOL000934

IMPORTANT: This air/gas or substance was tested only against a specified standard and may contain undetected items which are beyond the purpose or scope of this analysis. More extensive testing can be conducted upon request. This does not guarantee the condition nor safe application of the analyzed air/gas substance. Results reported relate only to the items tested. This report shall not be reproduced except in full, without the written consent of Lawrence Factor, Inc. Methods used: IR, electrochemical, color sensor, sniffing.

This report contains information which is confidential and may be legally privileged. The information is intended only for the individual or entity named on this report. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of this information is prohibited. If you received this report in error, please notify us by phone immediately so that we can arrange for retrieval of the original report.

ACCREDITED SP EA APLAC IAAC ilac

Technician / Luis A. Torres

Endorsement / President

Endorsement / Lab Director

X-zam Laboratories

Attachment D

Diver Certs

EPARFI03916

Commercial Diving Academy

This is to certify that

Jonathan Trimboli

Having satisfactorily completed the course of study
and having complied with all other requirements of the Academy in
Jacksonville, Florida on this 21st Day of September 2007

Diploma

With all the honors, rights, privileges and obligations pertaining to

Air/Mixed Gas Commercial Diver

FOUNDER/CEO

DIRECTOR OF EDUCATION

COMMERCIAL DIVING ACADEMY INC.
EDUCATION INTEGRITY SAFETY
INTERNATIONAL

EPARFI03917

Medical Examination

I hereby certify that

Jonathan D. Trimboli

is ***FIT*** *for Commerical Diving*

1-9-2014

Date

Glenn Underwater Services, Inc.

Expires 1 Year From Physical Date

Address of Approved Doctor

Jordan R Baker PA-C

Name of Approved Doctor (Printed)

URGO-BALLANTYNE
Ballantyne Lake Road
Suite 100
Charlotte, NC 28277

Phone Number 704 687-2650

Jordan R Baker PA-C

Doctor's Signature

EPARFI03918

Certificate Of Completion

PRESENTED TO

Jonathan Trimboli

In Recognition of Successful Completion of Requirements In

Basic Life Support

1/8/2014
CERTIFICATION DATE

1/8/2016
EXPIRATION DATE

HOLDER'S SIGNATURE

AUTHORIZED SIGNATURE

AMERICAN SAFETY TRAINING INSTITUTE
ASTI

www.AmericanSTI.org

This certifies participant listed above has successfully passed skills evaluation in accordance with national cognitive skills examination standards, and American Safety Training Institute certification terms and conditions. American Safety Training Institute courses follow national guidelines set by the American Heart Association (AHA), and the International Liaison Committee on Resuscitation (ILCOR). The American Safety Training Institute is not associated, affiliated with, sponsored, or endorsed by, American Safety and Health Institute (ASHI), American Heart Association (AHA), or American Red Cross (ARC), and unless otherwise specified no affiliation or endorsement is implied.

EPARFI03919

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P.O. Box 830724 • Birmingham, Alabama 35283-0724

(205) 879-1150 • (800) 245-1150 • Fax (205) 879-1095

To: **PROFESSIONAL SCREENING &INFORMATION**
316 BROAD STREET
ROME, GA 30161-

Results of Controlled Substance Test

Date of Transmittal: 05/07/13
Division / Location: Glenn Underwater Svcs.
SS#: **218-19-5514**
Name: **Jonathan Trimboli**
Type Test: Pre-employment
Laboratory: Laboratory Corporation of America
Collection Date: 05/06/13
Collection Site: Labcorp

Medical Review Officer: ***Dr. Michael Cloyd*** MC Cloyd MD

Drug Screen Panel: 9 Panel + MDMA +6 AM

Substance Tested	Result
Amphetamines	NEGATIVE
Barbiturates	NEGATIVE
Benzodiazepines	NEGATIVE
Cocaine	NEGATIVE
MDMA	NEGATIVE
Marijuana	NEGATIVE
Methadone	NEGATIVE
Opiates	NEGATIVE
Phencyclidine	NEGATIVE
Propoxyphene	NEGATIVE
6-AM	NEGATIVE

BHS
BEHAVIORAL HEALTH SYSTEMS
Managed Healthcare Services for Business and Industry

DIVERS ACADEMY INTERNATIONAL

1500 Liberty Place • Erial, New Jersey

Presents this Diploma to

Caleb Ross Beers

This 18th day of April, 2011

Who has demonstrated the skill and proficiency with Surface Supplied Air and Helium Diving Equipment to ANSI / ACDE 01-2009 Standards to be eligible for graduation as a Commercial Deep Sea Diver.

ANSI / ACDE 01-2009 720 HOURS

President/Director

Tamara M. Brown

ACCSCT

ADC

DIVERS ACADEMY INTERNATIONAL

EPARFI03921

Diver Medical Examination

Physician, Please Mail Copy to Address at End of this Form

:turn ALL FOUR PAGES
ges 1 and 2 to be completed by PATIENT
ges 3 and 4 to be completed by PHYSICIAN

DATE: 4-18-19

me: Caleb R Beers Date of Birth: 4-9-92 Sex: M Social Security Number: 363-15-9

dress: 301 chestnut st Apt 1B09 Harrisburg PA Telephone Number: 989-335-1893

rital Status (check one): X Single ___ Married ___ Divorced ___ Widowed Number of Children: ___

xt of Kin/Relationship/Address/Telephone Number: [redacted]

EDICAL HISTORY: Have you ever had or been treated for:

	Yes	No		Yes	No		Yes	No
in Rash			Abnormal Heart Rhythm			Rheumatism		
nvulsions			Fainting Spells			Back Strain		
ilepsy			Heart Trouble			Dislocations		
ites or Thyroid Trouble			Asthma			Paralysis		
graines/Disabling Headaches			Coughing of Blood			Muscle Weakness		
orrectable Vision			Tuberculosis			Ear Trouble		
lor Blindness or Vision Defect			Shortness of Breath			Shoulder Injury		
s Trouble (excluding glasses)			Lung Trouble			Arthritis		
o Surgery			Gallbladder Trouble			Broken Bones		
fective Hearing			Chronic Cough			Disc Problems		
ee Injury/Trick Knee			Stomach Trouble/Ulcers			Swollen Ankles		
forated Eardrum			Jaundice			Foot Trouble		
y Fever			Rupture			Elbow Injury		
se Bleed			Liver Disease			Diabetes		
way Obstruction			Appendicitis			Tumor or Cancer		
est Pain			Kidney Trouble			Head Injury		
art Murmur			Protein or Sugar in Urine			Blood Disease		
gh Blood Pressure			Blood in Urine			Anemia		
umatic Fever			Rectal Bleeding			Irregular Menses		
ricose Veins			Hemorrhoids (Piles)			Pregnancy		
art Attack			Painful Menstrual Cycle					

PLAIN IN DETAIL ANY "YES"
SWERS: ___

T ALL SURGERIES, SERIOUS ILLNESSES AND SERIOUS INJURIES, GIVING DATE OF
CURRENCE: ___

e following questions are to be answered in detail, attach additional sheets, if needed.
you have any physical defects or partial disabilities? No X Yes ___ If yes, explain: ___
you have any condition requiring special work arrangements? No X Yes ___ If yes, explain: ___
re you ever been rejected for insurance, employment, or the armed forces due to health reasons? No X Yes ___ If yes, explain: ___

re you had significant exposure to mining dust, asbestos, silica, or toxic chemicals? No X Yes ___ If yes, explain: ___

re you ever had ill effects from any work that you have done? No X Yes ___ If yes, explain: ___

you taking any type of medication(s)? No X Yes ___ If yes, list medication being taken and name, address, and telephone number of prescribing physician: ___

re you been advised to have any surgery or medical treatments? No X Yes ___ If yes, explain: ___

re you ever resigned, been terminated, or changed jobs for medical reasons? No X Yes ___ If yes, explain: ___

re you ever been dismissed from employment due to alcohol or drug use? No X Yes ___ If yes, explain: ___

you presently use marijuana or any controlled substances? No X Yes ___ If yes, explain: ___
you have any allergies or reactions to food, chemicals, drugs, insect stings, or marine life? No ___ Yes ___ If yes, explain: ___

you presently under the care of a physician? No X Yes ___ If yes, list reason for care, name and address of physician: ___

Last Updated September 16, 2010

EPARFI03922

List Name, Address, and Telephone Number of your personal physician: _____

How long have you been diving? 2 years Max. Depth Sur. Air 115 Sur. Mixed Gases 0
Longest Bottom Time Air: 9 hours Longest Bottom Time Mix Gas: 0

Have you made any saturation dives? No ___ Yes Y If yes, check gas mix: Heliox( ) Trimix( ) Nitrox( ) Max. Depth: 250 Total Duration (days) 9

List Number of Years Diving Experience for: Air 2 Mixed Gases 0 Saturation 0

Have you passed an oxygen tolerance test? _____ Name of Company/School: MTI

Number of Decompression Incidents:
Bends - Pain Only _____ Neurological _____ Serious Symptoms/Chokes _____ Inner Ear _____

List any residuals: _____

In diving have you had a history of any of the following (check all that apply):

___	Gas Embolism	___	Oxygen Toxicity	___	CO2 Toxicity
___	CO Toxicity	___	Ear Squeeze	___	Ear Drum Rupture
___	Sinus Squeeze	___	Deafness	___	Lung Squeeze
___	Near Drowning	___	Asphyxiation	X	Vertigo (Dizziness)
___	Pneumothorax	___	Nitrogen Narcosis	___	Loss of Consciousness

Provide details, including dates and severity of any items checked above: _____

Have you been involved in a diving accident (decompression sickness or bends) since your last physical examination? no
Date of Last Physical: _____

Check any of the following you have ever had and list date:

___	Chest X-Ray	___	Longbone Series	___	Back (Spine) X-Ray
___	ENG	___	EEG	___	EMG
___	EKG	___	Exercise EKG	___	Treadmill EKG
___	Audiogram	___	Nerve Condition Studies	___	Pulmonary Function Studies

I CERTIFY THAT I HAVE REVIEWED THE FOREGOING INFORMATION SUPPLIED BY ME AND THAT IT IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT LEAVING OUT OR MISREPRESENTING FACTS CALLED FOR ABOVE MAY BE CAUSE FOR REFUSAL OF EMPLOYMENT OR SEPARATION FROM THE COMPANY. I AUTHORIZE ANY OF THE DOCTORS, HOSPITALS, OR CLINICS MENTIONED ABOVE TO FURNISH MARINE TECHNOLOGIES, INC. A COMPLETE TRANSCRIPT OF MY MEDICAL RECORD FOR PURPOSES OF PROCESSING MY PHYSICAL EXAM.

Date: 4-18-13 Name of Patient (PRINT): Caleb Beers

Signature of Patient: Caleb R Beers

Date: _____ Name of Witness (PRINT): _____

Signature of Witness: _____

EPARFI03923

TO BE COMPLETED BY PHYSICIAN:

Patient Name: Caleb Beers Patient Date of Birth: 4/9/92 Date of Examination: 4/8/13

Patient Social Security Number: 303-15-9033 Height: 70 Weight: 180 Temperature: 97.7 Pulse: 76

Blood Pressure: 110/80 Appearance/Hygiene: Nutrition: Build:

Vision Examination: Left Uncorrected: Left Corrected: 20/30 Right Uncorrected: Right Corrected: 20/30

Evaluation of Following:

	Normal	Abnormal	Not Evaluated
Head, Face & Scalp	✓		
Neck	✓		
Eyes	✓		
Fundus	✓		
Ears – General (Int. & Ext. Canal)	✓		
Eustachian Tube Function	✓		
Drum Perforation	✓		
Nose (Septal Alignment)	✓		
Sinuses	✓		
Mouth & Throat	✓		
Lungs & Chest (Include Breast)	✓		
Heart (Thrust, size, rhythm, sounds)	✓		
Pulses (Equality, etc.)	✓		
Vascular System (Varicosities, etc.)	✓		
Abdomen & Viscera	✓		
Hernia (all types)	✓		
Endocrine System	✓		
G-U System	✓		
Upper Extremities (Strength, ROM)	✓		
Lower Extremities (Except Feet)	✓		
Feet	✓		
Spine	✓		
Skin, Lymphatics	✓		
Anus & Rectum			✓
Sphincter Tone			✓
Pelvic Exam			✓

NEUROLOGICAL EXAMINATION (This examination is mandatory):

Consciousness

CRANIAL NERVES

I	Olfactory	nl	VII	Facial	nl
II	Optic	nl	VIII	Auditory	nl
III	Oculomotor	nl	IX	Glossopharyngeal	nl
IV	Trochlear	nl	X	Vagus	nl
V	Trigeminal	nl	XI	Spinal Accessory	
VI	Abducent	nl	XII	Hypoglossal	NL

REFLEXES: Deep Tendon (Gradation of 4)

	Right	Left
Triceps	4/4	4/4
Biceps	4/4	4/4
Patella	4/4	4/4
Achilles	4/4	4/4

Pathological

	Right	Left
Babinski		3 nl
Hoffman		
Ankle Clonus		3

Superficial

	Right	Left
Upper Abd.		3 nl
Lower Abd.		3
Cremasteric		– No elev

CEREBELLAR FUNCTION

	Yes	No
Ataxia		✓
Tremor (Intention)		✓
Finger to Nose		✓
Heel to Shin (Sliding)		✓

POWER AND TONE OF MUSCLES:

Right Upper Extremity: intact 5/5

Left Upper Extremity: intact

Right Lower Extremity: intact

Left Lower Extremity: intact

SENSATIONS:

Hot ✓ Cold ✓

Sharp ✓ Soft

Two Point Discrimination NL ABN

ROMBERG SIGN:

UNTERBURGER (If Performed): Normal

Degrees 10 Sec. 20 Sec. 30 Sec.

Direction R L

LABORATORY FINDINGS (Urinalysis is Mandatory):

Urinalysis
Color Yellow
Appearance Clear
Sp. Gravity 1.005
Ph 7
Albumin neg

Sugar neg
Blood neg
Ketones neg
Bilirubin neg
Microscopic neg

BLOOD TESTS (if required by physician):

WBC
RBC
Hct
Hb
Blood Type & Rh
Sickle Cell Index
Aids

Serology
Test
Result

PULMONARY FUNCTION (if required by physician):

N/A
FVC
FEV
FEV/FVC

X-RAYS (if required by physician):

N/A
Chest
Spine
Abdominal Series
Other

ELECTROCARDIOGRAM (if required by physician):

N/A
Static
Stress or Exercise

AUDIOGRAM PURE TONE (if required by physician)

N/A

HZ	500	1000	2000	3000	4000	6000	8000
Right							
Left							

Complete List of Certifications *UPDATED 09/13/2010

SMA-12

Drug Screen (5 Panel) Results (This test is mandatory)

FINDINGS:

The Patient Is: (✓) Fit for Diving
( ) Fit for diving subject to the restrictions outlined below
( ) Unfit

THIS SECTION MUST BE FILLED OUT WITHOUT THIS FILLED OUT EMPLOYEE/PATIENT WILL NOT BE ABLE TO START WORK

Details on Restrictions or findings resulting in disqualification:

Date of Examination: 4/18/13

Name of Examinee: Evonne Crump MD

Name and Address of Physician (*Type or Rubber Stamp*)

Concentra Medical Cent
811 Cromwell Park Drive
Suite 105
Glen Burnie MD 2106

Signature of Physician: Evonne Crump MD

Phone Number of Physician 410-553-0110

PHYSICIANS OFFICE: UPON COMPLETION PLEASE MAIL COMPLETED FORM TO MARINE TECHNOLOGIES, INC. ATTENTION: CAROL KILIAN 6604 FORT SMALLWOOD ROAD BALTIMORE, MD 21226

American Red Cross

Certificate of Completion

Caleb Beers
has successfully completed requirements for

First Aid - valid 2 Years

conducted by
American Red Cross

Date Completed: **05/10/2013**
Instructors: **Michael Sean Bowers**

Certificate ID: GONWV9

To verify, scan code or visit: redcross.org/confirm

American Red Cross

Certificate of Completion

Caleb Beers
has successfully completed requirements for

Adult CPR/AED and Administering Emergency Oxygen - valid 2 Years

conducted by
American Red Cross

Date Completed: **05/10/2013**
Instructors: **Michael Sean Bowers**

Certificate ID: GONWV7

To verify, scan code or visit: redcross.org/confirm

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To: **PROFESSIONAL SCREENING &INFORMATION**
316 BROAD STREET
ROME, GA 30161-

Results of the Controlled Substance Test

Date of Transmittal: 12/30/2013
Division / Location: GLENN UNDERWATE
SS# 363-15-9633
Specimen id: 0180063547
Name: CALEB BEERS
Type Test: Pre-Employment
Laboratory: LABCORP
Collection Date: 12/27/2013
Collection Site: LABCORP
Medical Review Officer: M.L. Cloyd, MD

MLCloyd MD

Drug Screen Panel: 9 Panel + MDMA + 6 AM

Substance Tested	Result
6-AM	NEGATIVE
Amphetamines	NEGATIVE
Barbiturates	NEGATIVE
Benzodiazepines	NEGATIVE
Cocaine	NEGATIVE
MDMA	NEGATIVE
Marijuana	NEGATIVE
Methadone	NEGATIVE
Opiates	NEGATIVE
Phencyclidine	NEGATIVE
Propoxyphene	NEGATIVE

BHS

International Diving Institute

Summerville, South Carolina

This

Certificate

is awarded to

Alex Reed Paxton

for having successfully
completed and met all requirements of
the Institute's 640 hour course of study in

Air/Mixed Gas Surface Supplied Diving

This Training Program meets
The American National Standards for Divers
Given March 17, 2009

ADC™ Member Association of Diving Contractors International

200809-007

Student ID #

President/CEO

V.P./Head Instructor

INTERNATIONAL DIVING INSTITUTE CORPORATE SEAL 2004 SOUTH CAROLINA

Certificate is not valid without the Institutes Seal.

Copyright 2005 by International Diving Institute LLC

EPARFI03928

Medical Examination

I hereby certify that

Alex R Paxton

is FIT *for Commerical Diving*

May 1, 2013
Date

Glenn Underwater Services, Inc.

Expires 1 Year From Physical Date

Address of Approved Doctor

CHUC-BALLANTYNE
14214 Ballantyne Lake Road
Suite 100
Charlotte, NC 28277
704 667-2650

Phone Number

Steven Kreisman MD
Name of Approved Doctor (Printed)

Steven Kreisman, MD
Doctor's Signature

PRO
First Aid Basic

ProTrainings hereby certifies that

ALEX PAXTON

has successfully completed Adult CPR, AED, and First Aid Certification for Lay Rescuers following the National Cognitive Evaluation in accordance with the ProTrainings curriculum and the American Heart Association® guidelines

This Certification includes the following objectives and is consistent with national consensus 2010 ECC/ILCOR and American Heart Association® Guidelines.

- Adult CPR
- AED
- Bleeding Control
- Musculoskeletal Injuries
- Poisoning
- Shock Management
- Breathing Emergencies
- Heart Attack
- Choking, Conscious and Unconscious
- Universal Precautions
- Diabetic Emergencies
- Stroke
- Burns
- Bites and Stings
- Allergic Reactions
- Seizures
- Heat and Cold Emergencies

Date Issued: 05/01/2013 **Renewal Date:** 05/01/2015

Certificate Number: 136743011644

Instructor: ROY W. SHAW Roy W. Shaw

ProTrainings 5005 Plainfield Ave., NE Suite B Grand Rapids, MI 49525 1-888-406-7487 support@protrainings.com basic.profirstaid.com

SAFETY FIRST™

A BHS Sponsored Program for a

S UBSTANCE
A BUSE
F REE
E NVIRONMENT

Two Metroplex Drive • Suite 275 (35209)
P.O. Box 830724 • Birmingham, Alabama 35283-0724

(205) 879-1150 • (800) 245-1150 • Fax (205) 879-1095

To: **PROFESSIONAL SCREENING &INFORMATION**
316 BROAD STREET
ROME, GA 30161-

Results of Controlled Substance Test

Date of Transmittal: 05/02/13
Division / Location: Glenn Underwater Svcs.
SS#: 299-90-2204
Name: Alex Paxton
Type Test: Pre-employment
Laboratory: Laboratory Corporation of America
Collection Date: 05/01/13
Collection Site: Labcorp

Medical Review Officer: ***Dr. Michael Cloyd*** MC Cloyd MD

Drug Screen Panel: 9 Panel + MDMA +6 AM

Substance Tested	Result
Amphetamines	NEGATIVE
Barbiturates	NEGATIVE
Benzodiazepines	NEGATIVE
Cocaine	NEGATIVE
MDMA	NEGATIVE
Marijuana	NEGATIVE
Methadone	NEGATIVE
Opiates	NEGATIVE
Phencyclidine	NEGATIVE
Propoxyphene	NEGATIVE
6-AM	NEGATIVE

BHS
BEHAVIORAL HEALTH SYSTEMS
Managed Healthcare Services for Business and Industry

THE FACULTY AND STAFF OF

MINNESOTA COMMERCIAL DIVER TRAINING CENTER, INC.

HEREBY ACKNOWLEDGE THAT

STEPHEN C. RICE

HAS SATISFACTORILY COMPLETED THE REQUIREMENTS FOR THE

ADCI COMMERCIAL DIVER/TENDER COURSE & THE

DCBC CANADIAN RESTRICTED SURFACE SUPPLIED DIVER

AND IS HEREBY ADMITTED THE RIGHTS AND PRIVILEGES
BELONGING TO THAT TRAINING AND ACHIEVEMENT.

MAY 12, 2012

DIRECTOR OF EDUCATION

EXECUTIVE DIRECTOR

Wm Matthis Pres

EPARFI03932

Medical Examination

I hereby certify that

Stephen Rice

is ***FIT*** *for Commerical Diving*

March 6, 2014

Date

Glenn Underwater Services, Inc.

Expires 1 Year From Physical Date

Address of Approved Doctor: DUG BALLANTYNE
14214 Ballantyne Lake Road
Suite 100
Charlotte, NC 28277
704 667-2650

Phone Number

Steven Kreisman, MD

Name of Approved Doctor (Printed)

Steven Kreisman MD

Doctor's Signature

Certificate Of Completion

PRESENTED TO

Stephen Rice

In Recognition of Successful Completion of Requirements In

Basic Life Support

3/6/2014
CERTIFICATION DATE

3/6/2016
EXPIRATION DATE

HOLDER'S SIGNATURE

Christopher Bryan
AUTHORIZED SIGNATURE

AMERICAN SAFETY TRAINING INSTITUTE
ASTI

www.AmericanSTI.org

This certifies participant listed above has successfully passed skills evaluation in accordance with national cognitive skills examination standards, and American Safety Training Institute certification terms and conditions. American Safety Training Institute courses follow national guidelines set by the American Heart Association (AHA), and the International Liaison Committee on Resuscitation (ILCOR). The American Safety Training Institute is not associated, affiliated with, sponsored, or endorsed by, American Safety and Health Institute (ASHI), American Heart Association (AHA), or American Red Cross (ARC), and unless otherwise specified no affiliation or endorsement is implied.

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Two Metroplex Drive • Suite 275 (35209)
P.O. Box 830724 • Birmingham, Alabama 35283-0724

(205) 879-1150 • (800) 245-1150 • Fax (205) 879-1095

To: **PROFESSIONAL SCREENING &INFORMATION**
316 BROAD STREET
ROME, GA 30161-

Results of Controlled Substance Test

Date of Transmittal: 10/23/13
Division / Location: Glenn Underwater Svcs.
SS#: **587-71-5177**
Name: **Stephen Rice**
Type Test: Pre-employment
Laboratory: Laboratory Corporation of America
Collection Date: 10/22/13
Collection Site: Labcorp

Medical Review Officer: ***Dr. Michael Cloyd*** MC Cloyd MD

Drug Screen Panel: 9 Panel + MDMA +6 AM

Substance Tested	Result
Amphetamines	NEGATIVE
Barbiturates	NEGATIVE
Benzodiazepines	NEGATIVE
Cocaine	NEGATIVE
MDMA	NEGATIVE
Marijuana	NEGATIVE
Methadone	NEGATIVE
Opiates	NEGATIVE
Phencyclidine	NEGATIVE
Propoxyphene	NEGATIVE
6-AM	NEGATIVE

BHS
BEHAVIORAL HEALTH SYSTEMS
Managed Healthcare Services for Business and Industry

Innovative Underwater Solutions

Glenn Underwater Services, Inc. provides specialized underwater inspection, restoration and construction services. Our mission is to set industry standards by providing our clients with innovative, cost effective solutions, utilizing leading edge technology and improved methodologies.

Our services include the following:

Remotely Operated Vehicle (ROV) Services

Underwater Concrete Repair

Underwater Construction

Grout & Leak Sealing

Underwater Welding & Burning

3D Facility Modeling

Steel Fabrication Services

CADD Drawing Documentation

EPARFI03936

From: Zarzar, Issa <Issa.Zarzar@duke-energy.com>
Sent: Sunday, July 7, 2013 10:10 PM
To: Wimberly, Danny <Danny.Wimberly@duke-energy.com>
Subject: FW: Cape Fear Site

Make sure this is in our closure plan and schedule for the site.

Thanks

From: Bryson, Robin R.
Sent: Thursday, June 20, 2013 11:27 AM
To: Zarzar, Issa; Lancaster, Harry L III; Umstead, John
Cc: Wimberly, Danny; Brown, Kevin; Kemp, Daniel; Toepfer, John; Baxley, Larry; Landseidel, Mark E; Smith, Al; Hallman, Chris
Subject: RE: Cape Fear Site

As has been discussed previously, timing will be crucial. As long as the ash ponds have a flow, we will be required to conduct toxicity testing in the effluent channel. Without flow down the channel we will likely fail these tests. There are two options I can think of (there are likely more):

(1) Stop the possibility of flow from the ash ponds (except from a 25-year storm)
(2) Request a modification of the permit to remove the toxicity testing requirement. But to remove this requirement will likely mean we'll have selenium and arsenic limits at the internal outfalls. Which in the past have been a problem.

From: Zarzar, Issa
Sent: Thursday, June 20, 2013 10:35 AM
To: Lancaster, Harry L III; Umstead, John
Cc: Wimberly, Danny; Brown, Kevin; Kemp, Daniel; Toepfer, John; Baxley, Larry; Landseidel, Mark E; Smith, Al; Bryson, Robin R.; Hallman, Chris
Subject: RE: Cape Fear Site

Base on the information below we will plan on removing the intake at Cape Fear and closing out as many permits as is possible. Please let me know if you have any questions or concerns.

From: Lancaster, Harry L III
Sent: Wednesday, June 19, 2013 4:24 PM
To: Umstead, John; Zarzar, Issa
Cc: Wimberly, Danny; Brown, Kevin; Kemp, Daniel; Toepfer, John; Baxley, Larry; Landseidel, Mark E
Subject: RE: Cape Fear Site

Issa,

John, Mark and I have talked. We do not believe there will be any repowering at Cape Fear in the next five years. There are other sites that are more promising. Let me know if you have questions.

Harry Lancaster
Charlotte: 704-382-8208
Cell: 704-604-3999
email: harry.lancaster@duke-energy.com

From: Umstead, John

Sent: Monday, June 17, 2013 3:21 PM
To: Zarzar, Issa; Lancaster, Harry L III
Cc: Wimberly, Danny; Brown, Kevin; Kemp, Daniel; Toepfer, John; Baxley, Larry
Subject: RE: Cape Fear Site

Issa,
Harry is in training today and tomorrow. I will discuss with him and we will get back with you.
Thank you,
John Umstead

From: Zarzar, Issa
Sent: Monday, June 17, 2013 11:12 AM
To: Lancaster, Harry L III; Umstead, John
Cc: Wimberly, Danny; Brown, Kevin; Kemp, Daniel; Toepfer, John; Baxley, Larry
Subject: Cape Fear Site

We were discussing our assumptions for Cape Fear site future use after demolition this morning. We need to update the future plan for the site in our closure plan. Two paths going forward for us:

1) Future repower of the site within the next 5 years:
    a. Fill tunnels and retain NPDS permit
2) Future repowering beyond 5 years
    a. Demolish intake and fill the tunnels
    b. Closeout the permits
    c. Minimize ongoing O&M

Please let me know the future plans for the Cape Fear site and what path to take.
Thanks,
Issa J. Zarzar
Director - Plant Demolition and Retirement
Duke Energy
7001 Pinecrest Road
Raleigh, NC 27613
Office - 919-881-3803
Cell - 919-812-0446
Fax - 919-881-3743

Progress Energy

East Regional Office
1420 Wal Pat Road
Smithfield, NC 27577
(fax) 919-209-2457

fax

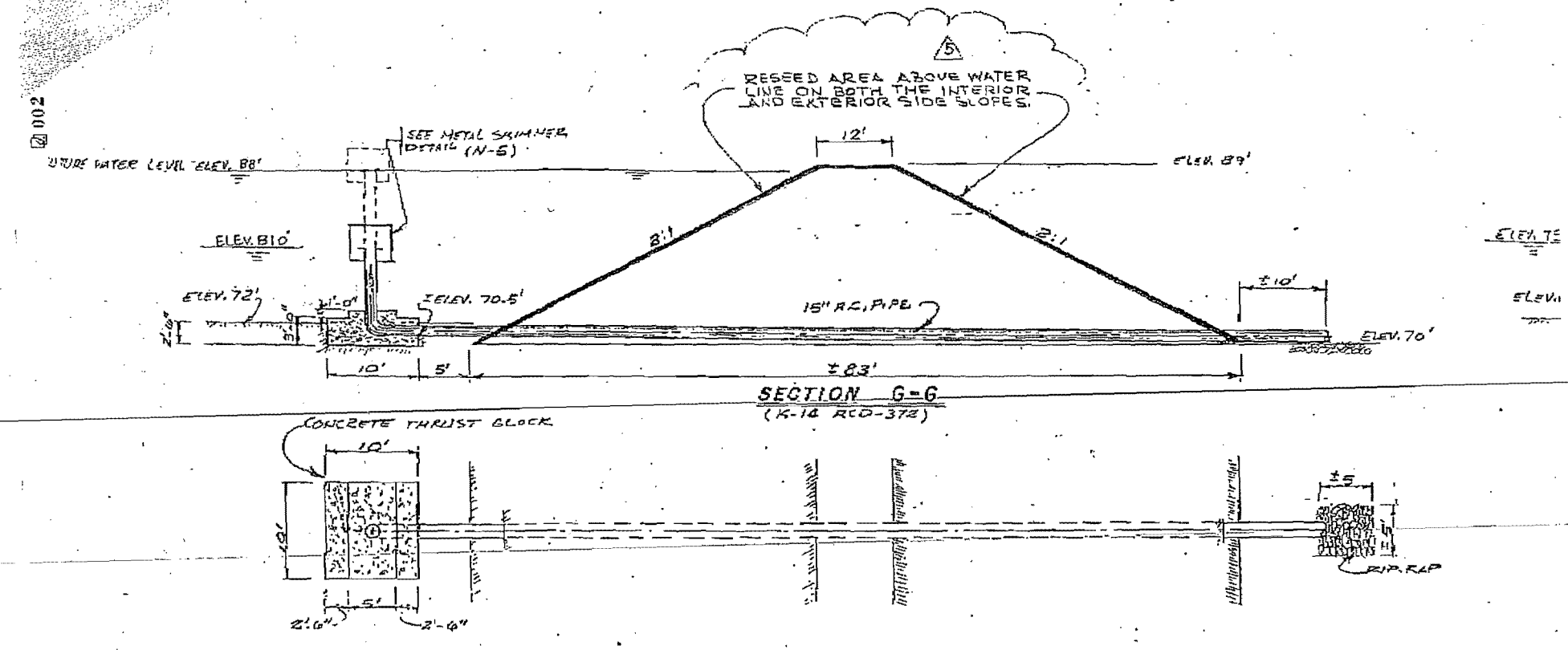
To: Dennis Cole
From: Jay Etheridge
Company: PGN
Phone No.:
Fax No.:
Date:
Subject: Ash Pond
Pages: 2

Comments:

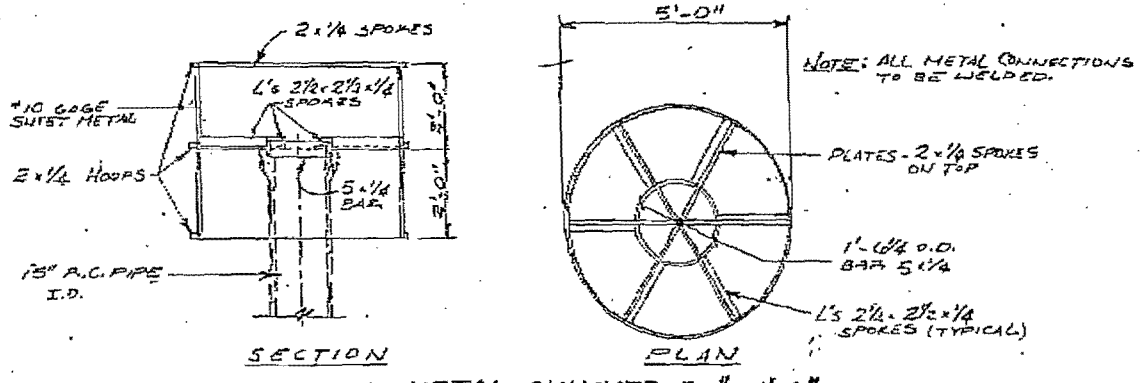
As Discussed.

EPARFI0394

002



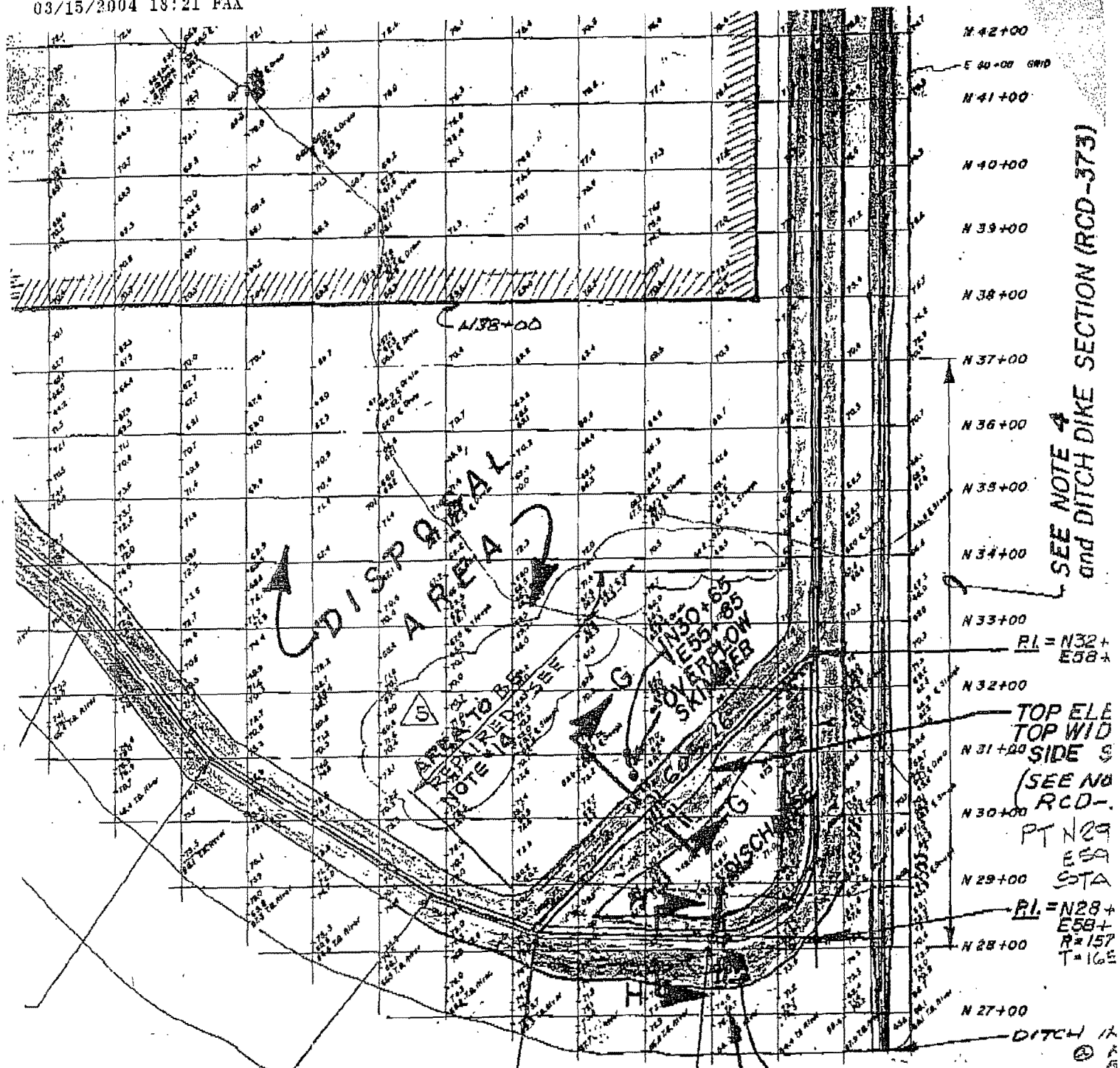
SECTION G-G
(K-14 RCD-372)



DETAIL - METAL SKIMMER 3/8" = 1'-0"

ASH DISPOSAL AREA - SECTIONS AND DETAILS
DRAWG. NO. RCD-373
6-15-78

03/15/2004 18:21 FAX



ASH POND AREA PLAN
DRAWG. No: RCD-372
6-15-78

5	11-6-84	REPAIR INTERIOR SL (E,14) (H,9)(B,18)(K,13)

EPARFI03941

Progress Energy

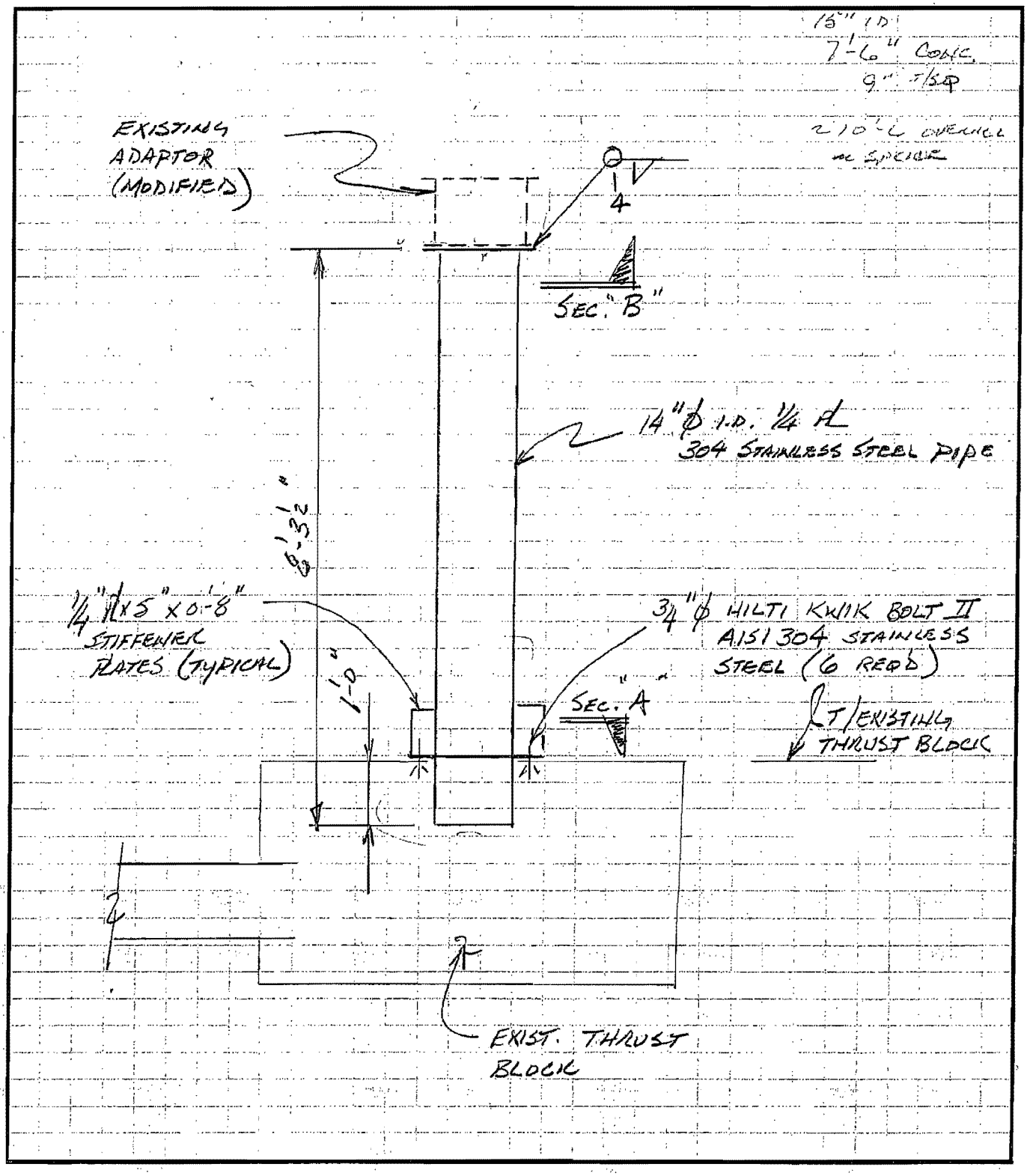
1420 Wal Pat Road
Smithfield, NC 27577

Page _____ of _____

Customer: LER
Project: ASH POND DISCHARGE
System:

Proposal No.:
Job No.:

Date: 3/28/04
By: C. HOLLIS



EPARFI03942

Progress Energy

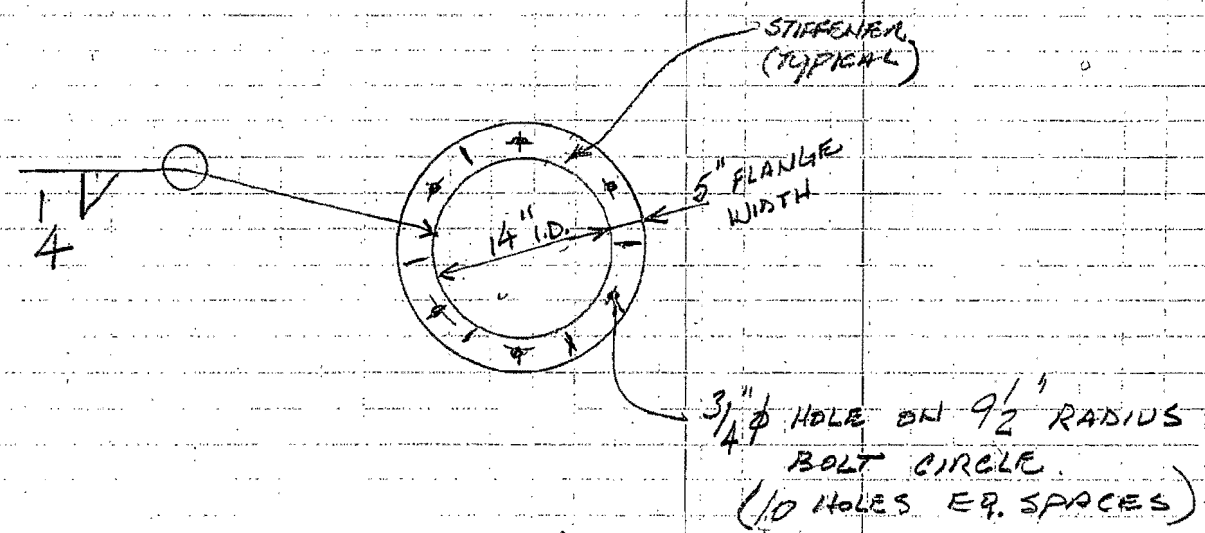
1420 Wal Pat Road
Smithfield, NC 27577

Page _____ of _____

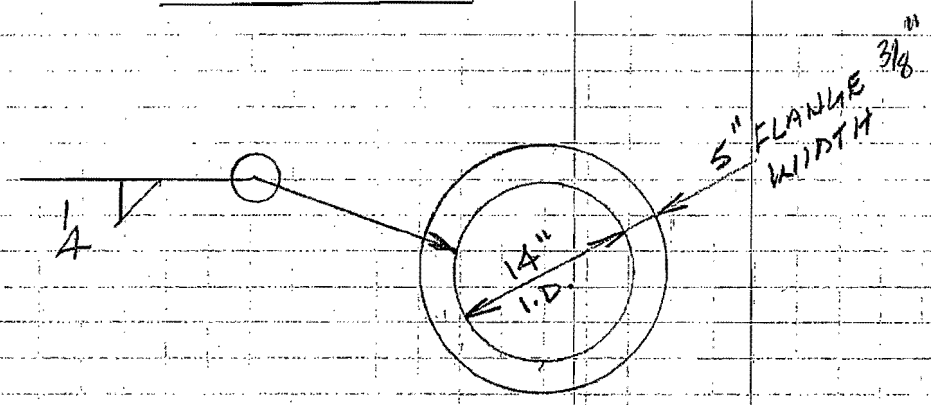
Customer: CEC
Project: ASH POND DISCHARGE
System:

Proposal No.:
Job No.:

Date: 3/28/04
By: C. Hollis

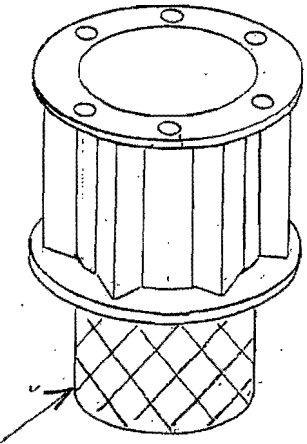


SEC. A



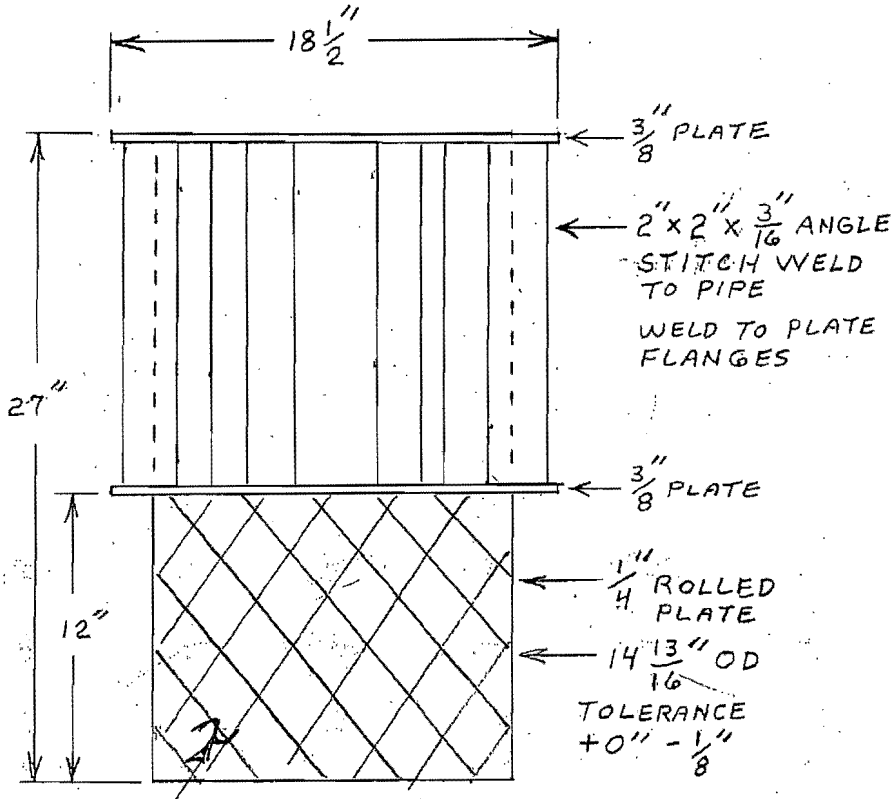
EPARFI03943

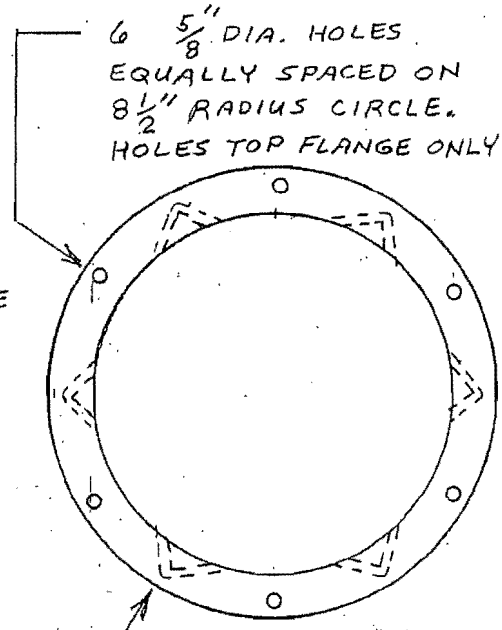
ASH POND DISCHARGE PIPE
ADAPTOR / EXTENSION
(MODIFIED)



SEE
ASSEMBLY DETAIL

REMOVE THIS SECTION
OF ADAPTOR.





REMOVE
THIS SECTION OF ADAPTOR

ALL MATERIAL 304 SS

EPARFI03944

Task Profile WO 00592407 01 00591174

File Edit Options Tabs Tools Help

5. Document Reference | 6. Requirements/Permits | 7. Tools & Equipment | 8. Contracts/Expenses

1. Task Profile | 2. Instructions | 3. Resources | **4. Material Request**

Matl Request: 00591174

M/R Type: M

Responsible: COLEDE

Status & Date: APPROVED 03/30/04

Need Date: 03/30/04

Priority: 3

Issue Facility: LEE

Need Days:

Build M/R | New M/R | Notes | Qty Status | e-Error | More Info

Deliver to Facility: LEE

Deliver To:

Delivery Instructions:

Direct Ship

Accounting

Group ID	Cost Center	Activity	Account	Sub Account	User Defined Value
00	-01Y55D		-20042012	-W1400	

Multi Acct

Qty	UI	Catalog ID	Q	Rsv	Description	M	S/P	Acct	Actual Qty	Ave
1				☒						
				☐						
				☐						
				☐						
				☐						
				☐						

Material Request approved. | 3 | TIMI010

Stainless Steel Riser Pipe — Benton + Son. (176437 Pott)

10 -304 Stainless Steel fastners w/ 4" Enbedment - Picked up by Compressor -used for Air hammer & Drill on mounting flange.

RENTAL CONTRACT
(On reverse side)

Ram Rent-All, Inc.

RENTALS, SALES & SERVICE

American Rental Association ARA MEMBER

306 FEDLON TRL.
GOLDSBORO, NC 27530
(919) 735-3320

2900 U.S. 70 EAST
CLAYTON, NC 27520
(919) 359-2211

IN

LOADED BY	UNLOADED BY
WRITTEN BY	CHECK IN BY

DELIVERY TIME

PICK-UP TIME

DEL. & P.U.

FUEL 8/8

DRIVER'S LICENSE NUMBER	DATE OF BIRTH	HOME PHONE	EMPLOYED BY	AUTO TAG NO.	CONTRACT NO.	PAGE

JOB PHONE	JOB NUMBER	PURCHASE ORDER NO.	RENTED BY	DATE	OUT	TIME

RENTER	SHIP TO (ADDRESS WHERE USED)	DUE IN WITHOUT ADDITIONAL CHARGE	TO BE RETURNED DATE	TIME

RATES

QUAN.	ITEM NO.	DESCRIPTION	2 HOURS	3 HOURS	½ DAY	1 DAY	WEEK	MONTH

RENTAL	SALES		TAX	DEL. & P/U		LABOR	DAMAGE WAIVER	CL. DEP.	OTHER SALES	DEPOSIT

OVERTIME AMOUNT DUE

TOTAL ADVANCE CHARGES

RENTAL	SALES		TAX	DEL. & P/U		LABOR	DAMAGE WAIVER	CL. DEP.	OTHER SALES	DEPOSIT

DAMAGE WAIVER CHARGE 10% OF RENTAL CHARGE. RENTER MAY, BY INITIALS HEREON, DECLINE BENEFITS OF PARAGRAPH #11, DAMAGE WAIVER, ON REVERSE SIDE OF THE CONTRACT. DAMAGE WAIVER IS NOT INSURANCE.
Coverage as specified on reverse hereof.
Equipment was tested and customer was instructed on how to safely operate and maintain. I have read and I agree to the CONTRACT TERMS ON THE BACK OF THIS WRITING, which is the entire agreement. There are no oral or other representations not included herein. I acknowledge receipt of a copy of this contract.

DECLINES

INITIALS

X

WE CHARGE FOR SUNDAYS AND HOLIDAYS

OUT		IN
☐	CASH	☐
$		$
☐	CHECK	☐
#		$
☐	CREDIT CARD	☐
#		$

TOTAL DUE ON RETURN	95.00
REFUND ON RETURN	
BALANCE DUE	
TOTAL CHARGE THIS CONTRACT	

EPARFI03946

1-800-879-8000

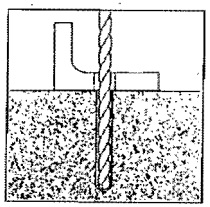
The Hilti Kwik Bolt II System continued

Kwik-Bolt Length Identification System

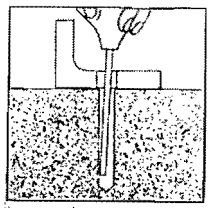
Stamp on Anchor		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	From	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	11	12	13	14	15	16	17	18
Length of Anchor (inches)	Up To But Not Including	2	2½	3	3½	4	4½	5	5½	6	8½	7	7½	8	8½	9	9½	10	11	12	13	14	15	16	17	18	19

Stamp on Anchor		A A	B B	C C	D D	E E	F F	G G	H H	I I	J J	K K	L L	M M	N N	O O	P P	Q Q	R R	S S	T T	U U	V V	W W	X X	Y Y	Z Z
	From	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
Length of Anchor (inches)	Up To But Not Including	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41				

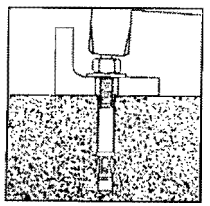
Kwik Bolt II Installation Instructions



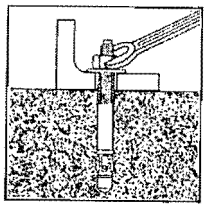
1. Simply hammer drill a hole the same nominal diameter as the Hilti KWIK BOLT-II, with or without the fixture in place — the KWIK BOLT-II works in a "bottomless" hole.



2. Clean hole with Blow Out Bulb.



3. Drive the Hilti KWIK BOLT-II far enough into the hole so that at least six threads are below the top surface of the fixture, using a Hilti 2 lb. hammer.



4. Tighten to the recommended torque value with a torque wrench, or if torque wrench is not available 2 to 3 turns from the finger tight position to achieve proper anchor setting.

Kwik Bolt II Allowable Tension & Shear Loads (lbs) in Grout-Filled Block (ASTM C-90; f'_m = 2000 psi)

Anchor Dia.	¼"		⅜"		½"		⅝"		¾"	
Embedment	1⅛"	2"	1⅝"	2½"	2¼"	3½"	2¾"	4"	3¼"	4¾"
Tension	230	400	470	570	1060	1050	1200	1800	1700	2500
Shear	370	370	930	930	1600	1600	2500	2500	2600	3100

Kwik Bolt II Allowable Tension & Shear Loads (lbs) in Light Weight Concrete

Anchor Size	Embedment Depth (in)	Shear $f'_c \geq$ 2000 psi	Tensile f'_c = 2000 psi	Tensile f'_c = 3000 psi	Tensile f'_c = 4000 psi
¼	1⅛	400	225	295	350
	> 2*	500	325	390	450
⅜	1⅝	775	425	530	625
	> 2½*	1375	625	810	975
½	2¼	1400	725	920	1100
	> 3½	2300	1100	1360	1600
⅝	2¾	2500	1125	1350	1550
	> 4**	3550	1650	1990	2300
¾	3¼	3250	1575	1905	2200
	> 4¾**	4700	2200	2750	3250

* Values shown are for a shear plane acting through the anchor bolt shank. When the shear plane is acting through the anchor bolt threads, reduce the shear values by 20%.

** Values shown are for a shear plane acting through the anchor bolt shank. When the shear plane is acting through the anchor bolt threads, reduce the shear value by 12%.

All other values shown are for shear plane acting through either body or threads.

Need (11)

Kwik Bolt II AISI 304 and 316 Stainless Steel Ultimate Tensile and Shear Loads (lbs)*

Anchor Dia. (in)	Embedment Depth (in)	f'_c = 2000 psi		f'_c = 3000 psi		f'_c = 4000 psi		f'_c = 6000 psi	
		Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile	Shear
¼	1⅛	1200	2100	1250	2150	1300	2200	1400	2200
	2	1750	2200	2070	2200	2070	2200	2070	2200
	3¾	2070	2200	2070	2200	2070	2200	2070	2200
⅜	1⅝	1600	3300	1825	3800	2050	4300	2500	4600
	2½	3500	5000	4100	5000	4700	5000	5400	5000
	4¼	4000	5000	5000	5000	5400	5000	5400	5000
½	2¼	3200	6800	4000	6950	4800	7100	5000	8340
	3½	5000	8340	6500	8340	8000	8340	9000	8340
	6	5500	8340	7050	8340	8600	8340	10200	8340
⅝	2¾	4700	10500	6000	11500	6800	12500	7200	12500
	4	7000	12500	9000	12500	11000	12500	12000	12500
	7	9000	12500	11300	12500	13700	12500	13700	12500
¾	3¼	5800	10800	7300	12400	8800	14000	9800	18000
	4¾	9400	16900	12200	17450	14500	18000	17500	18000
	8	11000	18000	14500	18000	17000	18000	19200	18000
1	4½	11700	22800	14500	25400	17300	28000	18000	28000
	6	16500	28000	24000	28000	27000	28000	27500	28000
	9	21000	28000	30000	28000	35200	28000	35200	28000

*Does not apply to Post Nut Kwik Bolt II

Stainless Steel Kwik Bolt II Allowable Working Loads (lbs)*

Diameter	Embedment	f'_c = 2000 psi		f'_c = 3000 psi		f'_c = 4000 psi		f'_c = 6000 psi	
		Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
¼"	1⅛	320	560	330	570	350	590	370	590
	2	470	590	550	590	550	590	550	590
	3¾	550	590	550	590	550	590	550	590
⅜"	1⅝	430	880	490	1010	550	1150	670	1230
	2½	930	1330	1090	1330	1250	1330	1440	1330
	4¼	1070	1330	1330	1330	1440	1330	1440	1330
½"	2¼	850	1810	1070	1850	1280	1890	1330	2220
	3½	1330	2220	1730	2220	2130	2220	2400	2220
	6	1470	2220	1880	2220	2290	2220	2720	2220
⅝"	2¾	1250	2800	1600	3070	1810	3330	1920	3330
	4	1870	3330	2400	3330	2930	3330	3200	3330
	7	2400	3330	3010	3330	3650	3330	3650	3330
¾"	3¼	1550	2880	1950	3310	2350	3730	2610	4800
	4¾	2510	4510	3250	4650	3870	4800	4670	4800
	8	2930	4800	3870	4800	4530	4800	5120	4800
1"	4½	3120	6060	3870	6770	4610	7470	4800	7470
	6	4400	7470	6400	7470	7200	7470	7330	7470
	9	5600	7470	8000	7470	9390	7470	9390	7470

*Does not apply to Post Nut Kwik Bolt II

Suggested Specifications

Expansion Anchors — Expansion anchors shall be stud type with a single piece three section wedge and zinc plated in accordance with ASTM B633. The anchors must meet the description in Federal Specification FF-S-325, Group II, Type 4, Class I for concrete expansion anchors. Anchors shall be Hilti Kwik Bolt II as supplied by Hilti Fastening Systems, P.O. Box 21148, Tulsa, OK 74121.

Installation — Anchors to be installed in holes drilled with Hilti carbide tipped drill bits. Anchors shall be installed per manufacturer's recommendations.

Listings

Underwriters Laboratory No. 203 "Pipe Hangers" (⅛"-⅜" diameters).

International Conference of Building Officials: ICBO Evaluation Report No. 4627

Southern Building Code Congress (SBCCI): SBCCI Report No. 8913

Approvals

City of Los Angeles (COLA): Research Report No. 24946

Conforms to Federal Specification FF-S-325, Group II, Type 4, Class 1.

Factory Mutual (FM) KB II ⅜" x 2⅛" w/Rod Coupler

EPARFI03947

Maintenance Pre-Job Briefing Checklist Form

This checklist is designed as a tool to be used prior to each task in accordance with OSHA 29 CFR 1910.269(c)

Work Activity/Description: _____

Location of Task: _____

Date: _____
Shop: _____
Presenter: _____

Process Completion Order

1.) Walk Down Job
2.) Clearance Sign On; If Required
3.) Pre-Job Brief
4.) Complete Form (check all appropriate boxes or enter N/A)

Work Procedures/Processes Involved

Discuss or N/A

- ☐ ☐ What are we doing? (Who? What?, Where?, How?)
- ☐ ☐ When unsure, review all job specific, safe work practices, policies and procedures. Include review of tasks, technical information, staging of tools and equipment.
- ☐ ☐ Have all personnel completed appropriate initial training and verified that specific qualifications, if required, are up to date (forklift, switching & tagging, crane, respirator, etc.)?
- ☐ ☐ Are other shops/disciplines involved? If so, should they be present to communicate and coordinate activities with them.

Hazards Associated with the Job

Discuss or N/A

- ☐ ☐ Review/discuss known risks associated with this activity.
- ☐ ☐ Review/discuss any Site Specific or Other "Job Hazard Analysis" (JHA) that may be associated with this task.
- ☐ ☐ Discuss what could go wrong or change during this activity and actions that may be necessary. Contingency plans identified?
- ☐ ☐ Is this work accessible, or will scaffold/ladders be necessary?
- ☐ ☐ Inspect scaffold prior to use.
- ☐ ☐ Are there environmental or biological hazards (weather, animal, and disease)?
- ☐ ☐ Discuss "Potential Exposures" that may result from this activity and actions to take (i.e. Lead, Arsenic, Asbestos, Refractory Ceramic Fiber, Fly Ash, Silica, Heat Stress, or others).
- ☐ ☐ Are water and/or trenching (entrapment) hazards present?
- ☐ ☐ Are chemical hazards present (acids, caustics, gasses, flammable liquids or solids)?
- ☐ ☐ Review hazardous chemical/material procedures and MSDS sheets?
- ☐ ☐ Prior to use, inspect hoists, lifting devices, or cranes.
- ☐ ☐ Discussed housekeeping issues (air hose and electrical cord routing, etc.).

Special Precautions

Discuss or N/A

- ☐ ☐ Are all personnel in good health today and physically able to perform the scheduled activity?
- ☐ ☐ Review all applicable emergency procedures that may be involved.
- ☐ ☐ Are barricades, welding shields, respirators, fire extinguishers, or other specialty items needed?
- ☐ ☐ Is this a Confined Space?
- ☐ ☐ As applicable, are FME work practices, boundaries, devices, logging requirements identified?

Personal Protective Equipment (PPE)

Discuss or N/A

- ☐ ☐ Are all tools and equipment in safe, useable condition?
- ☐ ☐ What PPE is required for the job? Is PPE available, clean, inspected and in good working condition?

Minimum PPE On All Jobs

Hardhat, safety glasses, and safety shoes. List all additional below

_____

_____

- ☐ ☐ Are there airborne hazards present that require the use of respiratory or special face/eye protection?

Energy Source Controls

Discuss or N/A

- ☐ ☐ Clearances required, boundaries communicated and understood? Ensure all appropriate clearances are obtained and verified.
- ☐ ☐ Have grounds been identified or needed to perform this work?

I.D. Number(s) of Clearance(s). If Known at this time!

_____

_____

- ☐ ☐ Have all potential sources of energy in the work zone been identified (including radioactive sources that may be present)?
- ☐ ☐ Is stored energy present (rotating equipment, pneumatic/hydraulic, springs, etc.)?
- ☐ ☐ If electrical hazards are present, can they be eliminated? If not, are adequate controls in place?
- ☐ ☐ Are grounds required and part of the clearance for this work?

Hot Work

Discuss or N/A

- ☐ ☐ Has a hot work permit been completed?

Site Specific Information

CONTROL ROOM _____

In reporting emergencies, remember to calmly and clearly state the location and the nature of the emergency.

Location of Nearest Phone/PA

_____

Work Order(s) Covered

_____

_____

_____

Top 10 Human Error Traps

Identify if any error traps are present

Yes	No	
☐	☐	Time pressure
☐	☐	Distractive environment
☐	☐	High work load/multiple tasks
☐	☐	First time evolution
☐	☐	First working day after days off
☐	☐	Half hour after wake up or meal
☐	☐	Vague or incorrect guidance
☐	☐	Overconfidence
☐	☐	Imprecise communication
☐	☐	Work stress

Six Human Error Reduction Tools

Identify error reduction tool(s) to use

Yes	No	
☐	☐	Stop, Think, Act, Review (STAR)
☐	☐	Qualify, Validate and Verify (QV&V)
☐	☐	Procedure Use and Adherence
☐	☐	Clear Communications
☐	☐	Stop When Unsure/Unsafe
☐	☐	Peer Coaching and Checking

Signature and Date for Attendees

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Additional Sign-On For Multiple-Day Maintenance Activities

Signature/Date	Signature/Date	Signature/Date

Additional Pre-Job Briefing Process Discussion

1. The Maintenance Pre-Job Briefing Checklist Form is to be filled out in the following sequence:
   - Fill out work activity/description/location of task/appropriate date
   - Perform walk down of the job
   - Sign on appropriate clearance(s) associated with the job
   - Conduct a Pre-Job Briefing (PJB) utilizing form FRM-FGDX-00660
   - All aspects of the PJB must be addressed (either yes/no/or Not Applicable)
   - PA phone must be identified
   - Work order number must be identified
   - Ten most common human error traps must be reviewed
   - If "yes" is checked for any human error trap, discuss appropriate defense to avoid human error associated with this work activity
   - Six most common error reduction tools must be used as appropriate
   - All error reduction tools which apply must be checked and discussed
   - All personnel involved in job must sign the PJB form

Facility: LEE LEE PLANT
WR Originator: COLEDE COLE D W
Unit : 0 Project :
W/O Type: CO TSK PRI: 3 W/O Dspln: V
Planner : COLEDE COLE D W
W/O Title : DECAUNTER/WEIR IN ASH POND HAS BLOWN
W/O Task Title: DECAUNTER/WEIR IN ASH POND HAS BLOWN OFF OF DISCHARGE PIPE.
Task Dspln : V Due By:

Work Order Package

00532487 01

Rpt : TIPMC11
Date: 03/11/04

Page: 1

Work Order Task Written To

Facility : LEE Unit : 0 Sys: 7030 PMT:
Equipment : PON PON Component:
Work Item : Eqt. List: Review Reqd:
Equip. Tag: Alt:
Catalog ID: Job Type : CE UCR:A UTC :
Name : POND, ASH
Location : EAST OF PLANT
Crew : Y55
Resource Type: PERS Resource Code: OPRP Qty: 2 Duration: 16
Cost Centr: 01Y55D Activity : User Def:
Percentage: 100.000 Acct No. : 00 20000002 W1100
CPM Proj : NONSCHED Network Reference:

Work Order Task Instructions

WEIR HAS BLOWN OFF OF DISCHAREGE PIPE. PIPE HAS NOT BEEN LOC
ATED. PIPE NEEDS TO BE LOCATED. PIPE CONDITION NEEDS TO BE
ASSESSED AND REPAIRED IF NEEDED. SET WEIR BACK ON PIPE. WATE
R LEVEL IN POND HAS DROPPED ABOUT 18 TO 24 INCHES.

Rework/Approval

Deficiency Tag No.: Loc: Tag Removed:
ReWork Job : Comments:

Task Requirements

FAC.	REG/REQ	VALUE	COMMENTS
LEE	CLR NBR		
LEE	CLR REQ		
LEE	FIRE PROT		
LEE	INSU		
LEE	SCAFFOLD		
LEE	SECURITY		
LEE	VR	N	

Authorization

Start Permission : _____ _ _ Date: _____ _____

Facility: LEE LEE PLANT
WR Originator: COLEDE COLE D W
Unit : 0 Project :
W/O Type: CO TSK PRI: 3 W/O Dspln: V
Planner : COLEDE COLE D W
W/O Title : DECAUNTER/WEIR IN ASH POND HAS BLOWN
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Task Dspln : V Due By:

Work Order Package

00532487 01

Rpt : TIPMC11
Date: 03/11/04

Failure/Action Taken/As Found

Failure Category Code (F/NF) _____
Action Taken Category Code: _____
As Found Sub Category Code: (1-5) _____

Deficiency Tag Loc:

Deficiency Marker or Tag: _____
Removed (Y/N) _____

Work Completion Signatures

Name	Function/Dept.	Date

Comments: _____
(rework?) _____

Rework Reason/Cause

		(Y/N)
CT	COMPONENT FAILED	_
I W	INCOMPLETE WORK FROM MAINTENANCE	_
N/A	NON APPLICABLE	_

Date: _____
Comments: _____

Completion Comments on Work Performed

Completion Comments Required : Y

Comments: _____

Facility: LEE LEE PLANT
WR Originator: COLEDE COLE D W
Unit : 0 Project :
W/O Type: CO TSK PRI: 3 W/O Dspln: V
Planner : COLEDE COLE D W
W/O Title : DECAUNTER/WEIR IN ASH POND HAS BLOWN
W/O Task Title: DECAUNTER/WEIR IN ASH POND HAS BLOWN OFF OF DISCHARGE PIPE.
Task Dspln : V Due By:

Work Order Package

00532487 01

Rpt : TIPMC11
Date: 03/11/04

Completion Comments on Work Performed

Completion Comments Required : Y

Comments: _____

Comments: _____

Continued on Additional Sheets? : _____

***** E N D O F R E P O R T *****

Work Plan /Dewatering Cape Fear (Clearing) 1985 Ash Pond

Goal 1:	Measures of Effectiveness:
Lower the water level in the clear pond to promote and speed natural dewatering	**Pond water level drops a maximum of one foot per day.Compliance with all safety and environmental procedures & regulations is maintained.**

Objectives	Activities Planned to Meet Objectives	Detail Comments
Perform all task Safely	Notify Plant management and site environmental specialist on arrival and brief as needed. Perform Safety Orientation with all employees Review JHA Conduct Pre Job Briefing Wear all PPE Assess area where work will be performed Verify water level. Limit Cell Phone Use Watch/treat for the prevention of Ticks/Insects, wasp, snakes etc...	Danny Wimberly/Macy Graham/Larry Baxley Equipment Operation only Minimum PPE= Hard Hat, Safety Glasses, Safety Shoes, Gloves if working with hands, **Use Personal Floatation Devices when working in a boat on the water.** Not allowed when driving. Exit work area when phones are in use. **Use caution to ensure water is contained inside of approved area**
Pre Checks	Water level will be read and recorded daily. Water level must not be lowered more than one foot per day. Check to make sure there are no cenospheres in the area being pumped. If there are, suspend pumping until wind directions changes and water is clear. Check equipment oil and fuel **<u>Ensure Environmental approval has been received.</u>** Check to ensure all pipe joints are tight and secured **Read and Document water level readings in PZ-3S, PZ-3D, PZ-4, and in PZ-5 piezometers at the beginning and the end of each shift.**	Verify Staff Gauge Level Check oil levels in pump and any mobile equipment in use. Suspend pumping until water is clear of cenospheres Larry Baxley No uncontained leaks **Piezometer readings should be taken and documented at the same time as the staff gauge. All readings should be taken at the same time each day (+/- 3 hours)**

Pump Equipment Capabilities	**Take a picture of the upstream slope on each side of the pump at beginning and end of shift.** CD150M Dri-Prime Pump 6" Suction and delivery connections Max Head-154' Max operating speed-2200 RPM Max Capacity-2277 USGPM	Spec. Sheet attached
Fabricate and install a staff gauge for tracking daily pumping progress	**Construct a simple staff gauge** **Use plant boat to install** **Install close to weir location near pumping activity. Should be visible from pump operation.** **Level should not exceed one foot per day-(24 hours)**	**Foot and inches** **Two men present** **Life jackets required** **Throw -Buoy should be present** **Record and document start and finish reading daily.**
Positioning equipment	Position pump near edge of dike.(Chock Wheels) Suction line should be near but not on or in the discharge pipe within the weir. Suction Line should be on a float to prevent sediment from being pulled in. Discharge Line is to be placed inside of the drain on the outside of the dike. Grating should be removed and the pipe secured. Place a secondary containment for potential fuel and oil leaks under all equipment.	All connections should be checked, wrapped and taped or a barrier placed beneath the connections if necessary to prevent spillage. Use CAUTION when working near the weir and piping. This **should not** be disturbed. Construct with plastic and wood or use plastic pool if available.
Staging Material	Have oil s spill kit available at pump site.	**Pads and boom**
Securing the work area	Barricade the area	**Identify/establish risk and traffic patterns to ensure safety**
Monitoring Operations	Pump Operator should stay in the area with the pump at all times when pump is operating. Monitor to ensure that pump suction stays off the bottom. Monitor for leaks. Monitor for changes in dike	Check for leaks Check water level Check for cloudy discharge-**STOP** if water becomes stained or appears to contain sediment. Check pump fuel level and oil pressure

	conditions. Monitor for cenospheres Monitor water levels Monitor equipment	
Recordkeeping	**Record and document water level readings at the start and conclusion of activities daily. Record total pump run time for the day in hours and quarterly amounts. Example: 4.75 hours run time on a particular date.** **Read and Document water level readings in PZ-3S, PZ-3D, PZ-4, and in PZ-5 piezometers at the beginning and the end of each shift.** **Operational Samples should be taken by the Plant ORC and analyzed for TSS(total suspended solids and oil/grease)**	**Documented daily water level readings to be given to CF Plant personnel at least weekly.** **Pump total run times to be given to CF Operator of Responsible Charge for NPDES purposes and monthly DMR reporting.** **Piezometer readings should be taken and documented at the same time as the staff gauge. All readings should be taken at the same time each day (+/- 3 hours)** **Henry Gales**
Pumping down water	Pump down water using portable pump. Water should be pumped directly into the current discharge piping. Run discharge hose into the piping. Allow discharge water to follow normal path. All hoses should be secured to prevent whipping	All discharge activities should simulate normal discharge and not exceed more than one foot of drop in 24 hours. Any deviation from this plan should result in pumping operation shutdown and assessment of conditions prior to restarting.
Condition Change	Look for cloudy discharge or sediment in outflow.	Check suction to make sure it is floating and hasn't fallen to the bottom. TSS will still need to be monitored.
Shutdown Activities @ end of day	Document the water level at end of day. Position Equipment in safe area and Shut down properly Leave area clean and ready for next day Barriers will be required under all equipment not located in a	Swimming pools or plastic/canvas barrier should be underneath all equipment not located in containment.

	containment when shutdown for the day.	
Anticipated Equipment to be Used on the Dam for Dewatering Activities: **Note: The following weight limits of equipment used on the dam:** **Weight of Tracked Equipment < 40 tons** **Weight of Service Vehicles < 10,000 pounds** **Weight of Rubber Tired Equipment < 17 tons per axle**	Please note that we **cannot change (i.e., cut it, lower it, etc.)** the riser structure without having a permit from Dam Safety to do so, which we do not want to do, if possible.	

Glenn Underwater Services, Inc.
5325 Marshall Air Drive
Charlotte, NC 28217
P: 704-540-9777 F: 704-540-7707
www.glenndiving.com

Project Estimate

October 22, 2013

Duke Energy
Proposal for Abandonment of
Intakes and Leak Sealing
Cape Fear Steam Plant

2013-837NC

Quote Valid for: 90 Days

Client Contact: Kevin Brown

ESTIMATE DETAILS				
Item	Qty.	Description	Rate	Sub-total
		Cape Fear Abdonment and Leak Sealing		$97,230.00
		Includes:		
A		**Isolation of 1-4 Intake Tunnels**		
		Divers Seal Upstream Sluice Gates - Dewater Intake		
		Construct Two Intake Bulkheads & Pump Concrete in the dry (10' & 5' Diameter Pipes)		
B		**1-4 Discharge Point Bulkheads**		
		Divert seal bulkheads		
C		**Cooling Tower Discharge Line: 120"**		
		Construct Bulkhead at Entrance into Discharge Canal		
D		**Ashpond Riser Repairs**		
		Chemical Grout Injection to Seal Riser Pipes at Ash Ponds		
		** Cost includes engineered drawings of bulkheads.*		
			Estimated Total	$97,230.00

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Water Resources
Water Quality Programs

Pat McCrory
Governor

Thomas A. Reeder
Director

John E. Skvarla, III
Secretary

January 15, 2014

Mr. Hershell McCarty
Plant Manager
Cape Fear Steam Electric Power Plant
500 CP&L Rd
Moncure, NC 27559

Subject: **NPDES Compliance Evaluation Inspection**
NPDES Wastewater Discharge
Permit No. NC0003433
Cape Fear Steam Electric Power Plant
Chatham County

Dear Mr. McCarty:

On December 6, 2013, Autumn Romanski with the North Carolina Division of Resources conducted a Compliance Evaluation Inspection of the Cape Fear Steam Electric Power Plant. This inspection was conducted to verify that the facility is operating in compliance with the conditions and limitations specified in NPDES Wastewater Permit No. NC0003433. The time and assistance of Duke Energy Staff, Shannon Langley, LeToya Ogallo, Robin Bryson, and ORC Henry Gales was greatly appreciated.

A summary of the findings and comments noted during this inspection is provided in Section D on Page 2 of the attached copy of the complete inspection report titled "Water Compliance Inspection Report".

If you have any questions concerning this report, please contact me at 919-791-4255 in the Raleigh Regional Office.

Sincerely,

Danny Smith

Danny Smith
Raleigh Regional Operations Supervisor

Attachments
Cc: (w/attachments) Raleigh Regional Office – File
DWQ/Raleigh – Central Files
Wetlands, Buffers, Stormwater Compliance & Permitting Unit

Electronic Cc:
Mrs. Robyn Bryson, Mr. Larry Baxley, Shannon Langley, and LeToya Ogallo

Section D Summary of Findings /Comments

1. Permit:

Your NPDES Individual Wastewater permit became effective September 1, 2011 and expires on July 31, 2016. The facility is not currently under a Special Order by Consent.

The facility was compliant with the wastewater requirements of the NPDES permit the day of the inspection. The plant no longer sends ash sluice water/wastewater to the ash pond. An ash pond closure plan is in the process of being developed. The plant is required to submit the ash pond closure plan one year prior to the closure of the facility. Current plans are to continue pumping resource water from the Cape Fear River thru the plant. As operations change, the facility should report changes that may affect permit related wastewater treatment units and effluent discharge. A closure notice was submitted by the permittee on December 4, 2013 for the oil and water separator and domestic wastewater package plant.

2. Compliance Schedules:

The permit does not have any outstanding compliance schedules for this facility.

3. Facility Site Review:

The overall condition of the plant site was satisfactory. The appearance of the facility was in acceptable condition indicating the current housekeeping practices are good.

4. Records/Reports:

a) A review of the daily monitoring data submitted during the previous 12-month period and a review of the permit conditions indicates the facility was in compliance with the permit requirements and/or limitations.

The facility was issued no penalty assessments and no notices of violation for the 12-month period.

The wastewater and groundwater reports data was reviewed. Amended DMRs for wastewater were collected at the site the day of the inspection and forwarded to DWR Central Office for processing. According to the data entered in BIMs data system, the facility provided groundwater monitoring results required by the Groundwater Monitoring Plan dated March 30, 2011.

The records for the Ash Pond Dam Integrity Inspections reside with the Division of Energy, Mines, and Land Resources (NC DEMLR).

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The DWR NPDES Point Source Branch is working with the permittee on the Ash Pond Closure. The records for the Fish Tissue Monitoring near the Ash Pond reside with the Environmental Sciences Section (DWR ESS). The current permit requires Fish Tissue Monitoring near the ash pond to be completed once between September 1, 2011 and July 31, 2016.

b) The facility must designate a certified Operator-in-Responsible-Charge (ORC) having a certification level equal to or greater than the facility classification. A Back-up ORC must also be designated with a minimum certification level at least one level less than the facility classification.

The facility is currently in compliance with these requirements. This facility is classified as a Physical Chemical 1 (PC-1) and the Operator in Responsible Charge (ORC) is Henry Gales. He holds a PC-1 (Cert. No.996750). Larry Baxley is the (BORC).

The facility is currently in compliance with these requirements.

5. Self-Monitoring Program:

You are reminded that your monitoring samples must be collected, preserved, and analyzed by appropriate procedures and methods. You should maintain records of the sampler temperature, and a certified laboratory must calibrate the sample thermometers annually.

Your operator is reminded that he/she must keep a logbook of all operation/maintenance activities undertaken at the facility. The logbook should include all daily process control activities including any field measurements conducted for process control. A visitation log for the facility must also be maintained.

The facility is currently in compliance with these requirements, however, the sampling location for Outfall 005 historical has been at the outlet of the underground conveyance pictured below.

Outfall 005

EPARFI03966

The operator indicated that sampling was being conducted at the manhole/wet well located on the other side of the road nearest the 1985 Ash pond. For safety reasons this wet well was not used in the past. To eliminate ongoing safety concerns, and to maintain historical consistency of data, the ORC will go back to sampling the outlet of the underground conveyance.

Monitoring for Temp and pH is conducted by the ORC at required sample locations, but all other sampling requirements have been contracted out to Pace Labs.

6. Laboratory:

For all analytical data submitted for compliance monitoring purposes, a certified laboratory must be utilized for all laboratory analysis. Additionally, if field parameter testing is conducted, an operator certified to perform the specified field parameter analysis is also required. The operator needs to be sure to calibrate all meters/instrumentation before each use and retain all calibration records.

The facility is currently in compliance with these requirements and utilizes Pace NC Certified Labs (different analytes are sent to different Pace locations- Raleigh, Asheville....) The facility holds a current NC DWQ Laboratory Field Parameter Certification #5101 for pH and temperature measurements.

The Regional Field Inspectors checklist (to be forwarded to the DWQ Laboratory Certification Program) was completed the day of the inspection and reflects the extent of laboratory items investigated by Regional inspectors. Lab inspections are also performed separately by the Lab Certification Program. The Regional lab checklist results are attached.

7. Flow Measurement:

If the permit requires a flow measurement device for determining the effluent flow, the flow measurement device must be calibrated annually.

This facility is required to monitor and report effluent flow and the facility is in compliance with this requirement. They report effluent flow. It appears from the recent NPDES effluent outfall 007 flow data reported that flow may vary widely as the facility is off-line more frequently and is entering a transition period that will work towards a permanent shutdown. The current plans are to continue pumping resource water from the Cape Fear River thru the plant so the methods used to calculate effluent flow may need to be reviewed. During plant transition to closure attention to flow versus discharge loading is necessary to ensure effluent water quality. It was reported that plans are to complete repairs in progress at the 1985 Ash Pond riser such that the 005 Ash Pond Discharge flow will cease.

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8. Effluent/Receiving Waters:

The effluent discharge should be clear with a continuous flow with no visible changes to the receiving waters.

The effluent discharge was clear and flow was continuous. The receiving waters looked clear with no visible changes from the effluent discharge.

9. Pretreatment:

*This facility currently has no pretreatment permit and does not accept or discharge domestic or industrial waste to a sanitary sewer system. Pre-treatment permits are required, **if applicable**, by your NPDES Discharge Permit.*

10. Solids Handling/Disposal:

The facility must dispose of solids by an acceptable method such as a landfill or utilize the services of an approved solids hauling and disposal contractor, which requires the facility to be included under the contractor's non-discharge permit (i.e. land application). The facility is reminded to maintain adequate records (i.e. shipment dates, quantities, etc.) of any solids hauling and/or disposal activities.

The facility is in compliance with these requirements, and reports no transporting of ash or wastewater sludge solids to off site locations. The facility should address Coal Combustion Products management as directed by the NC Division of Solid Waste and/or as directed by other state or federal regulations as that apply to solids at this facility. The capacity and ultimate disposal of solids from the active 1985 ash pond is currently being reviewed, and Progress Energy has reported all ash ponds on-site will close as a result of the closure of the plant.

11. Sanitary Wastewater Treatment Plant

The sanitary wastewater treatment unit was not observed during this inspection. A notice was received on December 4, 2013 on closure of the domestic wastewater plant.

12. **Compliance Sampling:**

No compliance sampling was conducted the day of this inspection.

13. **Operations & Maintenance:**

The facility was in compliance with these requirements the day of the inspection.

EPARFI03968

EPA

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Form Approved.
OMB No. 2040-0057
Approval expires 8-31-98

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N 2 5	3 NC0003433 11	12 13/12/06 17	18 C	19 S	20

Remarks
21 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 69	70	71	72 N	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For Industrial Users discharging to POTW, also include POTW name and NPDES permit Number)	Entry Time/Date	Permit Effective Date
Cape Fear Steam Electric Power Plant 500 CP L Rd Moncure NC 27559	09:00 AM 13/12/06	11/09/01
	Exit Time/Date	Permit Expiration Date
	11:00 AM 13/12/06	16/07/31

Name(s) of Onsite Representative(s)/Titles(s)/Phone and Fax Number(s)
///
Henry Gaston Gales/ORC/919-774-5217/

Other Facility Data

Name, Address of Responsible Official/Title/Phone and Fax Number
Hershell McCarty,500 CP L Rd Moncure NC 27559///
Contacted No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

- [x] Permit
- [x] Flow Measurement
- [x] Operations & Maintenance
- [x] Records/Reports
- [x] Self-Monitoring Program
- [x] Sludge Handling Disposal
- [x] Facility Site Review
- [x] Compliance Schedules
- [x] Effluent/Receiving Waters
- [x] Laboratory
- [x] Other

Section D: Summary of Finding/Comments (Attach additional sheets of narrative and checklists as necessary)

(See attachment summary)

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Autumn H Romanski Autumn Romanski	RRO WQ//919-791-4247/	1/6/2014

Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date
Danny Smith DWR/RRO	(919) 791-4200	8 Jan 13

EPA Form 3560-3 (Rev 9-94) Previous editions are obsolete.

EPARFI03969

NPDES	yr/mo/day	Inspection Type
3 NC0003433 11	12 13/12/06 17	18 C

1

Section D: Summary of Finding/Comments (Attach additional sheets of narrative and checklists as necessary)

The facility was in compliance with the permit requirements reviewed the day of this inspection.

EPARFI03970

Permit	Yes	No	NA	NE
(If the present permit expires in 6 months or less). Has the permittee submitted a new application?	☐	☐	■	☐
Is the facility as described in the permit?	■	☐	☐	☐
# Are there any special conditions for the permit?	☐	☐	■	☐
Is access to the plant site restricted to the general public?	■	☐	☐	☐
Is the inspector granted access to all areas for inspection?	■	☐	☐	☐

Comment: The facility provided written notice on December 4, 2013 on the closure of several wastewater treatment components: the extended aeration package plant, and oil & water separator. Future- will be closing the effluent channel and ash ponds.

Compliance Schedules	Yes	No	NA	NE
Is there a compliance schedule for this facility?	☐	☐	■	☐
Is the facility compliant with the permit and conditions for the review period?	☐	☐	■	☐

Comment:

Pump Station - Influent	Yes	No	NA	NE
Is the pump wet well free of bypass lines or structures?	☐	☐	☐	■
Is the wet well free of excessive grease?	☐	☐	☐	■
Are all pumps present?	☐	☐	☐	■
Are all pumps operable?	☐	☐	☐	■
Are float controls operable?	☐	☐	☐	■
Is SCADA telemetry available and operational?	☐	☐	☐	■
Is audible and visual alarm available and operational?	☐	☐	☐	■

Comment: The facility is intake pump station has one pump operational with another pumps that could be placed back online as needed until such time as the plant stops intaking water from Cape Fear River.

These pumps were not evaluated during this inspection visit - but should be maintained and operational as needed until plant closure.

Flow Measurement - Influent	Yes	No	NA	NE
# Is flow meter used for reporting?	■	☐	☐	☐
Is flow meter calibrated annually?	■	☐	☐	☐
Is the flow meter operational?	■	☐	☐	☐
(If units are separated) Does the chart recorder match the flow meter?	☐	☐	☐	■

Flow Measurement - Influent

	Yes	No	NA	NE

Comment: Flow is calulated from pump curves.

Flow Measurement - Effluent

	Yes	No	NA	NE
# Is flow meter used for reporting?	☐	☐	■	☐
Is flow meter calibrated annually?	☐	☐	■	☐
Is the flow meter operational?	☐	☐	■	☐
(If units are separated) Does the chart recorder match the flow meter?	☐	☐	■	☐

Comment: Combined effluent flow at outfall 007 is reported as measured at the influent pumps.

Operations & Maintenance

	Yes	No	NA	NE
Is the plant generally clean with acceptable housekeeping?	■	☐	☐	☐
Does the facility analyze process control parameters, for ex: MLSS, MCRT, Settleable Solids, pH, DO, Sludge Judge, and other that are applicable?	■	☐	☐	☐

Comment:

Lagoons

	Yes	No	NA	NE
Type of lagoons?	Facultative			
# Number of lagoons in operation at time of visit?	1			
Are lagoons operated in?	Multicell			
# Is a re-circulation line present?	☐	☐	☐	■
Is lagoon free of excessive floating materials?	■	☐	☐	☐
# Are baffles between ponds or effluent baffles adjustable?	☐	☐	☐	■
Are dike slopes clear of woody vegetation?	■	☐	☐	☐
Are weeds controlled around the edge of the lagoon?	■	☐	☐	☐
Are dikes free of seepage?	☐	☐	☐	■
Are dikes free of erosion?	☐	☐	☐	■
Are dikes free of burrowing animals?	☐	☐	☐	■
# Has the sludge blanket in the lagoon (s) been measured periodically in multiple locations?	☐	☐	☐	■
# If excessive algae is present, has barley straw been used to help control the growth?	☐	☐	☐	■
Is the lagoon surface free of weeds?	☐	☐	☐	■
Is the lagoon free of short circuiting?	☐	☐	☐	■

EPARFI03972

Lagoons

	Yes	No	NA	NE

Comment: The 1985 ash pond / lagoon is no longer receiving ash sluice wastewater, the plant has eliminated the ash sluice wastewater.

The pond is still receiving domestic wastewater, but package plant closure notice was given and this domestic discharge and the oil and water separator discharge to the 1985 ash pond will be eliminated.

Currently, only overflow through the standpipe is leaving pond based on pond water levels. The plant is in the process of repairs on the standpipe and reported once the repairs were complete that there would be no wastewater flow from the 1985 ash pond, through Outfall 005.

Outfall 005 - sampling data was reviewed and the new contract operator at the plant explained the Outfall 005 samples were being taken at the wet well instead of the prior sample location at the 005 effluent channel. It was discussed that in interest of safety risk at the wet well/cover that the operator would return to historical outfall 005 sample location.

Pump Station - Effluent

	Yes	No	NA	NE
Is the pump wet well free of bypass lines or structures?	☐	☐	■	☐
Are all pumps present?	☐	☐	■	☐
Are all pumps operable?	☐	☐	■	☐
Are float controls operable?	☐	☐	■	☐
Is SCADA telemetry available and operational?	☐	☐	■	☐
Is audible and visual alarm available and operational?	☐	☐	■	☐

Comment:

Effluent Sampling

	Yes	No	NA	NE
Is composite sampling flow proportional?	☐	☐	☐	■
Is sample collected below all treatment units?	☐	☐	☐	■
Is proper volume collected?	☐	☐	☐	■
Is the tubing clean?	☐	☐	☐	■
# Is proper temperature set for sample storage (kept at less than or equal to 6.0 degrees Celsius)?	☐	☐	☐	■
Is the facility sampling performed as required by the permit (frequency, sampling type representative)?	☐	☐	☐	■

Effluent Sampling

	Yes	No	NA	NE

Comment: The facility has hired a contract lab to provide composite sampler and sampling as required, they were not on-site sampling the day of this inspection and therefore not inspected.

Effluent Pipe

	Yes	No	NA	NE
Is right of way to the outfall properly maintained?	■	□	□	□
Are the receiving water free of foam other than trace amounts and other debris?	■	□	□	□
If effluent (diffuser pipes are required) are they operating properly?	□	□	■	□

Comment: Outfall 007 - effluent channel receiving water was clear with no foam/debris.

Final closure plans for this wastewater channel (permitted by the NPDES permit to outfall 007) is currently being discussed.

Other

	Yes	No	NA	NE

Comment:

Laboratory

	Yes	No	NA	NE
Are field parameters performed by certified personnel or laboratory?	■	□	□	□
Are all other parameters(excluding field parameters) performed by a certified lab?	■	□	□	□
# Is the facility using a contract lab?	■	□	□	□
# Is proper temperature set for sample storage (kept at less than or equal to 6.0 degrees Celsius)?	□	□	□	■
Incubator (Fecal Coliform) set to 44.5 degrees Celsius+/- 0.2 degrees?	□	□	■	□
Incubator (BOD) set to 20.0 degrees Celsius +/- 1.0 degrees?	□	□	■	□

Comment:

Record Keeping

	Yes	No	NA	NE
Are records kept and maintained as required by the permit?	■	□	□	□
Is all required information readily available, complete and current?	■	□	□	□
Are all records maintained for 3 years (lab. reg. required 5 years)?	■	□	□	□
Are analytical results consistent with data reported on DMRs?	■	□	□	□
Is the chain-of-custody complete?	■	□	□	□
Dates, times and location of sampling	■			
Name of individual performing the sampling	■			
Results of analysis and calibration	■			
Dates of analysis	■			

Record Keeping	Yes	No	NA	NE
Name of person performing analyses	■			
Transported COCs	■			
Are DMRs complete: do they include all permit parameters?	■	☐	☐	☐
Has the facility submitted its annual compliance report to users and DWQ?	☐	☐	☐	■
(If the facility is = or > 5 MGD permitted flow) Do they operate 24/7 with a certified operator on each shift?	■	☐	☐	☐
Is the ORC visitation log available and current?	■	☐	☐	☐
Is the ORC certified at grade equal to or higher than the facility classification?	■	☐	☐	☐
Is the backup operator certified at one grade less or greater than the facility classification?	■	☐	☐	☐
Is a copy of the current NPDES permit available on site?	■	☐	☐	☐
Facility has copy of previous year's Annual Report on file for review?	☐	☐	☐	■

Comment: The facility provided an amended DMR for October 2012, as a Fecal result was inadvertently left off the DMR when it was submitted. The facility had the lab data and the DMR was corrected the day of this inspection.

It was recommened that the facility note all Holidays with an H in each sample adat column on DMR. December 2012 DMR was amended to add Holidays. This facilitates reduction of DWR data entry errors and explains why the data is missing on that date. December 24 and December 25 were holidays that did not require data reporting in 2012.

EPARFI03975

No	Co.	Plant Name	LQS NAME	Ash Pond	Active	In-Active	LQS RO	State ID	Hazard	CMP	Date Inspected	Comments (3/2/14 - 2:30 hrs)	Risk Summary
1	DUK	Allen Steam Station	Allen Active Ash Basin Dam	1	1		MRO	GASTO-061	H	NO	3/1/2014	Concrete riser, RCP barrel. Clear flow at outfall.	22
2	DUK	Allen Steam Station	Allen Retired Ash Basin Dam	1		1	MRO	GASTO-016	H	NO	3/1/2014	Concrete riser, RCP barrel. Some damage at outlet energy dissipator. Clear flow at outfall.	16
3	DUK	Belews Creek Steam Station	Belews Creek Active Ash Basin Dam	1	1		WSRO	STOKE-116	H	YES	3/1/2014	There are two decant structures (pipe and riser spillways). First structure with concrete riser and CMP barrel was decommissioned in 1994 and grout filled. Second structure has a concrete riser but 24-inch pipe outlet was submerged in backwater and could not be viewed. Duke Energy staff are reviewing construction records to determine pipe material.	19
10	DUK	Buck Steam Station	Buck Steam Station Main Dam	1	1		MRO	ROWAN-047	H	YES	2/26/2014	Concrete riser with CMP barrel. In December 2013 a camera inspection was performed by Duke Energy. Some damage in pipe outlet energy dissapator. Flow at outfall is clear.	18
11	DUK	Buck Steam Station	Buck Steam Station New (Additional Primary) Dam	1	1		MRO	ROWAN-068	H	NO**	2/26/2014	No outfall. Discharge flows directly to ROWAN-069.	20
12	DUK	Buck Steam Station	Buck Steam Station Basin 1 to Basin 2 Dam	1	1		MRO	ROWAN-069	H	NO	2/26/2014	Concrete riser with RCP barrel. Flow at outfall clear. Discharge flows to ROWAN-070. There is discharge channel erosion. MRO is considering issuance of NOD to repair channel.	14
13	DUK	Buck Steam Station	Buck Steam Station Basin 2 to Basin 3 Dam	1	1		MRO	ROWAN-070	H	NO	2/26/2014	Concrete riser with RCP barrel. Clear flow at outlet.	14
14	DUK	Buck Steam Station	Buck Steam Station Divider Dam	1		1	MRO	ROWAN-071	H	NO**	2/26/2014	No discharge from this dam. Dam is a divider dike.	12
17	DUK	Cliffside Steam Station	Cliffside Inactive Ash Basin #5 Main Dam	1		1	MRO	RUTHE-070	H	NO	3/1/2014	Concrete riser with RCP barrel. Clear flow at outlet.	19
18	DUK	Cliffside Steam Station	Cliffside Inactive Ash Basin #5 Saddle Dam	1		1	MRO	RUTHE-072	H	NO	3/1/2014	Saddle dike. No decant structure.	21
19	DUK	Cliffside Steam Station	Cliffside Active Ash Basin Upstream Dam	1	1		MRO	CLEVE-050	H	NO**	Planned	No decant or spillway structure. Inspection scheduled for 3/4/14.	19
20	DUK	Cliffside Steam Station	Cliffside Active Ash Pond Downstream Dam	1	1		MRO	CLEVE-049	H	NO	3/1/2014	Concrete riser, RCP barrel. Clear flow at outfall.	21
21	DUK	Cliffside Steam Station	Cliffside Inactive Ash Basin 1-4 Main Dam	1		1	MRO	CLEVE-047	H	YES	3/1/2014	Concrete riser with CMP barrel. Duke staff recently discovered leak in CMP near riser. Duke Energy staff are attempting to repair and are pumping discharge to another basin. MRO is considering a NOD.	21
23	DUK	Dan River Steam Station	Dan River Active Primary Ash Basin	1	1		WSRO	ROCKI-237	H	UNK		Decant structure outlets in ROCKI-238 reservoir.	21
24	DUK	Dan River Steam Station	Dan River Active Secondary Ash Basin	1	1		WSRO	ROCKI-238	H	UNK		Decant structure pipe outlet currently submerged by the river.	19
27	DUK	Marshall Steam Station	Marshall Active Ash Basin Dam	1	1		MRO	CATAW-054	H	YES	3/1/2014	Concrete riser with CMP barrel that is slip lined with 30-inch plastic pipe. Outlet is submerged and not visible.	20
28	DUK	Riverbend Steam Station	Riverbend Active Ash Basin Dam 1 (Primary)	1	1		MRO	GASTO-097	H	NO**	3/1/2014	No decant or spillway structure.	19
29	DUK	Riverbend Steam Station	Riverbend Active Ash Basin Dam 2 (Secondary)	1	1		MRO	GASTO-098	H	YES	3/1/2014	Concrete riser with CMP barrel. Gray material in the barrel at the outlet but flow is clear.	18
30	DUK	Riverbend Steam Station	Riverbend Ash Basin Intermediate Dam	1	1		MRO	GASTO-099	H	NO	2/19/2014	Concrete riser with RCP barrel. No outlet observation noted.	16
36	PGN	Asheville Power Station	Asheville 1982 Ash Pond Dam	1	1		ARO	BUNCO-089	H	NO	3/1/2014	No CMP spillway components. BUNCO-89 and 97 served by a combined multiple riser, single pipe spillway discharging at a single point. Pipe material is RCP and HDPE. Discharge is clear.	19
37	PGN	Asheville Power Station	Asheville 1964 Ash Pond Dam	1		1	ARO	BUNCO-097	H	NO	3/1/2014	See BUNCO-089	17
39	PGN	Cape Fear Power Station	Cape Fear 1956 Ash Pond (Inactive)	1		1	RRO	CHATH-075	H	NO	2/21/2014	A steel pipe barrel from the retired decant structure is covered by soil material and growth, but it is not flowing and eppears to be in satisfactory condition. The dam has two additional small steel conduits through the embankment just below the crest; they are both not flowing and are in satisfactory condition.	14
40	PGN	Cape Fear Power Station	Cape Fear 1963 Ash Pond Dam (Inactive)	1		1	RRO	CHATH-076	H	NO**	2/21/2014	Thera are no spillway conduits. Runoff passes through an old breached separation dike into the inactive impoundment area associated with CHATH-077.	16
41	PGN	Cape Fear Power Station	Cape Fear 1970 Ash Pond Dam (Inactive)	1		1	RRO	CHATH-077	H	NO	2/21/2014	A 24" fiberglass-composite pipe from the decant structure passes through the embankment toward the river; however, it is not flowing and is in satisfactory condition.	19
42	PGN	Cape Fear Power Station	Cape Fear 1978 Ash Pond Dam	1		1	RRO	CHATH-078	H	NO	2/21/2014	Concrete riser and 24-inch RCP barrel. Some leakage has occurred in the riser. The reservoir level has been lowered to facilitate investigation of needed maintenance to stop the leakage. The CMP trash rack is significantly corroded and should be replaced, but is not significant structurally. The barrel was flowing slightly and flow was clear. The conduit appears to be in satisfactory condition.	18
43	PGN	Cape Fear Power Station	Cape Fear 1985 Ash Pond Dam	1	1		RRO	CHATH-079	H	NO	2/21/2014	48" concrete riser and 30" RCP barrel appear to be in satisfactory condition. As with CHATH-078, the resevoir level has been lowered for maintenance. The riser has a metal trash rack that has experienced some corrosion. The barrel was flowing, and flow was relatively clear.	17
45	PGN	Sutton Power Station	Sutton 1984 Ash Pond	1	1		WIRO	NEWHA-005	L	YES	2/20/2014	CMP riser and barrel. CMP in good condition. Reservoir level below riser. No discharge at outlet.	12

49	PGN	Mayo Power Station	Mayo Ash Pond Dam	1	1		RRO	PERSO-035	H	YES	3/1/2014	The 48" CMP riser and barrel decant structure penetrate a shallow, crescent shaped dike at the internal canal to the main freshwater reservoir. The pipe does not penetrate the main ash pond dam. Although the outlet is submerged, the structure appears to be functioning properly and is in satisfactory condition. The metal trash rack on the riser is significantly corroded.	21
54	PGN	Roxboro Power Station	Roxboro West Ash Pond Dam	1	1		RRO	PERSO-038	H	NO**	3/1/2014	No spillway conduits serve this structure. Internal canals direct runoff into the impoundment served by PERSO-039. New HDPE structures penetrate the dams associated with the FGD settling and flush ponds that are present within the footprint of this ash pond. They deliver liquid from the plant to the treatment system, and outflow from the skimmers passes through the treatment facility via DI pipes. The ultimate treated discharge passes through the ash pond dam into the perimeter canal. Although slight leakage was observed where the outlet pipe attaches to a 16" HDPE that discharges into the perimeter canal, the connection is outside of any embankment and the structures appear to be in satisfactory condition. Flow was clear.	23
55	PGN	Roxboro Power Station	Roxboro West Ash Pond South Rock Filter	1	1		RRO	PERSO-039	I	NO	3/1/2014	The dual RCP riser/barrel structures with flap gates appear to be in satisfactory condition and are operating properly. Flow was clear.	17
59	PGN	Roxboro Power Station	Roxboro East Ash Pond	1		1	RRO	PERSO-033	L	NO**	3/1/2014	No spillway conduits. There are several high level RCP storm culverts associated with the access road on the crest of the dam. The pipes all appear to be in satisfactory condition.	16
62	PGN	Weatherspoon Power Station	Weatherspoon 1979 Ash Pond	1	1		FRO	ROBES-009	I	YES	2/21/2014	CMP riser, RCP barrel. CMP riser in fair condition. Reservoir level below riser. Small, clear discharge at outlet.	14
64	PGN	H.F. Lee Power Station	H.F. Lee Active Ash Pond	1	1		WaRO	WAYNE-022	H	NO	2/25/2014	Concrete riser and RCP barrel. No discharge at outlet.	17
				33	22	11				8				

GASTO-061 Allen Active Ash Basin Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: NOD issued 4/6/2010, Reissued 12/14/2010, NOD resolved		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	4
5	> 9,000 Acre-feet	
Comments: 4608 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
GASTO-061	22

Dam Safety Considerations

	Risk Factors – below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	

5	> 9,000 Acre-feet	
Comments: 1092 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	2
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	
Comments: Inactive ash basin. Basin area is ash landfill, tree growth in portion of former basin area and downstream slope of dam.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
GASTO-016	16

DRAFT (For discussion purposes only)

Water Quality Considerations - (STOKE-116-H)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	

Comments:

**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	

Comments:

Dam Safety Considerations (STOKE-116-H)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	5

Comments: Middleton Loop Road and railroad tracks are located 3800' below ash pond.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		
5	Directly adjacent	

EPARFI03983

Comments: Bridge on Middleton Loop Road is between ash pond and Dan River.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	

Comments: Dam has been repaired.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	5

Comments: Entire impoundment is covered with water.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: Drainage area to ash pond is 711 acres, ash pond is 350 acres at full pond.

ROWAN-047 Buck Steam Station Main Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	

2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 801 Acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water; sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
ROWAN-047	18

ROWAN-068 Buck Steam Station New (Additional Primary) Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	

2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 2089 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water; sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
ROWAN-068	20

ROWAN-069 Buck Steam Station Basin 1 to Basin 2 Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	1
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Engineering action requested		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	

2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 676 Acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
ROWAN-069	14

ROWAN-070 Buck Steam Station Basin 2 to Basin 3 Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		2
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	1
2	300 to 1,500 acre-feet	

3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 179 Acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
ROWAN-070	14

ROWAN-071 Buck Steam Station Intermediate Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		
5	Directly adjacent	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	1

2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 62 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	1
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
ROWAN-071	12

RUTHE-070 Cliffside Inactive Ash Basin 5 Main Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: NOD issued 3/5/2014		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	

5	> 9,000 Acre-feet			
Comments: 1773 Acre-feet				

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content			
1	Dry - heavy natural vegetation and tree growth			
2	Dry - no standing water, sparce tree growth			2
3	25% of reservoir area water covered			
4	25% to 75% of reservoir area water covered			
5	100% of reservoir area water covered			
Comments: Majority of the basin is now used as laydown yard , basin functions as Sediment/Stormwater basin.				

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)			
1	Drainage area = reservoir area			
2	Drainage area = 1 to 3 times reservoir area			2
3	Drainage area = 3 to 6 times reservoir area			
4	Drainage area = 6 to 10 times reservoir area			
5	Drainage area = > 10 times reservoir area			
Comments:				

	Composite Score
RUTHE-070	19

RUTHE-072 Cliffside Inactive Ash Basin #5 Saddle Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	5
Comments: Loss of life is also possible, I will consider it 4.5 for Risk calculations. Or for worst case 5		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	

2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 767 Acre feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	2
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	
Comments: Majority of basin is now used as laydown yard. Saddle dike to RUTHE-070.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
RUTHE-072	21

CLEVE-050 Cliffside Active Ash Basin Upstream Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	

5	> 9,000 Acre-feet	
Comments: 583 Acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water; sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments: 25-30 % of reservior area water covered.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
CLEVE-050	19

CLEVE-049 Cliffside Active Ash Basin Downstream Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: NOD issued 4/6/2010, Resolved		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	

2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	4
5	> 9,000 Acre-feet	
Comments: 3100 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
CLEVE-049	21

CLEVE-047 Cliffside Inactive Ash Basin 1-4 Main Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: NOD issued 4/6/2010, Reissued 11/24/2010, NOD resolved, NOD issued 3/5/2014		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	1
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	

5	> 9,000 Acre-feet	
Comments: This is an inactive ash basin with a portion of the impoundment area now being used as a stormwater management pond. 139 Acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments: This is an inactive ash basin with a portion of the impoundment area (est 25%) now being used as a stormwater management pond.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	4
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
CLEVE-047	21

DRAFT (For discussion purposes only)

Water Quality Considerations - (ROCKI-237-H)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	

Comments:

**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	

Comments:

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5: Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	

Comments: Dam embankment discharges in to Dam River. Primary spillway drains to ROCKI-238-H

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		

5	Directly adjacent	5
Comments: Directly adjacent to Dan River		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	5
Comments: Dam is currently under repair per emergency provision of the Dam Safety Act.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: Impoundment is approximately 390 acre-feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments: Reservoir is mostly drained to strom drain failure under ash impoundment		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: No additional drainage to impoundment.

Composite Score (ROCKI-237) 21

DRAFT (For discussion purposes only)

Water Quality Considerations - (ROCKI-238-H)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	
Comments:		
**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	
Comments:		

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Dam embankment discharges in to Dan River.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		

5	Directly adjacent	5

Comments: Directly adjacent to Dan River. Primary spillway discharges to Dan River.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	

Comments: Dam has been repaired.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	1
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments: Impoundment is approximately 135 acre-feet

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	5

Comments: Entire impoundment is covered with water.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: ROCKI-237-H drains into ROCKI-238 by principle spillway

Composite Score (ROCKI-238) 19

EPARFI04013

CATAW-054 Marshall Active Ash Basin Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 1605 Acre Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
CATAW-054	20

GASTO-097 Riverbend Active Ash Basin Dam 1 (Primary)

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 1328 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
GASTO-097	19

GASTO-098 Riverbend Ash Basin Dam 2 (Secondary)

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 831 Acre-Feet		

Ratings – facilities should be rated 1 as the best and 5 as the worst.	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments: It covered 90 % of Reservior area. I will say for calculation pupurposes it will be 4.75		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
GASTO-098	18

4.75

GASTO-099 Riverbend Ash Basin Intermediate Dam

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments: 247 Acre-Feet		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	
Comments: Intermediate dike serves to direct flow from GASTO-097 to GASTO-098		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	
Comments:		

	Composite Score
GASTO-099	16

DRAFT (For discussion purposes only)

Water Quality Considerations -

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	
Comments:		

**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	
Comments:		

Dam Safety Considerations - BUNCO-089 (1982)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		4
5	Directly adjacent	

Comments: Interstate-26 is between the dam and the French Broad River. River is approximately 1070 feet from the dam.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	

Comments: Note that the impoundment is currently dewatered.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

DRAFT (For discussion purposes only)

Water Quality Considerations -

	Risk Factors – below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

EPARFI04028

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	
Comments:		
**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	
Comments:		

Dam Safety Considerations - BUNCO-097 (1964)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	5
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		4

5	Directly adjacent	
Comments: Interstate-26 is between the dam and the French Broad River. River is approximately 590 feet from the dam.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	1
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	3
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

DRAFT (For discussion purposes only)

Dam Safety Considerations (CHATH-075)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition in this inactive pond		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		4
5	Directly adjacent	
Comments: Within 200' of river, but inactive and covered with trees.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Monitoring of trees and old erosion has been noted		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 700 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	1
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

	Composite Score
CHATH-075	.14

Dam Safety Considerations (CHATH-076)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition in this inactive pond		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments: Within 100' of river		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Old slope failure adjacent to river would have meant a NOD under our program		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments: 400 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	1
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: very small perimeter area

	Composite Score
CHATH-076	16

Dam Safety Considerations (CHATH-077)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments: Within 100' of river		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Primarily ground cover		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments: 580 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	

Comments: about 50%

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: very small perimeter area and US old ash pond

	Composite Score
CHATH-077	19

DRAFT (For discussion purposes only)

Dam Safety Considerations (CHATH-078)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		4
5	Directly adjacent	
Comments: 4000 - 5000 ft. from river, more via canal. Directly adjacent to canal		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Ground cover maintenance primarily		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 450 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	2
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

	Composite Score
CHATH-078	18

DRAFT (For discussion purposes only)

Dam Safety Considerations (CHATH-079)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		4
5	Directly adjacent	
Comments: Adjacent canal some distance from river, ash pond inside larger ash pond		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Ground cover maintenance primarily		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 1800 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	3
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: very small perimeter area

	Composite Score
CHATH-079	17

DRAFT (For discussion purposes only)

Water Quality Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	

Comments:

**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	

Comments:

Sutton Plant 1984 Ash Pond Dam, NEWHA-005

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	1
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	

Comments: The 1984 Ash Pond has a height of 27 feet and a volume of 1364 acre-feet.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		
5	Directly adjacent	

Comments: Sutton Plant's 1972 Cooling Pond (NEWHA-003) provides the physical barrier

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	

Comments: Recommendations were made in our NOIs of January 2010 and September 2010.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments: The 1984 Ash Pond has a volume of 1364 acre-feet.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	3
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	

Comments: The impoundment is being phased out. Currently there is no flow from impounded water.

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments: Sutton Plant 1984 Ash Pond is a completely encircled impoundment.

Dam Safety Considerations (PERSO-035)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments: In stream		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Primarily ground cover issue		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	4
5	> 9,000 Acre-feet	

Comments: 4100 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content			
1	Dry - heavy natural vegetation and tree growth			
2	Dry - no standing water, sparce tree growth			
3	25% of reservoir area water covered			
4	25% to 75% of reservoir area water covered			4
5	100% of reservoir area water covered			

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)			
1	Drainage area = reservoir area			
2	Drainage area = 1 to 3 times reservoir area			2
3	Drainage area = 3 to 6 times reservoir area			
4	Drainage area = 6 to 10 times reservoir area			
5	Drainage area = > 10 times reservoir area			

Comments:

	Composite Score
PERSO-035	21

DRAFT (For discussion purposes only)

Dam Safety Considerations (PERSO-038)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		
5	Directly adjacent	5
Comments: Hyco lake DS		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	3
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Slope failures at interior FGD dikes would have needed NOD if not already being addressed		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	4
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 4000 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content			
1	Dry - heavy natural vegetation and tree growth			
2	Dry - no standing water, sparce tree growth			
3	25% of reservoir area water covered			
4	25% to 75% of reservoir area water covered			4
5	100% of reservoir area water covered			

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)			
1	Drainage area = reservoir area			
2	Drainage area = 1 to 3 times reservoir area			
3	Drainage area = 3 to 6 times reservoir area			3
4	Drainage area = 6 to 10 times reservoir area			
5	Drainage area = > 10 times reservoir area			

Comments:

	Composite Score
PERSO-038	23

DRAFT (For discussion purposes only)

Dam Safety Considerations (PERSO-039)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	3
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		
5	Directly adjacent	
Comments: Canal/Weir DS before lake		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	1
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 2300 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	
4	25% to 75% of reservoir area water covered	4
5	100% of reservoir area water covered	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	3
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

	Composite Score
PERSO-039	17

DRAFT (For discussion purposes only)

Dam Safety Considerations (PERSO-033)

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	2
3	Intermediate Hazard	
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	
Comments: Concern is material composition		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		
5	Directly adjacent	
Comments: DS intake pond prior to lake		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments: Ground cover and minor erosion		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	4
5	> 9,000 Acre-feet	

DRAFT (For discussion purpose only)

March 6, 2014

Comments: 4100 af estimated

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content			
1	Dry - heavy natural vegetation and tree growth			
2	Dry - no standing water, sparce tree growth			2
3	25% of reservoir area water covered			
4	25% to 75% of reservoir area water covered			
5	100% of reservoir area water covered			

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)			
1	Drainage area = reservoir area			
2	Drainage area = 1 to 3 times reservoir area			
3	Drainage area = 3 to 6 times reservoir area			3
4	Drainage area = 6 to 10 times reservoir area			
5	Drainage area = > 10 times reservoir area			

Comments: 3-4 times the reserv. Area

	Composite Score
PERSO-033	16

DRAFT (For discussion purposes only)

Water Quality Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	
Comments:		
**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	
Comments:		

Dam Safety Considerations

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	3
4	High Hazard - Environmental Concerns	
5	High Hazard - Loss of Life	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	3
4		

5	Directly adjacent	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1	Notice of Inspection (NOI) with no recommendations	
2	NOI with maintenance recommendations	2
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	2
3	1,500 to 3,000 acre-feet	
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3	25% of reservoir area water covered	3
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

EPARFI04065

EPARFI04066

DRAFT (For discussion purposes only)

Water Quality Considerations - WAYNE-022 LEE ACTIVE ASH POND

	Risk Factors -- below is the criteria in rating each facility from 1 to 5	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Groundwater Standards	
1	An exceedance of ph, iron or manganese	
2	Exceedance of chloride, nitrate, sulfate, or TDS	
3	Exceedance of aluminum, barium, copper, nickel or zinc	
4	Exceedance of boron, cadium, chromium, selenium, or antimony	
5	Exceedance of arsenic, lead, mercury, or thallium	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Drinking Water Intakes – distance of intake from discharge	
0	No intake	
2	greater than 50 miles downstream	
3	greater than 20 miles, but less than or equal to 50 miles downsteam	
4	greater than 10 miles, but less than or equal to 20 miles downsteam	
5	less than or equal to 10 miles downstream	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Total Population Served by Intakes	
1	1 - 500 served	
2	501 - 3,300 served	
3	3,301 - 10,000 served	
4	10,001 - 100,000 served	
5	> 100,000 served	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Classification downstream and discharge points -- use worst case scenario	
1	Class C	
2		
3		
4	Class B	
5	High Quality Waters, Outstanding Resource Waters, Threatened or Endangered Species present	
Comments:		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Distance of Water Supply Wells from the Compliance Boundary (CB)**	
1	wells greater than 1/2 mile (2640 ft) of the CB	
2	wells within 2000 to 2640 ft of CB	
3	wells within 1500 to 2000 ft of CB	
4	wells within 1000 to 1500 ft of CB	
5	wells within 1000 ft of CB	
Comments:		
**Hydrogeologic considerations -- Use to adjust rating due to unique characterics that should be considered such as wells upgradient, cross gradient, etc.		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Population Served by Water Supply Wells (referenced above)	
1	0 population	
2	0 - 25 people	
3	26 - 100 people	
4	101 200 people	
5	greater than 200 people	
Comments:		

Dam Safety Considerations - WAYNE-022 LEE ACTIVE ASH POND

	Risk Factors -- below is the criteria in rating each facility from 1 to 5. Worst case scenario should be used for multiple ponds	
Ratings -- facilities should be rated 1 as the best and 5 as the worst	Hazard Classification	
1	Low hazard - small size	
2	Low Hazard - Large size	
3	Intermediate Hazard	
4 XXXXXXX	High Hazard - Environmental Concerns	4
5	High Hazard - Loss of Life	
Comments: ash and effluent into Neuse River. Drinking water intake ±6 mi. downstream		

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Proximity to Waters of the State	
1	Located within/above a larger ash reservoir with large amount of available storage	
2		
3	Potential coal ash migration constrained by physical barrier	
4		

5 XXXXXXX	Directly adjacent	5

Comments: ±150 FT. - NO BARRIERS BETWEEN DIKE AND RIVER

Ratings -- facilities should be rated 1 as the best and 5 as the worst	State of Structural Stability & Maintenance (use historical worst case scenario)	
1 XXXXXXX	Notice of Inspection (NOI) with no recommendations	1
2	NOI with maintenance recommendations	
3	Notice of Deficiency (NOD)	
4	Dam Safety Order (DSO)	
5	Enforcement action required	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Volume of Facility	
1	< 300 acre-feet	
2	300 to 1,500 acre-feet	
3 XXXXXXX	1,500 to 3,000 acre-feet	3
4	3,000 to 9,000 acre-feet	
5	> 9,000 Acre-feet	

Comments:

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Free Water Content	
1	Dry - heavy natural vegetation and tree growth	
2	Dry - no standing water, sparce tree growth	
3 XXXXXXX	25% of reservoir area water covered	3
4	25% to 75% of reservoir area water covered	
5	100% of reservoir area water covered	

Comments: ONLY ± 2% SURFACE AREA UNDER WATER

Ratings -- facilities should be rated 1 as the best and 5 as the worst	Offsite Drainage Area (DA = Drainage Area, A = Reservoir Area)	
1 XXXXXXX	Drainage area = reservoir area	1
2	Drainage area = 1 to 3 times reservoir area	
3	Drainage area = 3 to 6 times reservoir area	
4	Drainage area = 6 to 10 times reservoir area	
5	Drainage area = > 10 times reservoir area	

Comments:

EPARFI04071

EPARFI04073

From: Bryson, Robin R.
To: Cook, Cynthia
Subject: FW:
Date: Tuesday, July 15, 2014 11:54:48 AM
Attachments: 92174102_bio non comp 10-13.pdf

From: Ogallo, Letoya
Sent: Monday, March 24, 2014 11:45 AM
To: Velte, John S; Hickok, Linda; Bryson, Robin R.
Subject: FW:

FYI- appears that we did an "operational sample" for toxicity in October. This was done prior to the 007 compliance point. We scheduled this to answer questions in our mind of whether we could pass a tox test on the ash pond discharge alone. Larry just forwarded this to us- it was not included in Robin's summary prepared on Friday.

Toya

From: Baxley, Larry
Sent: Sunday, March 23, 2014 9:46 AM
To: Bryson, Robin R.; Ogallo, Letoya
Subject: FW:

Ladies,

I believe these results are from an operational toxicity we performed in October 2013 during the pumping of the 1985 pond with no circulator running. There are other water quality indicators in the report. Some of these are hardness, pH, temperature and conductivity. We did do some sampling while this was going on and we did Pass. Hope this is useful.

Larry

From: Gales III, Henry
Sent: Thursday, March 20, 2014 10:05 AM
To: Baxley, Larry
Subject:

Henry Gales
Cape Fear Plt
919-516-1982

Pace Analytical Services, Inc.
6701 Conference Drive
Raleigh, NC 27607
(919)834-4984

Laboratory Report

Report Date: 10/10/2013
Date Received: 10/01/2013

Henry Gales
Progress Cape Fear
500 CP&L Rd
Moncure, NC 27559

Project: BIOASSAY
Pace Project No.: 92174102

Sample: PIPE 007 Lab ID: 92174102001 Collected: 10/01/13 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	Analyzed	Qualifiers
C.dubia Pass/Fail Chronic	PASS			10/02/13 00:00	

Reviewed by: Pam Cotten

Pam Cotten

pam.cotten@pacelabs.com

Raleigh Certification IDs
6701 Conference Drive Raleigh, NC 27607
North Carolina Wastewater Certification #: 67

North Carolina Bioassay Certification #: 16
North Carolina Drinking Water Certification #: 37731

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 10/10/13

Facility: CAPE FEAR MONCURE NPDES#: NC003433 Pipe#: 007 County: CHATHAM

Laboratory Performing Test: PACE ANALYTICAL

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: _____

* PASSED: -9.49% Reduction *

Work Order: 92174102

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Water Quality
N.C. DENR
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

Chronic Test Results
Calculated t = -1.646
Tabular t = 2.508
% Reduction = -9.49

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	17	31	28	18	27	27	25	28	29	28	28	30
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

% Mortality	Avg.Reprod.
0.00 Control	26.33 Control
0.00 Treatment 2	28.83 Treatment 2

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	26	27	31	24	29	32	28	25	31	31	29	33
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Control CV 16.697%

% control orgs producing 3rd brood 83.3%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	7.83	7.65	7.61	7.77	7.74	7.70
Treatment 2	7.77	7.94	7.68	8.15	7.63	7.78

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	7.31	6.92	7.84	7.33	7.44	7.40
Treatment 2	7.46	7.43	7.71	7.31	7.66	7.54

Complete This For Either Test
Test Start Date: 10/02/13
Collection (Start) Date
Sample 1: 09/30/13 Sample 2: 10/02/13
Sample Type/Duration

	Grab	Comp.	Duration
Sample 1		X	23.7 hrs
Sample 2		X	23.2 hrs

DILUT	1st SAMP	2nd P/F SAMP
Hardness (mg/1)	38	
Spec. Cond. (µmhos)	121	259.7	340.0
Chlorine (mg/1)		<0.1	<0.1
Sample temp. at receipt (°C)		4.6	2.1

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

Concentration	%	%	%	%	%	%	%	%	%	%
Mortality	%	%	%	%	%	%	%	%	%	%

Note: Please Complete This Section Also

LC50 = _____ %
95% Confidence Limits
_____ % -- _____ %

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other ___

	pH start	pH end		D.O. start	D.O. end
			Control		
			High Conc.		

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DWQ form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.41)

Effluent Toxicity Statistical Results - Chronic Pass/Fail Date: 10/10/13

Facility: CAPE FEAR MONCURE NPDES#: NC003433 Pipe#: 007 County:CHATHAM

Laboratory Performing Test: PACE ANALYTICAL

Reduction: -9.49%	CONTROL	90% Effluent
# Replicates	12	12
Female Live	12	12
Adult Male	0	0
Adult Dead	0	0
Adult Mortality	0.00%	0.00%
# Neonates	316	346
Mean # Neonates	26.333	28.833
Standard Deviation	4.397	2.887
Coefficient of Variation	16.697%	

Fisher's Exact Test

A = 12 B = 12 a = 12 b = 12

a/A = 1.00 b/B = 1.00

Success is: survival

Critical b value = 8

12 > 8

The test concludes that the proportion of survival is not significantly different for the control and the effluent groups.

Test Passes!

SHAPIRO-WILK'S TEST FOR NORMAL DISTRIBUTION OF DATA

ORDERED OBSERVATIONS

i	Group	Neonates	Centered	i	Group	Neonates	Centered
1	C	17	-9.3333	13	C	28	1.6667
2	C	18	-8.3333	14	C	28	1.6667
3	E	24	-4.8333	15	C	28	1.6667
4	E	25	-3.8333	16	C	28	1.6667
5	E	26	-2.8333	17	E	31	2.1667
6	E	27	-1.8333	18	E	31	2.1667
7	C	25	-1.3333	19	E	31	2.1667
8	E	28	-0.8333	20	C	29	2.6667
9	E	29	0.1667	21	E	32	3.1667
10	E	29	0.1667	22	C	30	3.6667
11	C	27	0.6667	23	E	33	4.1667
12	C	27	0.6667	24	C	31	4.6667

SHAPIRO-WILK'S TEST FOR NORMAL DISTRIBUTION OF DATA (cont.)

COEFFICIENTS AND DIFFERENCES

i	x(n-i-1)	x(i)	a(i)	x(n-i-1) - x(i)
1	4.6667	-9.3333	0.4493	14.0000
2	4.1667	-8.3333	0.3098	12.5000
3	3.6667	-4.8333	0.2554	8.5000
4	3.1667	-3.8333	0.2145	7.0000
5	2.6667	-2.8333	0.1807	5.5000
6	2.1667	-1.8333	0.1512	4.0000
7	2.1667	-1.3333	0.1245	3.5000
8	2.1667	-0.8333	0.0997	3.0000
9	1.6667	0.1667	0.0754	1.5000
10	1.6667	0.1667	0.0539	1.5000
11	1.6667	0.6667	0.0321	1.0000
12	1.6667	0.6667	0.0107	1.0000

$$W = \frac{1}{304.3333} \times 269.1847$$

Calculated W = 0.885 Critical W = 0.884

0.885 ≥ 0.884

The reproduction data is normally distributed evaluated at a 99% confidence interval.

Test Passes!

F test for Homogeneity of Variance

$$F = \frac{\text{Control variance}}{\text{Effluent variance}} = \frac{19.3333}{8.3333} = 2.32$$

Numerator degrees of freedom: 11 Denominator degrees of freedom: 11

Critical F = 5.32

2.32 ≤ 5.32 ⟹ The Test PASSES, the variances of the two groups are significantly the same, homogeneous.

EQUAL VARIANCE t TEST

$$t = \frac{26.3 - 28.8}{1.518} = -1.646$$

Degrees of freedom = 22

Critical t = 2.508

$-1.646 < 2.508$

Test passed. There is not a significant difference in reproduction between the Control and the effluent evaluated at a 99% confidence interval.

Chronic Test PASSES

EPARFI04082

Ceriodaphnia dubia Chronic Pass/Fail Toxicity Test

Client: Duke/Prospect/Cape Fear Meow
NPDES #: NC 003433 (Non-compliance)
Culture Transfer (Date/Time): 10/1/13 / 9:15am
Organism Born (Date/Time): 10/1/13 / 1:52pm - 4:40pm
Age of Organism: 22hrs + 52min
Time Fed (Culture): 8:55am
Organism source: 201 + 202
Dilution Water Batch: HW# 321
Temp Dilution Water: 25.1
Temp stock solution 24.9
Start Date: 10/2/13 Time: 12:44pm Analyst: PBC Randomized: ✓ Incubator: BA1
1st Transfer Date: 10/4/13 Time: 11:50am Analyst: [illegible]
2nd Transfer Date: 10/7/13 Time: 9:15am Analyst: [illegible]
Ending Date: 10/8/13 Time: 4:24pm Analyst: PBC
Reviewed by: PBC

Days	Fed By	Time
Day 0	PBC	12:38pm
Day 1	PBC	9:41am
Day 2	[illegible]	11:40am
Day 3	NW	11:38
Day 4	U	14:35
Day 5	[illegible]	9:04a
Day 6	PBC	9:30am

Control

Day 2	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	0	0	0	0	0	0	0	0	0	0	0	0
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 5	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	6	7	4/8	6	6/11	4/9	4/8	5/11	4/12	4/10	5/10	4/11
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 7	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	11	11/13	16	12	12	14	13	12	13	14	13	15
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

	1	2	3	4	5	6	7	8	9	10	11	12
# Total Produced	17	31	28	18	27	27	25	28	29	28	28	30

Effluent % 90

Day 2	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	0	0	0	0	0	0	0	0	0	0	0	0
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 5	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	4/9	4/9	5/11	4/8	4/10	5/12	4/9	4/8	5/12	5/10	4/11	5/13
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 7	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	13	14	15	12	15	15	15	13	14	16	14	15
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

	1	2	3	4	5	6	7	8	9	10	11	12
# Total Produced	26	27	31	24	29	32	28	25	31	31	29	33

Collection (Start) Date
1st Sample: 9/30/13 2nd Sample: 10/2/13

Sample Type/Duration

	Grab	Composite	Duration
1st Sample		✓	23.75
2nd Sample		✓	23.25

	Control	1st Sample	2nd Sample
Hardness (mg/L)	38.0		
Conductivity (µS/cm)	120.6	259.7	340.0
Chlorine (mg/L)		<0.1	<0.1
Sample Temp (°C)		4.6	2.2
pH 100%		7.66	7.72

pH	Start	End	Start	End	Start	End
Control	7.83	7.65	7.61	7.77	7.74	7.70
Treatment	7.77	7.94	7.68	8.15	7.63	7.78
D.O.	**Start**	**End**	**Start**	**End**	**Start**	**End**
Control	7.31	6.92	7.84	7.33	7.44	7.40
Treatment	7.46	7.43	7.71	7.31	7.66	7.54
Temp.	**Start**	**End**	**Start**	**End**	**Start**	**End**
Control	25.1	25.0	25.4	25.2	25.3	25.1
Treatment	25.0	24.9	25.2	25.1	25.0	25.0

NON-Compliance

Pace Analytical	Document Name: Bioassay Chain of Custody	Date Revised: June 22, 2012 Page 1 of 1
	Document Number: F-RAL-CS-007-rev.01	Issuing Authority: Pace Carolinas Quality Office

Bioassay Chain of Custody Form

Facility Name: Duke Progress Cape Fear - Moncure

Address: _____ P.O. Box: _____

Phone # : ( ) _____

Contact: _____

County : _____ NPDES permit #: NC 003433 pipe: *

% Effluent Dilution (IWC): _____ Test Method: _____

Plant Flow: _____

Sample Collector: Print David Gardner

Signature David M. Gardner

Sample Type:

Composite

Date Started 9-30-13 Time: 1015 AM or PM

Date Ended 10-1-13 Time: 1000 AM or PM

Samples per Hr: 4 # Hrs: 24

Grab

Date: _____ Time: _____ AM or PM

Sample Volume: 10 L Chilled during Collection? Yes or No

Method of Transportation to the Lab: Pace Truck

Chain of Custody Release

Relinquished By	Date	Time	Received By	Date	Time
D Gardner / Pace	10-1-13	1050	J Moore / Pace	10-1-13	1050

Comments:

*upstream from 007 sampling point *

For Pace Analytical, Inc. Use Only

Pace Work Order Number: 92141 02

Receiving Temperature: _____ Received By: 4.6° Trim

Pace Analytical Services, Inc. Address: 6701 Conference Dr., Raleigh, NC 27607 Phone: (919)834-4984

Tech Time - 4 hrs
mileage 80mi

EPARFI04083

Pace Analytical	Document Name: Bioassay Chain of Custody	Date Revised: June 22, 2012 Page 1 of 1
	Document Number: F-RAL-CS-007-rev.01	Issuing Authority: Pace Carolinas Quality Office

Bioassay Chain of Custody Form

Facility Name: Duke Energy Progress - Cape Fear Moncure

Address: _____ P.O. Box: _____

Phone # : ( ) _____

Contact: _____

County : _____ NPDES permit #: 003433 pipe: _____

% Effluent Dilution (IWC): _____ Test Method: _____

Plant Flow: _____

Sample Collector: Print David Gardner

Signature [signature]

Sample Type:

Composite

Date Started 10-2-13 Time: 1045 AM or PM

Date Ended 10-3-13 Time: 1000 AM or PM

Samples per Hr: 4 # Hrs: 24

Grab

Date: _____ Time: _____ AM or PM

Sample Volume: 10 L Chilled during Collection? Yes or No

Method of Transportation to the Lab: Pace Truck

Chain of Custody Release

Relinquished By	Date	Time	Received By	Date	Time
D Gardner	10-3-13	1055	Nicole Coplen Pace	10/3/13	1055

Comments:

Upstream of 005

For Pace Analytical, Inc. Use Only

Pace Work Order Number: _____

Receiving Temperature: 2.1 Received By: NAC

Pace Analytical Services, Inc.
6701 Conference Drive
Raleigh, NC 27607
(919)834-4984

Laboratory Report

Report Date: 10/10/2013
Date Received: 10/01/2013

Henry Gales
Progress Cape Fear
500 CP&L Rd
Moncure, NC 27559

Project: BIOASSAY
Pace Project No.: 92174102

Sample: PIPE 007 **Lab ID: 92174102001** Collected: 10/01/13 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	Analyzed	Qualifiers
C.dubia Pass/Fail Chronic	PASS			10/02/13 00:00	

Reviewed by: Pam Cotten

Pam Cotten

pam.cotten@pacelabs.com

Raleigh Certification IDs
6701 Conference Drive Raleigh, NC 27607
North Carolina Wastewater Certification #: 67
North Carolina Bioassay Certification #: 16
North Carolina Drinking Water Certification #: 37731

Effluent Toxicity Report Form - Chronic Pass/Fail and Acute LC50 Date: 10/10/13

Facility: CAPE FEAR MONCURE NPDES#: NC003433 Pipe#: 007 County: CHATHAM

Laboratory Performing Test: PACE ANALYTICAL

X _____
Signature of Operator in Responsible Charge

X _____
Signature of Laboratory Supervisor

Comments: _____

* PASSED: -9.49% Reduction *

Work Order: 92174102

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Water Quality
N.C. DENR
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

North Carolina Ceriodaphnia
Chronic Pass/Fail Reproduction Toxicity Test

CONTROL ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	17	31	28	18	27	27	25	28	29	28	28	30
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Effluent %: 90%

TREATMENT 2 ORGANISMS	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	26	27	31	24	29	32	28	25	31	31	29	33
Adult (L)ive (D)ead	L	L	L	L	L	L	L	L	L	L	L	L

Chronic Test Results
Calculated t = -1.646
Tabular t = 2.508
% Reduction = -9.49

% Mortality	Avg.Reprod.
0.00 Control	26.33 Control
0.00 Treatment 2	28.83 Treatment 2

Control CV 16.697%

% control orgs producing 3rd brood 83.3%

PASS	FAIL
X	
Check One	

pH	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	7.83	7.65	7.61	7.77	7.74	7.70
Treatment 2	7.77	7.94	7.68	8.15	7.63	7.78

D.O.	1st sample start	1st sample end	1st sample start	1st sample end	2nd sample start	2nd sample end
Control	7.31	6.92	7.84	7.33	7.44	7.40
Treatment 2	7.46	7.43	7.71	7.31	7.66	7.54

Complete This For Either Test
Test Start Date: 10/02/13
Collection (Start) Date
Sample 1: 09/30/13 Sample 2: 10/02/13
Sample Type/Duration

	Grab	Comp.	Duration	DILUT	1st SAMP	2nd P/F SAMP
Sample 1		X	23.7 hrs			
Sample 2		X	23.2 hrs			
Hardness (mg/l)				38		
Spec. Cond. (µmhos)				121	259.7	340.0
Chlorine (mg/l)					<0.1	<0.1
Sample temp. at receipt (°C)					4.6	2.1

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%	Concentration
%	%	%	%	%	%	%	%	%	%	Mortality

Note: Please Complete This Section Also

LC50 = _____ %
95% Confidence Limits
_____ % -- _____ %

Method of Determination
Moving Average __ Probit __
Spearman Karber __ Other __

	pH start/end		D.O. start/end	
Control				
High Conc.				

Organism Tested: Ceriodaphnia dubia Duration(hrs): _____

Copied from DWQ form AT-1 (3/87) rev. 11/95 (DUBIA ver. 4.41)

Effluent Toxicity Statistical Results - Chronic Pass/Fail Date: 10/10/13

Facility: CAPE FEAR MONCURE NPDES#: NC003433 Pipe#: 007 County: CHATHAM

Laboratory Performing Test: PACE ANALYTICAL

Reduction: -9.49%	CONTROL	90% Effluent
# Replicates	12	12
Female Live	12	12
Adult Male	0	0
Adult Dead	0	0
Adult Mortality	0.00%	0.00%
# Neonates	316	346
Mean # Neonates	26.333	28.833
Standard Deviation	4.397	2.887
Coefficient of Variation	16.697%	

Fisher's Exact Test

A = 12 B = 12 a = 12 b = 12

a/A = 1.00 b/B = 1.00

Success is: survival

Critical b value = 8

12 > 8

The test concludes that the proportion of survival is not significantly different for the control and the effluent groups.

Test Passes!

SHAPIRO-WILK'S TEST FOR NORMAL DISTRIBUTION OF DATA

ORDERED OBSERVATIONS

i	Group	Neonates	Centered	i	Group	Neonates	Centered
1	C	17	-9.3333	13	C	28	1.6667
2	C	18	-8.3333	14	C	28	1.6667
3	E	24	-4.8333	15	C	28	1.6667
4	E	25	-3.8333	16	C	28	1.6667
5	E	26	-2.8333	17	E	31	2.1667
6	E	27	-1.8333	18	E	31	2.1667
7	C	25	-1.3333	19	E	31	2.1667
8	E	28	-0.8333	20	C	29	2.6667
9	E	29	0.1667	21	E	32	3.1667
10	E	29	0.1667	22	C	30	3.6667
11	C	27	0.6667	23	E	33	4.1667
12	C	27	0.6667	24	C	31	4.6667

SHAPIRO-WILK'S TEST FOR NORMAL DISTRIBUTION OF DATA (cont.)

COEFFICIENTS AND DIFFERENCES

i	x(n-i-1)	x(i)	a(i)	x(n-i-1) - x(i)
1	4.6667	-9.3333	0.4493	14.0000
2	4.1667	-8.3333	0.3098	12.5000
3	3.6667	-4.8333	0.2554	8.5000
4	3.1667	-3.8333	0.2145	7.0000
5	2.6667	-2.8333	0.1807	5.5000
6	2.1667	-1.8333	0.1512	4.0000
7	2.1667	-1.3333	0.1245	3.5000
8	2.1667	-0.8333	0.0997	3.0000
9	1.6667	0.1667	0.0764	1.5000
10	1.6667	0.1667	0.0539	1.5000
11	1.6667	0.6667	0.0321	1.0000
12	1.6667	0.6667	0.0107	1.0000

$$W = \frac{1}{304.3333} \times 269.1847$$

Calculated W = 0.885 Critical W = 0.884

0.885 ≥ 0.884

The reproduction data is normally distributed evaluated at a 99% confidence interval.

Test Passes!

F test for Homogeneity of Variance

$$F = \frac{\text{Control variance}}{\text{Effluent variance}} = \frac{19.3333}{8.3333} = 2.32$$

Numerator degrees of freedom: 11 Denominator degrees of freedom: 11

Critical F = 5.32

2.32 ≤ 5.32 ⟹ The Test PASSES, the variances of the two groups are significantly the same, homogeneous.

EQUAL VARIANCE t TEST

$$t = \frac{26.3 - 28.8}{1.518} = -1.646$$

Degrees of freedom = 22

Critical t = 2.508

$-1.646 < 2.508$

Test passed. There is not a significant difference in reproduction between the Control and the effluent evaluated at a 99% confidence interval.

Chronic Test PASSES

EPARF104090

Ceriodaphnia dubia Chronic Pass/Fail Toxicity Test

Client: Duke/Progress/Cape Fear Mercury NPDES #: NC 003433 (Non-compliance)
Culture Transfer (Date/Time): 10/1/13 / 9:15am Organism Born (Date/Time): 10/1/13 / 1:52pm-4:40pm
Age of Organism: 22hrs+52min Time Fed (Culture): 8:51am Organism source: 201+202
Dilution Water Batch: HCH# 321 Temp Dilution Water: 25.1 Temp stock solution 24.9
Start Date: 10/2/13 Time: 12:44pm Analyst: PBC Randomized: ✓ Incubator: BA1
1st Transfer Date: 10/4/13 Time: 11:50am Analyst: [illegible]
2nd Transfer Date: 10/7/13 Time: 9:15am Analyst: [illegible]
Ending Date: 10/8/13 Time: 9:04pm Analyst: PBC Reviewed by: PBC

Days	Fed By	Time
Day 0	PBC	12:38pm
Day 1	PBC	9:41am
Day 2	[illegible]	11:40am
Day 3	NW	11:38
Day 4	U	14:35
Day 5	[illegible]	9:04a
Day 6	PBC	9:30am

Control

Day 2	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	0	0	0	0	0	0	0	0	0	0	0	0
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 5	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	6	7	4/8	6	4/11	4/9	4/8	5/11	4/12	4/10	5/10	4/11
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 7	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	11	11/13	16	12	12	14	13	12	13	14	13	15
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

	1	2	3	4	5	6	7	8	9	10	11	12
# Total Produced	17	31	28	18	27	27	25	28	29	28	28	30

Effluent % 90

Day 2	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	0	0	0	0	0	0	0	0	0	0	0	0
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 5	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	4/9	4/9	5/11	4/8	4/10	5/12	4/9	4/8	5/12	5/10	4/11	5/13
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

Day 7	1	2	3	4	5	6	7	8	9	10	11	12
# Young Produced	13	14	15	12	15	15	15	13	14	16	14	15
Adult: Live, Dead	L	L	L	L	L	L	L	L	L	L	L	L

	1	2	3	4	5	6	7	8	9	10	11	12
# Total Produced	26	27	31	24	29	32	28	25	31	31	29	33

Collection (Start) Date
1st Sample: 9/30/13 2nd Sample: 10/2/13

Sample Type/Duration

	Grab	Composite	Duration
1st Sample		✓	23.75
2nd Sample		✓	23.25

	Control	1st Sample	2nd Sample
Hardness (mg/L)	38.0		
Conductivity (µS/cm)	120.6	259.7	390.0
Chlorine (mg/L)		<0.1	<0.1
Sample Temp (°C)		4.6	2.2
pH 100%		7.66	7.72

pH	Start	End	Start	End	Start	End
Control	7.83	7.65	7.61	7.77	7.74	7.70
Treatment	7.77	7.94	7.68	8.15	7.63	7.78
D.O.	**Start**	**End**	**Start**	**End**	**Start**	**End**
Control	7.31	6.92	7.84	7.33	7.44	7.40
Treatment	7.46	7.43	7.71	7.31	7.66	7.54
Temp.	**Start**	**End**	**Start**	**End**	**Start**	**End**
Control	25.1	25.0	25.4	25.2	25.3	25.1
Treatment	25.0	24.9	25.2	25.1	25.0	25.0

NON-Compliance

Pace Analytical	Document Name: Bioassay Chain of Custody	Date Revised: June 22, 2012 Page 1 of 1
	Document Number: F-RAL-CS-007-rev.01	Issuing Authority: Pace Carolinas Quality Office

Bioassay Chain of Custody Form

Facility Name: Duke Progress Cape Fear - Moncure

Address: _____ P.O. Box: _____

Phone # : ( ) _____

Contact: _____

County : _____ NPDES permit #: NC 003433 pipe: *

% Effluent Dilution (IWC): _____ Test Method: _____

Plant Flow: _____

Sample Collector: Print David Gardner

Signature David W. Gardner

Sample Type:

Composite

Date Started 9-30-13 Time: 1015 AM or PM

Date Ended 10-1-13 Time: 1000 AM or PM

Samples per Hr: 4 # Hrs: 24

Grab

Date: _____ Time: _____ AM or PM

Sample Volume: 10 L Chilled during Collection? Yes or No

Method of Transportation to the Lab: Pace Truck

Chain of Custody Release

Relinquished By	Date	Time	Received By	Date	Time
D Gardner / Pace	10-1-13	1050	J Moore / Pace	10-1-13	1050

Comments:

*upstream from 007 sampling point *

For Pace Analytical, Inc. Use Only

Pace Work Order Number: 92141102

Receiving Temperature: _____ Received By: 4.6° Trim

Pace Analytical Services, Inc. Address: 6701 Conference Dr., Raleigh, NC 27607 Phone: (919)834-4984

Tech Time - 4 hrs
mileage 80mi

EPARFI04091

Pace Analytical	Document Name: Bioassay Chain of Custody	Date Revised: June 22, 2012 Page 1 of 1
	Document Number: F-RAL-CS-007-rev.01	Issuing Authority: Pace Carolinas Quality Office

Bioassay Chain of Custody Form

Facility Name: Duke Energy Progress - Cape Fear Moncure

Address: _____ P.O. Box: _____

_____ Phone # : ( ) _____

_____ Contact: _____

County : _____ NPDES permit #: 003433 pipe: _____

% Effluent Dilution (IWC): _____ Test Method: _____

Plant Flow: _____

Sample Collector: Print David Gardner

Signature [signature]

Sample Type:

Composite

Date Started 10-2-13 Time: 1045 AM or PM

Date Ended 10-3-13 Time: 1000 AM or PM

Samples per Hr: 4 # Hrs: 24

Grab

Date: _____ Time: _____ AM or PM

Sample Volume: 10 L Chilled during Collection? Yes or No

Method of Transportation to the Lab: Pace Truck

Chain of Custody Release

Relinquished By	Date	Time	Received By	Date	Time
D Gardner	10-3-13	1055	Nicole Coplen	10/3/13	1055

Comments:

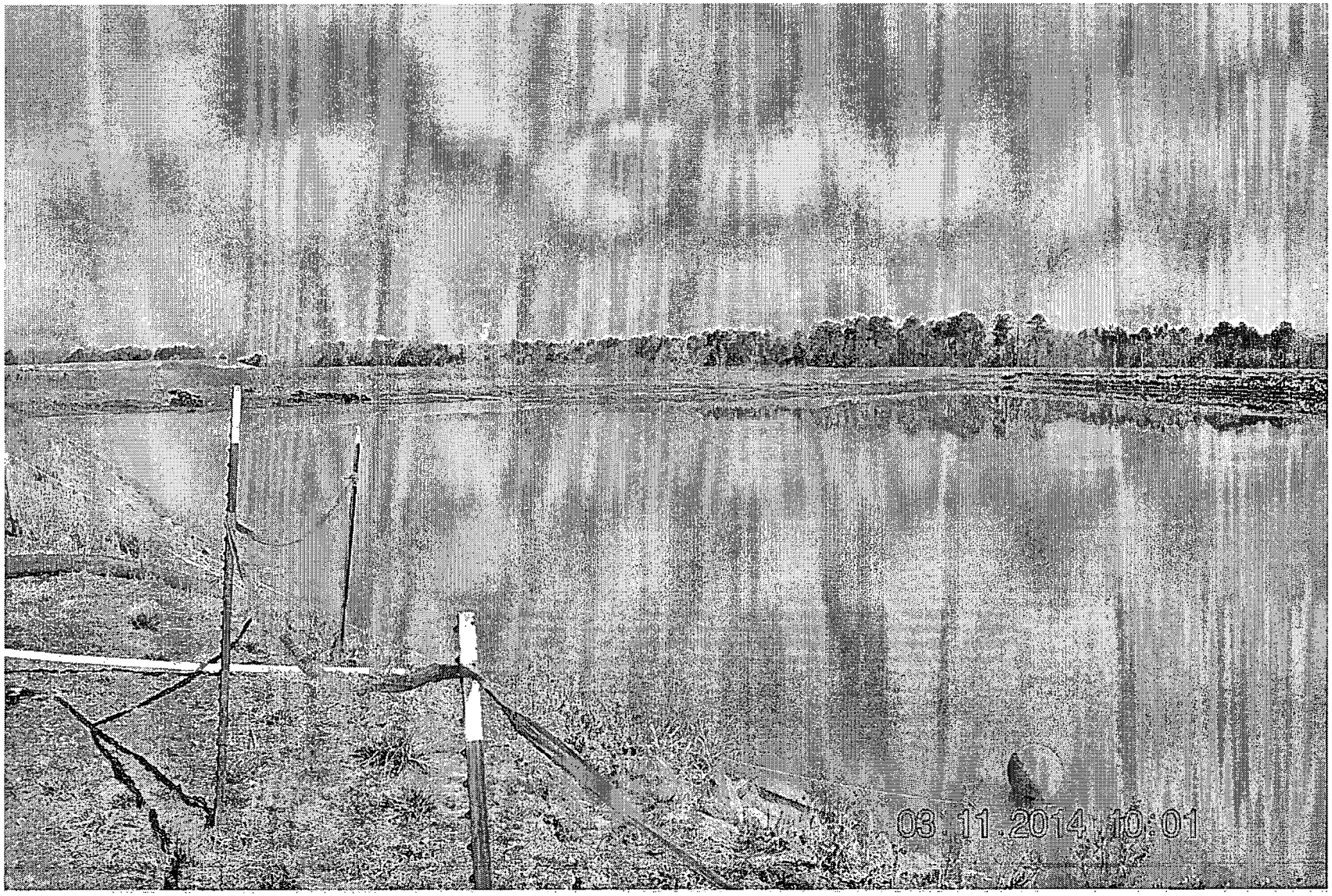
Upstream of 004

For Pace Analytical, Inc. Use Only

Pace Work Order Number: _____

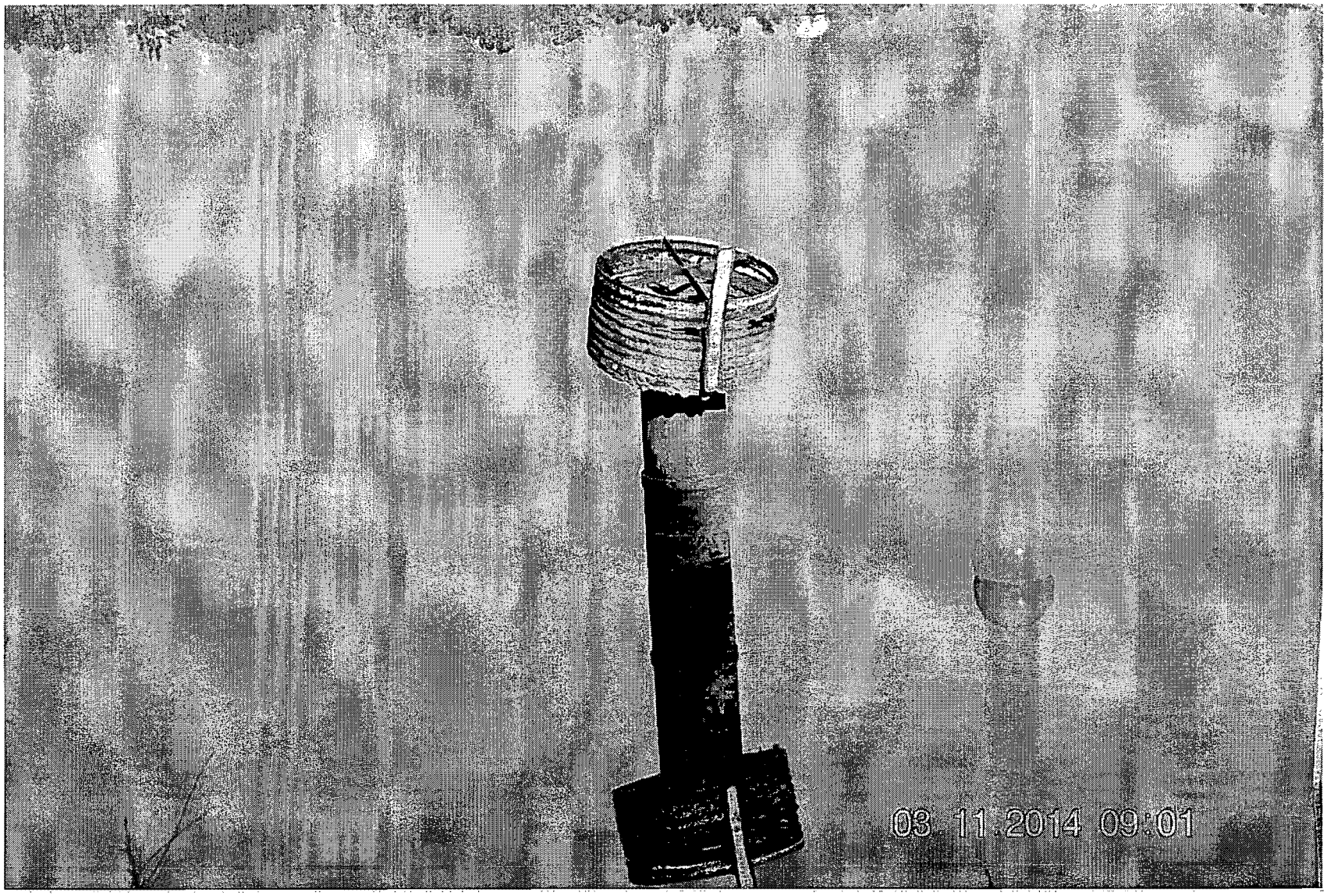
Receiving Temperature: 2.1 Received By: NAC

EPARFI04093



EPARFI04094

EPARFI04095



EPARFI0409