Harry K. Sideris
Senior Vice President
Environmental, Health & Safety
526 S. Church Street
Mail Code: EC3XP
Charlotte, NC 28202
(704) 382-4303

July 12, 2016

Mr. Jeffrey Poupart
North Carolina Division of Water Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

RECEIVED/NCDEQ/DWR
JUL 14 2016
Water Quality
Permitting Section

Re: Application for Special Order by Consent
Duke Energy Carolinas, LLC.
Riverbend Steam Station
Permit #: NC0004961
Gaston County

Dear Mr. Poupart,

Duke Energy Carolinas, LLC (Duke Energy) is submitting herewith application for Special Order by Consent for the Riverbend Station. A completed application (in triplicate) and check in the amount of $400.00 for the nonrefundable application fee are enclosed.

Should you have any questions regarding this letter or require additional information, please contact Mr. Shannon Langley at (919) 5462439 or at shannon.langley@duke-energy.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,

Harry Sideris
SVP - Environmental, Health & Safety

Enclosures

Duke Energy cc: Richard Baker, Jim Wells, Matt Hanchey, Shannon Langley, Brad Loveland

RECEIVED/NCDEQ/DWR

JUL 14 2016

Water Quality
Permitting Section

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

APPLICATION FOR A SPECIAL ORDER BY CONSENT (SOC)

I. PERMIT RELATED INFORMATION:

1. Applicant (corporation, individual, or other): Duke Energy Carolinas, LLC.

2. Print or Type Owner's or Signing Official's Name and Title:

Harry K. Sideris, Senior Vice President

3. Facility Name (as shown on Permit): Riverbend Steam Station

4. Owner Phone: (980) 373-4370 *(or)* _____

5. Owner Email: Harry.Sideris@duke-energy.com

4. Application Date: July 12, 2016

5. NPDES Permit No. (if applicable): NC0004961

6. Name of the specific wastewater treatment facility (*if different from I.3. above*):

Riverbend Steam Station

II. PRE-APPLICATION MEETING:

Prior to submitting this completed application form, applicants must meet with the appropriate regional office staff to discuss whether or not an SOC is appropriate for this situation. Please note the date this meeting occurred and who represented the permittee: Representative: Various discussions held with DEQ management over several months Date: Various.

III. ADDITIONAL FLOW OR FLOW REALLOCATION:

In accordance with NCGS 143-215.67(b), only facilities owned by a unit of government may request additional flow.

Additional flow may be allowed under an SOC only in specific circumstances. These circumstances may include eliminating discharges that are not compliant with an NPDES or Non-discharge permit. These circumstances do not include failure to perform proper maintenance of treatment systems, collection systems or disposal systems. When requesting additional flow, the facility must include its justification and supporting documentation.

If the requested additional flow is **non-domestic**, the facility must be able to demonstrate the ability to effectively treat the waste and dispose of residuals. The applicant must provide a detailed analysis of the constituents in the proposed non-domestic wastewater.

The total domestic additional flow requested: N/A gallons per day.

The total non-domestic additional flow requested: N/A gallons per day.

The total additional flow (*sum of the above*): N/A gallons per day.

Please attach a detailed description or project listing of the proposed allocation for additional flow, with an explanation of how flow quantities were estimated. Further, any additional flow requested must be justified by a complete analysis, by the permittee, that additional flow will not adversely impact wastewater collection/treatment facilities or surface waters.

IV. NECESSITY NARRATIVE:

Please attach a narrative providing a detailed explanation of the circumstances regarding the necessity of the proposed SOC. Include the following issues:

- Existing and/or unavoidable future violations(s) of permit conditions or limits(s),
- The existing treatment process and any process modifications that have been made to date to ensure optimum performance of existing facilities,
- Collection system rehabilitation work completed or scheduled (including dates),
- Coordination with industrial users regarding their discharges or pretreatment facilities. Identify any non-compliant significant industrial users and measure(s) proposed or already taken to bring the pretreatment facilities back into compliance. If any industrial facilities are currently under consent agreements, please attach these agreements,
- Date and outcome of last Industrial Waste Survey,
- Whether or not the facility is acting as a regional facility receiving wastewater from other municipalities having independent pretreatment programs.

V. CERTIFICATION:

The applicant must submit a report prepared by an independent professional with expertise in wastewater treatment. This report must address the following:

- An evaluation of existing treatment units, operational procedures and recommendations as to how the efficiencies of these facilities can be maximized. The person in charge of such evaluation must sign this document.
- A certification that these facilities could not be operated in a manner that would achieve compliance with final permit limits. The person making such determination must sign this certification.
- The effluent limits that the facility could be expected to meet if operated at their maximum efficiency during the term of the requested SOC (be sure to consider interim construction phases).
- Any other actions taken to correct problems prior to requesting the SOC.

VI. PREDICTED COMPLIANCE SCHEDULE:

The applicant must submit a detailed listing of activities along with time frames that are necessary to bring the facility into compliance. This schedule should include milestone dates for beginning construction, ending construction, and achieving final compliance at a minimum. In determining the milestone dates, the following should be considered:

- Time for submitting plans, specifications and appropriate engineering reports to DWR for review and approval.
- Occurrence of major construction activities that are likely to affect facility performance (units out of service, diversion of flows, etc.) to include a plan of action to minimize impacts to surface waters.
- Infiltration/Inflow work, if necessary.
- Industrial users achieving compliance with their pretreatment permits if applicable.
- Toxicity Reduction Evaluations (TRE), if necessary.

VII. FUNDING SOURCES IDENTIFICATION:

The applicant must list the sources of funds utilized to complete the work needed to bring the facility into compliance. Possible funding sources include but are not limited to loan commitments, bonds, letters of credit, block grants and cash reserves. The applicant must show that the funds are available, or can be secured in time to meet the schedule outlined as part of this application.

If funding is not available at the beginning of the SOC process, the permittee must submit a copy of all funding applications to ensure that all efforts are being made to secure such funds.

Note: A copy of the application should be sufficient to demonstrate timeliness unless regional office has reason to request all information associated with securing funding.

THE DIVISION OF WATER RESOURCES WILL NOT ACCEPT THIS APPLICATION PACKAGE UNLESS ALL OF THE APPLICABLE ITEMS ARE INCLUDED WITH THE SUBMITTAL.

Required Items:

a. One original and two copies of the completed and appropriately executed application form, along with all required attachments.

   - If the SOC is for a City / Town, the person signing the SOC must be a ranking elected official or other duly authorized employee.
   - If the SOC is for a Corporation / Company / Industry / Other, the person signing the SOC must be a principal executive officer of at least the level of vice-president, or his duly authorized representative.
   - If the SOC is for a School District, the person signing the SOC must be the Superintendent of Schools or other duly authorized employee.

Note: Reference to signatory requirements in SOCs may be found in the North Carolina Administrative Code [T15A NCAC 2H .1206(a)(3)].

b. The non-refundable Special Order by Consent (SOC) processing fee of $400.00. A check must be made payable to The Department of Environment and Natural Resources.
c. An evaluation report prepared by an independent consultant with expertise in wastewater. (in triplicate)

APPLICANT'S CERTIFICATION:
(NO MODIFICATION TO THIS CERTIFICATION IS ACCEPTABLE)

I, Harry K. Sideris, attest this application for a Special Order by Consent (SOC) has been reviewed by me and is accurate and complete to the best of my knowledge. I understand if all required parts of this application are not completed and if all required supporting information and attachments are not included, this application package may be returned as incomplete. *(Please be advised that the return of this application does not prevent DWR from collecting all outstanding penalties upon request).* **Furthermore, I attest by my signature that I fully understand that an upfront penalty, which may satisfy as a full settlement of outstanding violations, may be imposed.** {Note: Reference to upfront penalties in Special Orders by Consent may be found in the North Carolina Administrative Code [T15A NCAC 2H .1206(c)(3)].}

Date 7/12/16

Signature of Signing Official

Harry Siderls

Printed Name of Signing Official

THE COMPLETED APPLICATION PACKAGE, INCLUDING THE ORIGINAL AND TWO COPIES OF ALL SUPPORTING INFORMATION AND MATERIALS, SHOULD BE SENT TO THE FOLLOWING ADDRESS:

NORTH CAROLINA DIVISION OF WATER RESOURCES
POINT SOURCE BRANCH
1617 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1617

IF THIS APPLICATION IS FOR A NON-DISCHARGE SYSTEM, THEN SEND TO:

NORTH CAROLINA DIVISION OF WATER QUALITY
AQUIFER PROTECTION SECTION
1636 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1636

Duke Energy Carolinas, LLC.

Application for Special Order by Consent

Supplemental information

Riverbend Steam Station

NPDES Permit #: NC0004961

Gaston County

July, 2016

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Application Section IV. Necessity Narrative

Existing and/or unavoidable future violations(s) of permit conditions or limits(s):

Duke Energy anticipates future violations of limits on Total Hardness and pH in Outfalls 101 through 112. Outfalls 101 through 112 are designated in the NPDES permit for Riverbend Steam Station as discharges of wastewater that has migrated from the impoundment via seepage into groundwater. While travelling through groundwater, this wastewater interacts with soils, biota, and stormwater in ways that cannot be controlled by Duke Energy. The interactions result in ranges of pH and Total Hardness that are consistent with naturally occurring conditions and that, due to natural variability, can be anticipated to fall outside of permit limits from time to time.

Duke Energy is addressing these discharges by closing the impoundments and implementing groundwater corrective action in accordance with the North Carolina Coal Ash Management Act of 2014 ("CAMA"). CAMA requires the impoundments to be closed and all ash excavated by August 1, 2019. Duke Energy has begun bulk dewatering from the impoundments and anticipates that excavation will begin this fall. Dewatering will reduce the hydrologic head driving groundwater to the outfalls, and excavation will remove the source material for the pollutants. However, natural flow patterns may result in continued discharges at some locations.

The existing treatment process and any process modifications that have been made to date to ensure optimum performance of existing facilities:

The wastewater generated by the site is treated in the sites ash basin. pH adjustment is performed if necessary to assure that discharges from the ash basin through outfall XXX is within permit limits. pH of wastewater in and leaving the ash basin falls within the permit requirements of 6.0 and 9.0 standard units. Adjustment of pH is usually required because the basin has a pH above 9.0.

The pH of seepage outfalls as identified in the Riverbend NPDES permit are influenced by conditions in the soil and may from time to time fall below 6.0 standard units as is typical for small flows. Additionally, seepage outfalls included in the Riverbend permit do not have the capability to include pH adjustment.

Likewise, as related to hardness, discharges from the ash basin and the facility have shown no reasonable potential to cause the contravention of water quality standards for hardness in the receiving waters of Mountain Island lake. Hardness is applicable to receiving waters classified as "water supply" and in the case of the Riverbend permit this standard is applied to the small receiving streams that flow into Mountain Island lake. Hardness has no known health or

environmental risks. The following information is extracted from a document produced by the SCDHEC on drinking water (SCDHEC CR-006453 11/09).

Hardness in drinking water:

Causes

The amount of naturally occurring calcium and magnesium compounds dissolved by the water as it filters through the earth will determine its hardness. Hardness varies with location and the types of minerals and rocks in the earth.

Effects:

Despite all of the problems it causes, hard water is not considered to be a health hazard. Moderate amounts of hardness are desirable because of the protective coating it produces on exposed metal surfaces. Excessively hard water, however, will cause a hard, chalky scale (boiler scale) to form when the water is heated. Water heaters are especially affected by hardness. The boiler scale will accumulate on the heating elements, reducing their heating capacity, and eventually causing them to burn-out. Hard water will form a white, powdery residue on plumbing fixtures, and will cause spots on dishes. Because calcium and magnesium compounds are not very soluble in cold water, ice made from hard water may contain white particles. Vegetables cooked in hard water may be tough. More soap must be added to a hard water to produce a lather. With very hard water, soap will form a sticky "curd," which is difficult to remove from fabrics and containers.
Laundry washed in hard water will be stiff and dingy. Hair becomes dull and limp when washed in hard water.

Collection system rehabilitation work completed or scheduled (including dates): N/A

Coordination with industrial users regarding their discharges or pretreatment facilities: N/A

Identify any non-compliant significant industrial users and measure(s) proposed or already taken to bring the pretreatment facilities back into compliance: N/A

Date and outcome of last Industrial Waste Survey: N/A

Whether or not the facility is acting as a regional facility receiving wastewater from other municipalities having independent pretreatment programs: N/A

Section V. Certification

Submitted under separate cover.

Section VI. Predicted compliance schedule

Under the Order, Duke proposes to undertake the following activities.

1. Within 30 days of the finalization of the Order, submit request for effluent channel designation related to seeps at Riverbend. (MET)
2. Within 30 days of receipt of effluent channel designation, as applicable, submit a permit application to the United States Army Corps of Engineers. The application will seek to improve the channel to the extent needed. Activities required for improvement and/or modification to each channel will vary and be specific to each channel. The activities may range from rip rap lining of the channel, installation of conveyance piping etc. to no significant modification at all.
3. Duke will provide needed information for DEQ to perform Reasonable Potential Analysis (RPA) on seeps in relation to receiving waters of the Catawba River.
4. Within 90 days of receipt of all permits needed to Improve the effluent channels at Riverbend, Duke will begin the process of effluent channel modification construction.
5. Within 90 days of beginning effluent channel modifications, Duke will complete effluent channel modification construction.
6. Upon completion of effluent channel modifications and modification of the NPDES permit limits based on the submitted evaluation of NPDES permit RPA with receiving waters being the Catawba River, Duke will comply with modified limits for discharges to the Catawba River via effluent channels. Between the effective date of the Order and the date of modified RPA based limits, Duke will comply with modified pH and Hardness limits for Outfalls 101-112 as follows:

Parameter	Permit Limit	Interim Limits (SOC)
pH	6.0-9.0	4.0-9.0
Total Hardness	100.0 mg/L monthly average 100.0 mg/L daily average	200 mg/L monthly average 200 mg/L daily average

7. If any new seep discharges are discovered after the effective date of the Order they shall be subject to the same requirements.
8. During the term of the Order, Duke will submit quarterly reports due January 31, April 30, July 31 and October 31 of each year that the Order is in effect.

Section VII. Funding Source Identification

Duke Energy will provide adequate funds to engineer, permit and implement the proposed activities listed in Section VI. As detailed in the company's filings with the Securities and Exchange Commission (available at http://www.duke-energy.com/investors/default.asp), Duke Energy Carolinas has sufficient resources to fund the activities, without the need for external funding sources.