Water Resources
ENVIRONMENTAL QUALITY

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July 28, 2016

MEMORANDUM

To: Jay Zimmerman

From: Jim Gregson, Regional Supervisor
Water Quality Regional Operations Section
Wilmington Regional Office

Subject: Hearing Officer's Report and Recommendations
Duke Energy Carolinas, LLC - Draft NPDES Wastewater Permit No. NC0004987
Marshall Steam Station, Catawba County

I served as the Hearing Officer for two public hearings held on April 8, 2015 at the James Warner Citizen Center, 115 West Main Street, in Lincolnton, NC and on June 22, 2016, at the Catawba Valley Community College East Wing Auditorium at 2550 Highway 70 Southeast, in Hickory, NC. The purpose of the public hearings was to allow the public to comment on the draft NPDES wastewater permit for Duke Energy Carolinas, LLC's Marshall Steam Station. The April 8, 2015, public hearing was a combined public hearing for both the draft NPDES wastewater permit and the draft NPDES stormwater permit. Brad Cole from the Division of Energy, Mineral and Land Resources served as the hearing officer for the draft NPDES stormwater permit.

The Hearing Officer's Report for the Marshall Steam Station NPDES permit includes two public hearings and two public comment periods. Due to substantial changes in the draft permit, a second public hearing was required by the Coal Ash Management Act of 2014.

In addition to listening to oral comments at the public hearings, I have reviewed all written comments received during the first public comment period which ended on May 5, 2015, and the second public comment period which ended on June 22, 2016. In preparation of this report I have considered all of the public comments, the public record, and the site visits for the three facilities.

The report has been prepared using the following outline:

I. Site History / Background
II. Site Visit
III. April 8, 2015, Public Hearing and Comments Summary
IV. June 22, 2016 Public Hearing and Comments Summary
V. Recommendations
VI. Attachments

Hearing Officer Report

April 8, 2015, and June 22, 2016, PUBLIC HEARINGS – DRAFT NPDES PERMIT No. NC0004987 FOR DUKE ENERGY CAROLINAS, LLC TO DISCHARGE WASTEWATER FROM THE MARSHALL STEAM STATION, 8320 EAST N.C. HIGHWAY 150, TERRELL, NC., CATAWBA COUNTY

I. History / Background

Duke Energy's Marshall Steam Station is a four-unit coal fired steam electric generating facility located along Lake Norman in Catawba County. The facility has been in operation since 1965 and has a capacity of 2,090 megawatts. Marshall Steam Station is permitted to discharge wastewater under NPDES Permit No. NC0004987 to Lake Norman. The Marshall Steam Station ash basin consists of a single cell of approximately 382 acres that was constructed in 1965. The ash basin receives wastewater flow from the ash removal system, yard drain sumps, low volume wastes, effluent from a 6,100 GPD domestic wastewater treatment system, the FGD treatment system, as well as stormwater. The FGD system discharges to the ash basin via internal outfall 004. The ash basin discharges via NPDES outfall 002 to Lake Norman.

§ 130A-309.210 of the Coal Ash Management Act of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the State. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the department on December 30, 2014.

Duke Energy identified two unpermitted seeps at the Marshall Steam Station from the ash settling basin. The two seeps are not located on the wall of the ash basin dike. Flow volume for the seeps was determined to be 0.0019 MGD. The two seeps would be incorporated into the NPDES Permit under Outfalls 101 and 102. A summary of the proposed changes to the NPDES permit can be found on the Fact Sheet for NPDES Permit Development in Attachment B.

II. Site Visit

A site visit was conducted on April 8, 2015, at the Marshall Steam Station. The site visits were conducted with Duke Energy staff, DWR staff, as well as the hearing officer for DEMLR. The site visit focused on the unpermitted seeps and other wastewater and stormwater outfalls that are the subject of the draft NPDES Permit.

III. April 8, 2015 Public Hearing and Comments Summary

A public hearing was held on April 8, 2015, at 6:00 pm, at the James Warner Citizen Center, 115 West Main Street, in Lincolnton, NC. The purpose of the public hearing was to allow the public to comment on the draft NPDES wastewater permits and the draft NPDES stormwater permits for Duke Energy Carolinas, LLC's Allen Steam Station, Marshall Steam Station and Riverbend Steam Station. Because this was a combined public hearing, Brad Cole from the Division of Energy, Mineral and Land Resources served as the hearing officer for the draft NPDES stormwater permits.

Notice of the hearing (Attachment E.) was published in the Hickory Daily Record, the Charlotte Observer, and the Gaston Gazette on March 6, 2015. Additionally, a news release of the Notice was issued on March 6, 2015, and publication of this notice was posted on the DEQ, DWR and DEMLR websites. The public comment period closed on May 5, 2015.

Approximately 86 people attended the public hearing including 24 staff members of the Division of Water Resources and the Division of Energy, Mineral and Land Resources and the two hearing officers. A total of 60 individuals signed the attendance sign in sheets at the hearing (Attachment F. and G.). The hearing officer provided opening comments and Sergei Chernikov, Ph.D., with the Division of Water Resources gave a brief overview of the draft NPDES wastewater permits. Bradley Bennett with the Division of Energy, Mineral and Land Resources then gave a brief overview of the draft NPDES stormwater permits. Twenty-four individuals registered in advance of the hearing to provide oral comments. Speakers were allowed five minutes to comment. Additional time was provided after everyone that registered to speak was finished. Two individuals that spoke at the hearing also provided written comments. The list of speakers is included as Attachment F. The two written comments provided at the public hearing are included with other written comments in Attachment C.

ORAL COMMENTS

All speakers were generally opposed to the NPDES permit drafts. The following is a summary by major topic area of oral comments received at the public hearing:

- Permits would allow coal ash to leak legally or would make legal polluting that is subject to criminal charges by the United States Department of Justice. (Speakers 1, 2, 7, 8, 11, 12, and 16)

  Response: § 130A-309.210 of the Coal Ash Management Act (CAMA) of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. The facility identified two unpermitted seeps (all non-engineered) from the ash settling basin. Under the draft NPDES Permit, both seeps are considered to be discharging through delineated Effluent Channels. The Effluent Channels were delineated by DWR staff on May 4, 2016, in accordance with 15A NCAC 02B .0228. The draft permit requires the permittee to demonstrate that water quality standards in the receiving stream are not contravened. This demonstration must be submitted to the Division no later than 180 days from the effective date of the permit.

- Coal ash should be moved out of the storage ponds and placed in safe lined storage areas or general comments concerning site clean- up. (Speakers 1, 2, 4, 7, 8, 12, 14, 16, 17, 18, 19 and 23)

  Response: §130A-309.213 of the Act required the department to develop a proposed classification system for all coal combustion residuals surface impoundments, including active and retired sites. §130A-309.214 requires owners of coal combustion residual surface impoundments to submit a proposed closure plan for the Departments approval. High-risk impoundments shall be closed no later than December 31, 2019, intermediate-risk impoundments shall be closed no later than December 31, 2024, and low-risk impoundments shall be closed no later than December 31, 2029.

- Permits would violate laws that are designed to protect the ground waters of North Carolina or general groundwater concerns. (Speakers 2, 11, 15, 17, 19, and 23)

  <u>Response</u>: While non-engineered seeps do have the potential to contaminate both surface water and groundwater, the draft NPDES permit requires groundwater monitoring be conducted to determine compliance with current groundwater standards found under 15A NCAC 02L .0202. In accordance with 15A NCAC 02L .0107, the permit requires that said monitoring wells be in place at the compliance boundary, such that the groundwater within the designated area is sufficiently monitored. Groundwater standard violations would be investigated and regulated according to 15A NCAC 02L and the Coal Ash Management Act of 2014.

- Permits should require best available treatment technology (BAT) and/or use require technology based effluent limits (TBEL). (Speakers 2, 16, and 17)

  <u>Response</u>: The draft NPDES permit requires both TBEL limits and BAT limits in accordance with 40 CFR 423 Steam Electric Power Generating Point Source Category.

- Permits should require sampling for additional constituents. (Speakers 6, 12, 13, 14, 16, 17 and 21)

  <u>Response</u>: The sampling requirements in the draft NPDES permit is based on the state and federal rules, regulations, and policies. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for a monitoring or limit for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA. The RPA is conducted on the 126 parameters in the renewal/major modification application. The RPA is conducted on the parameters that are above detection level and have appropriate state water quality standard/EPA criteria. The majority of the parameters in the renewal application are below detection level.

- Seeps should be monitored separately or concerns about unspecified seeps. (Speakers 2, 16 and 17)

  <u>Response</u>: The draft NPDES permit requires regular inspection for new seeps and monitoring requirement for all identified seeps. The two identified seeps would be monitored separately as Outfalls 101 and 102.

- Specific concerns about PCBs. (Speaker 14)

  <u>Response</u>: The draft NPDES permit requires priority pollutant analysis be conducted once per permit cycle at Outfall 002 (ash pond discharge) and

specifically prohibits the discharge of polychlorinated biphenyl compounds (Condition A.13).

- Specific concerns about selenium and fish contamination. (Speaker 21)

  Response: The draft NPDES permit requires fish tissue monitoring annually and requires submission of the results with the renewal application. The parameters analyzed include arsenic, selenium, and mercury.

The public hearing audio file is included as Attachment D.
In addition to the public hearing, DWR received 503 written comments via email and 99 comments via the US Mail during the public comment period. Those comments are included as Attachment C.

E-MAIL COMMENTS

42 of the email comments were received using the following form letter email:

1. Using NPDES permits to approve illegal seeps goes against the Clean Water Act and our own NC General Statutes.

2. The Clean Water Act requires that the permits include limits based on the "Best Available Technology" and must eliminate discharges of pollution when possible. Here, it is possible. Excavating the coal ash from leaking lagoons and storing it in dry, lined landfills away from public waters, or recycling it for concrete. DENR's new permits should include a requirement to eliminate the discharges from these sites by excavating them to lined storage or recycling.

3. Many of the toxic metals listed in the permit have no limits on the amount that can be discharged for coal ash pollutants like cobalt, boron, strontium, and zinc that are leaking out of the lagoons, and the limits it has set for arsenic, mercury, and selenium are too weak. This is not acceptable, DENR must SET STRONG LIMITS on ALL coal ash pollutants.

4. Monitoring of many discharges is proposed for only twice a year, which is totally inadequate. Monitoring should be increased to gain an accurate understanding of the changes in discharges throughout the year.

Response: The inclusion of the seeps into the NPDES permit is based on the provisions of the Coal Ash Management Act of 2014 (CAMA). The DWR has been consulting with EPA in regard to the incorporation of the seeps into the NPDES wastewater permits. The inclusion of the seeps is considered an interim measure until the facilities decommission the ash ponds. Some of the seeps are part of the natural groundwater flow and might remain at the sites even after the ash ponds are decommissioned.

The draft NPDES permit requires both TBEL limits and BAT limits in accordance with 40 CFR 423 Steam Electric Power Generating Point Source Category.

The permit also includes the requirement to meet the CAMA provisions. The CAMA requires removal of the ash from the high-risk and intermediate risk impoundments and disposing of it in the landfills.

The Total Arsenic limits (Outfall 002 dewatering) in the permit are based on the results of the Reasonable Potential Analysis (RPA) of the interstitial water data. The calculations are conducted in accordance with the EPA Guidance entitled "Technical Support Document for Water Quality-based Toxics Control." The water quality chronic dissolved standard of 150.0 µg/L for Freshwater Aquatic Life and water quality acute dissolved standard of 340.0 were used in the calculations of the limits.

The State of North Carolina has a state-wide mercury impairment. A TMDL was developed to address this issue in 2012. The TMDL included the implementation strategy, both documents were approved by EPA in 2012. The mercury evaluation was conducted in accordance with the Permitting Guidelines for Statewide Mercury TMDL. The allowable mercury concentration for this facility is 68.0 ng/L. All annual average mercury concentrations are below the allowable level. All maximum sampling results are below the TBEL of 47.0 ng/L. Based on the Permitting Guidelines for Statewide Mercury TMDL, the limits are not required.

Water Quality Based Effluent Limits are established in accordance with the EPA Guidance entitled "Technical Support Document for Water Quality-based Toxics Control." The limits are established only when the particular parameter demonstrates a reasonable potential to exceed the state water quality standard or EPA criterion. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for a limit for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA and is based on the conservative assumption of the low flow and the highest detected value in the monitoring data set during the last 5 years of the facility operation. The RPA is conducted on the 126 parameters (if the parameter is detected) in the renewal/major modification application submitted by Duke Energy.

The monitoring requirements in the permit are based on the state and federal rules, regulations, and policies. The established frequency is sufficient to conduct a valid statistical analysis of the effluent data.

127 comments were received using the following form letter email:

I am concerned about the coal ash pollution, which includes arsenic, mercury, cobalt, seeping into the Catawba River from Duke Energy's leaking and unlined lagoons. The draft permits are unacceptably weak and will not adequately protect our communities from contaminates in coal ash.

For instance, DENR is proposing to start allowing random, untreated streams of polluted coal ash wastewater to spew out of Duke Energy's lagoons.

These leaks should be stopped and Duke must be required to clean up their source—the coal ash—and move it away from our waterways.

Response - The inclusion of the seeps into the NPDES permit is based on the provisions of the Coal Ash Management Act of 2014 (CAMA). The DWR has been consulting with EPA in regard to the incorporation of the seeps into the NPDES wastewater permits. The inclusion of the seeps is considered an interim measure until the facilities decommission the ash ponds. The combined seeps flow for operating coal-fired power plants represents a miniscule portion of the wastewater flow from coal ash impoundment. For example, combined seep flow from Marshall Steam Station represents only 0.02% of the ash pond discharge. The chemical composition of the seep discharge is almost identical to the ash pond wastewater but the pollutant concentrations are generally lower. The statistical analysis conducted on the effluent from ash ponds and seeps indicates no reasonable potential to contravene state water quality standards or EPA criteria in the receiving stream.

146 comments were received using the following form letter email:

Please reject the current NPDES permits for Duke Energy's three coal ash power plants along the Catawba River. I'm concerned because the draft permits would allow Duke Energy to discharge unlimited amounts of arsenic, mercury, and selenium into the Catawba River and Mountain Island Lake (a drinking water supply reservoir). This is unacceptable.

The NPDES permitting program goal is to eliminate pollutant discharges and these permits do not do that. Please protect our communities from coal ash pollution.

Response: In order to eliminate pollutant discharges from the Duke Energy sites, the facilities need NPDES wastewater permits that establish conditions for ash pond dewatering. The dewatering is the first step in the ash pond decommissioning, which would significantly decrease pollutant loading to the Catawba River.

153 comments were received using the following form letter email:

> *Please do not allow Duke Energy to pollute our waterways with toxic coal ash. The NPDES permits for the three power plants along the Catawba River are woefully inadequate and I hope that you will reject them. As written, the permits would not even monitor or report on elements and chemicals that are known to be associated with coal ash ponds. Also, industrial chemicals have been permitted to be dumped into the coal ash ponds and Duke should be required to test for them at outfalls.*
>
> *These permits cannot simply be a way to allow Duke Energy to keep its coal ash in leaking, unlined lagoons next to bodies of water. I urge you to reject these NPDES permits as they do not properly protect our communities.*
>
> **<u>Response</u>: The monitoring requirements in the permit are based on the state and federal rules, regulations, and policies. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for a monitoring for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA. The RPA is conducted on the 126 parameters (if the parameter is detected) in the renewal/major modification application. The RPA is conducted on the parameters that are above detection level and have appropriate state water quality standard/EPA criteria. The majority of the parameters in the renewal applications are below detection level. The permit also contains a plan for identification of new discharges.**
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> **In order to eliminate ash ponds, the facilities need NPDES wastewater permits that establish conditions for ash pond dewatering. The dewatering is the first step in the ash pond decommissioning.**

<u>US MAIL COMMENTS</u>

99 comments were received via the US Mail using the following form letter:

- *Using NPDES permits to approve illegal seeps goes against the Clean Water Act and our own NC General Statutes.*

- *Permits do not include a timeline for eliminating this illegal discharge. The leaks should be stopped, not permitted under a fictional collective seep outfall. DENR should consider utilizing its own SOC process for getting Duke in compliance with the law, and not allow these illegal discharges to be permitted under an NPDES permit.*

- *Many of the toxic metals listed in the permit have NO LIMITS on the amount that can be discharged. DENR should never allow unsafe amounts of arsenic,*

mercury, and selenium to be discharged into drinking water supplies. There needs to be specified limits for all elements and chemicals associated with coal ash.

Response: § 130A-309.210 of the Coal Ash Management Act of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. The two non-engineered seeps identified at the Marshall facility would be incorporated into the NPDES wastewater permit as Outfalls 101 and 102. Under the permit, the seeps would be monitored and subject to applicable effluent limits which would ensure that seep discharges would not result in unacceptable impacts to surface waters. Incorporation of the seeps in to the NPDES permit is considered an interim measure until the coal ash impoundments are closed. The draft permit requires that the facility continue to implement a plan for the identification of new seeps. A seep identification survey shall be conducted semi-annually and new seeps are to be reported to the Division within five days of detection.

Special Orders by Consent (SOC) can be an appropriate action when a facility is unable to consistently meet terms, conditions or limits in an NPDES permit. In this case, there is no evidence that Duke Energy will be unable to meet the proposed effluent limits.

The Division conducted EPA-recommended analyses to determine the reasonable potential for toxicants to be discharged at levels exceeding water quality standards/EPA criteria by this facility from outfall 002 (Ash Pond). For the purposes of the RPA, the background concentrations for all parameters were assumed to be below detection level. The RPA uses 95% probability level and 95% confidence basis in accordance with the EPA Guidance entitled "Technical Support Document for Water Quality-based Toxics Control."

RPA calculations included: As, Be, Cd, Chlorides, Cr, Cu, CN, Pb, Hg, Mo, Ni, Se, Ag, Zn, Al, and B concentrations. The renewal application listed 8.3 MGD as a current flow. However, 11.44 MGD was used in the RPA as the highest reported flow during the last permit cycle. The analysis indicates no reasonable potential to violate the surface water quality standards or

EPA criteria. The water-quality based limits for selenium were removed from the permit (Outfall 002) based on the results of Reasonable Potential Analysis.

The Division also considered data for other parameters of concern in the EPA Form 2C that the facility submitted for the renewal. The majority of the parameters were not detected in the discharge. The Division reviewed the following parameters that were detected in the discharge and have an applicable state standards or EPA criteria for Class WS-IV stream (phenols). Phenol concentrations were were well below the state standard.

An RPA was also conducted for the combined flow from the seeps (Outfalls 101 and 102). The analysis was based on the dilution in the receiving stream since the effluent channels were delineated for both seeps. Although one seep was not flowing at the time of the sampling, it was assumed that it might discharge during the wet season. RPA calculations included: As, Cd, Chlorides, Cr, Cu, F, Pb, Hg, Mo, Ni, Se Zn, SO_4, Al, Ba, B, Sb, and Tl (please see attached). The analysis indicates no reasonable potential to violate the water quality standards or EPA criteria. The flow volume for the first seep was measured at 0.0019 MGD. However, the flow of 0.5 MGD was used for the RPA to incorporate a safety factor, account for potential new seeps that might emerge in the future or increase in flow volume at the existing seeps.

In conclusion, the RPA analysis indicates that existing discharges from the facility outfalls and seeps will not cause contravention of the state water quality standards/ EPA criteria.

Other comments received expressed issues that have already been addressed above or are comments from specific organizations as listed below.

The following is a summary of comments received from Duke Energy (Response to Duke's updated comments on the second public notice are included in Section IV):

- Technology Based Effluent Limits (TBELs) - There was no indication that the Division considered any of the factors established in 40 CFR 125.3(d) in setting the TBELs. The Fact Sheet indicates that existing federal regulations require the development of TBELs for parameters of concern. In Duke Energy's opinion, the permit writer has discretion to choose to impose BPJ limits which is supported by recent court ruling in Tennessee. Since EPA considered setting numeric limits for metals, the Division is not obligated to establish TBELs for these parameters.

- Mercury Limits at Outfall 002 and Outfall 010 – Duke Energy requests a 5-year compliance schedule to comply with the mercury limit.

- Outfall 002 – Duke Energy requests the removal of TBELs from Outfall 002, given the reasonable potential analysis concluded that the discharge is not expected to violate applicable water quality criterion and the TBELs were not developed in accordance with 40 CFR 125.3(d). If the TBELs are applied, Duke Energy requests the specific model technology used to derive the TBELs that were applied to Outfall 002. If imposed limits are not achieved, Duke Energy would like to have the option of requesting a less stringent limit as allowed under the Clean Water Act §402(o)(2)(E). Duke Energy would like clarifying language in the permit authorizing the removal free water above the settled ash layer including, but not limited to decanting, controlled pumping and/or normal operation. Duke Energy requests the title for the ash basin discharge outfall to be revised to "Outfall 002 (discharges from the ash basin associated with normal operations, decanting and/or stormwater)". Duke Energy would like to request the language in the Fact Sheet be updated to reflect current discharges to the ash basin.

- Outfall 002 Dewatering - Duke Energy requests specific clarifying language in the permit that "dewatering limits" are applicable to removal of interstitial water only and that limits would only apply to the removal of interstitial water generated by dewatering activities occurring in the secondary ash basin. Duke Energy requests that the title for the dewatering outfall be revised to "Outfall 002 (discharge of interstitial water due to dewatering)". Duke Energy requests the removal of the TBELs from Outfall 002 (Dewatering). If the Division is bound to develop TBELs for the dewatering process, Duke Energy request interim limits for a period of 4.5 years to further evaluate the characteristics of the dewatering waste stream and evaluate, budget and design a treatment technology. If the TBELs are applied, Duke Energy requests the specific model technology used to derive the TBELs that were applied to Outfall 002 (Dewatering). If imposed limits are not achieved, Duke Energy would like to have the option of requesting a less stringent limit as allowed under the Clean Water Act §402(o)(2)(E).

- Outfall 010 – The nitrate/nitrite limits established for Outfall 010 is extremely low and unnecessary. The permit needs to state the methodology to calculate the concentration for the combined seeps to be reported in the discharge monitoring reports (DMR). Duke Energy requests the seeps listed and updated in the Discharge Identification Plan (DIP) referenced in Appendix B be used as the official seep identification with regards to official location and type (non-engineered seeps and engineered seeps) Duke Energy believes it is appropriate that the seeps be grouped into two outfalls: one for engineered seeps and one for non-engineered seeps. The same permit limits and conditions applied to Outfall 001 should be applied to engineered seeps. Duke Energy requests the removal of the TBELs from Outfall 010. In lieu of TBELs, Duke Energy requests the Division to adopt a similar process as with new seep identification to evaluate the constituent concentration and flow. If the concentration of any parameter exceeds the concentrations in Table 1 of the permit or the total flow of all seeps is determined to be in excess of 0.5 MGD, the Division should calculate

reasonable potential to determine if water quality based effluent limits (WQBELs) are necessary. If so, a formal modification of the permit can be conducted to incorporate the WQBELs in the permit. This approach would be consistent with the Hanlon memo. If the Division is bound to develop TBELs for the seeps, Duke Energy requests a 5-year compliance schedule. The permit states the limits can be met by installing a treatment system, re-routing the discharge to the existing treatment system, or discontinuing the discharge. The Fact Sheet, however, states it will be time-consuming and ineffective to re-route the seeps back to the ash basin. Given these conflicting statements, a compliance schedule is necessary to evaluate, budget, design and construct the treatment system or eliminate the discharge. Duke Energy requests the inclusion of the methodology for determining the concentration to be reported in the DMR for Outfall 010.

- Seep Pollutant Analysis – Duke Energy requests the inclusion of clarifying language in the permit defining a seep that warrants further evaluation. Duke Energy requests the following clarifying language be included in the permit: "Seepage is considered to be the movement of wastewater from the ash basin through the ash basin embankment, the embankment foundation, the embankment abutments, through residual material in areas adjacent to the ash basin, or through the bottom of the ash basin. Therefore, a seep is defined in this permit as an expression of seepage at the ground surface above the ordinary high water mark of any waters of the state. Only seeps that have the presence of a discernible, confined and discrete conveyance to the surface water will be considered a new seep warranting further evaluation of flow and pollutant characterization." Duke Energy requests the screening value of nitrate/nitrite removed from Table 1. Duke Energy requests the screening values for arsenic and selenium be revised to be 10 times the baseline concentration as with the other parameters. Duke Energy requests the inclusion of clarifying language on the notification requirements for newly identified seeps. The following language is recommended:
  "New seeps identified through the seep survey or otherwise discovered or reported to the permittee shall have their flow calculated, and be sampled for parameters indicated in Table 1. The location(s) of the seep shall be reported to Division of Water Resources within 5 business days. Samples of the seep shall be collected within 10 business days of identification and the sampling results shall be submitted within 30 days of sampling for administrative inclusion in Appendix A."

- Outfall 011 -Duke Energy requests the removal of the monitor and report requirements for arsenic, selenium, mercury, nitrate/nitrite as N, total phosphorus and total nitrogen on Outfall 011. Duke Energy requests the removal of the turbidity requirements for Outfall 011. Duke Energy requests the revision of the oil and grease (O&G) limits for Outfall 011 to equal the (O&G) limits in the current ELG, which are a monthly average of 15 mg/L and a daily maximum of 30 mg/L. There was no justification stated for the lower limits in the permit or Fact Sheet. Duke Energy requests the revision of the total suspended solids (TSS) limits for Outfall 011 to equal the TSS limits in the current ELG, which are a monthly

average of 30 mg/L and a daily maximum of 100 mg/L. There was no justification for the lower limits in the permit or Fact Sheet. Duke Energy requests the removal of footnote 2 from Outfall 011. There are no copper and iron limits imposed on this outfall and there is no chemical / metal cleaning wastewater discharged to this outfall.

- Outfall 002A (Yard Sump Overflow) - Duke Energy requests the removal of the copper and iron limits on Outfall 002A. There was no justification within the permit or Fact Sheet for these limits.

- Nonchemical Metal Cleaning Wastewater - Duke Energy requests the inclusion of language defining nonchemical metal cleaning wastewater as low volume wastewater and only subject to the low volume wastewater limits of O&G and TSS.

- Chronic Toxicity - The permit contains conflicting effluent concentrations at which the chronic toxicity test should be conducted. On page 8 of 15, the effluent chronic toxicity is listed at 2.7%; however, for footnote 4 under Outfall 002 (ash basin discharge) page 4 of 15 and (dewatering), page 5 of 15, the effluent concentration is listed as 10%.

The following is a summary of comments received from the Sierra Club:

- The Department proposes to permit the discharge of pollutants from illegal seeps in violation of the Clean Water Act.

  Response: The inclusion of the seeps into the NPDES permit is based on the provisions of the Coal Ash Management Act of 2014 (CAMA). § 130A-309.210 of the Coal Ash Management Act of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. Under the permit, the seeps would be monitored and subject to applicable effluent limits which will ensure that seep discharges will not result in unacceptable impacts to surface waters. Incorporation of the seeps into the NPDES permit is considered an interim measure until the coal ash impoundments

are closed. The draft permit requires that the facility continue to implement a plan for the identification of new seeps. A seep identification survey shall be conducted semi-annually and new seeps are to be reported to the Division within five days of detection. The DWR has been consulting with EPA in regard to the incorporation of the seeps into the NPDES wastewater permits.

- Seeps, leaks or other structural issues should be addressed directly with sound engineering solutions, i.e., removal of all coal ash for reuse or stored in adequately lined landfill.

  <u>Response</u>: §130A-309.213 of the Act required the department to develop a proposed classification system for all coal combustion residuals surface impoundments, including active and retired sites. §130A-309.214 requires owners of coal combustion residual surface impoundments to submit a proposed closure plan for the Departments approval. High-risk impoundments shall be closed no later than December 31, 2019, intermediate-risk impoundments shall be closed no later than December 31, 2024, and low-risk impoundments shall be closed no later than December 31, 2029.

- Limits that the Department has proposed are inadequate. Permits do not set any limits on the discharge of cobalt, boron, strontium, zinc and a variety of harmful pollutants. Proposed monitoring frequencies are inadequate.

  <u>Response</u>: The sampling requirements in the draft NPDES permit are based on the state and federal rules, regulations, and policies. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for monitoring or a limit for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA. The RPA is conducted on the 126 parameters in the renewal/major modification application. The RPA is conducted on the parameters that are above detection level and have appropriate state water quality standard/EPA criteria. The majority of the parameters in the renewal applications are below detection level.

- Draft permits should be revised to include numeric effluent limits that are based on best available technology for all pollutants discharged into receiving waterways.

  <u>Response</u>: The sampling requirements in the draft NPDES permit is based on the state and federal rules, regulations, and policies. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for a monitoring or limit for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA. The RPA is conducted on the 126 parameters in the renewal/major modification application. The RPA is conducted on the parameters that are above

detection level and have appropriate state water quality standard/EPA criteria. The majority of the parameters in the renewal application are below detection level. Effluent limits and monitoring for all pollutants of concern is not necessary to ensure that the pollutants are adequately controlled because many of the pollutants originate from similar sources, have similar treatabilities, and are removed by similar mechanisms. Because of this, it may be sufficient to establish effluent limits for one pollutant as a surrogate or indicator pollutant that ensures the removal of other pollutants of concern." The permit also implements Best Practicable Technology Currently Available (BPT) as well as BAT requirements of 40 CFR 423 Steam Electric Power Generating Point Source Category.

The following is a summary of comments received from the Catawba Riverkeeper:

- In permitting seeps, the permit fails to identify specific wastewater streams, instead collectively labeling random, untreated, uncontrolled wastewater streams as a single outfall.

  <u>Response</u>: The draft NPDES permit requires regular inspection for new seeps and monitoring requirement for all identified seeps. The two identified seeps would be monitored separately as Outfalls 101 and 102.

- The permit fails to set limits on multiple parameters known to be of significant concern.

  <u>Response</u>: The sampling requirements in the draft NPDES permit is based on the state and federal rules, regulations, and policies. The state conducts a Reasonable Potential Analysis (RPA) to determine the need for monitoring or a limit for a particular constituent. RPA is the statistical analysis of the effluent data that was approved by EPA. The RPA is conducted on the 126 parameters in the renewal/major modification application. The RPA is conducted on the parameters that are above detection level and have appropriate state water quality standard/EPA criteria. The majority of the parameters in the renewal applications are below detection level.

- The permit fails to monitor at all for elements and chemicals we know to be associated with coal ash ponds.

  <u>Response</u>: The effluent limitations in the permit are established in accordance with the existing federal and state rules and regulations. EPA has recently updated 40 CFR 423 and after reviewing parameters of concern established TBELs for several of these parameters. The EPA decided that TBELs for all parameters of concern are not necessary because "Effluent limits and monitoring for all pollutants of concern is not necessary to ensure that the pollutants are adequately controlled because

many of the pollutants originate from similar sources, have similar treatabilities, and are removed by similar mechanisms. Because of this, it may be sufficient to establish effluent limits for one pollutant as a surrogate or indicator pollutant that ensures the removal of other pollutants of concern."

- The permit fails to temporally and spatially monitor the site in an adequate manner.

  Response: The monitoring requirements in the permit are based on the state and federal rules, regulations, and policies. The established frequency is sufficient to conduct a valid statistical analysis of the effluent data.

- Duke should be required to reduce the impacts of thermal pollution from the facility, and the facility should not be allowed a 316(a) temperature variance.

  Response: In order to maintain the temperature variance the facility has to conduct annual biological and chemical monitoring of the receiving stream to demonstrate that it has a balanced and indigenous macroinvertebrate and fish community. The latest BIP (balanced and indigenous population) report was submitted to DWR in October of 2014. The DWR has reviewed the report and concluded that Lake Norman near Marshall Steam Station has a balanced and indigenous macroinvertebrate and fish community.

The following is a summary of comments received from the Southern Environmental Law Center on behalf of the Catawba Riverkeeper Foundation, Inc., the Waterkeeper Alliance and the Sierra Club.:

- The proposed permit violates North Carolina Groundwater Rules.

  Response: While non-engineered seeps do have the potential to contaminate surface water and groundwater, the draft NPDES permit requires groundwater monitoring be conducted to determine compliance with current groundwater standards found under 15A NCAC 02L .0202. In accordance with 15A NCAC 02L .0107, the permit requires that said monitoring wells be in place at the compliance boundary, such that the groundwater within the designated area is sufficiently monitored. Groundwater standard violations would be investigated and regulated according to 15A NCAC 02L and the Coal Ash Management Act of 2014.

- The draft permit sets deficient technology-based effluent limits.

  Response: The draft NPDES permit requires both TBEL limits and BAT limits in accordance with 40 CFR 423 Steam Electric Power Generating Point Source Category.

- The draft permit authorizes uncontrolled and unidentifiable leaks from lagoons in violation of the Clean Water Act, and violates the public notice and comment and other requirements of the clean water act.

  Response: The inclusion of the seeps into the NPDES permit is based on the provisions of the Coal Ash Management Act of 2014 (CAMA). § 130A-309.210 of the Coal Ash Management Act of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. Under the permit, the seeps would be monitored and subject to applicable effluent limits which will ensure that seep discharges will not result in unacceptable impacts to surface waters. Incorporation of the seeps into the NPDES permit is considered an interim measure until the coal ash impoundments are closed. The draft permit requires that the facility continue to implement a plan for the identification of new seeps. A seep identification survey shall be conducted semi-annually and new seeps are to be reported to the Division within five days of detection. The DWR has been consulting with EPA in regard to the incorporation of the seeps into the NPDES wastewater permits.

- The draft permit fails to set protective water quality based effluent limits.

  Response: The Division conducted EPA-recommended analyses to determine the reasonable potential for toxicants to be discharged at levels exceeding water quality standards/EPA criteria by this facility from outfall 002 (Ash Pond). For the purposes of the RPA, the background concentrations for all parameters were assumed to be below detection level. The RPA uses 95% probability level and 95% confidence basis in accordance with the EPA Guidance entitled "Technical Support Document for Water Quality-based Toxics Control."

  RPA calculations included: As, Be, Cd, Chlorides, Cr, Cu, CN, Pb, Hg, Mo, Ni, Se, Ag, Zn, Al, and B concentrations. The renewal application listed 8.3 MGD as a current flow. However, 11.44 MGD was used in the RPA as the highest reported flow during the last permit cycle. The analysis indicates no reasonable potential to violate the surface water quality standards or

EPA criteria. The water-quality based limits for selenium were removed from the permit (Outfall 002) based on the results of Reasonable Potential Analysis.

The Division also considered data for other parameters of concern in the EPA Form 2C that the facility submitted for the renewal. The majority of the parameters were not detected in the discharge. The Division reviewed the following parameters that were detected in the discharge and have an applicable state standards or EPA criteria for Class WS-IV stream (phenols). Phenol concentrations were well below the state standard.

An RPA was also conducted for the combined flow from the seeps (Outfalls 101 and 102). The analysis was based on the dilution in the receiving stream since the effluent channels were delineated for both seeps. Although one seep was not flowing at the time of the sampling, it was assumed that it might discharge during the wet season. Calculations included: As, Cd, Chlorides, Cr, Cu, F, Pb, Hg, Mo, Ni, Se Zn, SO_4, Al, Ba, B, Sb, and Tl (please see attached). The analysis indicates no reasonable potential to violate the water quality standards or EPA criteria. The flow volume for the first seep was measured at 0.0019 MGD. However, the flow of 0.5 MGD was used for the RPA to incorporate a safety factor, account for potential new seeps that might emerge in the future or increase in flow volume at the existing seeps.

In conclusion, the RPA analysis indicates that existing discharges from the facility outfalls and seeps will not cause contravention of the state water quality standards/ EPA criteria.

- The proposed permit violates the Clean Water Act's anti-backsliding provisions.

  <u>Response</u>: Anti-backsliding provisions are applicable to the TBEL limits, none of the TBEL limits in the proposed permit are less stringent than in the previous limits.

- The draft permit sets inadequate monitoring requirements for seeps.

  <u>Response</u>: The monitoring requirements in the permit are based on the state and federal rules, regulations, and policies. The established frequency is adequate to conduct a valid statistical analysis of the effluent data.

The following is a summary of comments received from the Neuse Riverkeeper Foundation:

- The pollution limits in the permits are too weak.

Response: The effluent limitations in the permit are established in accordance with the existing federal and state rules and regulations. EPA has recently updated 40 CFR 423 and after reviewing parameters of concern established TBELs for several of these parameters. The EPA decided that TBELs for all parameters of concern are not necessary because "Effluent limits and monitoring for all pollutants of concern is not necessary to ensure that the pollutants are adequately controlled because many of the pollutants originate from similar sources, have similar treatabilities, and are removed by similar mechanisms. Because of this, it may be sufficient to establish effluent limits for one pollutant as a surrogate or indicator pollutant that ensures the removal of other pollutants of concern."

- Permitting the leaks violates the Clean Water Act.

Response: The inclusion of the seeps into the NPDES permit is based on the provisions of the Coal Ash Management Act of 2014 (CAMA). § 130A-309.210 of the Coal Ash Management Act of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) Permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. Under the permit, the seeps would be monitored and subject to applicable effluent limits which will ensure that seep discharges will not result in unacceptable impacts to surface waters. Incorporation of the seeps into the NPDES permit is considered an interim measure until the coal ash impoundments are closed. The draft permit requires that the facility continue to implement a plan for the identification of new seeps. A seep identification survey shall be conducted semi-annually and new seeps are to be reported to the Division within five days of detection. The DWR has been consulting with EPA in regard to the incorporation of the seeps into the NPDES wastewater permits.

IV. June 22, 2016, Public Hearing and Comments Summary

A second public hearing was held on June 22, 2016, at 6:00 pm, at the Catawba Valley Community College East Wing Auditorium, at 2550 Highway 70 Southeast, in Hickory, NC. The purpose of the public hearings was to allow the public to comment on the draft NPDES wastewater permit for Duke Energy Carolinas, LLC's Marshall Steam Station.

Notice of the hearing (Attachment E.) was published in the Hickory Daily Record on May 22, 2016, and in the Charlotte Observer on May 19, 2016. Additionally, a news release of the Notice was issued on May 17, 2016, and publication of this notice was posted on the DEQ website. The public comment period closed on June 22, 2016.

Approximately 16 people attended the public hearing including 10 staff members of the Division of Water Resources and the hearing officer. A total of 6 individuals signed the attendance sign in sheets at the hearing (Attachment F). The hearing officer provided opening comments and Sergei Chernikov, Ph.D., with the Division of Water Resources gave a brief overview of the draft NPDES wastewater permit. One individual registered in advance of the hearing to provide oral comments and indicated that she was representing the Sierra Club. The speaker list is also included as Attachment F.

ORAL COMMENTS

The following is a summary of the comments received at the public hearing.

- Draft permit would allow polluted pond water to continue to leak into Lake Norman and into North Carolina's groundwater.

- Removing coal ash and contaminated water is the only way to protect our waterways.

- Proposed permit violates the Clean Water Act and North Carolina's groundwater rules.

- Permit gives Duke more than two years of extra time before is must meet new limits for scrubber wastewater.

  Response: § 130A-309.210 of the Coal Ash Management Act (CAMA) of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a

National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. The facility identified two unpermitted seeps (both non-engineered) from the ash settling basin. Under the draft NPDES Permit, both seeps are considered to be discharging through delineated Effluent Channels. The Effluent Channels were delineated by DWR staff on May 4, 2016, in accordance with 15A NCAC 02B .0228. The draft permit requires the permittee to demonstrate that water quality standards in the receiving stream are not contravened. This demonstration must be submitted to the Division no later than 180 days from the effective date of the permit.

§130A-309.213 of the Act required the department to develop a proposed classification system for all coal combustion residuals surface impoundments, including active and retired sites. §130A-309.214 requires owners of coal combustion residual surface impoundments to submit a proposed closure plan for the Departments approval. High-risk impoundments shall be closed no later than December 31, 2019, intermediate-risk impoundments shall be closed no later than December 31, 2024, and low-risk impoundments shall be closed no later than December 31, 2029.

The NPDES Permit for Marshall Steam station has been developed in accordance with the existing federal and state rules and regulations. The Permit conditions are established to provide compliance with the water quality standards in the receiving stream.

The extended deadlines for Compliance with the New Effluent Limitations have been established in accordance with the 40 CFR 423. Duke provided justification for the compliance schedule, which is well within authorized by the federal rule.

The public hearing audio file is included as Attachment D.
In addition to the public hearing, DWR received 127 written comments via email during the public comment period. Those comments are included as Attachment C.

E-MAIL COMMENTS

125 of the email comments were received using the following form letter email:

Duke Energy's Marshall coal plant has polluted our lakes and rivers for decades. The proposed permit, which would authorize Duke to continue operating the leaky ash pond at the plant and to continue discharging contaminated pond water

through seeps into Lake Norman, violates the Clean Water Act and North Carolina's groundwater rules. The release of coal ash pollution into our waterways puts public health and the environment at risk.

In addition, the proposed permit would give Duke more than two years of extra time before it must meet new limits on the discharge of scrubber wastewater. Duke Energy has had more than enough time to plan for how to deal with its toxic waste streams. It is time for the company to stop fouling the waters of our state.

Therefore, I request that DEQ revise the permit so that it protects the waters of our state from Duke Energy's toxic coal plant pollution.

<u>Response</u>: § 130A-309.210 of the Coal Ash Management Act (CAMA) of 2014 requires owners of coal combustion residuals surface impoundments to identify and assess all discharges from the impoundments and to implement corrective action to prevent unpermitted discharges from the impoundments to the surface waters of the state. Identification of discharges includes engineered channels designed or improved for the purpose of collecting water from the toe of the impoundment (toe drains), as well as non-engineered seeps and weeps. One method of proposed corrective action allowed under the Act is to make application for a National Pollutant Discharge Elimination System (NPDES) permit amendment to bring the unpermitted discharge under permit regulations. A Discharge Assessment Plan for the unpermitted discharges at the Marshall Steam Station was submitted by Duke Energy to the Department on December 30, 2014. The facility identified two unpermitted seeps (all non-engineered) from the ash settling basin. Under the draft NPDES Permit, both seeps are considered to be discharging through delineated Effluent Channels. The Effluent Channels were delineated by DWR staff on May 4, 2016, in accordance with 15A NCAC 02B .0228. The draft permit requires the permittee to demonstrate that water quality standards in the receiving stream are not contravened. This demonstration must be submitted to the Division no later than 180 days from the effective date of the permit.

The extended deadlines for Compliance with the New Effluent Limitations have been established in accordance with the 40 CFR 423. Duke provided justification for the compliance schedule, which is well within authorized by the federal rule.

The following is a summary of comments received from the Southern Environmental Law Center on behalf of the Catawba Riverkeeper Foundation, Inc., the Sierra Club and the Waterkeeper Alliance:

1. Permitting Waters of the United States as “effluent channels” violates the Clean Water Act and North Carolina Law.

Response: The Effluent Channels at the Marshall Steam Station have been delineated in accordance with the requirements of 15A NCAC 02B .0228. The EPA and USACOE did not object to this action.

2. The draft permit fails to account for discharges of wastewater through hydrologically connected groundwater.

   Response: The NPDES program regulates point source discharges to the Waters of the US, the infiltration of the wastewater to the groundwater does not fit the definition of the point source discharge. The groundwater contamination is being regulated under a separate program within DWR.

3. The Department cannot issue a permit to a facility that is violating surface water standards.

   Response: The NPDES Permit for Marshall Steam station has been developed in accordance with the existing federal and state rules and regulations. The Permit conditions are established to provide compliance with the water quality standards in the receiving stream.

4. The Reasonable Potential Analysis is inadequate.

   Response: he Reasonable Potential Analysis (RPA) has been conducted in compliance with the CWA. The RPA uses 95% probability level and 95% confidence basis in accordance with the EPA Guidance entitled "Technical Support Document for Water Quality-based Toxics Control." The RPA procedure has been approved by EPA. The downstream analysis of the water in the receiving stream does not indicate violations of the water quality standards.

5. The draft permit violates its own permit term – the Removed Substances Provision.

   Response: The disposal of the coal ash in wet lagoons has been authorized by the EPA in accordance with the CWA. New federal regulations will gradually phase out the use of coal ash lagoons.

6. The draft permit violates requirements applicable to critical areas.

   Response: The MCL levels for Sb, As, Ba, Be, Cd, Cr, Cu, CN, F, Pb, Hg, NO_3, NO_2, Se, and Tl have been established by EPA and are applicable to the Critical Area of the receiving stream. Most of these parameters (Hg, As, Cd, Cr, Cu, Se, Pb, NO_3) have been sampled downstream of the discharge location. The instream sampling indicate that most parameters are below detection level, the rest are below water quality

standard. The only parameter that exceeds the MCL is NO_3. However, the effluent monitoring data shows that concentration of nitrate in the ash pond discharge is well below MCL. Therefore, exceedance of MCL can be attributed to other point and non-point sources of pollution.

7. The Department cannot justify extended deadlines for compliance with new effluent limitations.

Response: The extended deadlines for Compliance with the New Effluent Limitations have been established in accordance with the 40 CFR 423. Duke provided justification for the compliance schedule, which is well within that authorized by the federal rule.

8. The effluent limitations in the proposed permit are too weak.

Response: The effluent limitations in the permit are established in accordance with the existing federal and state rules and regulations. EPA has recently updated 40 CFR 423 and after reviewing parameters of concern established TBELs for several of these parameters. The EPA decided that TBELs for all parameters of concern are not necessary because "Effluent limits and monitoring for all pollutants of concern is not necessary to ensure that the pollutants are adequately controlled because many of the pollutants originate from similar sources, have similar treatabilities, and are removed by similar mechanisms. Because of this, it may be sufficient to establish effluent limits for one pollutant as a surrogate or indicator pollutant that ensures the removal of other pollutants of concern."

The SELC mistakenly concluded that the dewatering stage for outfall 002 includes TBEL for As. However, this is a water-quality based limit, it has been established in accordance with the results of RPA.

The SELC also suggests that more monitoring for seeps is needed. The combined seep discharge represents less than 0.02% of the discharge from the ash pond. This is a miniscule contribution to the overall discharge from the facility and the monitoring frequency is adequate to evaluate its impact. In addition, the EPA has approved the monitoring frequency for seeps.

The following is a summary of comments received from Duke Energy.

1. Comments on Draft Permit Section A. (2.) Effluent Limitations and Monitoring Requirements (Outfall 002-normal operations)

   - In the DRAFT Permit, the monitoring frequency for arsenic and mercury is "weekly," in contrast to the "quarterly" monitoring frequency

in the current permit. Historical monitoring data do not indicate that the discharge from Outfall 2 has caused problems with arsenic and mercury in the receiving stream, and the reasonable potential analysis ("RPA") demonstrates the discharge will not cause contravention of the water quality criteria for either of these constituents. Given that more frequent monitoring is not necessary to address an immediate concern, Duke Energy requests the sampling frequency be returned to "quarterly". If NCDEQ feels that more frequent monitoring is needed, Duke Energy would not object to "monthly" sampling.

Response: The monitoring frequency for As, Hg, were increased to address EPA comments. The Division is unable to grant request from Duke for a monitoring frequency reduction.

- The DRAFT Permit requires chronic toxicity testing "monthly" during normal operations, contrasted with "quarterly" in the current permit. Historical data do not indicate that chronic toxicity is a concern during normal operations, and Duke Energy requests that the monitoring frequency be changed to a "quarterly" requirement during normal operations.

Response: The monitoring frequency for toxicity testing was included as monthly to address EPA comments. The Division is unable to grant request from Duke for a monitoring frequency reduction.

- Duke Energy requests that the language in Note 2 be clarified to state that continuous monitoring of Total Suspended Solids ("TSS") is only required when decanting via pumps. As written, the permit could be interpreted to require continuous TSS monitoring during normal operations not involving pumping from the ash basin.

Response: The Division will add clarifying language for TSS continual monitoring in the Final Permit.

- Duke Energy requests re-insertion of Note 2 from the existing permit related to TSS. The existing footnote reads: "A total suspended solids average of 40 mg/L is permitted provided the permittee can demonstrate that the difference between the monthly average of 20 mg/L and 40 mg/L is the result of the concentration of total suspended solids in the intake water."

Response: The Division is unable to re-insert the Note 2 from the previous Permit. This change was made to address the EPA comment.

- Duke Energy requests that language on page 5 be amended as follows: “The facility is allowed to drawdown the wastewater in the ash ~~pond~~ **settling basin** to no less than three feet above the ash **at the pump intake location under this section. Lowering the level below the three feet mark triggers the limits and conditions in Section A. (3) of this permit."** Without this clarification, the permit could be misinterpreted to prevent Duke from ever undertaking the work authorized in Section A. (3).

  Response: The Division will add clarification to the drawdown language in the Final Permit.

- Duke Energy requests that the language on page 5 be clarified to state that the zero discharge limits on fly ash and bottom ash transport water only applies to fly ash and bottom ash transport water generated after November 1, 2018 and January 31, 2021. Fly ash and/or bottom ash transport water generated prior to these dates and stored in the ash basins is classified as "legacy wastewater" under the Steam Electric Effluent Limitations Guidelines (ELG) Rule. As stated in the rule, legacy wastewater is not subject to the same limits. We believe the intent of the permit is to allow continued discharges from the ash basin after the effective dates but to require zero discharge of new fly ash transport water after 2018 and of bottom ash transport water after 2021. To address this concern, Duke Energy suggests either adding additional definitions to Section A.(10.) or making the following clarifications on page 5:
  - o The zero discharge limit of fly ash transport water only applies to fly ash transport water generated after November 1, 2018.
  - o The zero discharge limit of bottom ash transport water only applies to bottom ash transport water generated after January 31, 2021.

  Response: The Division will add clarification regarding fly ash and bottom ash transport water in the Final Permit.

2. Comments on Draft Permit Section A. (3) Effluent Limitations and Monitoring Requirements (Outfall 002-dewatering phase)

- The DRAFT Permit sets a flow limit at 1.0 million gallons per day (MGD). Duke Energy requests the flow limit be removed and only require monitor and report. Flows during dewatering will be lower than flows during decanting, for which Section A.(2) does not set a daily limit. Dewatering is already subject to a limit on drawdown of 1 ft/week for dam safety purposes.

<u>Response</u>: The flow limit for the dewatering phase was added to address the EPA comment. The Division is unable to remove it.

3. Comments on Draft Permit Section A. (7.) Effluent Limitations and Monitoring Requirements (Internal Outfall 004)

- As written, the Discharge Limitation on Total Mercury in this section is not subject to Note 4, probably due to a typographical error. Duke Energy requests the addition of a Note 4 superscript to the total mercury limits in the permit limit table to clarify that limits on total mercury are also effective on January 31, 2021.

<u>Response</u>: The Division will correct this error in the Final Permit.

4. Comments on Draft Permit Sections A. (8.) and A. (9.) Effluent Limitations and Monitoring Requirements (Outfall 101 and 102)

- Duke Energy requests that Note 3 be amended to state that a measurement of pH lower than 6.0 or higher than 9.0 is not a violation of the permit limits. As a result of the hydro geochemistry involved in the migration of ash basin seepage through groundwater, the pH of water measured at Outfalls 101 and 102 will not always be representative of the seep flow discharge from the ash basin. Water in the ash basin consistently discharges between 6.0 and 9.0, but natural conditions, including contributions from stormwater, in the vicinity of the ash basin can result in lower pHs measured at the Outfalls. As long as discharges from the ash basin at Outfall 002 remain between 6.0 and 9.0, lower pHs at Outfalls 101 and 102 could be considered unrepresentative samples.

<u>Response</u>: The Division is unable to change pH requirements in the Permit; this is a statutory requirement.

- Similarly, Duke Energy requests that a note be added to state that TSS levels due to conditions of the sampling area (sediment entrainment) should be considered an unrepresentative sample since a seep flow from the Ash Basin would not carry TSS levels in excess of 30 mg/l.

<u>Response</u>: The Division believes that existing language regarding low flow condition already addresses the issue of the excessive sample turbidity.

- Duke Energy requests the removal of the monitoring and reporting requirements for Total Iron, Total Manganese and Conductivity. There are no surface water quality standards associated with these parameters;

therefore, it is unnecessary to conduct monitoring and report for these parameters.

<u>Response</u>: The Division believes that monitoring for Fe, Mn, and conductivity is necessary to evaluate the hydrogeological and geochemical conditions at the site, detect changes caused by the decanting and dewatering, and determine the source of the seep.

5. Comments on Draft Permit Section A. (10.) ADDITIONAL CONDITIONS AND DEFINITIONS

- Duke Energy requests the inclusion of the following statement based on the historical permitting of non-chemical metal waste without limits for copper and iron: "Non-chemical metal cleaning wastewater will be treated as 'low volume waste' subject only to TSS and oil and grease limits based on the historical permitting of non-chemical metal cleaning wastewater."

<u>Response</u>: The Division is unable to grant this request, all the definitions in the Permit are based on the 40 CFR 423 and have been approved by EPA.

6. Comments on Draft Permit Section A. (17.) Chronic Toxicity Pass/Fail Permit Limit

- The DRAFT Permit establishes the chronic toxicity effluent concentration of 23% for Outfall 002, changed from 12% in the current permit. Duke Energy requests this to be changed to 18% based on the instream wastewater concentration (IWC) reported in the Fact Sheet and the minimum flow release of Cowens Ford dam of 80 cubic feet per second (cfs). See additional comments on the minimum flow release below.

<u>Response</u>: The Division is unable to grant the request regarding the IWC. The IWC is based on the flow data reported on the DMR and the historic stream flow data.

- The DRAFT Permit establishes the chronic toxicity requirement for dewatering and references Part I, Section A. (17.), which sets a chronic toxicity effluent concentration of 23.0%. The RPA for dewatering was conducted at a flow of 1.0 MGD and the DRAFT Permit sets a flow limit of 1.0 MGD. Therefore, the chronic toxicity effluent concentration for dewatering should be set at an appropriate level based on RPA calculations (Ex. 2.0% based on a flow of 1.0 MGD and a 7Q10s of 80 cfs or 3.7% based on a flow of 2.0 MGD and a 7Q10s of 80 cfs).

<u>Response</u>: The Division will add a separate IWC for dewatering phase in the Final Permit.

7. Comments on Draft Permit Section A. (30.) Seep Pollutant Analysis

- Duke Energy appreciates that the approach of this section is based on the model developed for the Riverbend NPDES permit. However, the circumstances at Marshall are different because, as stated in the Draft Permit, Marshall's two existing seeps, S-1 and S-2, have been designated as Effluent Channels, and both are included as outfalls in the draft permit. Because water quality standards do not apply in Effluent Channels, as stated in 15A NCAC 2B .0200, there is no need to determine compliance with water quality standards in the channels themselves. Because both discharge to the Catawba River, the RPA performed for the permit should be sufficient to demonstrate that water quality standards in the receiving stream are not contravened, as required in subparagraph 3. As a result, there is no further work to be done with respect to the existing seeps required by Section A.(30). Duke Energy proposes to revise this section so that it applies only to New Identified Seeps.

  Response: The Division is unable to grant this request, the text of this condition has been approved by EPA.

8. Comments on Attachment 1: Groundwater Monitoring Plan

- Please add the following clarifying language to the permit:

  "3(h). The provisions of sections 3(f) and 3(g) apply only to the sampling events described in 3(b) above. The reporting requirements for any sampling events other than those described in 3(b) above shall be in accordance with the general provisions of 15A NCAC 02L."

  Response: Agree. We will add to the language in the Groundwater Monitoring Plan.

- Additionally, Duke requests that the GW59CCR form submittal date be 60 days after sampling in lieu of 45 days.

  Response: Disagree. We believe that 45 days is ample time to submit sampling data, and is consistent with other coal ash permits that have been recently renewed.

9. Comments on Fact Sheet

- The Fact Sheet states that the summer 7Q10 flow of 60 cubic feet per second (cfs) is based on the minimum release from the dam that regulates the receiving water body (Cowens Ford). However, based on the issued Catawba-Wateree operating license, the minimum release from Cowens Ford is 80 cfs and the minimum average daily release requirement is 311 cfs. In the recently issued permit for McGuire Nuclear

Station, the 7Q10 was set at 80 cfs. In addition, the IWC reported in the Fact Sheet is 18%, which corresponds to a flow of 11.44 MGD and 7Q10 of 80 cfs. Duke request the 7Q10 reflect the minimum release from Cowan's Ford Dam stated in the current Catawba-Wateree operating license.

<u>Response</u>: The Division calculated the IWC based on the historic stream flow data. The IWC in the fact sheet is a typo, the correction will be made in the Final Permit.

V. Recommendations

Based on the review of the public record, written and oral public comments, the North Carolina General Statutes and Administrative Code, the Coal Ash Management Act of 2014, the site visit and discussions with other DWR staff, I recommend to the Division Director that the draft NPDES permit for the Marshall Steam Station be modified and issued with the following minor changes:

1. Clarifying language should be added to the permit in Section A. (2). Note 2 should be clarified to state that continuous monitoring of Total Suspended Solids ("TSS") is only required when decanting via pumps. As written, the permit could be interpreted to require continuous TSS monitoring during normal operations not involving pumping from the ash basin.
2. Clarifying language should be added to the permit in Section A. (2), Page 5 to specify that limits and conditions in Section A. (3) of the permit apply when water in the ash settling basin is lowered below the three feet trigger mark.
3. Clarifying language should be added to the permit in Section A. (2), Page 5 to specify that the zero discharge limits on fly ash and bottom ash transport water only applies to fly ash and bottom ash transport water generated after November 1, 2018 and January 31, 2021.
4. Section A. (7) should include addition of a Note 4 superscript to the total mercury limit to clarify that limits are effective on January 31, 2021.
5. Section A. (17) should include a separate IWC for dewatering phase toxicity testing.

   The Groundwater Monitoring Plan attachment should include the following clarifying language: "3(h). The provisions of sections 3(f) and 3(g) apply only to the sampling events described in 3(b) above. The reporting requirements for any sampling events other than those described in 3(b) above shall be in accordance with the general provisions of 15A NCAC 02L."

VI. Attachments

A. NPDES Application
B. Draft Permit and Fact Sheet
C. Written Comments Received During Public Comment Period
D. Public Hearing Transcript, Including Oral Comments
E. Notice of Public Hearing
F. Speaker Sign-in Sheets
G. Non-speaker Sign-in Sheets