NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF STOKES

IN THE MATTER OF NORTH CAROLINA NPDES PERMIT **NC0024406** HELD BY DUKE ENERGY CAROLINAS, LLC	)))))	SPECIAL ORDER BY CONSENT EMC SOC WQ S18-009

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent is entered into by Duke Energy Carolinas, LLC, hereinafter referred to as Duke Energy, and the North Carolina Environmental Management Commission, an agency of the State of North Carolina created by G.S. 143B-282, and hereinafter referred to as the Commission. Duke Energy and the Commission are referred to hereafter collectively as the "Parties."

1. Duke Energy and the Commission hereby stipulate the following:

   (a) Duke Energy holds North Carolina NPDES permit NC0024406 for the operation of an existing treatment system for coal ash wastewater at its Belews Creek Steam Station and the discharge of treated wastewater from that system.

   (b) The Belews Creek Steam Station is a two-unit, coal fired electric generating facility with a 2,240 megawatt capacity, located on Belews Lake in southeastern Stokes County. The facility was constructed during the early 1970s. It was placed into service for commercial operation in 1974, and will continue to operate into the future.

   (c) Treatment of coal ash wastewater is provided primarily through the use of a coal ash basin at the site that allows for the settling of solids within the coal ash slurry and eventual discharge of its liquid portion. The coal ash basin was constructed from 1970-1972 through the installation of an earthen dam across an unnamed tributary (UT) to the Dan River northwest of the steam station. The coal ash basin created by this activity has a surface area of approximately 342 acres.

   (d) The coal ash basin originally discharged to Belews Lake, a 3,200 acre impoundment also created by Duke Energy in the 1970s as a source of cooling water for the steam station. Due to findings of elevated levels of selenium in Belews Lake during the 1980s, the outfall from the ash basin was relocated to its current location (Outfall 003) in 1985.

(e) Outfall 003 was constructed as a concrete cascade structure with discharge to a channelized feature within the valley landscape below the earthen dam. In previous versions of the NPDES permit, Outfall 003 has been described as a discharge to the Dan River with the feature receiving the flow from the concrete cascade understood to be an effluent channel. In accord with this determination, effluent limitations for Outfall 003 were based upon conditions in the Dan River.

(f) Investigations conducted by the U.S. Army Corps of Engineers and the North Carolina Department of Environmental Quality during 2017 each concluded that feature receiving flow from the concrete cascade is a UT to the Dan River.

(g) The latest draft of a proposed NPDES permit renewal for the Belews Creek Steam Station has adopted the conclusion noted in paragraph (f) above. The draft permit designates the receiving stream for the discharge from Outfall 003 to be a UT to the Dan River and a zero flow stream.

(h) The latest draft of a proposed NPDES permit renewal for the Belews Creek Steam Station also provides coverage for the discharge of wastewater from Outfall 111, seep discharge from toe drains within the ash basin's earthen dam. This discharge also flows to the UT to the Dan River, upstream of the Outfall 003 discharge point

(i) Because the receiving stream for Outfalls 003 and 111 is a zero flow stream, the proposed effluent limits associated with monitoring of the discharges in the draft permit are set as the water quality standards established for WS-IV waters (the stream classification of the UT to the Dan River) for those parameters.

(j) Monitoring of the discharges from Outfalls 003 and 111 indicates that upon the prospective effective date of the NPDES permit renewal (currently estimated to be early 2019), the discharges will be noncompliant with the proposed effluent limits.

(k) Noncompliance with final effluent limits will constitute causing and contributing to pollution of the waters of this State named above, and Duke Energy is within the jurisdiction of the Commission as set forth in G.S. Chapter 143, Article 21.

(l) The composition of the discharged effluent will not substantially change from the effluent discharged from this facility for the past 34 years. While this Special Order provides relief from certain proposed effluent limits in NPDES permit NC0024406, these modified limits (see paragraphs 2(f), (g), and (h)) are more stringent than those applied in prior NPDES permits for this facility.

(m) Notwithstanding paragraph (k) above, which establishes standing for the issuance of this Special Order, the Commission and Duke Energy further stipulate that no wrongdoing occurred on the part of Duke Energy through the discharge of wastewater via Outfall 003 as it was allowed under the terms of prior versions of NPDES permit NC0024406.

(n) Duke Energy will close the Belews Creek Steam Station coal ash impoundment in accordance with applicable requirements set out in the North Carolina Coal Ash Management Act and the Federal Coal Combustion Residuals rule. This will require relocation of contributing flows to the ash basin, followed by decanting and dewatering of the basin. These contributing flows will be redirected to a Lined Retention Basin.

(o) In accord with the compliance schedule below, Duke Energy has agreed to construct an outfall pipe from the Lined Retention Basin to the Dan River on an expedited basis. This pipe will discharge at new Outfall 006.

(p) Additionally, Duke Energy has agreed to route the discharge of all ash basin dewatering flow to the Dan River via Outfall 006.

(q) In accord with the compliance schedule below, Duke Energy has also agreed to reroute any flow from Outfall 111 that remains after decanting of the ash basin is completed to Outfall 006 on an expedited basis.

(r) Upon completion of these construction activities, discharge of wastewater to the UT to the Dan River will be eliminated.

(s) Since this Special Order is by Consent, neither party will file a petition for a contested case or for judicial review concerning its terms.

2. Duke Energy, desiring to comply with the permit identified in paragraph 1(a) above, hereby agrees to do the following:

(a) **Outfalls 006, 003 and 003A:** Undertake the following activities in accordance with the indicated time schedule:

(1) Conduct decanting activities at the Belews Creek Steam Station ash basin in accordance with the schedule established in EMC WQ SOC S18-004.

(2) On or before March 31, 2019, begin construction of new NPDES Outfall 006.

(3) On or before August 31, 2020, complete construction of Outfall 006.

(4) On or before September 30, 2020, begin discharging to the Dan River via NPDES Outfall 006 and eliminate discharge from Outfalls 003 and 003A.

(b) **Outfall 111:** Undertake the following activities in accordance with the indicated time schedule:

(1) On or before March 31, 2020, begin construction of the rerouting of flow from the toe drain seepage discharge (Outfall 111) to Outfall 006.

(2) On or before August 31, 2020, complete construction of the rerouting of the toe drain seepage discharge (Outfall 111) to Outfall 006.

(3) On or before September 30, 2020, begin discharging toe drain seepage to the Dan River via Outfall 006 and eliminate discharge from Outfall 111.

(c) No later than January 31 and July 31 of each year during the time this Special Order is in effect, provide semi-annual progress reports documenting activities associated with the planning, design, construction and use of the new outfall to the Dan River. The reports are to be submitted as follows: one copy must be mailed to the Winston-Salem Regional Supervisor, Division of Water Resources/Water Quality Regional Operations Section, 450 West Hanes Mill Road; Suite 300, Winston-Salem, NC 27105, and one copy must be mailed to the Division of Water Quality/Water Quality Permitting Section, 1617 Mail Service Center, Raleigh, NC 27699-1617.

(d) No later than thirty (30) calendar days after any date identified for accomplishment of any activity listed in paragraphs 2(a) and 2(b) above, submit to the Director of DWR a written notice of compliance (including the date compliance was achieved along with supporting documentation if applicable) or noncompliance therewith. In the case of noncompliance, the notice shall include a statement of the reason(s) for noncompliance, remedial action(s) taken, and a statement identifying the extent to which subsequent dates or times for accomplishment of listed activities may be affected.

(e) Duke Energy shall comply with all terms and conditions of NPDES Permit NC0024406 except those effluent limitations identified in paragraphs 2(f), 2(g) and 2(h) below. See Attachments A, B, C and D for all monitoring requirements and effluent limitations. The Permittee may also be required to monitor for other parameters as deemed necessary by the Director in future permits or administrative letters.

(f) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 003 contained in NPDES permit NC0024406 unless modified below:

Under this SOC, <u>only</u> the parameters listed below for Outfall 003 have been modified from the NPDES Permit NC0024406 issued in 2019.

During Normal Operations & Decanting

	Permit Limits		**Modified Limits (SOC)**	
Parameter	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Arsenic	10.0 µg/L	340.0 µg/L	75.0 µg/L	340.0 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Selenium	5.0 µg/L	56.0 µg/L	25.0 µg/L	56.0 µg/L
Chronic Toxicity	Ceriodaphnia P/F @ 90%		Ceriodaphnia Full Range Testing – Monitor Only	

(g) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 003A contained in NPDES permit NC0024406 unless modified below:

Under this SOC, <u>only</u> the parameters listed below for Outfall 003A have been modified from the NPDES Permit NC0024406 issued in 2019.

	Permit Limits		**Modified Limits (SOC)**	
Parameter	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Arsenic	10.0 µg/L	340.0 µg/L	Monitor & Report	340.0 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Sulfates	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Cadmium	0.59 µg/L	3.24 µg/L	Monitor & Report	3.24 µg/L
Total Selenium	5.0 µg/L	56.0 µg/L	Monitor & Report	85.0 µg/L
Chronic Toxicity	Ceriodaphnia P/F @ 90%		Ceriodaphnia Full Range Testing – Monitor Only	
Total Thallium	2.0 µg/L	2.0 µg/L	Monitor & Report	4.0 µg/L

Because the concentrations of pollutants in the Lined Retention Basin discharge are currently unknown, for the purpose of future considerations, the minimum monitoring frequencies for all parameters monitored at NPDES permit Outfall 003A shall be increased to **<u>Weekly</u>** during its first six months of operation.

(h) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 111 contained in NPDES permit NC0024406 unless modified below:

Under this SOC, <u>only</u> the parameters listed below for Outfall 111 have been modified from the NPDES Permit NC0024406 issued in 2019.

	Permit Limits		**Modified Limits (SOC)**	
Parameter	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
pH	≥ 6.0 & ≤ 9.0 Std. Units		≥ 5.0 & ≤ 10.0 Std. Units	
Total Mercury	12.0 ng/L	12.0 ng/L	47.0 ng/L (Annual Average)*	
Total Cadmium	0.59 µg/L	3.24 µg/L	2.0 µg/L	3.24 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Dissolved Solids	500.0 mg/L	500.0 mg/L	Monitor & Report	

*Calendar Year

(i) During the time in which this Special Order is effective, the following Interim Action Levels shall be established within the UT to the Dan River receiving discharges from Outfalls 003, 003A and 111, from the Outfall 003/003A discharge location to the confluence of the UT with the Dan River:

Characteristic	**Interim Action Level**
pH**	5.0 – 10.0 standard units
Cadmium	3.24 µg/L
Chlorides**	700.0 mg/L
Arsenic	25.0 µg/L
Mercury**	0.1 µg/L
Hardness**	800.0 mg/L
Selenium	56.0 µg/L
Total Dissolved Solids	1,700.0 mg/L
Sulfates	700.0 mg/L

** Interim Action Levels are the same as those as established in EMC SOC WQ S18-004.

3. Duke Energy agrees that unless excused under paragraph four (4), Duke Energy will pay the Director of DWR, by check payable to the North Carolina Department of Environment and Natural Resources, stipulated penalties according to the following schedule for failure to meet the deadlines set out in paragraphs 2(a) and 2(b), the interim limits found in paragraphs 2(f), 2(g) and 2(h), or the interim action levels listed in paragraph 2(i).

Violation Description	Stipulated Penalty
Failure to meet a schedule date listed in paragraphs 2(a)(1) – 2(a)(3) or 2(b)(1) – 2(b)(2)	$500 per missed schedule date within the first seven (7) days of tardiness; $750 per day thereafter.
Failure to submit progress reports as required by paragraph 2(c).	$500/day
Failure to maintain compliance with any modified limit contained in the Special Order	$2,000/violation
Failure to maintain compliance with any interim action level contained in the Special Order	$4,500/violation
Failure to eliminate discharge from Outfall 003 by September 30, 2020.	$200,000.00 + $3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 003 is eliminated
Failure to eliminate discharge from Outfall 003A by September 30, 2020.	$200,000.00 + $3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 003A is eliminated
Failure eliminate discharge from Outfall 111 by September 30, 2020.	$200,000.00 + $3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 111 is eliminated

4. Duke Energy and the Commission agree that the stipulated penalties specified in paragraph 3 are not due if Duke Energy satisfies DWR that noncompliance was caused solely by:

   a. An act of God;

   b. An act of war;

   c. An intentional act or omission of a third party, but this defense shall not be available if the act or omission is that of an employee or agent of Duke Energy or if the act or omission occurs in connection with a contractual relationship with Duke Energy;

   d. An extraordinary event beyond the Duke Energy's control, specifically including any court order staying the effectiveness of any necessary permit or approval. Contractor delays or failure to obtain funding will not be considered as events beyond Duke Energy's control; or

   e. Any combination of the above causes.

5. Failure within thirty (30) days of receipt of written demand by DWR to pay the stipulated penalties, or challenge them by a contested case petition pursuant to G.S. 150B-23, will be grounds for a collection action, which the Attorney General is hereby authorized to initiate. The only issue in such an action will be whether the thirty (30) days has elapsed.

6. Noncompliance with the terms of this Special Order is subject to enforcement action in addition to the above stipulated penalties, including, but not limited to injunctive relief pursuant to G.S. 143-215.6C.

7. This Special Order and any terms or conditions contained herein, hereby supersede any and all previous Special Orders (with the exception of EMC SOC WQ S18-004), Enforcement Compliance Schedule Letters, terms, conditions, and limits contained therein issued in connection with NPDES permit NC0024406. In the event of an NPDES permit modification or renewal, any effluent limit of monitoring requirements contained therein shall supersede those contained in this Special Order by Consent, except as modified and contained in paragraphs 2(f), 2(g) and 2(h) above.

8. This Special Order may be modified at the Commission's discretion, provided the Commission is satisfied that Duke Energy has made good faith efforts to secure funding, complete all construction, and achieve compliance within the dates specified. In accordance with applicable law, modification of this Special Order will go to public notice prior to becoming effective.

9. In addition to any other applicable requirement, each report required to be submitted by Duke Energy under this Special Order shall be signed by a plant manager or a corporate official responsible for environmental management and compliance, and shall include the following certification:

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

10. This Special Order shall become effective in accordance with state law, and once effective, Duke Energy shall comply with all schedule dates, terms, and conditions herein.

This Special Order by Consent shall expire on December 31, 2020.

For Duke Energy Carolinas, LLC:

_____ _____

Paul Draovitch
Senior Vice President, Environmental, Health & Safety

Date

For the North Carolina Environmental Management Commission:

_____ _____

Linda Culpepper, Director
N.C. Division of Water Resources
For the Chair of the Commission

Date

ATTACHMENT A
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(Outfall 003 – normal operations/decanting)

During the period beginning on the effective date of this Special Order and lasting until September 30, 2020, Duke Energy is authorized to discharge from Outfall 003 - Ash Settling Basin **(decanting the free water above the settled ash layer that does not involve mechanical disturbance of the ash)**. Such discharges shall be limited and monitored[5] by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD	Monitor & Report		Weekly	Pump logs or estimate	Effluent
Oil and Grease[1]	15.0 mg/L	20.0 mg/L	Monthly	Grab	Effluent
Total Suspended Solids[1,7]	30.0 mg/L	50.0 mg/L	Monthly	Grab	Effluent
Total Arsenic, µg/L	**75.0 µg/L**	340.0 µg/L	Monthly	Grab	Effluent
Chlorides	**Monitor & Report**		Monthly	Grab	Effluent
Sulfates	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Total Iron[10]	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Copper[10]	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Aluminum	6.5 mg/L	6.5 mg/L	Monthly	Grab	Effluent
Total Cadmium	0.59 µg/L	3.24 µg/L	Monthly	Grab	Effluent
Total Selenium	**25.0 µg/L**	56.0 µg/L	Monthly	Grab	Effluent
Total Zinc, µg/L	Monitor & Report		Monthly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Monthly	Grab	Effluent
Total Dissolved Solids, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Silver, µg/L	Monitor & Report		Monthly	Grab	Effluent
Fluoride, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Phosphorus, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Nitrogen (NO_2 + NO_3 + TKN), mg/L	Monitor & Report		Monthly	Grab	Effluent
Chronic Toxicity[2]	**See footnote**		Quarterly	Grab	Effluent
pH[3,8]	See footnote		2/Month	Grab	Effluent
Bromides, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	2.0 µg/L	2.0 µg/L	Monthly	Grab	Effluent
Total Mercury[4], ng/L	Monitor & Report		Monthly	Grab	Effluent
Turbidity[6], NTU	See footnote		Weekly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Monthly	Grab	Effluent
Ammonia[9]	1.0 mg/L	5.0 mg/L	Variable	Grab	Effluent

Notes:

1. Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
2. **Whole Effluent Toxicity shall be monitored through full range chronic toxicity (Ceriodaphnia) testing (parameter code THP3B).** See Attachment D of this SOC for details.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. The facility shall employ method 1631E.
5. Please See Special Condition A. (23.) of NPDES permit NC0024406.

6. The discharge from this facility shall not cause turbidity in the receiving stream to exceed 50 NTU. If the instream turbidity exceeds 50 NTU due to natural background conditions, the discharge cannot cause turbidity to increase in the receiving stream. Therefore, if the effluent measurement exceeds 50 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to demonstrate the existing turbidity level in the receiving waterbody was not increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)). NTU - Nephelometric Turbidity Unit.
7. The facility shall continuously monitor TSS concentration when the decanting process commences and the decanting pump shall be shutoff automatically when one half of the Daily Maximum limit (15 minutes average) is exceeded. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous TSS monitoring only required when the pumps are employed for decanting.
8. The facility shall continuously monitor pH when the decanting process commences and the decanting pump shall be shutoff automatically when the 15 minutes running average pH falls below 6.1 standard units or rises above 8.9 standard units. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous pH monitoring is only required when the pumps are employed for decanting.
9. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia. The sampling should be commenced as soon as possible after the release considering personnel safety and every hour thereafter until the sampling indicate no discharge of ammonia.
10. The limit applies only when the chemical metal cleaning waste is being discharged to the basin.

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

Outfall sampling shall be conducting prior to the commingling with wastewater from Outfall 003A.

The facility is allowed to drawdown the wastewater in the ash pond to no less than three feet above the ash. The rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K.

The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. The limits and conditions in Section A. (4.) of the permit apply when water in the ash settling basin is lowered below the three feet trigger mark.

By November 1, 2018 there shall be no discharge of pollutants in fly ash transport water. This requirement only applies to fly ash transport water generated after November 1, 2018.

By May 31, 2021 there shall be no discharge of pollutants in bottom ash transport water. This requirement only applies to bottom ash transport water generated after May 31, 2021.

The facility shall notify via e-mail DWR Complex NPDES Permitting Unit and DWR Winston-Salem Regional Office seven calendar days prior to the commencement of the decanting.

In accordance with the N.C.G.S. § 130A-309.210, by December 31, 2019, the facility shall convert to the disposal of dry bottom ash, as defined in the Coal Ash Management Act ("CAMA").

ATTACHMENT B
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(Outfall 003A – Lined Retention Basin)

During the period beginning upon the commencement of operation of the new Lined Retention Basin and lasting September 30, 2020, Duke Energy is authorized to discharge from Outfall 003A (new lined retention basin). Such discharges shall be limited and monitored[2] by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency[7]	Sample Type	Sample Location
Flow, MGD	Monitor & Report		Weekly	Instantaneous	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	50.0 mg/L	Quarterly	Grab	Effluent
pH[3]	See footnote		Weekly	Grab	Effluent
Total Arsenic, µg/L	**Monitor & Report**	340.0 µg/L	Quarterly	Grab	Effluent
Total Mercury[1], ng/L	Monitor & Report		Quarterly	Grab	Effluent
Total Selenium	**Monitor & Report**	**85.0 µg/L**	Monthly	Grab	Effluent
Nitrate/nitrite as N, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Chlorides	**Monitor & Report**		Monthly	Grab	Effluent
Sulfates	**Monitor & Report**		Monthly	Grab	Effluent
Total Nickel, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Fluoride, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Barium, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Cadmium µg/L	**Monitor & Report**	3.24 µg/L	Monthly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Copper[6]	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	**Monitor & Report**	**4.0 µg/L**	Monthly	Grab	Effluent
Chronic Toxicity[4]	**See footnote**		Quarterly	Grab	Effluent
Ammonia[5]	1.0 mg/L	5.0 mg/L	Daily	Grab	Effluent
Total Iron[6]	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent

Notes:

1. The facility shall employ method 1631E.Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
2. Please See Special Condition A. (23.) of NPDES permit NC0024406.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. **Whole Effluent Toxicity shall be monitored through full range chronic toxicity (Ceriodaphnia) testing (parameter code THP3B). See Attachment D of this SOC for details.**
5. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia.
6. The limit applies when the chemical metal cleaning waste is being discharged to the basin.

Outfall 003A Footnotes, continued

7. **The monitoring frequency for all parameters shall be Weekly during the first six months of operation (discharge) of the Lined Retention Basin treatment system.**

The facility shall submit EPA Form 2C for this Outfall within 2 years of commencement of the discharge.

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

Outfall sampling shall be conducting prior to the commingling with wastewater from Outfall 003.

ATTACHMENT C
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
Outfall 111

During the period beginning on the effective date of this Special Order and lasting until September 30, 2020, Duke Energy is authorized to discharge from Outfall 111 – Toe Drain Discharge. Such discharges shall be limited and monitored[1] by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency[2]	Sample Type	Sample Location
Flow, MGD	Monitor & Report		Monthly/Quarterly	Estimate	Effluent
pH[3]	**See Footnote**		Monthly/Quarterly	Grab	Effluent
TSS	30.0 mg/L	100.0 mg/L	Monthly/Quarterly	Grab	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Monthly/Quarterly	Grab	Effluent
Fluoride, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Mercury[4], ng/L	**47.0 ng/L (Annual Average)***		Monthly/Quarterly	Grab	Effluent
Total Barium, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Zinc, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Arsenic	10.0 µg/L	340.0 µg/L	Monthly/Quarterly	Grab	Effluent
Total Boron, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Cadmium, µg/L	**2.0 µg/L**	3.24 µg/L	Monthly/Quarterly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Copper, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Thallium	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Lead, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Nickel, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Selenium	5.0 µg/L	56.0 µg/L	Monthly/Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Sulfates, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Chlorides	**Monitor & Report**		Monthly/Quarterly	Grab	Effluent
TDS, mg/L	**Monitor & Report**		Monthly/Quarterly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Temperature, ^{0}C	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Conductivity, µmho/cm	Monitor & Report		Monthly/Quarterly	Grab	Effluent

Notes:
1. Please See Special Condition A. (23.) of NPDES permit NC0024406.
2. The facility shall conduct monthly sampling from the effective date of the permit. After one year from the effective date of the permit the monitoring will be reduced to quarterly.
3. **The pH shall not be less than 5.0 standard units nor greater than 10.0 standard units.**
4. The facility shall employ method 1631E.

***Calendar Year**

If no discharge occurs during the reporting period or the Permittee is unable to obtain a representative sample due to low-flow conditions at the seep, the Permittee shall submit its DMR, as required, and indicate "No Flow" for the seep (15A NCAC 02B .0506(a)(1)(E)).

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

ATTACHMENT D
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

Full Range Whole Effluent Toxicity Monitoring (*Ceriodaphnia Dubia*)

Duke Energy shall perform full range Whole Effluent Toxicity Monitoring of the effluent discharges from both Outfall 003 and Outfall 003A, using ***Ceriodaphnia dubia*** as a test species.

The chronic value for multiple concentration tests will be determined using the geometric mean of the highest concentration having no detectable impairment of reproduction or survival and the lowest concentration that does have a detectable impairment of reproduction or survival. The definition of "detectable impairment," collection methods, exposure regimes, and further statistical methods are specified in the "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-December 2010) or subsequent versions.

Duke Energy shall perform at a minimum, *quarterly* monitoring using test procedures outlined in the "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-December 2010) or subsequent versions. The tests will be performed **during the months of February, May, August, and November**. These months signify the first month of each three month toxicity testing quarter assigned to the facility. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

All toxicity testing results required as part of this SOC condition will be reported using the eDMR system for the months in which tests were performed using the parameter code **THP3B** for the Chronic Value. Additionally, DWR Form AT-3 (original) is to be sent to the following address:

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

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

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

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

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month. Assessment of toxicity compliance is based on the toxicity testing quarter, which is the three month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

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