**DEPARTEMENT OF ENVIRONMENTAL QUALITY**
**DIVISION OF WATER RESOURCES**
**FACT SHEET FOR NPDES PERMIT DEVELOPMENT**
NPDES No. NC0003425

| Facility Information | | | |
|---|---|---|---|
| Applicant/Facility Name: | Duke Energy Progress/Roxboro Steam Electric Generating Plant | | |
| Applicant Address: | 1700 Dunnaway Rd., Semora, NC 27343 | | |
| Facility Address: | 1700 Dunnaway Rd., Semora, NC 27343 | | |
| Permitted Flow | Not limited | | |
| Type of Waste: | 99.8 % Industrial, 0.2% - domestic | | |
| Facility/Permit Status: | Existing/Renewal | | |
| County: | Person | | |
| **Miscellaneous** | | | |
| Receiving Stream: | Hyco Reservoir | Stream Classification: | WS-V, B |
| Subbasin: | 03-02-05 | 303(d) Listed?: | No |
| Drainage Area (mi2): | Lake | Primary SIC Code: | 4911 |
| Summer 7Q10 (cfs) | 0 | Regional Office: | RRO |
| 30Q2 (cfs): | 0 | Quad | Olive Hill |
| Average Flow (cfs): | 0 | Permit Writer: | Teresa Rodriguez |
| IWC (%): | 100% | Date: | 8/23/2016 |

## Summary

The Roxboro Steam Electric Plant is an electric generating facility that uses steam turbine generation (via four coal-fired units with a total net capacity of 2558 MW). Units No. 1 and 2 (385 MWe and 670 MWe, respectively) use condensers as cooling devices. Units No. 3 and 4 (707MWe and 700 MWe, respectively) use cooling towers as cooling devices.

The facility has three existing cooling water intake structures (CWISs). The source water for CWISs No. 1 and 2 is the Hyco Reservoir. The source water for CWIS no. 4 is the site's cooling canal. The facility total intake is approximately 1,114 MGD. The facility discharges to subbasin 030205 in the Roanoke River Basin. Discharges are mostly industrial, with a very small domestic flow (internal Outfall 008) piped to the on-site ash pond. Discharges from the ash pond (internal Outfall 002), once-through cooling water and FGD treatmet sytem (internal outfall 010) are discharged to the Discharge Canal (outfall 003). The Discharge Canal and Coal Pile Runoff (outfall 006) both discharge to Hyco Reservoir. The Hyco Reservoir is a 17.6 $km^2$ waterbody constructed in 1963 by CP&L to serve as a cooling water source. The receiving waterbody is class WS-V; B. The facility is located in the Lower Piedmont area of the state, the applicable state water quality temperature standard is 32°C (89.6° F).

This facility is subject to EPA effluent guideline limits per 40 CFR 423 - Steam Electric Power Generating Point Source Category which were amended November 3, 2015. The facility is also subject to the Cooling Water Intake Structures Rules (40 CFR 125) effective October 14, 2014. The intake flow is > 125 MGD.

The facility operates five internal outfalls and two outfalls to Hyco Reservoir. Duke requested the addition of two new outfalls on the permit; one to reflect the future treatment system for the low volume wastes as the ash basin will be closed and one for seeps and stormwater.

**Description of existing outfalls:**

- **Outfall 003 –** Heated Discharge Canal to Hyco Reservoir. The discharge canal combines all internal outfalls (002, 005, 008, 009, 010) before discharging to Hyco Reservoir. In addition, once-through cooling water from condensers for units 1,2, and 3, once-through cooling water from heat exchangers, seepage from ash pond, and stormwater runoff from plant drainage areas are discharged to the discharge canal.

- **Outfall 006 –** Coal Pile Runoff discharges directly to Hyco Reservoir. Coal pile runoff wastewaters include runoff from the coal pile, limestone pile and gypsum pile, truck wheel wash area and coal handling areas. Treatment is accomplished by neutralization, sedimentation and equalization.

- **Internal Outfall 002 –** Ash Pond discharging to the discharge canal. The ash pond receives wastewater from the following source:
    - Bottom ash transport waters
    - Silo wash water
    - Ash landfill leachate and runoff (this landfill receives CCR from Mayo and Roxboro plants)
    - Dry-ash handling system wash water
    - Blowdown from Unit 4 cooling tower
    - Coal mill rejects and pyrites
    - Sewage treatment plant effluent
    - Low volume waste consisting of boiler blowdown, equipment maintenance cleaning wastewaters, RO reject wastewater and floor drains. Low volume wastes are treated by neutralization.
    - Emergency overflow from FGD system blowdown.

  The ash pond uses precipitation, adsorption, and settling for treatment, which has been determined by NC to be BAT for this facility.

- **Internal Outfall 005 –** Cooling tower blowdown from Unit 4.

- **Internal Outfall 008 –** Treated domestic wastewater. The treatment system consists of a screen, communitor, surge tank, aeration tank, clarifier, chlorine contact chamber and sludge holding tank. A new package plant will be installed to replace the existing plant.

- **Internal Outfall 009** - Chemical metal cleaning waste. Wastewaters from cleaning of the boilers is generated every five to eight years. Every three to five years wastewaters are generated from cleaning the heat exchangers. The wastewaters generated can be treated by evaporation or by neutralization and precipitation.

- **Internal Outfall 010 –** Flue Gas Desulfurization (FGD) treatment system discharging to the discharge canal. The scrubber system removes SOx by mixing flue gas with a

limestone slurry. The blowdown from the scrubber is discharged to a gypsum settling pond system then to a bioreactor which utilizes microorganisms to reduce soluble contaminants to insoluble forms (under anaerobic conditions) that then precipitate from solution. Wastewater is discharged to the ash pond effluent channel. An emergency overflow from the FGD system blowdown discharges to the ash pond.

**Proposed Outfalls:**

- Outfall 001 (Seeps) - The facility identified 16 unpermitted seeps. Seven seeps are engineered drains from the ash basin flowing to the discharge canal. Four non-engineered seeps also flow to the discharge canal. Four seeps from the ash landfill and one from the gypsum pile flow to the intake canal through a common outfall. This outfall was previously designated as outfall 001 in the permit and will be reinstated to monitor the seeps.
- Internal Outfall 012 - Low volume waste and other wastewaters. Duke will build a new dual basin treatment system to treat wastewaters than now go to the ash basin.

**CWA 316 (b)**
The permittee shall comply with the Cooling Water Intake Structure Rule per 40 CFR 125.95. The Division approved the facility request for an alternative schedule in accordance with 40 CFR 125.95(a)(2). The permittee shall submit all the materials required by the Rule with the next renewal application.

**Temperature Mixing Zone – Outfall 003**
The facility is located in the Lower Piedmont area of the state, the applicable state water quality temperature standard is 32°C (89.6° F). The authorized temperature mixing zone for outfall 003 includes the North Hyco Arm downstream of NC Hwy 57, the main body of Hyco Reservoir downstream of the confluence of the Cobbs Creek Arm and the North Hyco Arm and the entire afterbay lake. USGS data at the afterbay monitoring station (USGS Station 02077303) was reviewed for the period of January 2011 to April 2016. Data shows that the temperature water quality standard was not exceeded for this period. Maximum temperature recorded was 30.5°C.

**Instream Monitoring**
The permit requires monitoring of Hyco Reservoir in accordance to the Biological Monitoring Program as approved by the Division. Based on the Division's review of the reports the fish community is comparable to other piedmont reservoirs and no problems were noted.

**DATA REVIEW/PERMIT REQUIREMENTS**

**Internal Outfall 002 – Ash Pond**

This outfall is subject to the Effluent Limitations Guidelines (ELG) in Table 1.
Table 1. ELG Outfall 002 (Prior to November 1, 2018)

| Pollutant | Daily Maximum | Monthly Average | ELG |
|---|---|---|---|
| TSS | 100 mg/l | 30 mg/l | 40 CFR 423.12 (b) (4) |
| Oil & Grease | 20 mg/l | 15 mg/l | 40 CFR 423.12 (b) (4) |

After November 1, 2018 no discharge of bottom ash transport water is allowed as per 40 CFR 423.13 (k) (1) (i). Compliance with this section shall be as soon as possible but no later than December 31, 2023. Duke has submitted a schedule of compliance for meeting the rule by April 30, 2021. Fly ash transport water is not discharge so they will meet the compliance date of November 1, 2018.

The current permit requires monitoring for flow and total selenium, limits for Oil & Grease and TSS. A summary of DMR data for the period of January 2011 to January 2016 is included in Table 2. There have been no violations of permit limits or conditions.

Table 2. DMR Summary Outfall 002

| Parameter | Average | Maximum | Minimum |
|---|---|---|---|
| Flow | 10.8 MGD | 48.3 MGD | 3.1 MGD |
| TSS | 5 mg/l | 21 mg/l | < 2.5 mg/l |
| Total Selenium | 14.6 µg/l | 68.8 µg/l | < 10 µg/l |
| O & G | < 5 mg/l | 13.5 mg/l | < 5 mg/l |

Table 3. Monitoring Requirements/Proposed Changes Outfall 002

| Parameter | Monitoring requirements | Changes | Basis |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B.0505 |
| TSS | 30 mg/l monthly aver<br>100 mg/l daily max | No changes | 40 CFR 423.12(b)(4) |
| Oil & Grease | 15 mg/l monthly aver<br>20 mg/l daily max | No Changes | 40 CFR 423.12(b)(4) |
| Total Selenium | Monthly monitoring | No changes | Pollutant of concern. |
| Turbidity, pH | No requirement | Monitor | Pollutant of concern for dewatering/decanting |

**Internal Outfall 002 – Dewatering**

To meet the requirements of the Coal Ash Management Act of 2014, the facility needs to dewater two ash ponds by removing the interstitial water and excavate the ash to deposit it in landfills. The facility's highest discharge rate from the dewatering process will be 1 MGD. The facility submitted data for the standing surface water in the ash ponds, interstitial water in the ash, and interstitial ash water that was treated by filters of various sizes. The following pollutants were detected at concentrations higher than the water quality standards: selenium, arsenic and molybdenum. A new effluent and monitoring sheet is included in the permit for the ash pond dewatering phase. As this is an internal outfall the water quality standards are not applied. Monitoring will be required for selenium, arsenic, molybdenum, antimony and copper.

Ash Pond Dams:

Seepage through earthen dams is common and is an expected consequence of impounding water with an earthen embankment. Even the tightest, best-compacted clays cannot prevent some water from seeping through them. Seepage is not necessarily an indication that a dam has structural problems, but should be kept in check through various engineering controls and

regularly monitored for changes in quantity or quality which, over time, may result in dam failure.

**Outfall 003 – Discharge Canal (Combined outfalls)**

DMR/Compliance Review

Data were reviewed for the period of January 2011 to March 2016. There have been no violations of permit limits or conditions.

Table 4. DMR Summary Outfall 003

| Parameter | Average | Maximum | Minimum |
|---|---|---|---|
| Flow (MGD) | 840 | 1130 | 6.9 |
| TRC | Not discharged | | |
| TP (mg/l) | < 0.036 | < 0.05 | < 0.05 |
| TN (mg/l) | 0.68 | 1.08 | 0.44 |
| Temperature (°C) | 29 | 41 | 13°C |
| Total Arsenic (µg/l) | 6.2 | 17.1 | < 2.8 |
| pH (SU) | 7.34 | 8 | 6.38 |

Toxicity Testing (003):

Current Requirement: Acute P/F at 90%, February, May, August, November.

Proposed Requirement: Acute P/F at 90%, February, May, August, November.

The facility passed 21 tests out of 21 tests performed for the period of January 2011 to January 2016.

Reasonable Potential Analysis Outfall 003:

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 003. 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." With the approval of the Triennial Review (2007-2014) of the NC Water Quality Standards by the Environmental Management Commission (EMC) in 2014 and US-EPA (with some exceptions) on April 6, 2016, the NPDES Permitting Unit is required to implement the new dissolved metal standards in all permits public noticed after April 6, 2016. The RPA included evaluation of dissolved metals' standards, utilizing measured hardness value of 100 mg/L $CaCO_3$ for hardness-dependent metals.

A reasonable potential analysis was conducted for arsenic, copper, nickel, selenium, strontium, thallium, chlorides and zinc. Arsenic data used for the RPA was collected between 2011 and 2016. Data for the remaining parameters was from a special study for the period of March 2010 to August 2011. Based on this analysis, the following permitting actions are proposed for this permit:

- Monitoring Only. The following parameters will receive a monitor-only requirement since they did not demonstrate reasonable potential to exceed applicable water quality standards/criteria, but the maximum predicted concentration was >50% of the allowable concentration: Arsenic, selenium, chloride and thallium.
- No Limit or Monitoring: The following parameters will not receive a limit or monitoring, since they did not demonstrate reasonable potential to exceed applicable water quality

standards/criteria and the maximum predicted concentration was <50% of the allowable concentration: copper, nickel, strontium, and zinc.

Mercury Evaluation Outfall 003**:**

A mercury evaluation was conducted in accordance with the permitting guidance developed for the implementation of the statewide Mercury TMDL to determine the need for a limit and Mercury Minimization Plan (MMP). Monitoring for mercury is not required for outfall 003 but mercury data was collected during a special study during the period of March 2010 to August 2011. The water quality based effluent limitation (WQBEL) for mercury is 12 ng/l. The technology based effluent limit (TBEL) is 47 ng/l. None of the annual averages exceeds the WQBEL or TBEL, no limit is required. See the attached mercury evaluation spreadsheet.

Table 5. Mercury Evaluation

| | 2010 | 2011 |
|---|---|---|
| # of Samples | 20 | 16 |
| Annual Average, ng/L | 3.6 | 4.4 |
| Maximum Value, ng/L | 7.63 | 6.92 |
| TBEL, ng/L | 47 | |
| WQBEL, ng/L | 12.0 | |

Table 6. Monitoring Requirements/Proposed Changes Outfall 003

| **Parameter** | **Monitoring requirements/Limits** | **Changes** | **Basis** |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B.0505 |
| TRC | 200 µg/l instantaneous max | Modified limit to 28 µg /l daily max | State WQ standards, 15A NCAC 2B .0200. The water quality standard is more stringent than the effluent guidelines limit. |
| TP | Monitor | No changes | 15A NCAC 2B .0500 |
| TN | Monitor | No changes | 15A NCAC 2B .0500 |
| Temperature | Monitor | No changes | Approved Mixing zone |
| Total Arsenic | Monitor | No changes | Based on results from RPA, Predicted concentration greater than 50% of allowable. |
| Total Selenium | No requirement | Quarterly monitoring | Based on results from RPA, Predicted concentration greater than 50% of allowable. |
| Total Thallium | No requirement | Quarterly monitoring | Based on results from RPA, Predicted concentration greater than 50% of allowable. |
| Chloride | No requirement | Quarterly monitoring | Based on results from RPA, Predicted |

| | | | |
|---|---|---|---|
| | | | concentration greater than 50% of allowable. |
| pH | 6 to 9 SU | No changes | State WQ standards, 15A NCAC 2B .0200 |
| Acute toxicity | P/F 90% | No changes | State WQ standards, 15A NCAC 2B .0200 |

**Internal Outfall 005 – Cooling Tower Blowdown from Unit 4**

This outfall is subject to the ELGs in Table 7.

Table 7. ELG Outfall 005

| Pollutant | Daily Maximum | Monthly Average | ELG |
|---|---|---|---|
| pH | 6 to 9 SU | | 40 CFR 423.12 (b) (1) |
| Free Available Chlorine | 0.5 mg/l | 0.2 mg/l | 40 CFR 423.12 (d) (1) |
| 126 Pollutants | No detectable amounts | | 40 CFR 423.13 (d) (1) |
| Total Chromium | 0.2 mg/l | 0.2 mg/l | 40 CFR 423.13 (d) (1) |
| Total Zinc | 1.0 mg/l | 1.0 mg/l | 40 CFR 423.13 (d) (1) |

The permit includes monitoring for flow and Total Residual Chlorine (TRC), limits for Free Available Chlorine, Total Chromium, Total Zinc and 126 priority pollutants.

Special condition A. (14) in the permit doesn't allow the discharge of the cooling tower blowdown to the discharge canal, it has to be discharged to the ash pond. With the modifications planned to the site and the future closure of the existing ash pond Duke will like to have the option to discharge the blowdown to the discharge canal. This will continue to be an internal outfall subject to the same limits under 40 CFR 423. The limits apply before it comingles with any other waste stream so there is no change in limits or other permit conditions by allowing the cooling tower blowdown to discharge into the discharge canal.

DMR/Compliance Review:
Data were reviewed for the period of January 2011 to January 2016. There have been no violations of permit limits or conditions. Flow was the only parameter monitored at this outfall since the facility did not chlorinate or added chromium or zinc for maintenance activities. Flow is reported as 7.2 MGD on a daily basis.

Table 8. Monitoring Requirements/Proposed Changes Outfall 005

| Parameter | Monitoring Requirements/Limits | Changes | Basis |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B.0505 |
| Free available chlorine | 500 µg/l daily max<br>200 µg/l monthly average | No changes | 40 CFR 423.13 (d)(1) |
| Total Residual Chlorine | Monitoring | No changes | 40 CFR 423.13 (d)(2) |
| Total chromium | 200 µg/l daily max | No changes | 40 CFR 423.13 (d)(1) |

| | | | |
|---|---|---|---|
| | 200 µg/l monthly average | | |
| Total Zinc | 1.0 mg/l daily max<br>1.0 mg/l monthly average | No changes | 40 CFR 423.13 (d)(1) |
| The 126 priority pollutants | No detectable amount | No changes | 40 CFR 423.13 (d)(1) |

**Outfall 006 – Coal Pile Runoff**
This outfall is subject to the ELG in Table 9.

Table 9. ELG Outfall 006

| Pollutant | Daily Maximum | Monthly Average | ELG |
|---|---|---|---|
| TSS | 50 mg/l | | 40 CFR 423.12 (b) (9) |
| pH | 6 to 9 SU | | 40 CFR 423.12 (b) (1) |

DMR/Compliance Review:
Data were reviewed for the period of January 2008 to March 2013. There have been no violations of permit limits or conditions.

Table 10. DMR Summary Outfall 006

| Parameter | Average | Maximum | Minimum |
|---|---|---|---|
| Flow (MGD) | 0.23 | 0.05 | 0.002 |
| TSS (mg/l) | 2.6 | 76.6 | < 2.5 |
| pH (SU) | 7.39 | 8.9 | 6.04 |

Priority Pollutant Scan:
The application included the results of one scan. Selenium was detected above the water quality standard. Monitoring for selenium was added to the permit.

Table 11. Monitoring Requirements/Proposed Changes Outfall 006

| Parameter | Monitoring requirements/Limits | Changes | Basis |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B .05 |
| TSS | 50 mg/l instantaneous max | Added Monthly average limit of 30 mg/l | 40 CFR 423.12(b)(9), 40 CFR 122.45 |
| pH | 6 to 9 SU | No changes | 40 CFR 423.12 (b) (1) |
| Total selenium | No requirement | Quarterly Monitoring | Detected in the PPA |
| Acute toxicity | P/F 90% | No changes | State WQ standards, 15A NCAC 2B .0200 |

**Internal Outfall 008 – Domestic WWTP**

Table 12. DMR Review Outfall 008

| Parameter | Average | Maximum | Minimum |
|---|---|---|---|
| Flow (MGD) | 0.007 | 0.01 | 0.002 |
| TSS (mg/l) | 14.7 | 30 | 5 |
| pH (SU) | 6.8 | 7.3 | 6.5 |
| BOD (mg/l) | 10.4 | 28 | 2.1 |
| NH3N (mg/l) | 0.8 | 1.6 | < 0.1 |

Table 13. Monitoring Requirements/Proposed Changes Outfall 008

| Parameter | Monitoring requirements/Limits | Changes | Basis |
|---|---|---|---|
| Flow | 0.015 MGD | Add effluent page for 0.025 MGD | WWTP will be upgraded during this permit cycle |
| TSS | 30 mg/l monthly aver 45 mg/l daily max | No changes | NPDES rules for secondary treatment of domestic wastewater, 15A 2B .0400 |
| pH | 6 to 9 SU | No changes | State WQ standards, 15A 2B .0200 |
| BOD | 30 mg/l monthly aver 45 mg/l daily max | No changes | NPDES rules for secondary treatment of domestic wastewater, 15A 2B .0400 |
| Total ammonia | Monitor | No changes | DWQ Policy |

**Internal Outfall 009 – Chemical cleaning waste**

Table 14. Monitoring Requirements/Proposed Changes Outfall 009

| Parameter | Monitoring requirements/Limits | Changes | Basis |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B.0505 |
| Total Copper | 1.0 mg/l monthly aver 1.0 mg/l daily max | No changes | 40 CFR 423.13 (e) |
| Total Iron | 1.0 mg/l monthly aver 1.0 mg/l daily max | No changes | 40 CFR 423.13 (e) |
| TSS | 30 mg/l monthly aver 100 mg/l daily max | No changes | 40 CFR 423.13 (e) |
| Oil & Grease | 15 mg/l monthly aver 20 mg/l daily max | No changes | 40 CFR 423.13 (e) |

**Internal Outfall 010 – FGD**

This outfall is subject to the Effluent Limitations Guidelines (ELG) in Table 15. These are new limitations promulgated November 3, 2015.

Table 15. ELG Outfall 010

| Pollutant | Daily Maximum | Monthly Average | ELG |
|---|---|---|---|
| pH | 6 to 9 SU | | 40 CFR 423.12 (b) (1) |
| TSS | 100 mg/l | 30 mg/l | 40 CFR 423.12 (b) (11) |
| Oil and grease | 20 mg/l | 15 mg/l | 40 CFR 423.12 (b) (11) |
| Total Arsenic | 11 µg/l | 8 µg/l | 40 CFR 423.13 (g) (1) (i) |
| Total Mercury | 788 ng/l | 356 ng/l | 40 CFR 423.13 (g) (1) (i) |
| Total Selenium | 23 µg/l | 12 µg/l | 40 CFR 423.13 (g) (1) (i) |
| Nitrate/nitrite | 17 mg/l | 4.4 mg/l | 40 CFR 423.13 (g) (1) (i) |

The rule establishes compliance dates for the new limitations. Permittee must meet limits as soon as possible beginning on November 1, 2018 but no later than December 31, 2023. Duke will construct a new treatment system and requested a compliance date of December 31, 2023. As the new treatment system will be placed in operation and the old pond may still discharge until it is decommissioned. A new outfall is included in the permit for the new system.

The current permit includes monitoring for flow, total beryllium, total mercury, total antimony, total selenium, total silver and total vanadium. Table 16 includes a summary of DMR data for the period of January 2011 to January 2016. There have been no violations of permit limits or conditions.

Table 16. DMR Summary Outfall 010

| Parameter | Average | Maximum | Minimum |
|---|---|---|---|
| Flow (MGD) | 0.84 | 1.77 | 0.01 |
| Total Beryllium (µg/l) | 3.9 | 10 | < 1 |
| Total Mercury (µg/l) | 1.08 | 9.6 | < 1 |
| Total Selenium (µg/l) | 102 | 712 | < 50 |
| Total Silver (µg/l) | 6 | 8.4 | < 5 |
| Total Antimony (µg/l) | 31 | 70 | < 25 |
| Total Vanadium (µg/l) | < 25 | < 25 | < 5 |

Table 17. Monitoring Requirements/Proposed Changes Outfall 010

| Parameter | Monitoring requirements/Limits | Changes | Basis |
|---|---|---|---|
| Flow | Monitor | No changes | 15A NCAC 2B.0505 |
| Total Beryllium | Monitor | Remove monitoring | Internal outfall, not a parameter of concern. |
| Total Vanadium | Monitor | Remove monitoring | Internal outfall, not a parameter of concern. |
| Total Antimony | Monitor | Remove monitoring | Internal outfall, not a parameter of concern. |
| Total Silver | Monitor | Remove monitoring | Internal outfall, not a parameter of concern. |

| | | | |
|---|---|---|---|
| Total Arsenic | No monitoring | Add limits of 11 µg/l daily maximum and 8 µg/l monthly average | 40 CFR 423.13 (g) (1) (i) |
| Total Selenium | Monitor | Add limits of 23 µg/l daily maximum and 12 µg/l monthly average | 40 CFR 423.13 (g) (1) (i) |
| Nitrate/Nitrite | No monitoring | Add limits of 17 mg/l daily maximum and 4.4 mg/l monthly average | 40 CFR 423.13 (g) (1) (i) |
| Total Mercury | Monitoring | Add limits of 788 ng/l daily maximum and 356 ng/l monthly average. | 40 CFR 423.13 (g) (1) (i) |

**Proposed Outfalls:**

Outfall 001

The facility identified 16 unpermitted seeps. Data collected on the seeps was reviewed to determine the need for limits. Five seeps discharge to the intake canal at Hyco Reservoir. The point of discharge is where former Outfall 001 used to discharge. The Division will reinstate outfall 001 to monitor the discharge from the seeps.

Table 18. Outfall 001 Proposed Limits/Monitoring:

| Parameter | Monitoring requirements/Limits | Basis |
|---|---|---|
| Flow | Monitor | 15A NCAC 2B.0505 |
| pH | 11 | State WQ standards, 15A 2B .0200 |
| Total copper, total antimony, total lead | Monitor | Detected below the wqs |
| Fluoride | Limit – 1.8 mg/l | Detected above the wqs |
| Total Arsenic | Limit – 10 µg/l | Detected above the wqs |
| Total Selenium | Limits 5 µg/l Monthly Average 56 µg/l Daily Max | Detected above the wqs |
| Sulfites | Limit – 250 mg/l (Monthly average & daily max) | Detected above the wqs |
| TDS, Hardness, Conductivity | Monitor | Parameters of concern |
| Acute toxicity | Quarterly Limit | State WQ standards, 15A NCAC 2B .0200 |

The remaining 11 seeps all drain to the discharge canal near the ash basin, 7 of those are chimney drains from the ash basin dam. The flow from the combined seeps account for less than 0.0005 % and will be included in the authorized wastewaters discharging through outfall 003.

Internal Outfall 012
A new treatment system will be installed to divert wastewaters from the ash basin. The proposed system consists of two lined basins discharging to the effluent discharge canal. Low volume wastes, metal cleaning wastes, stormwater, and other miscellaneous wastes that are routed to the ash basin will be routed to this new treatment system.

Table 19. Outfall 012 Proposed Limits/Monitoring:

| Parameter | Monitoring requirements/Limits | Basis |
|---|---|---|
| Flow | Monitor | 15A NCAC 2B.0505 |
| Total Suspended Solids | 30 mg/l Monthly Average<br>100 mg/l Daily Max | 40 CFR 423.12 (b)(3) |
| Oil & Grease | 15 mg/l Monthly Average<br>100 mg/l Daily max | 40 CFR 423.12 (b)(3) |

## ADDITIONAL CHANGES TO PERMIT

- A separate effluent page for the dewatering of the ash ponds (Outfall 002) was added to the permit.
- Outfall 001 was reinstated to monitor discharge of seeps and stormwater.
- A new internal outfall (Outfall 011) was added to the permit to monitor the discharge from the proposed FGD treatment system.
- A new internal outfall (Outfall 012) was added to the permit for the proposed retention basin for wastewaters previously treated in the ash pond.
- Special Condition A.(14) that prohibited the discharge of cooling tower blowdown from outfall 005 to the discharge canal was eliminated from the permit.
- A special condition was added to describe Section 316(b) requirements for submittal of applicable information.
- A special condition was added to the permit to require an Ash Pond Closure Plan
- A Special Condition was added to the permit to require compliance with Senate Bill 729 (Coal Ash Management Act).
- Attachment 1 entitled "Groundwater Monitoring Plan" was added to the permit.

## PROPOSED SCHEDULE FOR PERMIT ISSUANCE

Draft Permit to Public Notice: August 24, 2016
Permit Scheduled to Issue: October 17, 2016

## STATE CONTACT

If you have any questions on any of the above information or on the attached permit, please contact Teresa Rodriguez at (919) 807-6387.

NAME: Teresa K DATE: 8/24/2016