NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Raleigh Regional Office
County: Person
NC Facility ID: 7300045
Inspector's Name: Matthew Mahler
Date of Last Inspection: 06/24/2021
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Duke Energy Progress, LLC - Mayo Electric Generating Plant

Facility Address:
Duke Energy Progress, LLC - Mayo Electric Generating Plant
10660 Boston Road
Roxboro, NC 27574

SIC: 4911 / Electric Services
NAICS: 221112 / Fossil Fuel Electric Power Generation

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02Q .0501(b)(1), 02Q .0402 Acid Rain
NSPS: NA
NESHAP: NA
PSD: NA
PSD Avoidance: NA
NC Toxics: NA
112(r): NA
Other: 40 CFR 97 Subpart BBBBB

Contact Data

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Application Data

Application Number: 7300045.21B (Title V Renewal) and 7300045.21A (Title IV Renewal)
Date Received: 02/26/2021 and 02/12/2021
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 03478/T48
Existing Permit Issue Date: 05/05/2021
Existing Permit Expiration Date: 11/30/2021

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	1123.20	1280.35	22.59	190.69	207.18	6.67	4.51 [Hydrogen chloride (hydrochlori]
2018	1412.60	1583.64	22.17	187.07	209.03	6.56	4.44 [Hydrogen chloride (hydrochlori]
2017	1511.00	1304.68	19.43	164.93	158.58	6.13	4.23 [Hydrogen chloride (hydrochlori]
2016	2736.90	1561.18	28.64	241.96	245.48	7.66	5.01 [Hydrogen chloride (hydrochlori]
2015	2484.20	2590.72	41.32	347.04	331.13	9.91	4.98 [Hydrogen chloride (hydrochlori]

Review Engineer: Ed Martin

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 03478/T49
Permit Issue Date:
Permit Expiration Date:

Chronology

February 12, 2021	Title IV renewal application 7300045.21A received and complete for processing.
February 26, 2021	Title V renewal application 7300045.21B received and complete for processing.
September 7, 2021	The draft permit and review were sent to Erin Wallace at DEP for comment.
September 15, 2021	The draft permit was re-sent to Erin Wallace at DEP for comment for changes to Sections 2.1.A.2.g and h for the NOx, SO2, and PM CEMS.
October 1, 2021	DEP stated that they had no comments on the draft permit.

I. Purpose of Applications

Application 7300045.21B

The purpose of this permit application is to renew the existing Title V permit pursuant to 02Q .0513. The renewal application was received on February 26, 2021, at least six months before the November 30, 2021, expiration date of the current permit; therefore, the application was filed in a timely manner and the application shield pursuant to 15A NCAC 02Q .0512(b)(1) remains in effect. This renewal permit is being issued for another 5-year term and will expire 5 years from the date of issuance.

DEP requested the following permit updates in the application:

1. Add a propane-fired seep collection backup engine (100 kW) and associated propane tank to the insignificant activities list. This is added as IS-34.

2. Add the following as footnote 7 to the permit Section 1 table of emission sources. This has typically been incorporated in several Duke Energy permits.

   Incidental spills of oil, antifreeze, etc. from mobile equipment that might get on the coal are allowed to be burned in these boilers.

3. Remove the PSD avoidance condition in Section 2.1 A.6 for emissions of $PM_{2.5}$ when injecting activated carbon or similar sorbent in the flue gases of the Unit 1A Boiler and Unit 1B Boiler. DEP had requested this condition be added in application 7300045.12B to evaluate the effectiveness of activated carbon injection for removal of mercury emissions from the flue gases of the coal-fired boilers for compliance with the Mercury and Air Toxics Standards (MATS), and the condition was added to permit T38 on February 26, 2013. At that time, the technology was to be used in a feasibility study to determine its effectiveness for compliance with the MATS rule and was, and is not, required to assure compliance with any current applicable requirement for the boilers. DEP now requests that this activity be removed.

4. DEP requested the following sources that have not been constructed be removed from the permit.

   Remove sodium carbonate storage silo (ID No. SILO7) and associated bin vent filter (ID No. BF6) in Section 2.1 B of the permit

   Removed sorbent (lime or hydrated lime) silo ES-SORB2 and associated bagfilter BF8, and sorbent pneumatic conveying equipment ES-SORB5 in Section 2.1 I.

   Remove dry fuel additive receiving silos FHSILOA and FHSILOB and associated bagfilters BF-FHSILOA and BF-FHSILOB in Section 2.1 J of the permit.

This permit change is a significant Title V permit modification that does not contravene or conflict with a condition in the existing permit pursuant to rule 15A NCAC 02Q .0501(b)(1). Public notice of the draft permit is required.

The following application was consolidated with this application:

Application 7300045.21A (consolidated with Application 7300045.21B)
DEP has submitted a renewal Acid Rain Permit Application for the Unit 1A Boiler and Unit 1B Boiler. The revised Acid Rain Application, dated February 9, 2021, was received February 12, 2021, at the Raleigh Regional Office.

II. Permit Changes

The following changes were made to Air Quality Permit No. 03478T48:

Page No.	Section	Change
Throughout	Throughout	Updated permit/application numbers and dates.
--	Insignificant Activities List	Added IS-34.
--	TOC	Revised the Acid Rain Permit Application date.
3	1, table of permitted emission sources	Removed sodium carbonate storage silo SILO7 and associated bin vent filter BF6.
5		Removed sorbent silo ES-SORB2 and associated bagfilter BF8.
		Removed sorbent pneumatic conveying equipment ES-SORB5.
		Removed dry fuel additive receiving silos FHSILOA and FHSILOB and associated bagfilters BF-FHSILOA and BF-FHSILOB.
6		Added footnote 7.
7	2.1 A, regulation table	Removed "Federally-Enforceable Only" for the Cross State Air Pollution Rule 40 CFR Part 97 for sulfur dioxide and nitrogen oxides. Corrected the Cross State Air Pollution Rule 40 CFR Part 97 to Subpart CCCCC for sulfur dioxide and corrected the Cross State Air Pollution Rule 40 CFR Part 97 to Subpart AAAAA only for nitrogen oxides.
8		Removed 15A NCAC 02Q .0317 (Avoidance of PSD) for emissions of $PM_{2.5}$. Added 02Q .0317 (PSD Avoidance of 02Q .0700) to correct previous permit.
10	2.1 A.2.g	Revised this section.
11	2.1 A.2.h	Revised this section.
12	2.1 A.5	Removed "Federal-Enforceable Only" and removed 40 CFR Part 97, Subpart BBBBB.
12	2.1 A.6	Removed this PSD avoidance condition for emissions of $PM_{2.5}$ when injecting activated carbon or similar sorbent in the flue gases of the Unit 1A Boiler and Unit 1B Boiler.
21	2.1 B	Removed sodium carbonate storage silo (ID No. SILO7) and associated bin vent filter (ID No. BF6).
37	2.1 I	Removed sorbent silo ES-SORB2 and associated bagfilter BF8, and sorbent pneumatic conveying equipment ES-SORB5.
38	2.1 J	Removed this section as dry fuel additive receiving silos FHSILOA and FHSILOB and associated bagfilters BF-FHSILOA and BF-FHSILOB have been removed.

53-54	2.4	Removed effective dates. Effective dates are the same as the Title V permit itself. Revised the Acid Rain Permit Application date in Section 2.4 E.

III. Permit History

December 6, 2016	Permit No. 03478T45 was issued for Title V and Title IV renewals.
May 26, 2017	Permit No. 03478T46 was issued as a TV-Minor modification to correct the particulate matter (PM) standard for the NSPS-subject Unit 1A and 1B boilers. The NSPS Subpart D at 40 CFR 60.42(a) includes a PM standard in the form of 0.10 lb/million Btu and 20 percent opacity for fossil fuel-fired steam generators. However, in accordance with 40 CFR 60.42(c), the owner or operator, who elected to use CEMS (continuous emissions monitoring system) to measure PM emissions, can petition the EPA Administrator (in this case, DAQ Director) to comply with the PM standard in 40 CFR 60.42Da(a) (Subpart Da), in lieu of the above Subpart D standard. Under this provision of Subpart Da, the PM mass emission limit is not to exceed 0.03 lb/million Btu and the owner or operator is exempt from the opacity standard specified in 40 CFR 60.42Da(b)(1).
September 15, 2017	Permit No. 03478T47 was issued as a one-step significant modification to remove the use of a "halide salt" additive in its coal. Duke initially planned to use halide salt additives in order to comply with mercury emission limits under 40 CFR Part 63, Subpart UUUUU and requested to add halide salts to the permit in application 7300045.15D, and this was incorporated into the T43 permit. However, this was removed in permit T47 because Duke no longer planned to use the additives since they discovered that it was not necessary for compliance with Subpart UUUUU. Therefore, Duke wanted all references to the additive removed from the permit including a PSD avoidance limit regarding PM2.5 emissions related to the use of the halide salt additive.
May 5, 2021	Permit No. 03478T48 was issued as the first step of a two-step significant permit modification to close the existing Mayo Plant Ash Basin and Flue Gas Desulfurization Pond via excavation and place the excavated coal combustion residuals (CCR) in a new lined Closure Landfill. This was mandated in order to comply with the North Carolina Coal Ash Management Act of 2014, as amended (CAMA), the federal Disposal of Coal Combustion Residuals from Electric Utilities rule (CCR Rule) and the North Carolina Department of Environmental Quality (NC DEQ) Closure Determination of April 1, 2019.
TBD	Permit No. 03478T49 was issued.

IV. Facility Description

The Mayo Plant consists of two coal and oil-fired utility boilers (Units 1A and 1B). The boilers are each equipped with electrostatic precipitators, selective catalytic reduction (SCR), sorbent injection, and flue gas desulfurization (FGD) for emissions control. Ancillary equipment and activities include fuel oil and other petroleum storage tanks, coal handling and storage, gypsum handling and storage, limestone handling and storage, and emergency engines.

V. Regulatory Evaluation

The facility is subject to the following source-by-source regulations, in addition to the requirements in the General Conditions:

A. Two coal/No. 2 fuel oil/recycled No. 2 fuel oil-fired electric utility boilers equipped with low-NOx burner systems, sodium coal conditioning, and alkaline-based fuel additive (ID Nos. Unit 1A Boiler and Unit 1B Boiler), each exhausting to two electrostatic precipitators operating in parallel (ID Nos. ESP1 and 2 and ESP3 and 4), a selective catalytic reduction system (ID Nos. SCR1A and SCR1B), a sorbent injection system (ID Nos. SORB1A and SORB1B), and a common flue gas desulfurization system (ID No. SCRUBBER)

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART D)

   The Unit 1A and 1B boilers have a 4,512.5 million Btu per hour rated heat input each. Subpart D applies to emissions of sulfur dioxide, nitrogen oxides, and particulate matter from each fossil-fuel-fired steam generating unit of more than 250 million Btu per hour that commenced construction or modification after August 17, 1971.

   For particulate matter, the limit was changed from the NSPS Subpart D PM standard of 0.10 lb/million Btu and 20 percent opacity for fossil fuel-fired steam generators, as specified at 40 CFR 60.42(a), to the Subpart Da limit of 0.03 lb/million Btu as specified in 40 CFR 60.42Da(a) in permit 03478T46 on May 26, 2017. In accordance with 40 CFR 60.42(c), as an alternate to meeting the PM requirement in 40 CFR 60.42(a), the Permittee has elected to use CEMS (continuous emissions monitoring system) to measure PM emissions and therefore has petitioned the EPA Administrator (in this case, DAQ Director) to comply with the PM standard in 40 CFR 60.42Da(a), in lieu of the above Subpart D standard. Under this provision of Subpart Da, the PM mass emission limit is not to exceed 0.03 lb/million Btu and the owner or operator is exempt from the opacity standard specified in 40 CFR 60.42Da(b)(1).

   Emission Limits

   The following emissions limits shall not be exceeded:

POLLUTANT	EMISSION LIMIT (Pounds per million Btu)
Sulfur Dioxide [40 CFR 60.43]	[y (0.80)+z (1.2)]/(y+z)*
Nitrogen Oxides (as NO_2) [40 CFR 60.44]	[y (0.30)+z (0.70)]/(y+z)*
Particulate Matter [40 CFR 60.42Da via 40 CFR 60.42]	0.03

   * Where:
   y = percentage of total heat input derived from liquid fossil fuel
   z = percentage of total heat input derived from solid fossil fuel

   Testing

   A stack test shall be conducted once per calendar year for particulate matter in accordance with either Method 5 at a sample temperature of 320° ± 25° F as described in 40 CFR 63.10010(i)(1) or Method 5B of Appendix A of 40 CFR Part 60. In the event that a boiler exceeds 80 percent of its particulate emission limit during the stack test, the Permittee shall schedule and conduct another stack test within six months. Upon demonstration that the source is operating under 80 percent of its particulate limit, as shown by three consecutive semiannual stack tests, the source may resume annual stack tests.

   Monitoring/Recordkeeping

   The Permittee shall install, maintain, and operate a continuous emission monitor system (CEMS) for measuring sulfur dioxide emissions, nitrogen oxide emissions, particulate matter emissions, and either oxygen or carbon dioxide, as per the requirements of 40 CFR Part 75.

   Compliance with SO_2 and NO_x emission limits shall be determined by averaging hourly

continuous emission monitoring system values over any three-hour (rolling) period.

Compliance with the particulate matter limit shall be determined using the PM CEMS based on a 24-hour daily (block) average of the hourly arithmetic average emissions concentrations.

At a minimum, valid PM CEMS hourly averages shall be obtained for 75 percent of all operating hours on a 30-day rolling average basis. Valid PM CEMS hourly averages shall be obtained for 90 percent of all operating hours on a 30-day rolling average basis. At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

Reporting

The Permittee shall submit excess emissions and monitoring system performance reports for the sulfur dioxide, nitrogen oxide, and particulate matter CEMS. The reports shall be postmarked on or before the 30th day following the end of each calendar year quarter and shall include, as a minimum, the information required in 40 CFR 60.7(c), as follows:

a. Sulfur Dioxide - Report all three-hour periods of excess emissions (pounds per million Btu) during the reporting period including periods exempted during startup, shutdown and malfunction.
b. Nitrogen Oxides - Report all three-hour periods of excess emissions (pounds per million Btu) during the reporting period including periods exempted during startup, shutdown and malfunction.
c. Particulate Matter – Report all 24-hour daily (block) average excess emissions (pounds per million Btu) using the CEMS outlet data, including periods exempted during startup, shutdown, and malfunction; within 15 days of a written request, report all PM CEMS hourly averages (in written or electronic format) to show, at a minimum, that valid PM CEMS hourly averages have been obtained for 90 percent of all operating hours on a 30-day rolling average basis.

The results of any stack test shall be reported within 30 days, and the test report shall be submitted within 60 days after the test.

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

The Mayo Electric Generating Plant was a PSD source at startup since it began operation after the PSD applicability date of August 7, 1980. The testing, monitoring, recordkeeping and reporting under PSD are the same as for NSPS above, with the exception that the particulate matter limit is the 0.10 lb/million Btu originally established as the BACT limit, when it was the same as the NSPS limit, before being reduced the 0.03 lb/million Btu as noted above.

Emission Limits

The following emission limits shall not be exceeded:

POLLUTANT	**EMISSION LIMIT** (pounds/million Btu)
Sulfur Dioxide	[y(0.80) + z(1.2)]/(y+z)*
Nitrogen Oxides (as NO_2)	[y(0.30) + z(0.70)]/(y+z)*
Particulate Matter	0.10

* Where:
y = percentage of total heat input derived from liquid fossil fuel
z = percentage of total heat input derived from solid fossil fuel

Testing

A stack test shall be conducted for particulate matter as shown in Section V.A.1 above under NSPS.

Monitoring/Recordkeeping

The Permittee shall comply with the applicable monitoring and recordkeeping requirements shown in Section V.A.1 above under NSPS with the following exceptions.

a. SO_2, NO_X and PM CEMS data reported to meet the requirements of this section shall include data substituted using the missing data procedures in Subpart D of 40 CFR Part 75 except that unbiased values may be used. The missing data procedure shall be used whenever the emission unit combusts any fuel.
b. Excess emissions for SO_2 and NO_X shall be defined as any three-hour (rolling) average emission rate that exceeds the emission limits in Section 2.1 A.2.b.
c. Excess emissions for PM shall be defined as any 24-hour daily (block) average of the hourly arithmetic average emissions concentrations using the CEMS outlet data each boiler operating day that exceeds the emission limits in Section 2.1 A.2.b.
d. Monitor downtime shall:
(A) not exceed 5.0 percent of the operating time in a calendar quarter, and
(B) be calculated using the following equation:

$$\%MD = \left(\frac{\text{Total Monitor Downtime}}{\text{Total Source Operating Time}}\right) \times 100$$

Where:

"Total Monitor Downtime" is the number of hours in a calendar quarter where an emission source was operating but data from the associated CEMS are invalid, not available, or filled with the missing data procedure.

"Total Source Operating Time" is the number of hours in a calendar quarter where the emission source associated with the CEMS was operating.

Reporting
The Permittee shall report excess emissions for all periods of operation, including start-up, shutdown, and malfunction.

3. 15A NCAC 02Q .0402 ACID RAIN PERMITTING PROCEDURES (40 CFR Part 72) Phase II Acid Rain Permit Requirements
DEP submitted a renewal Acid Rain Permit Application, received February 12, 2021 (application 7300045.21A), for these sources.

The effective dates of the acid rain portion of the permit are the same as the Title V permit itself. The Acid Rain Permit Application dated February 9, 2021 will become part of the Title V permit (as an attachment).

The applicable acid rain rules for these sources, as specified in the Acid Rain Permit Application includes the following emission and monitoring requirements:

15A NCAC 02Q .0402 Acid Rain Procedures (40 CFR Part 72 Permits Regulation)
North Carolina air quality regulation 15A NCAC 02Q .0400 implements Phase II of the federal acid rain program pursuant to Title IV of the CAA as provided in 40 CFR Part 72. Issuance or denial of acid rain permits shall follow the procedures under 40 CFR Part 70 (Title V) and Part 72. If the provisions or requirements of Part 72 conflict with or are not included in Part 70, the Part 72 provisions and requirements shall apply and take precedence. SO_2 allowances are not allocated by U.S. EPA for new units under 40 CFR Part 72; however, the sources must hold enough SO_2 allowances to cover their annual SO_2 emissions.

15A NCAC 2Q .0400 "Acid Rain Procedures" (40 CFR Part 73 "Sulfur Dioxide Allowance System")
Establishes the procedures for allocation, tracking, holding and transfer of sulfur dioxide emission allowances, including the initial allowances allocated to each applicable Phase II

unit account to be held in calendar years 2000 through 2009 (per Table 2, column C) and in calendar years 2010 and each year thereafter (Table 2, column F).

15A NCAC 2Q .0400 "Acid Rain Procedures" (40 CFR Part 76 "Acid Rain Nitrogen Oxides Emission Reduction Program")
Each coal-fired utility unit that is subject to an Acid Rain emissions limit for SO_2 under Phase I or Phase II of the CAA must meet the NOx emission limitations under 40 CFR Part 76 in compliance with 40 CFR 76.5, 76.6 or 76.7, as shown in the application.

15A NCAC 02Q .0402 Acid Rain Procedures (40 CFR Part 75 Continuous Emissions Monitoring)
This regulation establishes requirements for the installation, certification, operation, and maintenance of continuous emissions or opacity monitoring systems.

4. CROSS STATE AIR POLLUTION RULES (CSAPR) PERMIT REQUIREMENTS
The CSAPR trading programs requirements of 40 CFR Part 97, Subpart AAAAA "TR NOx Annual Trading Program", Subpart BBBBB "TR NOx Ozone Season Trading Program", and Subpart CCCCC "TR SO_2 Group 1 Trading Program" were previously included in the permit. However, DAQ has concluded that the previously applicable requirements of the Cross-State Air Pollution Rule in Subpart BBBBB of 40 CFR 97 for ozone season NOx for the Title V permits for all affected units in NC no longer apply and will be removed as follows.

Removal of CSAPR NOx Ozone Season (Subpart BBBBB) Trading Program Requirements
Background
The EPA established the original Cross-State Air Pollution Rule (CSAPR or "Transport Rule")[1] to address the interstate transport of emissions with respect to the 1997 ozone National Ambient Air Quality Standards (NAAQS) and the 1997 and 2006 fine particulate matter (PM2.5) NAAQS. This CSAPR was a federal implementation plan (FIP), requiring the upwind states to eliminate their "significant" contributions to the downwind states' non-attainment of these pollutants. With regard to the NOx ozone season trading program under this rule, EPA required NOx reductions in two phases (Phase 1 and Phase 2) for the affected states including NC.

Then the EPA finalized the CSAPR Update (CSAPR Update)[2] to address the interstate transport of emissions with respect to the 2008 ozone NAAQS. Through this rulemaking, EPA determined that NC did not contribute significantly to nonattainment in or interference with maintenance for the 2008 ozone standard for any downwind states[3]. Thus, EPA did not finalize the FIP for NC for this NAAQS, because the EPA's analysis supporting the final rule did not indicate that NC was linked to any identified downwind nonattainment or maintenance receptors with respect to the 2008 ozone standard[4].

In addition, because the 2008 ozone NAAQS is more stringent than the 1997 ozone NAAQS, EPA concluded that North Carolina was not linked to any remaining air quality concerns with respect to the 1997 ozone standard for which the state was regulated in the original CSAPR as above[5].

Addressing the D. C. Circuit Court[6] remand with respect to NC's Phase 2 NOx budget under the 1997 ozone standard, EPA concluded that the emissions from the state did not significantly contribute to nonattainment or interfere with maintenance of either the 1997 ozone NAAQS or 2008 ozone NAAQS in other states, and removed the state from the CSAPR ozone season trading program beginning in 2017 when the Phase 2 ozone season emission budget was scheduled to be

[1] 76 FR 48208 (August 8, 2011).
[2] 81 FR 74504 (October 26, 2016).
[3] 81 FR 74506, 74507.
[4] Id., 81 FR 74524.
[5] Id.
[6] *EME Homer City Generation, L.P., v. EPA*, No. 795 F.3d 118, 129–30, 138, July 28, 2015.

implemented[7]. Accordingly, starting with the 2017 ozone season, NC was no longer subject to the CSAPR NOx ozone season trading program requirements (40 CFR 97 Subpart BBBBB) and electric generating units (EGUs) in the state were not allocated further allowances by EPA nor obligated to demonstrate compliance with CSAPR NOx ozone season requirements[8][9].

Even for the more stringent 2015 ozone NAAQS, EPA proposed[10] to approve NC's State Implementation Plan (SIP), concluding that North Carolina sources would not significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state. EPA supplemented[11] this approval with the updated modeling analysis based on the most current and technically accurate information, supporting its finding that NC's implementation plan contained adequate measures to prohibit emissions that would significantly contribute or interfere with the maintenance of the 2015 ozone standard in any other states.

DAQ Title V Permitting

DAQ included the original CSAPR requirements in Title V permits for all affected units in NC, including the boilers (ID Nos. Unit 1A Boiler and Unit 1B Boiler) at the Mayo Electric Generating Plant, after the US Supreme Court[12] upheld the CSAPR. Specifically, DAQ included in the permits the CSAPR trading programs requirements for annual NOx (40 CFR 97 Subpart AAAAA), ozone season NOx (Subpart BBBBB), and annual SO_2 (Subpart CCCCC).

Conclusion

With EPA's removal of NC ozone season NOx reductions requirements for the 1997 ozone NAAQS and EPA's determination that NC is not subject to ozone season NOx reductions requirements for 2008 ozone NAAQS, the DAQ will revise the Title V permits for all affected units in NC under the original CSAPR by removing the previously applicable requirements in Subpart BBBBB (40 CFR 97) for ozone season NOx.

5. 15A NCAC 02D .0519: CONTROL OF NITROGEN OXIDES EMISSIONS

Emissions of nitrogen oxides from these sources when burning coal and oil (No. 2 fuel oil or recycled No.2 fuel oil) shall be calculated by the following equation:

$$E = \frac{(E_C)(Q_C)+(E_O)(Q_O)}{Q_t}$$

Where:

E = emission limit for combined burning of coal and oil in pounds per million Btu heat input
Ec = 1.8 pounds per million Btu heat input for coal only
Eo = 0.8 pounds per million Btu heat input for oil only
Qc = coal heat input in Btu per hour
Qo = oil heat input in Btu per hour
Qt = Qc + Qo

Monitoring/Recordkeeping/Reporting

The monitoring, recordkeeping, and reporting requirements specified under 15A NCAC 02D .0524 in Section V.A.1 above under NSPS for nitrogen oxides shall satisfy this requirement.

6. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR PART 63, SUBPART UUUUU)

The Subpart UUUUU requirements were added to permit 03478T43 on March 8, 2016.

[7] Id.
[8] 81 FR 74555.
[9] States that are Affected by the Cross-State Air Pollution Rule (CSAPR) | US EPA (https://www.epa.gov/csapr/states-are-affected-cross-state-air-pollution-rule-csapr) and 40 CFR 97.510(a)(16).
[10] 84 FR 71854 (December 30, 2019).
[11] 86 FR 37942 (July 19, 2021).
[12] *EPA v. EME Homer City Generation, L. P.*, No. 12-1182, Decided April 29, 2014.

Each of the Electric Generating Units are subject to all applicable requirements pertaining to existing, coal-fired EGUs with heating value greater than or equal to 8,300 Btu/lb.

In accordance with 40 CFR 63.9984(b), the EGUs are required to comply with all applicable requirements of Subpart UUUUU by no later than April 16, 2015. However, the DAQ has granted a 1-year extension in accordance with 40 CFR 63.6(i)(4)(i)(A), for complying with the applicable standards under the regulation until April 16, 2016.

Emission Limitations

The following limits apply:

a. 1. limit the emissions of filterable particulate matter (PM) to 3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh; or
   2. limit the emissions of total non-Hg HAP metals to 5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh; or
   3. limit the emissions of individual HAP metals to:

Constituent	Allowable Level
Antimony (Sb)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh
Arsenic (As)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh
Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh
Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh
Chromium (Cr)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh
Cobalt (Co)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh
Lead (Pb)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh
Manganese (Mn)	4.0E0 lb/TBtu or 5.0E-2 lb/GWh
Nickel (Ni)	3.5E0 lb/TBtu or 4.0E-2 lb/GWh
Selenium (Se)	5.0E0 lb/TBtu or 6.0E-2 lb/GWh

b. 1. limit the emissions of hydrogen chloride (HCl) to 2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh; or
   2. limit the emissions of sulfur dioxide (SO_2) to 2.0E-1 lb/MMBtu or 1.5E0 lb/MWh.

c. limit the emissions of mercury (Hg) to 1.2E0 lb/TBtu or 1.3E-2 lb/GWh.

DEP has chosen to comply with the MATs rule for the Mayo Steam Electric Plant by limiting emission as follows:

a. filterable particulate matter (PM) to 3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh (using PM CEMS),
b. hydrogen chloride (HCl) to 2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh (by demonstrating initial and continuous compliance by conducting an initial and periodic quarterly performance stack test for HCl), and
c. mercury (Hg) to 1.2E0 lb/TBtu or 1.3E-2 lb/GWh (using Hg CEMS and/or sorbent trap(s)).

State-enforceable only

7. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020. This only applies for these boilers when burning waste EDTA solution.

Monitoring/Recordkeeping/Reporting

The total amount of waste EDTA (as 100% $(NH_4)_4$ EDTA) evaporated in the electric utility boilers (**ID Nos. Unit 1A Boiler and Unit 1B Boiler**) shall not exceed 98,382 pounds per year. The Permittee shall keep records and report to DAQ as shown in the permit.

State-enforceable only

8. 15A NCAC 02Q .0308: FINAL ACTION ON PERMIT APPLICATIONS
This condition is to allow the burning of supplemental fuels in the Unit 1A and 1B Boilers. It arises from a change made to permit 03478T41 on January 9, 2015, to re-instate certain requirements pertaining to 2Q .0711 for 40 CFR Part 63 subject sources (such as coal-fired electric utility boilers subject to 40 CFR 63 Subpart UUUUU) that had been removed from Section 2.2 B in permit 03478T40 on October 29, 2014.

Even though DAQ was correct in removing the requirements in Sections 2.2 B because the requirements did not, and do not, apply to sources subject to MACT 40 CFR Part 63 sources, consistent with the 2Q .0702(a)(27)(B) exemption, the Permittee requested that they be added back to the permit to avoid potential confusion and questions that may arise in the future regarding the combustion of supplemental fuels and boiler cleaning solution in the coal-fired boilers.

The following is taken from the review for permit 03478T41:

> *DAQ agrees with the Permittee. DAQ knows that it had allowed burning of the above on-site supplemental fuels, for many years for coal-fired boilers. Although, DAQ was correct in removing these requirements consistent with 2Q .0702(a)(27)(B), DAQ cannot take away the previous approval for burning of the supplemental fuels. Thus, DAQ will put back in air quality permit 03478T41, the previously excluded requirements pertaining to the supplemental fuels. The DAQ will label the requirements as "state-only" with an underlying basis of 2Q .0308 "Final Action on Permit Applications". As per 2Q .0308, DAQ can issue any permit under its state construction and operation permits program, with any condition it chooses to assure compliance. Therefore, DAQ believes that the regulatory basis of 2Q .0308 is appropriate.*

State-enforceable only

9. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
(Avoidance of 15A NCAC 02Q .0700: TOXIC AIR POLLUTANT PROCEDURES)
The Permittee is avoiding the applicability of Rule 02Q .0700 by using recycled fuels which are equivalent to their virgin counterparts. The Permittee is allowed to burn recycled No. 2 fuel oil for light-off and flame stabilization in the Unit 1A Boiler and Unit 1B Boiler. The approved recycled No. 2 fuel oil shall be equivalent to unadulterated fossil fuel as shown in the permit.

Monitoring/Recordkeeping
The Permittee shall maintain accurate records of the actual amount of vendor approved recycled fuel oil delivered to, and combusted at, the facility on an annual basis. The Permittee shall maintain records of the results of the analytical testing of the vendor approved recycled No. 2 fuel oil as it is sampled and tested by the supplier (vendor). to representatives of the Division of Air Quality upon request.

Reporting
No reporting is required to demonstrate compliance with this avoidance condition.

B.

- **Flyash storage silo (ID No. SILO1) and associated bagfilter (ID No. BF1),**
- **Flyash storage silo (ID No. SILO1A) and associated bagfilter (ID No. BF1A),**
- **Dry flyash pneumatic transfer system (ID No. PFTS1) with deceleration cyclone (ID No C1) and fabric filter (ID No. BF4),**
- **Dry flyash pneumatic transfer system (ID No. PFTS2) with deceleration cyclone (ID No C2) and fabric filter (ID No. BF5),**
- **Dry flyash pneumatic transfer system (ID No. PFTS3) with deceleration cyclone (ID No C3) and fabric filter (ID No. BF13), and**
- **Dry flyash pneumatic transfer system (ID No. PFTS4) with deceleration cyclone (ID No C4) and fabric filter (ID No. BF14)**

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emission Limits

Emissions of particulate matter from these sources (**ID Nos. SILO1, SILO1A, PFTS1, PFTS2, PFTS3 and PFTS4**) shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Monitoring

Particulate matter emissions from these emissions sources (**ID Nos. SILO1, SILO1A, PFTS1, PFTS2, PFTS3 and PFTS4)** shall be controlled by the deceleration cyclones (**ID Nos. C1, C2, C3 and C4**) and fabric filters (**ID Nos. BF1, BF1A, BF4, BF5, BF13 and BF14**). To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

a. a monthly visual inspection of the system ductwork and material collection unit for leaks; and
b. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

Recordkeeping

The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of actions recorded;
b. The results of each inspection;
c. The results of any maintenance performed on the duct work, collection cyclone, and fabric filter; and
d. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting

The Permittee shall submit the results of any maintenance performed on the systems within 30 days of a written request by the DAQ.

The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit

Visible emissions from these sources (**ID Nos. SILO1, SILO1A, PFTS1, PFTS2, PFTS3 and PFTS4**) shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring

To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. SILO1, SILO1A, PFTS1, PFTS2, PFTS3 and PFTS4**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to

ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit.

Recordkeeping

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting

The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

C.

- **Five coal storage silos (ID Nos. SILO2 through SILO6) with bagfilter (ID No. BF2), and**
- **Coal crusher (ID No. CRUSHER) and three conveyor drop points (ID Nos. CV2, CV9A and CV9B) with bagfilter (ID No. BF3)**

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emission Limits

Emissions of particulate matter from these sources (**ID Nos. SILO2 through SILO6 and CRUSHER**) shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Monitoring

Particulate matter emissions from these emissions sources (**ID Nos. SILO2 through SILO6 and CRUSHER**) shall be controlled by the bagfilters (**ID Nos. BF2 and BF3**). To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

a. a monthly visual inspection of the system ductwork and material collection unit for leaks; and
b. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

Recordkeeping
The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of actions recorded;
b. The results of each inspection;
c. The results of any maintenance performed on the duct work, collection cyclone, and fabric filter; and
d. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting
The Permittee shall submit the results of any maintenance performed on the systems within 30 days of a written request by the DAQ.

The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities.

2. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART Y)

Emission Limit
Visible emissions from these sources (**ID Nos. SILO2 through SILO6 and CRUSHER**) shall not exceed 20% opacity except during periods of startup, shutdown and malfunction.

Monitoring
To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. SILO2 through SILO6 and CRUSHER**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit.

Recordkeeping
The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting
The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

D.

- **Coal unloading operation with wet suppression (ID No. COALDUMP),**
- **Eleven coal conveyors (ID Nos. CV2, CV5, CV6, CV9A, CV9B, CV10A, CV10B, CV12A, CV12B, CV13A and CV13B)**

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART Y)

   Emission Limit
   Visible emissions from these sources (**ID Nos. CV2, CV5, CV6, CV9A, CV9B, CV10A, CV10B, CV12A, CV12B, CV13A and CV13B)** shall not exceed 20% opacity except during periods of startup, shutdown and malfunction.

   Monitoring
   To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. CV2, CV5, CV6, CV9A, CV9B, CV10A, CV10B, CV12A, CV12B, CV13A and CV13B)** for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above emission limit.

   Recordkeeping
   The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   a. The date and time of each recorded action;
   b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   c. The results of any corrective actions performed.

   Reporting
   The Permittee shall submit a semiannual summary report of the observations.

   State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
   This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

E. No. 2 fuel oil-fired emergency diesel generator (ID No. EMGEN)

1. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

   Emission Limit
   Emissions of sulfur dioxide from this source **(ID No. EMGEN)** shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

   Monitoring/Recordkeeping/Reporting
   No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from the firing of

No. 2 fuel oil in this source **(ID No. EMGEN)**.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit
Visible emissions from this source **(ID No. EMGEN)** shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring/Recordkeeping/Reporting
No monitoring/recordkeeping/reporting is required to demonstrate compliance for visible emissions from this source **(ID No. EMGEN)**.

F. Limestone, Receiving, Storage, Transfer, and Grinding:

- **Reclaim hopper transfer and belt feeder L1 (ID No. LSL1)**
- **Belt feeder L1 transfer and conveyor L2 (ID No. LSL2)**
- **Head chute gate transfer housing for conveyor L2 transfer to conveyor L3 (ID No. LSL2HCG) with fabric filter (ID No. CDLSL2HCG)**
- **Conveyor L3 (ID No. LSL3)**
- **Conveyor L3 transfer and storage silo (ID No. LSS1A) with fabric filter (ID No. CDLSS1A)**
- **Head chute gate transfer and storage silo (ID No. LSS1B) with fabric filter (ID No. CDLSS1A)**
- **Wet ball mill grinders in preparation building (ID Nos. LSG1 and LSG2)**

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS 40 CFR PART 60, SUBPART OOO

Emission Limits
The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions that:

a. Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf) [40 CFR 60.672(a)(1)]; and
b Exhibit greater than 7 percent opacity [40 CFR 60.672(a)(2)].
c. Emission sources with stack emissions affected by these requirements include:
   i. Head chute gate transfer housing for conveyor L2 transfer to conveyor L3 (**ID No. LSL2HCG**) with fabric filter (**ID No. CDLSL2HCG**),
   ii. Conveyor L3 transfer and storage silo 1A (**ID No. LSS1A**) with fabric filter (**ID No. CDLSS1A**),
   iii. Storage silo 1B (**ID No. LSS1B**) with fabric filter (**ID No. CDLSS1A**)
   iv. Any vent of any building enclosing any affected emission source including; the below grade enclosure for LSL1 and LSL2, the silo transfer structure, and the reagent preparation building.

The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions that exhibit greater than 10 percent opacity.

The Permittee shall not allow to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions. Affected buildings include; the below grade enclosure for LSL1 and LSL2, the silo transfer structure, and the reagent preparation building.

Testing
The Permittee has completed the initial performance test required by 40 CFR 60.675.

Monitoring

Particulate matter emissions from these emissions sources (**ID Nos. LSL2HCG, LSS1A and LSS1B)** shall be controlled by the fabric filters (**ID Nos. CDLSL2HCG and CDLSS1A**). To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

a. a monthly visual inspection of the system ductwork and material collection unit for leaks; and
b. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

To assure compliance, once a month the Permittee shall observe the emission points of these emission sources (**ID Nos. LSL1, LSL2, LSL2HCG, LSL3, LSS1A and LSS1B**), including building enclosures, for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above emission limits.

Recordkeeping

The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each inspection;
c. The results of any maintenance performed on the fabric filters, duct work, or baghouse; and
d. Any variance from manufacturer's recommendations, if any, and corrections made.

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting

The Permittee shall provide the DAQ at least 30 days prior notice of any performance test to afford the DAQ the opportunity to have an observer present.

The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in this permit, including reports of opacity observations made using Method 9 and Method 22 to demonstrate compliance.

The Permittee shall submit a semiannual summary report of the monitoring and recordkeeping activities.

State-enforceable only

2. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

G. Limestone Receiving and Storage Pile (ID No. LSRSP)

1. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit
Visible emissions from this source **(ID No. LSRSP)** shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring
To assure compliance, once a month the Permittee shall observe the emission points of this source (**ID No. LSRSP**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit.

Recordkeeping
The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting
The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only
2. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

H. Dry Flyash Silo Truck Loadout (ID No. ES-DFA Load) and associated Wet Flyash Conditioner (ID No. WS1) [loadout operations from either source ID No. SILO1 or ID No. SILO1A]

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emission Limit
Emissions of particulate matter from this source **(ID No. ES-DFA Load)** shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Monitoring/Recordkeeping/Reporting
No monitoring/recordkeeping/reporting is required for emissions from this source **(ID No. ES-DFA Load)**.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit
Visible emissions from this source **(ID No. ES-DFA Load)** shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring
To assure compliance, once a month the Permittee shall observe the emission points of this source **(ID No. ES-DFA Load)** for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit. The Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521 if the required monthly observations are not conducted as required, or if the above-normal emissions are not corrected within the monitoring period or the percent opacity demonstration cannot be made.

Recordkeeping
The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each observation and/or test noting the source with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting
. The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

I.

- **One Sorbent (lime or hydrated lime) Silo (ID Nos. ES-SORB1) and associated bagfilter (ID No. BF7), and**
- **Sorbent Pneumatic Conveying Equipment (ID No. ES-SORB4)**

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emission Limits

Emissions of particulate matter from these sources (**ID Nos. ES-SORB1 and ES-SORB4**) shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Monitoring

Particulate matter emissions from this source **(ID No. ES-SORB1)** shall be controlled by the bagfilter (**ID No. BF7**). To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

a. a monthly visual inspection of the system ductwork and material collection unit for leaks; and
b. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

Recordkeeping

The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of actions recorded;
b. The results of each inspection;
c. The results of any maintenance performed on the duct work, collection cyclone, and fabric filter; and
d. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting

The Permittee shall submit the results of any maintenance performed on the systems within 30 days of a written request by the DAQ.

The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit

Visible emissions from these sources (**ID Nos. ES-SORB1 and ES-SORB4**) shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring

To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. ES-SORB1 and ES-SORB4**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:

a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit.

Recordkeeping

The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:

a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting

The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

J.

- **One bottom ash storage silo (ID No. SILO8) and associated bagfilter (ID No. CD-BF9), and**
- **Three bottom ash pneumatic transfer systems (ID Nos. ES-PBTS1, ES-PBTS2, and ES-PBTS3) and associated bagfilters (ID Nos. CD-BF10, CD-BF11, and CD-BF12)**

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emission Limits

Emissions of particulate matter from these sources (**ID Nos. SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3)** shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Monitoring

Particulate matter emissions from these sources **(ID Nos. SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3)** shall be controlled by the bagfilters (**ID Nos. CD-BF9, CD-BF10, CD-BF11, and CD-BF12**). To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

a. a monthly visual inspection of the system ductwork and material collection unit for leaks; and

b. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

Recordkeeping
The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on site and made available to an authorized representative upon request. The logbook shall record the following:
a. The date and time of actions recorded;
b. The results of each inspection;
c. The results of any maintenance performed on the duct work, collection cyclone, and fabric filter; and
d. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting
The Permittee shall submit the results of any maintenance performed on the systems within 30 days of a written request by the DAQ.

The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Emission Limit
Visible emissions from these sources (**ID Nos. SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3**) shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Monitoring
To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit.

Recordkeeping
The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
a. The date and time of each recorded action;
b. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting
The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
   This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

K. One bottom ash silo truck load-out (ID No. ES-DBA Load)

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

   Emission Limit
   Emissions of particulate matter from this source **(ID No. ES-DBA Load)** shall not exceed an allowable emission rate as calculated by the following equations:

   $E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
   $E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

   Where E = allowable emission rate in pounds per hour
   P = process weight in tons per hour

   Monitoring/Recordkeeping/Reporting
   No monitoring/recordkeeping/reporting is required for emissions from this source **(ID No. ES-DBA Load)**.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

   Emission Limit
   Visible emissions from this source **(ID No. ES-DBA Load)** shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

   Monitoring
   To assure compliance, once a month the Permittee shall observe the emission points of this source **(ID No. ES-DFA Load)** for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   a. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   b. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the above limit. The Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521 if the required monthly observations are not conducted as required, or if the above-normal emissions are not corrected within the monitoring period or the percent opacity demonstration cannot be made.

   Recordkeeping
   The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   a. The date and time of each recorded action;
   b. The results of each observation and/or test noting the source with emissions that were observed

to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
c. The results of any corrective actions performed.

Reporting
The Permittee shall submit a semiannual summary report of the observations.

State-enforceable only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
This condition in Section 2.2 B.1 of the permit contains the revised toxic permit limits as added in permit 03478T48 for the latest facility-wide toxics dispersion modeling analysis dated November 12, 2020.

L. Multiple Emission Sources

Limestone, Receiving, Storage, Transfer, and Grinding:

- **Receiving and storage pile (ID No. LSRSP)**
- **Reclaim hopper transfer and belt feeder L1 (ID No. LSL1)**
- **Belt feeder L1 transfer and conveyor L2 (ID No. LSL2)**
- **Conveyor L2 transfer and L2 head chute gate in transfer housing (ID No. LSL2HCG) with fabric filter (ID No. CDLSL2HCG)**
- **Head chute gate transfer and conveyor L3 (ID No. LSL3)**
- **Conveyor L3 transfer and storage silo 1A (ID No. LSS1A) with fabric filter (ID No. CDLSS1A)**
- **Head chute gate transfer and storage silo 1B (ID No. LSS1B) with fabric filter (ID No. CDLSS1A)**
- **Wet ball mill grinders in preparation building (ID Nos. LSG1 and LSG2)**

1. 15A NCAC 02D .0510: PARTICULATES FROM SAND, GRAVEL, OR CRUSHED STONE OPERATIONS

   a. The owner or operator of a sand, gravel, or crushed stone operation shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures, such as application of a dust or wet suppressant, soil stabilizers, covers, or add-on particulate control devices, to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.
   b. Fugitive non-process dust emissions from sand, gravel, or crushed stone operations shall be controlled by 15A NCAC 02D .0540.
   c. The owner or operator of any sand, gravel, or crushed stone operation shall control process-generated emissions: (1) from crushers with wet suppression; and (2) from conveyors, screens, and transfer points, such that the applicable opacity standards in 15A NCAC 02D .0521 or .0524 are not exceeded

2. 15A NCAC 02D .0540: PARTICULATES FROM FUGITIVE NON-PROCESS DUST EMISSION SOURCES

   a. The Permittee shall not cause or allow fugitive non-process dust emissions (i.e., particulate matter that is not collected by a capture system and is generated from areas such as pit areas, process areas, haul roads, stockpiles, and plant roads) to cause or contribute to substantive complaints (i.e., complaints that are verified with physical evidence acceptable to the DAQ).
   b. If fugitive non-process dust emissions cause or contribute to substantive complaints, the Permittee shall:
      i. Within 30 days upon receipt of written notification from the Director of a second substantive complaint in a 12-month period, submit to the Director a written description of what has been done and what will be done to reduce fugitive non-process dust emissions from that part of the facility that caused the second substantive complaint;

ii. Within 90 days of receipt of written notification from the Director of a second substantive complaint in a 12-month period, submit to the Director a control plan; and
iii. Within 30 days after the Director approves the plan, be in compliance with the plan.

c. The Director may require that the Permittee develop and submit a fugitive non-process dust control plan if:
   i. Ambient air quality measurements or dispersion modeling acceptable to the DAQ show violation or a potential for a violation of an ambient air quality standard for particulates in 15A NCAC 02D .0400 "Ambient Air Quality Standards;" or
   ii. If the DAQ observes excessive fugitive non-process dust emissions from the facility beyond the property boundaries.

   The control plan shall be submitted to the Director no later than 90 days after notification. The facility shall be in compliance with the plan within 30 days after the Director approves the plan.

d. A fugitive dust control plan shall:
   i. Identify the sources of fugitive non-process dust emissions within the facility;
   ii. Describe how fugitive non-process dust will be controlled from each identified source;
   iii. Contain a schedule by which the plan will be implemented;
   iv. Describe how the plan will be implemented, including training of facility personnel; and
   v. Describe methods to verify compliance with the plan.

e. The Director shall approve the plan if he finds that:
   i. The plan contains all required elements;
   ii. The proposed schedule contained in the plan will reduce fugitive non-process dust emissions in a timely manner;
   iii. The methods used to control fugitive non-process dust emissions are sufficient to prevent fugitive non-process dust emissions from causing or contributing to a violation of the ambient air quality standards for particulates; and
   iv. The described compliance verification methods are sufficient to verify compliance with the plan.

   If the Director finds that the proposed plan does not meet the requirements, he shall notify the Permittee of any deficiencies in the proposed plan. The Permittee shall have 30 days after receiving written notification from the Director to correct the deficiencies.

f. If after a plan has been implemented, the Director finds that the plan inadequately controls fugitive non-process dust emissions; he shall require the Permittee to correct the deficiencies in the plan. Within 90 days after receiving written notification from the Director identifying the deficiency, the Permittee shall submit a revision to his plan to correct the deficiencies.

3. <u>15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING (40 CFR 64)</u>

This facility is subject to a CAM analysis as required for renewal of a Title V permit for a pollutant specific emission unit (PSEU). The CAM rule applies to each emissions unit (source) at a Title V facility if the individual emissions unit uses a control device to achieve compliance with any non-exempt regulated air pollutant emission limit or standard (as defined by 02D .0614(b)(1)), and if the potential pre-control emissions from that specific source are equal to or greater than the major source thresholds of the applicable regulated air pollutant.

Boilers 1A and 1B have emission limits and control devices for PM, SO_2, and NOx with potential pre-control emissions greater than the major source threshold (100 tons per year) for each pollutant. These sources use CEMS to monitor emissions for PM, SO_2, NOx, which meets the CAM exemption in 02D .0614(b)(1)(F) for emission limitations or standards for which a permit issued pursuant to 15A NCAC 02Q .0500 specifies a continuous compliance determination method. HAPs are regulated by MACT Subpart UUUUU and therefore this rule is exempt from the CAM requirements in accordance with 02D .0614(b)(1)(A).

There have not been any sources added to the permit since the last permit renewal on December 6, 2016 for Permit No. 03478T45, where CAM was addressed.

Therefore, CAM does not currently apply to the Mayo facility.

VI. Public Notice

Pursuant to 15A NCAC 02Q .0521, a notice of the draft Title V Operating Permit will be published on the DAQ website to provide for a 30-day comment period with an opportunity for a public hearing. Copies of the draft (proposed) permit, review and public notice will be sent to EPA for their 45-day review, to persons on the Title V mailing list, to the Raleigh Regional Office, and to the Permittee.

VII. Other Requirements

PE Seal
NA. No controls are being added.

Zoning
There is no expansion of the facility, therefore zoning consistency is not needed.

Fee Classification
The facility fee classification before and after this modification will remain as "Title V".

VIII. Comments on the Draft Permit

The draft permit and review were sent to Erin Wallace at DEP, to Dena Pittman at RRO and to Samir Parekh with SSCB on September 7, 2021.

DEP Comments
Due to the SSCB comment below, the draft permit was re-sent to DEP on September 15, 2021, with revisions to Sections 2.1.A.2.g and h for the NOx, SO2, and PM CEMS.

On October 1, 2021, DEP stated they had no comments on the draft permit.

SSCB Comments
The following comment was received from Samir Parekh on September 10, 2021:

1. Please add excess emissions, monitor downtime, data substitution, emissions during SSM etc. in sections 2.1 A.2.g and h for NOx, SO2, and PM CEMS. The current condition refers to NSPS monitoring requirements for PSD purposes.

   The draft permit was revised to add excess emissions, monitor downtime, data substitution, emissions during SSM etc. in sections 2.1 A.2.g and h for NOx, SO2, and PM CEMS as shown in Section V.A.2 above.

RRO Comments
The following comments were received from Taylor Hartsfield on September 14, 2021:

1 In the draft permit (on page 2 of the cover letter & page 1 of the permit), there is still the previous expiration date of November 30, 2021. You may be waiting to update these until closer to permit issuance.

   I replied that I had not got to that yet.

2. In Section 2.4 for "Phase II Acid Rain Permit Requirements," the effective date range is not listed. Previously in T48, it had "Effective: December 6, 2016 until November 30, 2021" listed under "ORIS code: 6250" before paragraph A. Does the new effective date range need to be included?

All the acid rain renewals are being changed to remove the effective dates in that section. The permit table of changes shows: "Removed effective dates. Effective dates are the same as the Title V permit itself."

IX. Recommendations

TBD