

AMENDMENT TO AIR QUALITY PERMIT

Permit Amendment No.
4911-213-0034-P-01-1

Effective Date
July 22, 2002

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Rules, Chapter 391-3-1, adopted pursuant to and in effect under that Act, Permit No. 4911-213-0034-P-01-0 issued on February 13, 2001 to:

Duke Energy Murray, L.L.C.
5400 Westheimer Court
Houston, Texas 77056-5310

Facility location: Murray Energy Facility
925 Loopers Bridge Road
Dalton, Murray County, Georgia 30721

for the following: The construction and operation of two natural gas-fired only combined-cycle blocks which will produce a nominal 1,240 megawatts (MWs) of electric power. Each combined-cycle block includes two combustion turbines, two supplementary-fired heat recovery steam generators, one steam turbine, and one emergency diesel fired generator. The facility also includes one diesel firewater pump. Each combined-cycle block has a nominal output capacity of 620 MW.

is hereby amended as follows: The construction and operation of a second auxiliary boiler; an increase in the hours of operation of the existing auxiliary boiler; and revision to NOx, CO, VOC, and PM/PM10 BACT emission limits for each combined combustion turbine and duct burner stack. Facility Description Note B and Condition Nos. 2.6, 2.10, 2.11, 2.12, 2.13, 4.1, 4.4, 5.3, 8.3, 8.4, 8.16, and 8.17 modified.

Reason for Amendment: Application No. 13365 dated October 16, 2001.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached 6 page(s), which page(s) are part of this Amendment.

This Permit Amendment is effective from the date first above written and is hereby made a part of Permit No. 4911-213-0034-P-01-0 and compliance herewith is hereby ordered. Except as amended hereby, the above referenced Permit remains in full force and effect.

DRAFT

Director
Environmental Protection Division

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 1 of 6

NOTE B

FACILITY DESCRIPTION

| Emission Units | | Air Pollution Control Devices | |
|----------------|--|-------------------------------|--|
| ID No. | Description | ID No. | Description |
| CT1 | Combustion Turbine Unit 1 | LC1 SCR1 | Dry Low NOx Combustor SCR |
| DB1 | HRSG, for combustion turbine CT1, supplementary fired by Duct Burner Unit 1. | LD1 SCR1 | Dry Low NOx Burner SCR |
| CT2 | Combustion Turbine Unit 2 | LC2 SCR2 | Dry Low NOx Combustor SCR |
| DB2 | HRSG, for combustion turbine CT2, supplementary fired by Duct Burner Unit 2. | LD2 SCR2 | Dry Low NOx Burner SCR |
| CT3 | Combustion Turbine Unit 3 | LC3 SCR3 | Dry Low NOx Combustor SCR |
| DB3 | HRSG, for combustion turbine CT3, supplementary fired by Duct Burner Unit 3. | LD3 SCR3 | Dry Low NOx Burner SCR |
| CT4 | Combustion Turbine Unit 4 | LC4 SCR4 | Dry Low NOx Combustor SCR |
| DB4 | HRSG, for combustion turbine CT4, supplementary fired by Duct Burner Unit 4. | LD4 SCR4 | Dry Low NOx Burner SCR |
| AUXB1 | Auxiliary boiler rated at a maximum heat input of 31.4 MMBtu/hr, HHV | LB1 FGR1 | Dry Low NOx Burner Flue Gas Recirculation |
| AUXB1 | Auxiliary boiler rated at a maximum heat input of 31.4 MMBtu/hr, HHV | LB1 FGR1 | Dry Low NOx Burner Flue Gas Recirculation |
| GEN1 | 704 hp Emergency diesel generator | NA | None |
| GEN2 | 704 hp Emergency diesel generator | NA | None |
| FP1 | 265 hp Diesel firewater pump | NA | None |

HRSG = Heat Recovery Steam Generator
HHV = Higher Heating Value

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 2 of 6

2.0 Allowable Emissions

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emission Limitations or Standards included in this permit are tied to or based on the run time(s) specified for the applicable reference test method(s) or procedures required for demonstrating compliance.

- 2.6 The Permittee shall only fire natural gas in each auxiliary boiler (Source Codes: AUXB1 and AUXB2). [40 CFR 52.21(j) and 391-3-1-.02(2)(g) (subsumed)]
- 2.10 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from each combined combustion turbine and duct burner stack, noted in Condition 2.3, any gases which contain nitrogen oxides in excess of 3.0 ppmvd, corrected to 15% oxygen. [40 CFR 52.21(j); 40 CFR 60.332(a)(1) for the combustion turbines (subsumed); 40 CFR 60.44a(d)(1) and 40 CFR 60.46a(b) for the duct burners (subsumed)]
- 2.11 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from each combined combustion turbine and duct burner stack, noted in Condition 2.3, any gases which:
- a. Contain CO in excess of 12 ppmvd at 15% oxygen. [40 CFR 52.21(j)]
 - b. Contain particulate matter in excess of 25 pounds per hour. [40 CFR 52.21(j); 391-3-1-.02(2)(d) for the duct burners (subsumed), and 40 CFR 60.42a(a)(1) and 40 CFR 60.46a(a) for the duct burners (subsumed)]
 - c. Contain volatile organic compounds in excess of 4.5 ppmvd at 15% oxygen. [40 CFR 52.21(j)]
 - d. Exhibit greater than 10 percent opacity. [40 CFR 52.21(j); 40 CFR 60.42a(b) for the duct burners (subsumed); and 391-3-1-.02(2)(b) (subsumed)]
- 2.12 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from any auxiliary boiler (Source Codes: AUXB1 and AUXB2), any gases which:
- a. Contain NO_x in excess of 28.88 ppmvd at 3% oxygen. [40 CFR 52.21(j)]
 - b. Contain CO in excess of 0.037 pounds per million Btu heat input, HHV basis. [40 CFR 52.21(j)]
 - c. Contain particulate matter in excess of 0.010 pounds per million Btu heat input, HHV basis. [40 CFR 52.21(j); 391-3-1-.02(2)(d)]
 - d. Contain VOCs in excess of 0.0127 pounds per million Btu heat input, as methane, HHV basis. [40 CFR 52.21(j)]

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 3 of 6

- e. Exhibit greater than 10 percent opacity. [40 CFR 52.21(j); and 391-3-1-.02(2)(d) (subsumed)]
- 2.13 The Permittee shall limit the hours of operation of each auxiliary boiler (Source Codes: AUXB1 and AUXB2), such that the total hours of operation of said boiler does not equal or exceed 6,000 hours during any twelve consecutive months. [40 CFR 52.21(j)]

4.0 Performance Testing

- 4.1 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants**. The methods for the determination of compliance with emission limits listed under Section 2 which pertain to the emission units listed in Note B are as follows:
- a. Method 1 shall be used for the determination of sample point locations,
 - b. Method 2 shall be used for the determination of stack gas flow rate,
 - c. Method 3 or 3A shall be used for the determination of stack gas molecular weight,
 - d. Method 3B shall be used for the determination of the emissions rate correction factor or excess air, Method 3A may be used as an alternative;
 - e. Method 4 shall be used for the determination of stack gas moisture,
 - f. Method 5 or Method 17 shall be used for the determination of particulate matter concentration. The minimum sampling time for each run shall be at least one hour.
 - g. Method 5T shall be used for the determination of the particulate matter concentration from each affected unit as defined in Condition 2.3. The minimum sampling time for each run shall be at least one hour.
 - h. Method 7E shall be used for the determination of nitrogen oxides emissions from each auxiliary boiler (Source Codes: AUXB1 and AUXB2) and from each combustion turbine (Source Codes: CT1, CT2, CT3, and CT4). The sampling time for each run shall be one hour.
 - i. Method 9 and the procedures contained in Section 1.3 of the above reference document shall be used for the determination of opacity,
 - j. Method 10 shall be used for the determination of carbon monoxide concentration. The sampling time for each run shall be one hour.
 - k. Method 18 shall be used for the determination of toluene,

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 4 of 6

- l. Method 19 shall be used, when applicable, to convert particulate matter, carbon monoxide, and nitrogen oxides concentrations (i.e., grains/dscf for PM, ppm for gaseous pollutants), as determined using other methods specified in this section, to emission rates (i.e., lb/MMBtu).
- m. Method 20 shall be used for the determination of nitrogen oxides concentration from combustion turbines with emission unit IDs CT1, CT2, CT3, and CT4 for 40 CFR 60 Subpart GG purposes only,
- n. South Coast Air Quality Management District (Los Angeles, CA) Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) shall be used for the measurement of volatile organic compounds. The sampling time for each run shall be one hour.
- o. ASTM Test Method D129, D1552, D2622, or D4294 shall be used for the determination of fuel sulfur content, and
- p. Method 0011 from “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA publication SW-846 for the determination of formaldehyde and acetaldehyde concentrations.

Minor changes in methodology may be specified or approved by the Director or his designee when necessitated by process variables, changes in facility design, or improvement or corrections, which, in his opinion, render those methods or procedures, or portions thereof, more reliable.

[391-3-1-.02(3)(a); 40 CFR 60.48a for duct burners (subsumed) and 40 CFR 60.335(c) and (d) for combustion turbines (subsumed)]

- 4.4 Within 60 days after achieving the maximum production rate at which the first auxiliary boiler (either Source Codes AUXB1 or AUXB2) will be operated, but not later than 180 days after the initial startup of said boiler, the Permittee shall conduct the following performance tests on only said boiler and furnish to the Division a written report of the results of such performance tests:
 - a. A performance tests for nitrogen oxides shall be conducted at the maximum heat input rate for the applicable boiler. [40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]
 - b. A performance test for carbon monoxide shall be conducted at the maximum heat input rate for the applicable boiler. [40 CFR 52.21 and 391-3-1-.02(6)(b)1.(i)]

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 5 of 6

5.0 Monitoring Requirements

- 5.3 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
- a. The quantity of natural gas, in cubic feet, burned in each auxiliary boiler (Source Codes: AUXB1 and AUXB2). Data shall be recorded continuously. [391-3-1-.02(6)(b)1 and 40 CFR 52.21]
 - d. The cumulative total hours of operation, during all periods of operation, for each of the following: GEN1, GEN2, FP1, AUXB1, and AUXB2. Data shall be recorded monthly. [391-3-1-.02(6)(b)1 and 40 CFR 52.21].

8.0 Notification, Reporting, and Record Keeping

Record Keeping Requirements

- 8.3 The Permittee shall retain monthly records of natural gas usage in each auxiliary boiler (Source Codes: AUXB1 and AUXB2). [391-3-1-.02(6)(b)1.(i), 40 CFR 52.21 and 40 CFR 60.48c(g)(subsumed)]
- 8.4 The Permittee shall use the hour meters required by Condition 5.3d to determine and record the following: [391-3-1-.02(2)(6)(b)1 and 40 CFR 52.21]
- a. The net operating hours for each of the following during every calendar month: GEN1, GEN2, FP1, AUXB1, and AUXB2.
 - b. The total operating hours for each of the following for the twelve consecutive month period ending with each calendar month: GEN1, GEN2, FP1, AUXB1, and AUXB2.

These records (including calculations) shall be maintained as part of the monthly record suitable for inspection or submittal.

**STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**Draft Permit Amendment No.
4911-213-0034-P-01-1**

Page 6 of 6

Reporting Requirements

- 8.16 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 8.14, the following excess emissions, exceedances, and excursions shall be reported: [40 CFR 52.21 and 391-3-1-.02(6)(b)1]
- b. Exceedances: (means for the purpose of this Condition and Condition 8.14, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)
 - vi. Any twelve consecutive month total hours of operation of any auxiliary boiler (Source Codes: AUXB1 and AUXB2) which exceeds 6000 hours.
- 8.17 The Permittee shall submit a written report containing the following information for each quarterly period ending March 31, June 30, September 30, and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, April 30, July 30, October 30, and January 30, respectively. [40 CFR 52.21 and 391-3-1-.02(6)(b)1]
- b. The twelve consecutive month total hours of operation of GEN1, GEN2, FP1, AUXB1, and AUXB2, each for each month in the quarterly reporting periods.