

Appendix D

Controls on Large Electric Utility Steam Generating Units

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“NO_x Emissions from Electric Utility Steam Generating Units” has been codified in Georgia Rule 391-3-1-.02(2)(jjj), hereinafter referred to as Rule (jjj). Rule (jjj) became effective May 1, 1999 for various coal-fired units in the 1-hour ozone nonattainment area. Georgia EPD increased the stringency of the 1999 edition of this rule by revising the rule to include a reduced allowable NO_x emission limits as well as an extension to the geographic area covered by the rule. The rule revision increased the stringency of the rule requirements for the ozone seasons beginning in 2000 and 2003. Beginning May 1, 2003, there were two NO_x emission standards under Rule (jjj) and these standards are referred to as the “5-plant” standard and the “7-plant” standard.

Effective May 1, 2003, this air quality control rule limited NO_x from coal-fired units with maximum heat inputs greater than 250 million British thermal units per hour (MMBtu/hr) from the affected units in the 13 county Atlanta ozone nonattainment area and in Bartow, Floyd, and Heard counties to new alternative limits and/or 0.13 lb/MMBtu heat input averaged over all affected units (referred to as the “5-plant” standard). Effective May 1, 2003, Rule (jjj) also limited NO_x from the same affected units in the 13 county Atlanta ozone nonattainment area, those in Bartow, Floyd, and Heard counties, and also units in Monroe and Putnam counties to new alternative limits and/or 0.20 lb/MMBtu heat input averaged over all affected units (referred to as the “7-plant” standard). These emission limits apply during the period from May 1 through September 30 of each year on a 30-day rolling average basis.

Georgia EPD is in the process of further rulemaking to increase the stringency of Rule (jjj), and the new requirements will become effective May 1, 2007. The “5-plant” standard will remain unchanged. the “7-plant” standard will be reduced from 0.20 lb/MMBtu to 0.18 lb/MMBtu and/or new alternative unit limits. In addition, a third standard will apply beginning in the 2007 ozone season for Plant Scherer located in Monroe County. The facility-wide Plant Scherer standard will be set at 0.17 lb/MMBtu. As noted earlier, these emission limits will apply during the period from May 1 through September 30 of each year on a 30-day rolling average basis.

Compliance with Rule (jjj) is determined, potentially, in two steps. First, each source is assigned (in an air quality permit) a specific alternative emission limit that will be a 30-day rolling average limit. The source-specific alternative emission limits will be established such that the weighted average of all of the source-specific emission limits, using the maximum heat input capacity for each source, will equal the 30-day rolling average lb/MMBtu limit in the Rule (i.e., “5-plant” standard of 0.13 lb/MMBtu; “7-plant” standard before 2007 of 0.20 lb/MMBtu, etc.). If each source is complying with its specific alternative emission limit, compliance with Rule (jjj) is satisfied. If the actual emission rate from any source is greater than its alternative emission limit, then compliance shall be achieved by demonstrating that the actual Btu-weighted average emissions rate for all affected sources is less than the 30-day rolling average limit in the Rule.

Compliance with a 30-day rolling average alternative emission limit is determined by performing a weighted average, using the actual hourly source heat inputs (MMBtu/hr), of all of the hourly NO_x emission rates (lb/MMBtu) for the periods of operation of the source during a 30 consecutive day source operational period. To determine compliance with a 30-day rolling average emission limit specified in the Rule (i.e., “5-plant” standard of 0.13 lb/MMBtu; “7-plant” standard before 2007 of 0.20 lb/MMBtu, etc.), you would perform a weighted average, using the actual source heat inputs (MMBtu/hr), of all the hourly NO_x emission rates for all of the affected sources during a 30 consecutive day period.

Georgia Power operates seven coal-fired power plants in the counties covered by Rule (jjj): Plants Bowen, Branch, Hammond, McDonough-Atkinson, Scherer, Wansley, and Yates.

Plant Bowen includes four coal-fired units, identified as Bowen Units 1, 2, 3, and 4. Each of these units is equipped with combustion modifications consisting of Low NO_x Burners and Overfire Air (OFA) as well as being equipped with its own dedicated selective catalytic reduction (SCR) equipment for the reduction of NO_x emissions.

Plant Branch includes four coal-fired units, identified as Branch Units 1, 2, 3, and 4. These units utilize Low NO_x Burners (LNB) for the reduction of NO_x emissions.

Plant Hammond has four coal-fired units, identified as Hammond Units 1, 2, 3, and 4. Each unit is equipped with Low NO_x Burners (LNB). In 2000, Plant Hammond received an air quality permit amendment to construct (June 15, 2000) and operate (September 18, 2000) selective catalytic reduction (SCR) equipment for the reduction of NO_x emissions on Hammond Unit 4 (SG04).

Plant McDonough includes two coal-fired units, identified as McDonough Units 1 and 2. Each unit is equipped with Low NO_x Burners (LNB) and Overfire Air. In addition, Georgia Power co-fires these units with natural gas during the ozone season to aid in complying with Georgia Rule (jjj).

Plant Scherer includes four coal-fired units, identified as Scherer Units 1, 2, 3, and 4. Each unit is equipped with Low NO_x Burners (LNB) and Overfire Air. Plant Scherer switched from eastern to western coal on Units 1 and 2 in 2003 and on Units 3 and 4 in 2004 to reduce NO_x emissions.

Plant Wansley includes two coal-fired units, identified as Wansley Units 1 and 2. Each unit is equipped with Low NO_x Burners (LNB) and Overfire Air (OFA). In 2000, Plant Wansley received an air quality permit amendment to construct (June 15, 2000) and operate (November 6, 2000) selective catalytic reduction (SCR) equipment for the reduction of NO_x emissions on Wansley Units 1 and 2.

Plant Yates includes seven coal-fired units and these are identified as Yates Units 1, 2, 3, 4, 5, 6, and 7. Units 1, 4, 5, 6, 7 are equipped with Low NO_x Burners (LNB) and

Overfire Air (OFA). In addition, Georgia power co-fires these units with natural gas during the ozone season to aid in complying with Georgia Rule (jjj).

The information described above is presented in the following table for illustrative purposes.

Plant/Unit	NOx Base (lb/MMBtu)	NOx Control Method	NOx Target (lb/MMBtu)
Bowen 1	0.43	LNB/OFA/SCR	0.07
Bowen 2	0.44	LNB/OFA/SCR	0.07
Bowen 3	0.44	LNB/OFA/SCR	0.07
Bowen 4	0.44	LNB/OFA/SCR	0.07
Branch 1	0.99	LNB	0.50
Branch 2	0.72	LNB	0.50
Branch 3	0.83	LNB	0.50
Branch 4	0.83	LNB	0.50
Hammond 1	0.86	LNB	0.42
Hammond 2	0.86	LNB	0.42
Hammond 3	0.86	LNB	0.42
Hammond 4	0.43	LNB/OFA/SCR	0.07
McDonough 1	0.30	LNB/OFA	0.26
McDonough 2	0.30	LNB/OFA	0.26
Scherer 1	0.52	OFA FUEL SWITCH	0.30
Scherer 2	0.53	OFA FUEL SWITCH	0.30
Scherer 3	0.30	OFA FUEL SWITCH	0.15
Scherer 4	0.32	OFA FUEL SWITCH	0.20
Wansley 1	0.40	LNB/OFA/SCR	0.07
Wansley 2	0.43	LNB/OFA/SCR	0.07
Yates 1	0.30	LNB	0.38
Yates 2	0.30	N/A	0.38
Yates 3	0.30	N/A	0.38
Yates 4	0.30	LNB	0.33
Yates 5	0.30	LNB	0.33
Yates 6	0.30	LNB/OFA	0.26
Yates 7	0.30	LNB/OFA	0.26

LNB = Low NOx Burner

OFA = Overfired Air

FUEL SWITCH = Switch from eastern to western coal