March 23, 2016

Mr. Mark S. Berry
Vice President, Environmental Affairs
Georgia Power Company
241 Ralph McGill Boulevard, NE
Atlanta, Georgia 30308-3374

Re: Petition for Approval of an Exemption from the 7-Day Calibration Error Test Requirement for the Bypass Stacks on Units 1BLR through 4BLR at Plant Bowen (Facility ID (ORISPL) 703)

Dear Mr. Berry:

The United States Environmental Protection Agency (EPA) has reviewed the January 20, 2016 petition submitted under 40 CFR 75.66 by Georgia Power Company (GPC) requesting approval of an exemption from the requirement to perform 7-day calibration error tests of the continuous emission monitoring systems (CEMS) installed on the four bypass stack locations MS1BYP through MS4BYP at Plant Bowen. EPA approves the petition, with conditions, as discussed below.

Background

GPC owns and operates Plant Bowen (Bowen), which is located in Bartow County, Georgia. Bowen has four coal-fired boilers (Units 1BLR, 2BLR, 3BLR, and 4BLR) that serve four generators with reported nameplate capacities of 806, 789, 952, and 952 megawatts, respectively. According to GPC, all four units are subject to the Acid Rain Program, the Cross-State Air Pollution Rule (CSAPR) annual trading programs for sulfur dioxide (SO_2) and nitrogen oxides (NO_X), and the CSAPR ozone season NO_X trading program. GPC is therefore required to continuously monitor and report SO_2, NO_X, and carbon dioxide (CO_2) emissions and heat input data for these four Units in accordance with 40 CFR part 75. To meet these monitoring requirements, GPC has installed and certified CEMS for SO_2, NO_X, CO_2, and stack gas volumetric flow rate on the primary and bypass exhaust stacks for Units 1BLR, 2BLR, 3BLR, and 4BLR.

Each of the four Bowen units has a flue gas desulfurization (FGD) system to reduce SO_2 emissions. During normal operation of each unit, flue gases are routed through the FGD system to the unit's primary exhaust stack, but occasionally it becomes necessary to bypass the FGD system (e.g., for scheduled maintenance) and to send the flue gases through the unit's bypass stack. The bypass stacks for Units 1BLR through 4BLR are designated as MS1BYP, MS2BYP, MS3BYP, and MS4BYP, respectively.

As discussed in the petition, GPC intends to install a new set of monitoring systems for SO_2 and NO_X on the bypass stack for each of the units. According to GPC, all required certification tests of the new CEMS except the 7-day calibration error tests can be completed within a reasonable amount of time. However, because the bypass stacks are used so infrequently, it could take weeks or even months to complete the 7-day calibration error tests. According to GPC, the 7-day test could be expedited by forcing bypasses of the FGD systems solely for the purpose of completing those tests, but this would increase SO_2 emissions unnecessarily.

In view of these considerations, the January 20, 2016 petition requests an exemption from the requirement to conduct future 7-day calibration error tests of the CEMS installed on the bypass stack for each unit. The basis for the request is that the infrequent use of a bypass stack is similar to the intermittent operation of a "peaking unit" (as defined in 40 CFR 72.2). Under sections 6.3.1 and 6.3.2 of appendix A to part 75, CEMS installed on peaking units are exempted from the requirement that 7-day calibration error tests be performed.

A peaking unit is defined in 40 CFR 72.2 as a unit that has: (a) an average capacity factor of 10.0% or less during the previous three calendar years and (b) a capacity factor of 20.0% or less in each of those calendar years. On a heat input basis, "capacity factor" is defined in §72.2 as the ratio of a unit's actual annual heat input (in million British thermal units) to the unit's maximum potential annual heat input (i.e., the maximum rated hourly heat input times 8760 hours). Expressing this ratio as a percentage gives:

$$\%\,CF = \frac{HI_{annual}}{8760\,HI_{\max}}\ x\ 100 \qquad \text{(Equation A)}$$

Where:

% CF = Annual capacity factor of the unit (%)
HI_{annual} = Total (actual) annual heat input to the unit (mmBtu)
HI_{max} = Maximum rated hourly heat input to the unit (mmBtu/hr)
8760 = Number of hours in a calendar year (hr)
100 = Conversion factor from a decimal fraction to a percentage

Equation A above can be modified to determine the annual capacity factor for a bypass stack by redefining HI_{annual} as the "total (actual) annual heat input to the unit during hours when the bypass stack was used." When GPC performed this calculation for the bypass stacks on the four Bowen units, the annual capacity factors of the bypass stacks for calendar years 2013, 2014, and 2015 were found to be well within the limits established for meeting the definition of a peaking unit. Table 1 below shows that for each of the four bypass stacks the annual capacity factor was less than 0.70% in each year and the 3-year average capacity factor was less than 0.40%.

Table 1: Annual Capacity Factor of Bowen Bypass Stacks MS1BYP through MS4BYP for Years 2013, 2014, & 2015

Annual Capacity Factor:				
Unit ID	**2013**	**2014**	**2015**	**3 year average capacity factor**
MS1BYP	0.08%	0.00%	0.00%	0.03%
MS2BYP	0.00%	0.00%	0.00%	0.00%
MS3BYP	0.18%	0.23%	0.62%	0.34%
MS4BYP	0.02%	0.14%	0.00%	0.05%

EPA's Determination

EPA approves GPC's request for an exemption from the requirement to perform future 7-day calibration error tests of the CEMS installed on the bypass stacks at Bowen Units 1BLR through 4BLR (MS1BYP through MS4BYP). The basis of this approval is twofold: (1) the infrequent usage and low annual capacity factor of the bypass stacks; and (2) the unacceptability of bypassing an emissions control device such as an FGD system solely for the purpose of performing a 7-day calibration error test.

The purpose of the 7-day calibration error test is to demonstrate that the day-to-day calibration drift of a CEMS is minimal over an extended period of unit operation. Section 6 of appendix A to part 75 requires the test to be performed over seven consecutive unit or stack operating days. However, for a CEMS installed on a peaking unit that operates sporadically, or on a bypass stack that is seldom used, the test loses its significance.

The conditions of this approval are as follows:

(1) Beginning with calendar year 2016 and for each subsequent calendar year, GPC shall calculate the total annual heat input (mmBtu) to each of the four Bowen units (Units 1BLR through 4BLR) during hours when the bypass stack serving that unit is utilized.

(2) Beginning with calendar year 2016 and for each subsequent calendar year, GPC shall use the results from item (1) above to calculate the annual capacity factor for each of the four bypass stacks (MS1BYP through MS4BYP) in accordance with the modified version of Equation A described above.

(3) For the 3-year period beginning with calendar years 2014 through 2016, GPC shall calculate the arithmetic average of the annual bypass stack capacity factors for the three

individual years for each of the four bypass stacks. GPC shall repeat these calculations for each subsequent 3-year period (i.e., 2015-2017, 2016-2018, etc.).

(4) If, for any of the four bypass stacks at the end of a particular calendar year, the annual capacity factor of the bypass stack (item (2) above) exceeds 20.0% for that year, or if the 3-year average annual capacity factor for that year and the two previous calendar years (item (3) above), exceeds 10.0%, then, for each CEMS installed on that bypass stack that has never undergone a 7-day calibration error test, GPC shall perform a diagnostic 7-day calibration error test as soon as practicable after the end of that year.[1]

EPA's determination relies on the accuracy and completeness of GPC's January 20, 2016 petition and the associated electronic data reports and is appealable under 40 CFR part 78. If you have any questions regarding this determination, please contact Carlos R. Martínez at (202) 343-9747 or by e-mail at martinez.carlos@epa.gov. Thank you for your continued cooperation.

Sincerely,

/s/
Reid P. Harvey, Director
Clean Air Markets Division

cc: Dave McNeal, USEPA Region IV
Ross Winne, Georgia EPD
Carlos R. Martínez, CAMD

[1] Note that this is consistent with section 6.3.3 of appendix A to part 75, which requires a diagnostic 7-day calibration error test to be performed when a unit loses peaking unit status. However, unlike section 6.3.3, which requires the 7-day test to be completed within one year, no specific deadline is set for GPC to complete the test, due to the unpredictable nature of bypass stack operation from year to year. Instead, the test must be completed "as soon as practicable" after the end of the year in which the annual or 3-year average bypass stack capacity factor exceeds the threshold value.