

December 3, 2009

Patricia Q. West  
Designated Representative  
P.L. Bartow Power Plant  
Progress Energy Florida, Inc.  
P.O. Box 14042  
St. Petersburg FL 33733

Re: Petition for a Limited Waiver of the Part 75 Missing Data Substitution Requirements for Units 4A, 4B, 4C, and 4D at the P.L. Bartow Facility (Facility ID (ORISPL) 634)

Dear Ms. West:

The United States Environmental Protection Agency (EPA) has reviewed the October 14, 2009 petition submitted under 40 CFR 75.66(a) by Progress Energy Florida (PEF), in which PEF requested limited relief from using missing data substitution for failing to meet the certification deadline for certain continuous emission monitoring systems (CEMS) installed on Units 4A, 4B, 4C, and 4D at the P. L. Bartow facility (Bartow). EPA approves the petition, as discussed below.

#### Background

PEF owns and operates four combustion combined-cycle combustion turbines, Units 4A, 4B, 4C, and 4D, at its P.L. Bartow power plant in St. Petersburg, Florida. These four units commenced commercial operation on December 5, 2008, November 5, 2008, November 19, 2008, and December 20, 2008, respectively. Each unit consists of a stationary gas turbine and a heat recovery steam generator (HRSG). The units combust pipeline natural gas as the primary fuel and No. 2 diesel oil as a backup fuel. Each unit has a maximum load rating of 349 Megawatts and a maximum hourly heat input rate of 2,300 million British Thermal Units (mmBtu) per hour.

According to PEF, Units 4A, 4B, 4C, and 4D are subject to the Acid Rain Program and to the Clean Air Interstate Regulation (CAIR). Therefore, PEF is required to continuously monitor and report sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and carbon dioxide (CO<sub>2</sub>) emissions and heat input for these units in accordance with 40 CFR Part 75. To meet these monitoring requirements, PEF has installed and certified dry-extractive continuous emission monitoring systems (CEMS) for NO<sub>x</sub> at each bypass and

HRSG stack, and has installed orifice meters to measure fuel flow rates. PEF uses the methodology in Part 75 Appendix D to calculate the units' SO<sub>2</sub> and CO<sub>2</sub> emissions. Emission control devices for the units include dry low-NO<sub>x</sub> burners, water injection (for oil combustion, only), and selective catalytic reduction for NO<sub>x</sub>.

Each of the units has a bypass stack upstream of the HRSG and a main stack downstream of the HRSG. The units were operated in simple-cycle mode for a few months (until late February 2009) with emissions passing only through the bypass stacks, while construction of the HRSGs and addition of the pollution control devices were in progress. From that point on, operation was principally in the combined-cycle mode, with emissions exiting to the atmosphere through the HRSG stacks.

In June 2008, six months before the commencement of commercial operation of these units, PEF sought written guidance from EPA regarding the required timelines for certification of the monitors on the bypass and HRSG stacks from EPA. At that time, EPA indicated that the monitors on the bypass and HRSG stacks would be given separate windows of time for initial certification. For each unit, PEF would have 90 operating days or 180 calendar days (whichever comes first) from the date that the unit commences commercial operation to complete certification testing of the CEMS on the bypass stack, in accordance with §75.4(b). For certification of the main stack CEMS, PEF would have 90 operating days or 180 calendar days (whichever comes first), starting from the date that gases first flow through the HRSG stack, which would be treated as new stack construction, in accordance with §75.4(e).

PEF acted on the guidance from EPA regarding the required time frames for certifying the monitors on the bypass and HRSG stacks. Based on information provided by PEF in the October 14, 2009 petition, Table 1, below, shows the following for each of the bypass stack: (a) the date the unit commenced commercial operation; (b) the date on which the monitors were certified; (c) the number of stack operating days at the time certification was completed; and (d) 180 calendar days from the date of commencement of commercial operation (which came before 90 operating days in this case). Table 2, below, shows the same basic information for each HRSG stack, except that the number of stack operating days and calendar days are referenced to the date that gases first flowed through the HRSG stack, and that 90 operating days after the date that gases first flowed through the HRSG stack occurred before the 180 calendar days.

**Table 1: Certification Time Lines for the Bartow Bypass Stacks**

<b>Unit ID</b>	<b>Commence Commercial Operation Date</b>	<b>Certification Date for Bypass Stack Monitors</b>	<b>Number of Stack Operating Days at Certification</b>	<b>180 Calendar Days</b>
4A	12/5/08	4/12/09	9	6/3/09
4B	11/5/08	4/22/09	13	5/4/09
4C	11/19/08	4/21/09	13	5/18/09
4D	12/20/08	4/21/09	12	6/18/09

**Table 2: Certification Time Lines for the Bartow HRSG Stacks**

<b>Unit ID</b>	<b>Date Gases First Exited HRSG Stack</b>	<b>Certification Date for HRSG Stack Monitors</b>	<b>Number of Stack Operating Days at Certification</b>	<b>90 Operating Days</b>
4A	2/20/09	6/12/09	31	7/30/09
4B	2/27/09	6/11/09	37	7/26/09
4C	2/27/09	6/10/09	45	7/14/09
4D	2/23/09	6/20/09	46	7/19/09

Tables 1 and 2 clearly show that if separate 90 operating day/180 calendar day certification windows are allowed for the bypass stack monitors and the HRSG stack monitors, all required certification tests were successfully completed well within the allotted time frames under §§75.4(b) and (e). However, when PEF submitted its 2<sup>nd</sup> quarter 2009 electronic data reports for Units 4A, 4B, 4C, and 4D, EPA’s data checking software flagged the NO<sub>x</sub> emissions data recorded at each HRSG stack as invalid, in the time period extending from “day 180” of the certification window for the bypass stack monitors until the date on which certification testing the HRSG stack monitors was completed.

When PEF asked EPA to explain why these data were marked as invalid, the Agency, in an apparent reversal of its previous guidance, responded by stating that a new combined-cycle combustion turbine with a heat recovery steam generator is considered to be a single unit, and that, in accordance with §75.4(b), initial certification of the

continuous monitoring systems on all stacks must be completed within a single window of time, beginning on the date that the unit commences commercial operation. Further, for any monitoring system that does not pass all required certification tests within that window of time, maximum potential emissions values must be reported until the system is certified.

In view of this apparent change in EPA policy, PEF submitted a petition on October 14, 2009, requesting that the Agency accept as valid the NO<sub>x</sub> emissions data recorded by each HRSG stack monitor, in the time interval extending from “day 180” (in reference to the commencement of commercial operation) to the date on which the certification testing of the HRSG monitoring system was successfully completed. According to PEF, EPA should accept these data because: (1) all certification tests were completed within the time frames specified in the Agency’s original (June 2008) guidance; and (2) there is no technical basis for invalidating the data because the conditional data validation (CDV) procedures of §75.20(b)(3) were followed from the date that gases first flowed through the HRSG stacks, and CDV was applied in a manner consistent with sections 6.2(a), 6.3.2(a), 6.4(a), and 6.5(f)(1) of Appendix A to Part 75, and all required certification tests were passed in sequence, with no test failures. PEF estimates that invalidating the data and reporting the maximum potential NO<sub>x</sub> emission rate would result in the NO<sub>x</sub> mass emissions from these units being over-reported by nearly 500 tons.

#### EPA’s Determination

EPA approves PEF’s request for a limited waiver from using missing data substitution for NO<sub>x</sub> emissions from each HRSG stack at Bartow Units 4A, 4B, 4C, and 4D, in the time interval extending from the expiration date of the CEMS certification window under §75.4(b) to the date of completion of certification testing of the HRSG stack monitors. The Agency accepts as valid the NO<sub>x</sub> emissions data recorded at each HRSG stack in those time intervals.

The basis for this approval is as follows. First, PEF followed the certification timing guidance provided by EPA six months before the commencement of commercial operation of the Bartow units. Second, based on that guidance, all certification tests of the HRSG stack monitors were successfully completed within the prescribed time frames, in the current sequence and with no monitor adjustments and test failures. Third, using missing data substitution in the time intervals in question would require the maximum potential NO<sub>x</sub> emission rate (MER) to be reported for every unit operating hour. This would grossly overstate the NO<sub>x</sub> mass emissions from Units 4A, 4B, 4C, and 4D, by a factor of five (i.e., 499 tons using the MER versus 100 tons using data from the CEMS).

For the time intervals in question, EPA will manually override any critical error messages generated by its data checking software that flag NO<sub>x</sub> emissions data from Units 4A, 4B, 4C, and 4D as invalid. This will allow the quality-assured NO<sub>x</sub> data recorded by the CEMS during those time intervals to be entered into EPA’s data base and to be used for allowance accounting purposes under the CAIR regulation.

EPA's determination relies on the accuracy and completeness of the information provided by PEF in the October 14, 2009 petition and is appealable under Part 78. If you have any questions about this determination, please contact Art Diem at (202) 343-9340 or [diem.art@epa.gov](mailto:diem.art@epa.gov). Thank you for your continued cooperation.

Sincerely,

/s/

Sam Napolitano, Director  
Clean Air Markets Division

cc: David McNeal, EPA Region IV  
Michael Pacoine, Florida DEP  
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Charles Dufeny, PEF  
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