

April 17, 2008

Ron Bowen  
General Manager and Designated Representative  
Jonesboro City Water and Light  
P.O. Box 1289  
Jonesboro, AR 72403

Re: Petition to Use an Alternative Method to Account for Sulfur Dioxide Emissions Prior to Initial Certification for Units SN04 and SN06 at Jonesboro City Water & Light (Facility ID (ORISPL) 56505).

Dear Mr. Bowen:

The United States Environmental Protection Agency (EPA) has reviewed the November 26, 2007 petition submitted by Jonesboro City Water & Light (CWL) under 40 CFR 75.66, in which CWL requested to use an alternative data substitution method for Units SN04 and SN06 at its CWL facility to account for sulfur dioxide (SO<sub>2</sub>) emissions prior to initial certification. EPA denies the petition, as discussed below.

#### Background

CWL owns and operates five GE aero-derivative, simple cycle gas turbines, Units SN01, SN02, SN04, SN06, and SN07 at its Jonesboro City Water & Light facility in Jonesboro, Arkansas. The units combust primarily natural gas and occasionally combust diesel fuel. Water injection is used to control the units' nitrogen oxides (NO<sub>x</sub>) emissions. According to CWL, Units SN04, SN06, and SN07 all commenced commercial operation after 1990, serve generators greater than 25 MW producing electricity for sale, and are subject to the Acid Rain Program (ARP). Consequently, CWL 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.

In the November 26, 2007 petition, CWL states that Units SN04 and SN06 commenced commercial operation on May 16, 2000 and May 17, 2003, respectively. However, at that time, CWL assumed that these two units were not subject to the ARP. Consequently, CWL did not meet the continuous emission monitoring and reporting requirements of Part 75 for these units. CWL asserts that its assumption was based on a misinterpretation of statements in the Arkansas Air Permit, that: (1) the affected units are limited to "peaking" operations (less than 10% annual

capacity factor); (2) continuous emission monitoring systems (CEMS) are not required; and (3) continuous opacity monitoring systems (COMS) are not required. According to CWL, the exemption from CEMS requirements was the primary factor leading to the assumption that Units SN04 and SN06 were not ARP units.

In accordance with §75.4(b)(2), CWL should either have installed and certified continuous monitoring systems on Units SN04 and SN06 (or implemented an excepted monitoring methodology such as the low mass emissions (LME) methodology in §75.19), and should have begun reporting emissions data from these units, no later than 90 unit operating days or 180 calendar days (whichever occurred first) after they commenced commercial operation. For both units, the 180<sup>th</sup> calendar day occurred before the 90<sup>th</sup> unit operating day, and the respective deadlines for monitor certification and emissions reporting were therefore November 12, 2000 for Unit SN04 and November 13, 2003 for Unit SN06. As previously noted, CWL failed to meet these ARP requirements.

CWL stated that, at the beginning of 2007, it started planning for compliance with the Clean Air Interstate Regulation (CAIR). According to CWL, in the process of researching CAIR requirements, CWL became aware that Units SN04 and SN06 are not exempt from the ARP and should have been monitoring and reporting SO<sub>2</sub> emissions to EPA since 2000 (for Unit SN04) and 2003 (for Unit SN06). According to CWL, it also became aware that Unit SN07, which began operation on May 18, 2007, is an affected unit under the ARP and was required to begin monitoring and reporting SO<sub>2</sub> emissions on November 14, 2007 (i.e., the 180<sup>th</sup> calendar day after commencement of commercial operation).

CWL made the following submittals to EPA to bring these units into compliance with ARP requirements: (a) certificates of representation; (b) ARP permit applications; (c) monitor certification applications; and (d) electronic data reports (EDRs) for 2007. The certification applications for Units SN04, SN06, and SN07 were submitted on August 10, 2007. CWL elected to use the LME methodology in accordance with §75.19 for these units. To qualify for this monitoring option, a unit must be gas-fired or oil-fired and must emit no more than 25 tons of SO<sub>2</sub> and less than 100 tons of NO<sub>x</sub> per year. The LME methodology does not require actual continuous monitoring of emissions or unit heat input. Rather, emissions are estimated using fuel-specific default emission rates, and either the unit heat input is estimated from records of fuel usage or the maximum rated heat input is applied to each unit operating hour. EPA approved CWL's certification application for use of the LME methodology at Units SN04, SN06, and SN07. The units have been in compliance with the Part 75 monitoring and reporting requirements, including initial certification, since October 1, 2007.

In the November 26, 2007 petition, CWL requested to use an alternate data substitution method that estimates the SO<sub>2</sub> emissions from Units SN04 and SN06 prior to initial certification by applying the LME methodology in §75.19. Specifically, CWL proposed to estimate the SO<sub>2</sub> emissions using Equation LM-9 from §75.19, as shown below:

$$W_{SO_2} = EF_{SO_2} \times HI_{hr} \quad (\text{Eq. LM-9})$$

Where:

- $W_{SO_2}$  = Hourly SO<sub>2</sub> mass emissions (lb),
- $EF_{SO_2}$  = SO<sub>2</sub> emission factor from Table LM-1 of §75.19, (lb/mmBtu), and
- $HI_{hr}$  = Either the maximum rated hourly heat input under §75.19(c)(3)(i)(A) or the hourly heat input under §75.19(c)(3)(ii), (mmBtu).

For each unit operating hour, CWL used the appropriate default LME SO<sub>2</sub> emission rate from Table LM-1 of §75.19 in Equation LM-9 (i.e., 0.0006 lb/mmBtu for pipeline natural gas and 0.5 lb/mmBtu for diesel fuel). The unit heat input was estimated using the number of standard cubic feet of natural gas combusted or the number of gallons of diesel fuel combusted (as measured by on-site fuel flow meters) in conjunction with the average heat content of these fuels (i.e., 1,030 Btu/scf for pipeline natural gas and 146,673 Btu/gal for diesel fuel). The hourly SO<sub>2</sub> mass emission values were then summed, and the sum was divided by 2000 lb/ton, to give an estimated total of 15 tons of SO<sub>2</sub> emissions from Units SN04 and SN06 prior to initial certification (see Table 1 below). These estimated emissions are what CWL would have reported had the Units SN04 and SN06 been in compliance with Part 75 and used the LME methodology of §75.19 since November 12, 2000 and November 13, 2003, respectively.

**Table 1. Alternative Substitute Data for 2000-2006 SO<sub>2</sub> Emissions Prior to Certification for CWL Units SN04 and SN06 (from November 26, 2007 Petition)**

<b>Year</b>	<b>Unit SN04 Tons SO<sub>2</sub></b>	<b>Unit SN06 Tons SO<sub>2</sub></b>	<b>Total Tons SO<sub>2</sub></b>
2000	0	-	0
2001	0	-	0
2002	1	-	1
2003	7	1	8
2004	1	0	1
2005	4	1	5
2006	0	0	0
<b>Totals</b>	<b>13</b>	<b>2</b>	<b>15</b>

In the November 26, 2007 petition, CWL also provided a second estimate of the actual 2000-2006 SO<sub>2</sub> emissions from Units SN04 and SN06 based on SO<sub>2</sub> emission rates derived from performance tests on diesel fuel, rather than the default value for diesel fuel. Using these emission rates (i.e., 0.0184 lb/SO<sub>2</sub>/mmBtu and 0.0135 lb/SO<sub>2</sub>/mmBtu for Units SN04 and SN06, respectively) in the calculations substantially reduces the estimate of the total SO<sub>2</sub> mass emissions during 2000 through 2006, from 15 tons to 1 ton. While CWL requests to use the first

estimate, it believes that the second estimate of the units' 2000-2006 SO<sub>2</sub> emissions is more representative of actual emissions.

EPA's Determination

EPA denies CWL's petition to use an alternative data substitution methodology to calculate the SO<sub>2</sub> emissions from Units SN04 and SN06 prior to initial certification . EPA maintains that CWL must report SO<sub>2</sub> emissions calculated according to the LME standard missing data procedures of §75.19(b)(iii), as shown in Table 2 below.

**Table 2. Standard Substitute Data for 2000-2007 SO<sub>2</sub> Emissions Prior to Certification for CWL Units SN04 and SN06**

<b>Year</b>	<b>Unit SN04 Tons SO<sub>2</sub></b>	<b>Unit SN06 Tons SO<sub>2</sub></b>	<b>Total Tons SO<sub>2</sub></b>
2000	0	-	0
2001	0	-	0
2002	1	-	1
2003	8	1	9
2004	1	0	1
2005	5	2	7
2006	0	0	0
2007	0	0	0
<b>Totals</b>	<b>15</b>	<b>3</b>	<b>18</b>

CWL has not provided an adequate reason why the LME standard missing data procedures in §75.19 should not be applied in this case. The mere fact that the standard missing data procedures result in higher reported emissions than CWL's proposed alternative is not a basis for an exception to application of the procedures required by §75.19.

Equation LM-9, above, is used to calculate the LME standard SO<sub>2</sub> substitute data. However, under §75.19(b)(2)(iii), the maximum potential hourly heat input for Units SN04 and SN06 is used, instead of the units' actual heat input, as proposed by CWL. Each unit has a maximum hourly heat input of 469 mmBtu/hour.

Section 75.19 does not address LME initial missing data procedures as clearly as §75.4(j) addresses initial missing data procedures for CEMS methodologies.<sup>1</sup> However, §75.19(b)(2)(iii) specifies what methodology to use when a unit can no longer qualify to apply the LME methodology and certified CEMS are not installed, and EPA considers this approach to be the

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<sup>1</sup> EPA notes that §75.4(j) applies when required "certification tests" are not completed by the certification deadline. 40 CFR 75.4(j). However, §75.19 does not require continuous monitoring of emissions by certified monitoring systems, although in some cases a unit owner or operator could choose to use a certified fuel flow meter. Consequently, §75.4(j) does not apply to units that would qualify for the LME methodology under §75.19.

standard missing data procedure and appropriate to apply in this situation where certified CEMS are not installed and the LME methodology has not yet been approved for use.

EPA's determination relies on the accuracy and completeness of the information provided by CWL in the November 26, 2007 petition and in subsequent clarifying e-mails sent through February 13, 2008 and is appealable under Part 78. If you have any questions regarding this determination, please contact Travis Johnson, either at (202) 343-9018 or at [johnson.travis@epa.gov](mailto:johnson.travis@epa.gov).

Please contact Kenon Smith of my staff, either at (202) 343-9164 or at [smith.kenon@epa.gov](mailto:smith.kenon@epa.gov), to resolve the allowance accounting issues associated with this determination. Thank you for your continued cooperation.

Sincerely,

/s/

Sam Napolitano, Director  
Clean Air Markets Division

cc: Mr. Thomas Rheume, Arkansas DEQ  
Joyce Johnson, EPA Region VI  
Travis Johnson, CAMD  
Ujjval Shukla, CAMD  
Kenon Smith, CAMD