

March 18, 2019

Mr. Dale Irwin  
General Manager, Greenidge Generation LLC  
P.O. Box 187  
590 Plant Road  
Dresden, NY 14441

Re: Petition to use alternative methodologies for determining emissions and heat input data reported for unit 6 at Greenidge Electric Generating Station (Facility ID (ORISPL) 2527)

Dear Mr. Irwin:

The United States Environmental Protection Agency (EPA) has reviewed the November 27, 2018 petition submitted by Greenidge Generation LLC (Greenidge LLC), which EPA interprets as having been submitted under 40 CFR 75.66, as well as the supplemental information provided by Greenidge LLC via email on February 12, 2019. In the petition, Greenidge LLC requests authorization to use alternatives to standard part 75 missing data substitution procedures to determine data to be reported for unit 6 at Greenidge Electric Generating Facility (Greenidge) following a failure to perform timely relative accuracy test audits (RATAs). For the reasons discussed in this letter, EPA denies the petition.

#### Background

Greenidge LLC owns and operates the Greenidge facility in Dresden, New York. Greenidge unit 6 is a boiler serving an electricity generator with a reported nameplate capacity of 106 megawatts (MW).<sup>1</sup> The unit historically combusted coal but in February 2017, after almost six years during which the unit did not operate, resumed operation as a primarily natural gas-fired unit. Although the unit's new title V operating permit allows combustion of certain types of wood in combination with natural gas, Greenidge LLC reports that the unit has combusted exclusively natural gas from the resumption of operations through the end of 2018.<sup>2</sup>

According to Greenidge LLC, unit 6 is subject to the Acid Rain Program and CSAPR trading programs for emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>). Greenidge LLC is therefore required to continuously monitor and report SO<sub>2</sub>, NO<sub>x</sub>, and carbon dioxide (CO<sub>2</sub>) mass emissions, NO<sub>x</sub> emission rate, and heat input rate for unit 6 in accordance with 40 CFR part 75. To meet these requirements, Greenidge LLC has installed and certified an SO<sub>2</sub> continuous emission monitoring system (CEMS), a NO<sub>x</sub>-diluent CEMS, a CO<sub>2</sub> CEMS, and a stack flow CEMS on unit 6. To determine NO<sub>x</sub> and CO<sub>2</sub> mass emissions, NO<sub>x</sub> emission rate, and heat input rate data reported for purposes of the Acid Rain Program and the CSAPR trading programs, Greenidge LLC has generally used measurements obtained from the NO<sub>x</sub>-diluent, CO<sub>2</sub>, and stack flow CEMS. To determine the SO<sub>2</sub> mass emissions data reported for purposes of these programs, instead of using measurements from the unit's SO<sub>2</sub> CEMS, Greenidge LLC

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<sup>1</sup> EPA notes that the electricity generator served by boiler unit 6 is designated generator unit 4.

<sup>2</sup> Email from Dale Irwin, Greenidge Generation LLC, to Jeremy Schreifels, EPA Clean Air Markets Division, February 12, 2019.

has used Equation F-23 in appendix F to part 75. This equation computes a unit's SO<sub>2</sub> mass emissions rate based on the unit's reported heat input rate (determined using measurements from the CO<sub>2</sub> and stack flow CEMS) in combination with a fuel-specific default SO<sub>2</sub> emission rate.

The owner or operator of a unit using CEMS under part 75 must follow the quality assurance procedures for CEMS set forth in appendix B to part 75, including performance of periodic RATAs. Provisions governing the required timing of periodic RATAs are set forth in sections 2.3.1.1, 2.3.1.2, and 2.3.3 of appendix B. Generally, after completion of a RATA demonstrating a sufficient degree of relative accuracy, the next RATA is due in the earlier of (1) the fourth QA operating quarter<sup>3</sup> following the quarter in which the previous RATA was completed or (2) the eighth calendar quarter following the quarter in which the previous RATA was completed.<sup>4</sup> If RATA testing is not completed by the end of the quarter in which the RATA is due, the owner or operator is allowed a grace period of 720 unit operating hours after the end of that quarter in which to complete the testing.

Provisions governing the load levels at which RATA testing must be performed are set forth in section 2.3.1.3 of appendix B. Periodic RATA testing for SO<sub>2</sub>, NO<sub>x</sub>-diluent, and CO<sub>2</sub> CEMS generally must be performed at a single load level designated as normal for the unit. However, except in cases of CEMS installed on bypass stacks or at peaking units, periodic RATA testing for stack flow CEMS generally must be performed at the two most frequently used load levels (and must be performed at three load levels at least once every 20 calendar quarters).<sup>5</sup>

The consequences of failure to complete a required periodic RATA on a timely basis are set forth in section 2.3.3(c) of appendix B. Under this provision, if the RATA testing is not completed by the last hour of the grace period, measurements from the CEMS are considered invalid as of the next unit operating hour. Under § 75.30(a), from that hour through the hour when a RATA is successfully completed, instead of reporting data determined using CEMS measurements, the unit generally must report substitute data determined according to the standard missing data substitution procedures in subpart D of part 75.

As alternatives to the use of CEMS, part 75 also makes several non-CEMS methodologies available to qualifying units. Of relevance here, for units meeting the definition of "gas-fired" under 40 CFR 72.2, appendix D to part 75 contains a methodology for determining reported heat input rate and SO<sub>2</sub> mass emissions based on continuous measurements of fuel input combined with measured or default values for the gross calorific value and sulfur content of the fuel. Gas-fired units using the appendix D methodology to determine reported heat input rate and SO<sub>2</sub> mass emissions may also use a methodology in appendix G to part 75 to determine reported CO<sub>2</sub> mass emissions based on the

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<sup>3</sup> Under 40 CFR 72.2, a "QA operating quarter" for a unit is a calendar quarter with 168 or more unit operating hours, while a "unit operating hour" is a clock hour in which the unit combusts any fuel.

<sup>4</sup> Depending on the timeliness and results of the previous RATA, the number of QA operating quarters until the next RATA is due may be less than four. Refer to sections 2.3.1.2, 2.3.3(c), and 2.3.3(d) of appendix B. In addition, certain exceptions to the RATA timing requirements may apply, for purposes of SO<sub>2</sub> CEMS RATAs only, in cases where a unit combusts only natural gas or another fuel qualifying as "very low sulfur fuel." Refer to, *e.g.*, § 75.21(a)(9).

<sup>5</sup> The conditions under which stack flow RATA testing may be performed at a single load level rather the normal minimum of two load levels are set forth in section 2.3.1.3(b), 2.3.1.3(c)(2), and 2.3.1.3(c)(3) of appendix B.

appendix D heat input in combination with a fuel-specific default CO<sub>2</sub> emission rate.<sup>6</sup> Units using the appendix D and G methodologies do not report SO<sub>2</sub> concentration or stack flow rate and do not need to operate SO<sub>2</sub>, CO<sub>2</sub>, or stack flow CEMS for part 75 purposes.<sup>7</sup> Many such units do need to operate NO<sub>x</sub>-diluent CEMS in order to determine the reported NO<sub>x</sub> emission rate. The units can then determine reported NO<sub>x</sub> mass emissions from the NO<sub>x</sub> emission rate in combination with the appendix D heat input rate.

Following the February 2017 resumption of operations at unit 6, Greenidge LLC completed initial certification RATAs for the unit's new SO<sub>2</sub>, NO<sub>x</sub>-diluent, CO<sub>2</sub>, and stack flow CEMS in the second quarter of 2017. Based on the results of those RATAs and the numbers of unit operating hours in the next four quarters, periodic RATAs for the NO<sub>x</sub>-diluent, CO<sub>2</sub>, and stack flow CEMS on unit 6 were due in the second quarter of 2018.<sup>8</sup> However, Greenidge LLC did not complete the 2018 RATAs either during the second quarter, which ended on June 30, 2018, or within the unit's ensuing 720-unit operating hour grace period, which ended on August 6. According to Greenidge LLC, testing for the NO<sub>x</sub>-diluent and CO<sub>2</sub> RATAs was successfully completed on August 28; testing for the first required load level for the stack flow RATA was successfully completed on August 29; and testing for the second required load level for the stack flow RATA was successfully completed on October 31.<sup>9</sup> Based on these reported facts, measurements from the NO<sub>x</sub>-diluent and CO<sub>2</sub> CEMS for unit 6 are considered invalid for the period from August 6, hour 18, through August 28, hour 15, and measurements from the stack flow CEMS are considered invalid for the period from August 6, hour 18, through October 31, hour 15.

On November 27, 2018, Greenidge LLC submitted a petition to EPA requesting that, as an alternative to reporting substitute data for the CEMS for their respective out-of-control periods, unit 6 should instead be allowed to determine reported heat input rate, SO<sub>2</sub> mass emissions, and CO<sub>2</sub> mass emissions for period from July 1, 2018 through October 31, 2018 using the methodologies in appendices D and G to part 75. The petition also requests authorization to determine stack flow rate for this period from the appendix D heat input rate (without explaining how the computation would be done). Finally, the petition also requests authorization to treat measurements obtained from the NO<sub>x</sub>-diluent and CO<sub>2</sub> CEMS during this period as valid data.<sup>10</sup>

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<sup>6</sup> Refer to appendix G to part 75 (Equation G-4). EPA notes that the fuel-specific default CO<sub>2</sub> emission rates are not stated explicitly but are implicit in the combination of default values used for other variables.

<sup>7</sup> A unit using a NO<sub>x</sub>-diluent CEMS with CO<sub>2</sub> as the diluent gas must report CO<sub>2</sub> concentration data for use in determining reported NO<sub>x</sub> emission rate data, but if the unit also uses the appendix D and G methodologies, the CO<sub>2</sub> concentration data are not used to compute reported heat input rate or CO<sub>2</sub> mass emissions data.

<sup>8</sup> Because unit 6 combusted exclusively natural gas throughout 2017 and 2018, Greenidge LLC was not required to conduct a RATA for the unit's SO<sub>2</sub> CEMS in the second quarter of 2018.

<sup>9</sup> The correctness of Greenidge's assertion that the stack flow RATA was successfully completed on October 31 depends in part on whether all testing for the 2018 stack flow RATA was completed within a period of 720 consecutive unit operating hours. Refer to section 2.3.1.1(b) of appendix B and section 6.5(e) of appendix A to part 75. Because Greenidge has not yet submitted its quarterly report for the fourth quarter of 2018, EPA has not been able to verify whether this condition has been met. If the condition was not met, then the stack flow CEMS on unit 6 remains out of control.

<sup>10</sup> EPA notes that some aspects of the requests in the petition appear to be inconsistent with one another, at least for purposes of the Acid Rain Program and the CSAPR trading programs. Specifically, because stack flow rate and CO<sub>2</sub> CEMS data are not reported by units using the appendix D and G methodologies, if the request to use the appendix D and G methodologies were approved then it would be unnecessary for unit 6 to also have approved alternative methodologies for determining reported stack flow rate data and CO<sub>2</sub> CEMS data.

The petition includes several arguments intended to support these requests. First, the petition states that Greenidge LLC was unable to schedule timely performance of the required RATAs because of uncertainty regarding when the unit would be dispatched during the second quarter of 2018 and unavailability of test contractors on short notice during the third quarter. Second, the petition states that the delay in performing stack flow testing at the second required load level was due to earlier miscommunication between Greenidge LLC and the test contractor concerning whether unit 6 qualified to perform a single-load RATA instead of the normal two-load RATA for the stack flow CEMS. Third, the petition asserts that Greenidge LLC has already requested and obtained approval for a RATA testing deadline extension from the New York State Department of Environmental Conservation (NYSDEC) and EPA Region 2. Fourth, the petition contends that EPA's regulations for the Mercury and Air Toxics Standards (MATS) program somehow authorize or establish a precedent for a RATA extension for part 75 purposes. Finally, the petition contends that EPA's approval of a previous petition from Greenidge LLC to use the appendix D and G methodologies during a period in 2017 before unit 6 resumed normal operation represents a precedent for approval of the November 27, 2018 petition.

#### EPA's Determination

EPA has reviewed the November 27, 2018 petition and has concluded that it provides no basis for granting an alternative to any otherwise applicable requirements of the part 75 regulations relating to the use of CEMS-based monitoring methodologies at Greenidge unit 6.

First, with respect to the claim of inability to schedule the required RATA testing, the petition presents no information indicating that Greenidge's circumstances differ in any material way from the circumstances of many other intermediate-duty units in New York and other states that are routinely able to schedule their required RATA testing for timely completion despite the fact that, like unit 6, those other units are dispatched by an unaffiliated system operator. The part 75 regulations allow each required RATA to be scheduled at any time during the designated calendar quarter, plus a grace period of 720 unit operating hours after the end of the calendar quarter. In the second quarter of 2018, unit 6 operated for over 900 hours, including one stretch of over 300 consecutive clock hours, another stretch of over 200 consecutive clock hours, and three additional stretches of over 70 consecutive clock hours. In addition, the unit's first 720 unit operating hours in the third quarter (*i.e.*, the hours comprising the grace period for completion of the required RATAs) included one stretch of over 400 consecutive clock hours and two additional stretches of over 100 consecutive clock hours. In short, Greenidge LLC appears to have had ample opportunity to schedule and perform the required RATAs during the second quarter or, as a last resort, during the 720-unit operating hour grace period.

Second, with respect to the claim of miscommunication regarding the number of required load levels for the stack flow RATA, even if miscommunication did occur, it would not excuse a failure by Greenidge LLC to schedule and perform stack flow RATA testing at unit 6 at two load levels. Unit owners and operators are responsible for understanding and ensuring compliance with their obligations under part 75, just as they are responsible for understanding and ensuring compliance with other legal obligations. This responsibility applies regardless of whether the obligations are complex and whether contractors are employed to assist. Here, as noted above, stack flow RATAs routinely require testing at two (or three) load levels, and the exceptions under which single-load testing is allowed are clearly laid out in the regulations.<sup>11</sup>

Third, with respect to the claim that an extension of the RATA testing deadline was granted by NYSDEC or EPA Region 2, no such extension could have been granted because neither NYSDEC nor EPA

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<sup>11</sup> Refer to, *e.g.*, note 5 *supra*.

Region 2 has authority to grant it. Authority to allow alternatives to individual part 75 requirements under § 75.66 rests explicitly with the EPA Administrator and with the Director of the EPA Clean Air Markets Division (CAMD) as the Administrator's duly authorized representative.<sup>12</sup> No such authority to authorize alternatives has been delegated to any EPA Regional officials or to any state officials with respect to any part 75 requirement under either the Acid Rain Program or the CSAPR trading programs. The mere fact that a part 75 requirement may be explicitly or implicitly incorporated into a title V operating permit administered by a state agency does not give the state agency the authority to alter such a requirement.

Fourth, with respect to the claim that the MATS regulations somehow authorize or establish a precedent for a RATA extension for part 75 purposes, no plausible grounds for such a claim exist. The timing requirements for RATAs under the MATS regulations in fact are quite similar to the timing requirements for RATAs under the part 75 regulations, with each periodic RATA generally due in the earlier of (1) the fourth QA operating quarter following the quarter in which the previous RATA was completed or (2) the eighth calendar quarter following the quarter in which the previous RATA was completed, with a grace period of 720 unit operating hours after the end of the quarter in which the RATA is due.<sup>13</sup> Contrary to the suggestion in the petition, there is no provision in the MATS regulations for extension of a RATA deadline past the end of the 720-unit operating hour grace period. Moreover, even if there were such a provision, it would have no bearing on the legally distinct timing requirements for testing under the part 75 regulations.

Finally, with respect to the claim that EPA's grant of a previous petition<sup>14</sup> establishes a precedent relevant to Greenidge LLC's current request, EPA disagrees, because a circumstance identified as a key part of the basis for EPA's response to the previous petition is absent here. For most of the unit operating hours in the period covered by the earlier petition, unit 6 had been combusting fuel at an exceptionally low load level – about 2 MW, which is roughly 5% of the normal minimum load level of 37 MW specified in the unit's monitoring plan – with the consequence that standard substitute data for the invalid heat input data would have grossly overstated the unit's actual heat input during that earlier period.<sup>15</sup> In contrast, during the missing data period covered by the present petition, unit 6 appears to have been operating at or near its full load for many of the unit operating hours and at or above its normal minimum load for most of the remaining unit operating hours, with the consequence that standard substitute data would not overstate the true heat input rate data to anywhere near the same degree.<sup>16</sup>

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<sup>12</sup> Refer to, *e.g.*, § 75.66 and 40 CFR 97.435.

<sup>13</sup> Refer to section 5.1.2.4 of appendix A to subpart UUUUU of 40 CFR part 63.

<sup>14</sup> From February 20, 2017, when unit 6 first reported fuel combustion following its extended shutdown period, through May 7, 2017, when the first certification tests for the current CEMS installed on unit 6 were completed, Greenidge LLC did not use CEMS measurements to determine heat input rate and SO<sub>2</sub> and CO<sub>2</sub> mass emissions reported for part 75 purposes, but instead used measurements from the natural gas fuel flowmeter and the non-CEMS methodologies in appendices D and G to part 75. The temporary use of these methodologies was authorized pursuant to a January 24, 2018, petition under § 75.66 submitted by Greenidge LLC to EPA, which EPA granted in part. Refer to May 30, 2018 EPA Response to Greenidge petition.

<sup>15</sup> Refer to *id.* at 3.

<sup>16</sup> Hourly load data for unit 6 for the portion of the missing data period after September 30, 2018 have not yet been reported.

In summary, none of the arguments presented in the November 27, 2018 petition provides any basis for EPA to grant an alternative to any part 75 requirement. Timeliness of required testing is a central aspect of the part 75 quality assurance requirements, and the mechanism used to enforce timeliness is the requirement to report substitute data when testing deadlines are not observed. Accordingly, if unit 6 is using CEMS-based monitoring methodologies, then consistent with the part 75 regulations applicable to the use of CEMS, Greenidge LLC must report substitute data for the unit's NO<sub>x</sub> emission rate and CO<sub>2</sub> concentration for the period from hour 18 on August 6, 2018 through hour 15 on August 28, 2018 and must report substitute data for stack flow rate for the period from hour 18 on August 6, 2018 through hour 15 on October 31, 2018. All required substitute data must be determined in accordance with the provisions of subpart D of part 75.

Notwithstanding the denial of the petition, EPA notes that because Greenidge unit 6 has not combusted any fuel other than natural gas in over seven years, the unit appears to meet the definition of "gas-fired" in 40 CFR 72.2. Consequently, unit 6 may currently qualify to determine reported data for SO<sub>2</sub> and CO<sub>2</sub> mass emissions and heat input rate using the non-CEMS methodologies in appendices D and G to part 75 without a petition, at least for purposes of the Acid Rain Program and the CSAPR trading programs and at least through December 2018. If unit 6 in fact does qualify and if Greenidge LLC elects to use the appendix D and G methodologies as provided under the regulations for at least the period from August 6, 2018 through October 31, 2018, then the data substitution requirements for CO<sub>2</sub> concentration and stack flow rate stated in the previous paragraph would not apply (but the data substitution requirements for NO<sub>x</sub> emission rate would continue to apply). This letter does not address whether use of the appendix D and G methodologies by unit 6 would be consistent with any monitoring and reporting requirements that may apply to the unit under the unit's title V operating permit or any other legal authority besides the part 75 regulations as applied for purposes of the Acid Rain Program and the CSAPR trading programs.

EPA's determination relies on the accuracy and completeness of Greenidge LLC's November 27, 2018 petition and February 12, 2019 email and is appealable under 40 CFR part 78. If you have any questions regarding this determination, please contact Charles Frushour at 202-343-9847. Thank you for your continued cooperation.

Sincerely,

/s/

Reid P. Harvey, Director

Clean Air Markets Division

cc: Esther Nelson, USEPA Region 2

Randy Orr, New York State Department of Environmental Conservation

Steven Flint, NYSDEC DAR Central Office

Thomas Marriott, NYSDEC DAR RAPCE Region 9

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