



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF AIR AND RADIATION

April 22, 2021

Melissa C. Jones
Director of Production Energy Supply
Gainesville Regional Utilities
P.O. Box 147117, Station A-136
Gainesville, Florida 32614-7117

Re: Petition request for a revised site-specific default moisture value for unit BFB1 at the Deerhaven Renewable Energy Center (facility ID (ORISPL) 57241)

Dear Ms. Jones:

The United States Environmental Protection Agency (EPA) has reviewed the September 16, 2020 petition submitted under 40 CFR 75.66 by Gainesville Regional Utilities (GRU), requesting approval of a revised site-specific default moisture value for unit BFB1 at its Deerhaven Renewable Energy Center (Deerhaven), formerly known as the Gainesville Renewable Energy Center. EPA approves the petition, with conditions, as discussed below.

Background

GRU owns and operates the Deerhaven facility, which is located in Alachua County, Florida. Deerhaven unit BFB1 is a bubbling fluidized bed boiler that serves a 100-MW generator and combusts primarily biomass, as well as pipeline natural gas during unit startup and flame stabilization. According to GRU, unit BFB1 is subject to the Acid Rain Program. GRU is therefore required to continuously monitor and report the unit's sulfur dioxide (SO₂) and carbon dioxide (CO₂) mass emissions, nitrogen oxides (NO_x) emission rate, and heat input rate in accordance with 40 CFR part 75.

To meet the part 75 monitoring requirements, GRU has installed and certified continuous emission monitoring systems (CEMS) for SO₂, NO_x, CO₂, and oxygen (O₂) as well as a continuous stack gas flow monitoring system. The unit BFB1 CEMS include gas analyzers that measure SO₂, NO_x, and O₂ concentrations on a dry basis (i.e., exclusive of stack moisture), while stack gas flow rate is always measured on a wet basis (i.e., inclusive of stack moisture). Because dry-basis and wet-basis measurements are being combined, each of the equations from appendix F of part 75 that GRU uses to compute mass emissions and heat input rate requires the use of a moisture correction factor.

Under part 75, when moisture corrections are needed, a source generally can use either monitored moisture data from a CEMS or, in certain situations, a conservative fuel-specific default moisture value.

In each of the appendix F equations used by GRU to compute mass emissions and heat input, as the moisture percentage decreases, the reported mass emissions or heat input rate will increase. Therefore, for unit BFB1, a “conservative” default moisture value would be a value that is conservatively low relative to the average actual stack moisture content at the unit and that therefore prevents under-reporting of mass emissions and heat input rate. For biomass (wood), § 75.11(b) generally authorizes the use of a fuel-specific default moisture value of 13.0% H₂O without the need for specific EPA approval.¹ Use of a site-specific default value different from 13.0% H₂O requires EPA approval.

On January 15, 2014, the previous owner of unit BFB1 submitted a petition requesting approval of a site-specific default moisture value for the unit. EPA issued a petition response approving a site-specific default moisture value for the unit of 16.3% H₂O based on the 10th percentile of hourly moisture values obtained from a moisture monitoring system previously installed and operated on unit BFB1 between November 18, 2013 and January 1, 2014.²

On September 16, 2020, GRU submitted a petition requesting approval of a revised site-specific default moisture value for unit BFB1. As support for the petition, GRU provided a data set of 148 moisture measurements obtained using EPA reference method 4 during six relative accuracy test audits (RATAs) performed for the unit from November 2013 through February 2020. The reference method measurements range from 19.3% H₂O to 26.9% H₂O, with a mean of 22.3% H₂O. GRU is requesting approval of a revised default moisture value of 20.7% H₂O, representing the 10th percentile of the 148 moisture measurements. GRU further proposes that if the average moisture percentage measured in a subsequent RATA is less than this value by more than 1.0% H₂O, the average moisture value from that RATA would become the new approved default moisture value.

EPA’s Determination

EPA has reviewed GRU’s September 16, 2020 petition, the moisture measurement data, and GRU’s proposed methodology for determining and potentially adjusting site-specific default moisture values for Deerhaven unit BFB1. EPA agrees that in this instance, where a set of moisture tests performed using the same EPA reference method over a period of more than six years has produced a consistent set of measurement data that differs materially from the set of measurement data obtained from a moisture monitoring system operated for a period of six weeks, it is reasonable to rely more heavily on the reference method test data than on the moisture monitoring system data for purposes of determining a default site-specific moisture value for the unit. EPA further agrees that taking the 10th percentile value of the reference method measurement data set, subject to possible downward adjustment based on the moisture measurements obtained in future RATAs, is a reasonably conservative approach for setting default moisture values that will avoid potential under-reporting of mass emissions and heat input rate. Accordingly, EPA approves GRU’s request for a revised site-specific default moisture value of 20.7% H₂O for use in part 75 reporting at unit BFB1, subject to the conditions below.

¹ Although by its terms § 75.11(b) applies to only SO₂ monitoring, in the circumstances here § 75.10(c) and § 75.13(c) extend its application to heat input and CO₂ monitoring.

² Refer to EPA response to petition for Gainesville Renewable Energy Center (September 8, 2014), available at <https://www.epa.gov/airmarkets/responses-40-cfr-part-75-petitions-2014>.

- (1) GRU may begin to use a default moisture value of 20.7% H₂O beginning on the issuance date of this signed petition response. Prior to the electronic submission of hourly part 75 data, GRU must update the electronic monitoring plan replacing the previously approved default moisture value of 16.3% H₂O with a default moisture value of 20.7% H₂O.
- (2) GRU must re-evaluate the appropriateness of the default moisture value each year during the annual RATA testing. GRU must continue to use the approved default moisture value prior to each annual RATA (e.g., initially 20.7% H₂O) unless the average moisture value measured during that RATA is less than the default moisture value in use prior to that RATA by a difference of more than 1.0% H₂O. If this should occur, GRU must use the average moisture percentage from that RATA as the new default moisture value.
- (3) If and when a new default moisture value is determined, GRU must modify its electronic monitoring plan to reflect the change, and must ensure that the new moisture default value is applied to the emissions and heat input rate calculations, starting with the first unit operating hour after completion of the RATA testing.

EPA's determination relies on the accuracy and completeness of the September 16, 2020 petition, and is appealable under 40 CFR part 78. If you have any questions regarding this determination, please contact Charles Frushour at (202) 343-9847 or by email at frushour.charles@epa.gov. Thank you for your continued cooperation.

Sincerely,

Reid Harvey, Director
Clean Air Markets Division

cc: David McNeal, EPA Region 4
Tracy Watson, EPA Region 4
Mark Lovallo, Florida DEP