



OFFICE OF TRANSPORTATION AND AIR QUALITY

WASHINGTON, D.C. 20460

July 30, 2024

Mr. Mark Hill
West Branch RNG, LLC
435 Joe Hall Drive
Ypsilanti, MI 48197

Dear Mr. Hill:

This letter is in response to your alternative measurement protocol (AMP) submission of April 18, 2024, under 40 CFR 80.155(a)(3). In your letter, you requested that EPA approve the use of ultrasonic flow meters that meet the voluntary consensus standard board method AGA Report No. 9 as an alternative to the flow meters specified at 40 CFR 80.155(a)(2).

The regulations at 40 CFR 80.155(a) specify that the volume of biogas, renewable natural gas, and renewable compressed natural gas or liquified natural gas must be continuously measured using specified flow meters. The regulations allow for EPA to approve an alternative measurement protocol under 40 CFR 80.155(a)(3) if a party demonstrates that they are unable to continuously measure using the specified methods and the party demonstrates that the alternative measurement protocol is at least as accurate and precise as the specified methods. The regulations at 40 CFR 80.135(c)(3)(iii) and (d)(3)(iii) outline the requirements for biogas production and RNG production facilities, respectively, to request an alternative measurement protocol under 40 CFR 80.155(a)(3).

Your submission included information that described how ultrasonic flow meters that meet AGA Report No. 9 conduct measurement, listed applicable voluntary consensus standards bodies, described routine maintenance and calibration for ultrasonic flow meters, described the measurement frequency of ultrasonic flow meters, and included a comparison with supporting data between the accuracy, precision, and reliability of the alternative measurement protocol and the requirements specified in 40 CFR 80.155(a)(2).

Based on our review of your April 18, 2024, submission and the voluntary consensus standards listed in your AMP submission, the EPA approves your April 18, 2024 AMP submission and a biogas producer or RNG producer may register its facility to use ultrasonic flow meters that meet AGA Report No. 9 under

40 CFR 80.155(a)(3) so long as the producer meets the conditions specified in the attachment and all other applicable regulatory requirements at 40 CFR part 80, subpart E.

We note that your submission and this AMP approval do not address whether a specific facility satisfies the criteria for the approval of an AMP under 40 CFR 80.155(a)(3)(i). A facility that intends to use ultrasonic flow meters covered under this AMP approval must address this criterion in its registration submission as described in the regulations at 40 CFR 80.135(c)(3)(iii)(A) or (d)(3)(iii)(A), as applicable.

If you have any questions related to this general AMP approval, please contact Robert Anderson at anderson.robert@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Byron Bunker", is positioned above the typed name.

Byron Bunker, Director
Implementation, Analysis and Compliance Division
Office of Transportation and Air Quality

EPA Determination that ultrasonic flow meters that meet AGA Report No. 9 meet the requirements for an alternative measurement protocol under 40 CFR 80.155(a)(3)(ii)

Summary

On April 18, 2024, West Branch RNG, LLC submitted an alternative measurement protocol request under 40 CFR 80.155(a)(3)(ii). The regulations at 40 CFR 80.155(a) specify that the volume of biogas, renewable natural gas (RNG), and renewable compressed natural gas (CNG) or liquified natural gas (CNG) must be continuously measured using specified flow meters. The regulations allow for EPA to approve an alternative measurement protocol under 40 CFR 80.155(a)(3) if a party demonstrates that they are unable to continuously measure using the specified methods and the party demonstrates that the alternative measurement protocol is at least as accurate and precise as the specified methods. The regulations at 40 CFR 80.135(c)(3)(iii) and (d)(3)(iii) outline the requirements for biogas production and RNG production facilities, respectively, to request an alternative measurement protocol under 40 CFR 80.155(a)(3).

Based on EPA staff review of the April 18, 2024, and EPA has determined that ultrasonic flow meters are as precise, accurate, and reliable as meters specified at 40 CFR 80.155(a)(2) so long as a facility installs, operates, calibrates, and maintains the meter consistent with AGA Report No. 9.

The following sections describe how the April 18, 2024, submission satisfies the applicable regulatory requirements at 40 CFR 80.135 and 80.155, and how biogas and RNG production facilities using ultrasonic flow meters must submit as part of their registration submissions under 40 CFR 80.135.

Description and VCSB standards

The regulations at 40 CFR 80.135(c)(3)(iii)(B)-(C) and 80.135(d)(3)(iii)(B)-(C) require a description of how measurement would be conducted under the alternative measurement product and a description of any standards or specifications that apply for the measurement of biogas and RNG, respectively. Any ultrasonic flow meter submission under the AGA Report No. 9, must include a description of the specific ultrasonic flow meters and data that demonstrate how the meter meets specification in AGA Report No. 9 and any other flow meter standards. A list of standards could include:

- AGA Report No. 9 Measurement of Gas by Multipath Ultrasonic Meters
- ASME MFC-5.1 Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters
- ISO 17089-1 Measurement of fluid flow in closed conduits – Ultrasonic meters for gas – Part 1: Meters for custody transfer and allocation measurement
- ASME PTC 19-5 Flow Measurement Performance Test Codes
- API MPMS CHAPTER 21.1 Flow Measurement Using Electronic Metering Systems - Section 1: Electronic Gas Measurement
- ISO /IEC 17025 General requirements for the competence of testing and calibration laboratories
- OIML R-137 Gas meters Part 1 : Metrological and technical requirements and Part 2 : Metrological controls and performance tests

Any facility wishing to utilize this general AMP approval must note in their registration submission under 40 CFR 80.135 that they are using an ultrasonic flow meter as described in this AMP approval letter and must note in their registration submission under 40 CFR 80.135 that they intend to use ultrasonic flow meters that meet at a minimum AGA Report No. 9 installed at their facility.¹

Calibration and maintenance

The regulations at 40 CFR 80.135(c)(3)(iii)(D) and 80.135(d)(3)(iii)(D) require a description of all routine maintenance and the frequency that such maintenance will be conducted for an alternative measurement protocol.

Calibration should be performed according to AGA Report No. 9 Section 6 or another recognized standard, such as ISO/IEC 17089-1, that specifies calibration and custody transfer. Additionally, the calibration laboratory should meet requirements for a competent laboratory, such as ISO/IEC 17025. If the Ultrasonic flowmeter is calibrated with water or other fluid not identical to RNG, the equivalency to RNG flow must be demonstrated. Based on our review of the VCSB standards cited in your April 18, 2024, submission, calibration must be performed according to procedures in AGA 9 Section 6 or a similar standard such as ASME PTC 19.5-2022 or ISO/IEC 10790 at a competent calibration laboratory (e.g., ISO/IEC 17025). Any facility wishing to utilize this general AMP approval must note in their registration submission under 40 CFR 80.135 that the facility intends to meet the calibration specifications in AGA 9, ASME PTC 19.5-2022, and ISO/IEC 17025 or describe an alternative maintenance and calibration procedure. If utilizing an alternative calibration procedure, the facility must describe how the alternative will ensure proper operation of the meter in their registration submission.

Based on our review of your submission, the maintenance procedures specified in AGA 9 should help ensure reliable operation of ultrasonic flow meters if followed. Any facility wishing to utilize this AMP approval must note that they intend to follow the AGA 9 specifications. If utilizing an alternative maintenance procedure, the facility must describe how the alternative will ensure proper operation of the meter in their registration submission.

Measurement frequency

The regulations at 40 CFR 80.135(c)(iii)(E) and 80.135(d)(iii)(E) require facilities to submit a description of the frequency of all measurements and how often such measurements will be recorded under the alternative measurement protocol. AGA Report No. 9 does not state a frequency of measurement protocol. Producers utilizing AGA Report No. 9 for acceptance for use of an ultrasonic flow meter must demonstrate in their registration submissions that their ultrasonic flow meter(s) can measure and record data at a minimum of every one (1) second consistent within the definition of continuous measurement at 40 CFR 80.2.²

¹ Note, the facility should not submit copies of referenced VCSB standards as part of their registration submission.

² The regulations at 40 CFR 80.2 define “continuous measurement” as “the automated measurement of specified parameters of biogas, treated biogas, or natural gas as follows: (1) For in-line GC meters, automated measurement must occur and be recorded no less frequent than once every 15 minutes. (2) For flow meters, automated measurement must occur no less frequent than once every 6 seconds, and weighted totals of such measurement must be recorded at no more

Any facility wishing to utilize this general AMP approval must include a description of the frequency of measurement and how often such measurements will be recorded as part of their registration submission under 40 CFR 80.135. If the facility intends to meet the frequency specified in the definition of continuous measurement at 40 CFR 80.2, the facility should note that. If the facility wishes to use a less frequent measurement or recording frequency, the facility must specify what that frequency is and include a demonstration over how that frequency will result in measurement equivalent or better than the specified measurement and recording rates for continuous measurement at 40 CFR 80.2.

Accuracy, precision, and reliability comparison

The regulations at 40 CFR 80.135(c)(3)(iii)(F) and 80.135(d)(3)(iii)(F) require a comparison between the accuracy, precision, and reliability of the alternative measurement protocol and the requirements specified in 40 CFR 80.155(a)(1) and (2), as applicable, including any supporting data. In your April 18, 2024, submission, you included information including supporting data that compared the accuracy, precision, and reliability of ultrasonic flow meters and meters specified at 40 CFR 80.155(a)(2).

Based on our review of your April 18, 2024, submission, the listed VCSB standards, and other submissions requesting AMPs for ultrasonic flow meters, we have determined that ultrasonic flow meters that meet AGA Report No. 9 are as accurate, precise, and reliable as flow meters specified at § 80.155(a)(2) as long as producer demonstrates that the ultrasonic flow meters are selected for use, as per the guidelines in AGA Report No. 9 Sections 3 through 9, and are compliant with the minimum accuracy and repeatability specifications in AGA Report No. 9 Section 5.

Any facility using ultrasonic flow meters covered under this AMP approval should note in their registration submission under 40 CFR 80.135 that they are relying on EPA's determination in this letter to demonstrate the comparison of accuracy, precision, and reliability of ultrasonic flow meters that meet AGA Report No. 9 and the meters specified at 40 CFR 80.155(a)(2) and describe how their ultrasonic flow meters comport with AGA 9 Report No. 9, especially Sections 3 through 9.

than 1 minute intervals. (3) For all other meters, automated measurement and recording must occur at a frequency specified at registration."