OFFICE OF TRANSPORTATION AND AIR QUALITY
WASHINGTON, D.C. 20460

July 10, 2024

Mr. Scott Schindler
Kurz Instruments, Inc.
411 Garden Road
Monterey, CA 93940

Dear Mr. Schindler:

This letter is in response to your alternative measurement protocol (AMP) submission of March 21, 2024, under 40 CFR 80.155(a)(3). In your letter, you requested that EPA approve the use of two models of the Kurz thermal mass flow meters an alternative to the flow meters specified at 40 CFR 80.155(a)(2).[1]

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 Kurz thermal mass flow meters conduct measurement, listed applicable voluntary consensus standards bodies, described routine maintenance and calibration for Kurz thermal mass flow meters, described the measurement frequency of Kurz thermal mass 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 or your March 21, 2024, submission and the voluntary consensus standards listed in your AMP submission, the EPA approves your March 21, 2024 AMP submission and a biogas

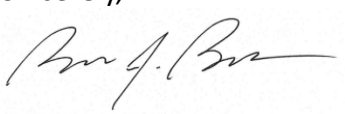
[1] In your March 21, 2024, submission, you described the following Kurz thermal mass flow meters: Kurz WGF (Wet Gas Flow) Models and Flow FTB (Transmitter B-Series) Models. For purposes of this letter, unless otherwise specified, the term H includes all of the thermal mass flow meter models included in your March 21, 2024, submission.

producer or RNG producer may register its facility to use Kurz thermal mass flow meters 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 Kurz thermal mass 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 AMP approval, please contact Robert Anderson at anderson.robert@epa.gov.

Sincerely,



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

EPA Determination that Kurz thermal mass flow meters (Kurz WGF (Wet Gas Flow) Models and Flow FTB (Transmitter B-Series) Models) meet the requirements of 40 CFR 80.155(a)(3)(ii)

Summary

On March 21, 2024, Kurz Instruments, Inc. submitted an alternative measurement protocol request under 40 CFR 80.155(a)(3)(ii) for Kurz thermal mass flow meters (Kurz WGF (Wet Gas Flow) Models and Flow FTB (Transmitter B-Series) Models). 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 March 21, 2024, and EPA has determined that Kurz thermal mass flow meters [Kurz WGF (Wet Gas Flow) Models and Flow FTB (Transmitter B-Series) Models] are as precise, accurate, and reliable as meters specified at 40 CFR 80.155(a)(1) so long as a facility installs, operates, calibrates, and maintains the meter consistent with the March 21, 2024, submission.

The following sections describe how the March 21, 2024, submission satisfies the applicable regulatory requirements at 40 CFR 80.135 and 80.155, and how biogas and RNG production facilities using Kurz thermal mass 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. Your March 21, 2024, submission, included a description of the Kurz thermal mass flow meters (Kurz WGF (Wet Gas Flow) Models and Flow FTB (Transmitter B-Series) Models) described the following VCSB standards that cover the Kurz thermal mass flow meters:

- ASME MFC-21.2 Measurement of Fluid Flow by Means of Thermal Dispersion Mass Flowmeters
- ISO 17025 or ANSI Z540
- ISO 14164 Stationary source emissions — Determination of the volume flowrate of gas streams in ducts — Automated method

Any facility wishing to utilize this AMP approval must note in their registration submission under 40 CFR 80.135 that they are using a Kurz thermal mass flow meters as described in this AMP approval letter and must note in their registration submission under 40 CFR 80.135 which VCSB standards they intend to use for their Kurz thermal mass flow meters installed at their facility.[2]

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

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.

Data shown in your March 21, 2024, submission demonstrate that the Kurz thermal mass flow meters are compliant with accuracy and repeatability specifications in ASME MFC-21. Your March 21, 2024, submission also described reliability and maintenance requirements for the Kurz thermal mass flow meters.

Based on our review of the VCSB standards cited in your March 21, 2024, submission, calibration must be performed according to ASME MFC-21. Any facility wishing to utilize this AMP approval must note in their registration submission under 40 CFR 80.135 that the facility intends to meet the calibration specifications in ISO/IEC 17025 or ANSI Z540 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 you specify should help ensure reliable operation of Kurz thermal mass flow meters if followed. Any facility wishing to utilize this AMP approval must note that they intend to follow the manufacturer recommended maintenance requirements for the Kurz thermal mass flow meters or suggest an alternative maintenance procedure. If utilizing an alternative maintenance procedure, the facility must describe how the alternative will ensure proper operation of the meter in their registration submission. If utilizing an alternative maintenance and/or calibration procedure, the facility must describe how the alternative will ensure proper operation of the meter.

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. According to your March 21, 2024, submission the meter calculates flow readings every 25 ms and can be reported at rates of 12 Hz (modbus) and 4 Hz (analog and Profibus) depending on the data output protocol. The data output protocols (modbus, analog, and Profibus) meet the minimum measurement frequency stated[3] consistent with the definition of continuous measurement at 40 CFR 80.2. Based on your submission, facilities that use Kurz thermal mass flow meters should be able to measure and record data within the 40 CFR 80.2 specification.

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

Any facility wishing to utilize this 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 March 21, 2024, submission, you included information including supporting data that compared the accuracy, precision, and reliability of Kurz thermal mass flow meters and meters specified at 40 CFR 80.155(a)(1).

Based on our review of your March 21, 2024, submission, and the listed VCSB standards, we have determined that Kurz thermal mass flow meters are as accurate, precise, and reliable as flow meters specified at § 80.155(a)(2). Any facility using Kurz thermal mass 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 Kurz thermal mass flow meters and the meters specified at 40 CFR 80.155(a)(2).