

State Registration Number

N1784

## RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-N1784-  
20XX

January 23, 2020 - STAFF REPORT ADDENDUM

### Purpose

A Staff Report dated November 4, 2019, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

### General Information

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### Summary of Pertinent Comments

Comments were received from USEPA during the 30-day public comment period. The comments were received on December 2, 2019 and are outlined below.

#### EPA Comment 1:

EUTURBINE SC I.1. The Monitoring/Testing Method references for the NO<sub>x</sub> limit may be missing additional references to SC V.3, SC VI.3, and SC VI.5. Please review these conditions and include them in the NO<sub>x</sub> Monitoring/Testing Method column as appropriate to clearly identify all compliance monitoring requirements associated with this limit, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

#### AQD Response:

The Monitoring/Testing Method references for the NO<sub>x</sub> emission limit for EUTURBINE Special Condition (SC) I.1 was reviewed and some references were added. These references include: SC V.3, SC VI.3, and SC VI.5. With the addition of these monitoring and testing requirements, this assures compliance with 40 CFR 70.6(a)(3) and (c)(1).

#### EPA Comment 2:

EUTURBINE SC I.2. The Monitoring/Testing Method references for the CO limit may be missing additional references to SC VI.4. and SC VI.5. Please review these conditions and include them in the CO Monitoring/Testing Method column as appropriate to clearly identify all compliance monitoring requirements associated with this limit, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

#### AQD Response:

The Monitoring/Testing Method references for the CO emission limit for EUTURBINE SC I.2 was reviewed and some references were added. These references include: SC VI.4 and SC VI.5. With the addition of these monitoring and testing requirements, this assures compliance with 40 CFR 70.6(a)(3) and (c)(1).

#### EPA Comment 3:

EUTURBINE SC II.1. Please review the regulatory authority for the natural gas material limit, verify the streamlining analysis/subsumed SO<sub>2</sub> requirements, and revise the permit as necessary to assure that the permit includes all applicable requirements and associated monitoring in accordance with 40 CFR 70.6(a)(1), (a)(3), and (c)(1).

#### AQD Response:

The Standards of Performance for New Stationary Sources, 40 CFR Part 60, Subpart GG, defines natural gas in 40 CFR 60.331(u). In this section it states that natural gas contains a sulfur content of 20.0 grains or less of sulfur per 100 standard cubic feet. This is also equivalent to 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total sulfur. The facility agreed to take a fuel restriction and only burn natural gas, opposed to the previously permitted allowance for fuel oil. 40 CFR 60.334(h)(3) indicates that if the gaseous fuel is demonstrated to have met the definition of natural gas in 40 CFR 60.331(u), it does not require additional monitoring. In order to be more clear, additional clarity will be added to EUTURBINE SC II.1, stating that for the purposes of this ROP, pipeline quality natural gas is defined per 40 CFR Part 60.331(u) and citing that Underlying Applicable Requirement (UAR). By adding this condition, it is more clear that the sulfur and sulfur monitoring requirements from NSPS Subpart GG are met.

#### EPA Comment 4:

EUTURBINE SC VI.3. This condition requires a parameter monitoring plan to be kept on-site which explains the procedures used to document proper operation of the NO<sub>x</sub> controls. Please ensure that the monitoring plan is readily accessible in the permit record, including online Internet availability if feasible. As addressed by EPA's March 5, 1996 "White Paper Number 2 for Improved Implementation of The Part 70 Operating Permits Program," information cited or cross-referenced in permits should be current and readily available to the permitting agency and to the public.

#### AQD Response:

The parameter monitoring plan that is required under EUTURBINE SC VI.3 was submitted as part of the ROP application; however, this plan is now posted on the Air Quality Division Website as a standalone plan. No changes were made to the permit as a result of this comment.

#### EPA Comment 5:

EUTURBINE SC VI.1 and 2. The underlying applicable requirements (UAR) cited for these monitoring/recordkeeping requirements list only NSPS Subpart GG. However, this monitoring is also associated with the NO<sub>x</sub> BACT limit in SC I.1. Were SC VI.1 and 2 included in the originating Permit to Install? If yes, should these conditions also include a UAR of 40 CFR 52.21(j) as well as a footnote 2 authority designation? If no, should these conditions also include a UAR of R 336.1213(3)? Please review the UARs and revise the permit as necessary.

AQD Response:

The requirements found in EUTURBINE SC VI.1 and 2 are required as part of NSPS Subpart GG. These requirements were part of the original Permit to Install. EUTURBINE SC VI.1 has the UAR of R 336.1213(3) already existing as part of the underlying applicable requirement. The UAR of R 336.1213(3) was added to EUTURBINE SC VI.2 to clarify that the requirement to calculate and maintain records for the ratio of water to fuel for the turbine as established by the most recent performance testing. A footnote 2 was added to the conditions.

EPA Comment 6:

FGENERGY SC I.1. and 2. The Monitoring/Testing Method references for the NO<sub>x</sub> limits may be missing additional references to SC V.3. Please review SC V.3 and include it in the NO<sub>x</sub> Monitoring/Testing Method column as appropriate to clearly identify all compliance monitoring requirements associated with these limits, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

The Monitoring/Testing Method references for the NO<sub>x</sub> emission limit for FGENERGY SC I.1 and SC I.2 were reviewed and some additional references were included. This reference includes SC V.3. With the addition of these monitoring and testing requirements, this assures compliance with 40 CFR 70.6(a)(3) and (c)(1).

EPA Comment 7:

FGCAM SC V. and VI. EUTURBINE, FGENERGY, and the Staff Report indicate that there are 2 water/fuel injection ratios- one for EUTURBINE alone, and one for FGENERGY (i.e., EUTURBINE and EUDUCTBURNER when operating together). To ensure that the permit includes clear, enforceable conditions meeting 40 CFR 70.6(a)(1) and 64.6(c), please revise FGCAM SC V. and VI. as necessary to clarify that there are 2 water-to-fuel CAM indicators.

AQD Response:

The NO<sub>x</sub> emissions from EUTURBINE and FGENERGY are subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). FGENERGY is comprised of EUTURBINE and EUDUCTBURNER. EUDUCTBURNER cannot operate independently of EUTURBINE and is therefore by itself, not subject to CAM. However, when the turbine and the duct burner operate together (FGENERGY), the NO<sub>x</sub> emissions are subject to CAM. Water injection is utilized for control for NO<sub>x</sub> emissions. Therefore, the water/fuel injection ratio is set for both with and without the duct burner. Testing requirements for EUTURBINE and FGENERGY are included in their respective emission unit and flexible group requirements. The Testing requirement for EUTURBINE is without the duct burner and the testing requirement for FGENERGY is with the duct burner. In order for the distinction in the two (2) ratios that are required, FGCAM SC V.1 and V.2 were updated to specify that testing is required for EUTURBINE and FGENERGY. The two (2) conditions now read:

1. The permittee shall establish the water-to-fuel ratio a minimum of every five (5) years from the date of the last test in accordance with the requirements in EUTURBINE and FGENERGY.
2. As part of the testing required in EUTURBINE and FGENERGY, the Continuous Monitoring System shall be used to determine the fuel consumption and water-to-fuel ratio necessary to comply with the Nitrogen Oxides emission limit at 3 points in the normal operating range of the gas turbine, including the minimum point in the range and 90-100% peak load.

## Changes to the November 4, 2019 Draft ROP

In order to address EPA Comment 1, the monitoring/testing method column of the table associated with EUTURBINE Special Condition (SC) I.1 was updated to include references to SC V.3, SC VI. 3 and VI.5.

In order to address EPA Comment 2, the monitoring/testing method column of the table associated with EUTURBINE SC I.2 was updated to include references to SC VI. 4 and VI.5.

In order to address EPA Comment 3, EUTURBINE SC II.1 was updated to read:

The permittee shall fire only pipeline quality natural gas in EUTURBINE. For the purposes of this ROP, pipeline quality natural gas is defined as 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total sulfur as defined in 40 CFR Part 60.331(u).<sup>b</sup> **(R 336.1213, 40 CFR 60.331(u))**

In order to address EPA Comment 5, EUTURBINE SC VI.1 and 2 have R 336.1213(3) added to the Underlying Applicable Requirements (UAR's) cited for those conditions, and a footnote 2 was added. This UAR is in addition to the existing NSPS UAR.

In order to address EPA Comment 6, the monitoring/testing method column of the table associated with FGENERGY SC I.1 and SC I.2 were updated to include references to SC V.3.

In order to address EPA Comment 7, FGCAM SC V.1 and SC V.2 were updated to read:

1. The permittee shall establish the water-to-fuel ratio a minimum of every five (5) years from the date of the last test in accordance with the requirements in EUTURBINE and FGENERGY.
2. As part of the testing required in EUTURBINE and FGENERGY, the Continuous Monitoring System shall be used to determine the fuel consumption and water-to-fuel ratio necessary to comply with the Nitrogen Oxides emission limit at 3 points in the normal operating range of the gas turbine, including the minimum point in the range and 90-100% peak load.

As a result of the review period after the aforementioned changes were made due to EPA comment, the company had a chance to review the changes. As a result of their review, one (1) additional change was made. This change was to EUTURBINE Special Condition II.1 adding in the equivalent definition of natural gas of 20 grains or less total sulfur per 100 standard cubic feet.