

State Registration Number
B6527

RENEWABLE OPERATING PERMIT

ROP Number
MI-ROP-B6527-
2020

JANUARY 23, 2020 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated September 2, 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

Responsible Official:	Brian Vokal, VP of Operation, Maintenance, & Engineering 989-633-7840
AQD Contact:	Meg Sheehan, Environmental Quality Analyst 989-439-5001

Summary of Pertinent Comments

The EPA was the only party to submit pertinent comments during the 30-day public comment period.

1. EPA Comment:

Please verify whether any of the units at Midland Cogeneration Venture (“MCV”) are subject to the Acid Rain Program, pursuant to 40 CFR 72.6(a), and include any relevant information in the Staff Report. The Title V permit is required to include any applicable acid rain requirements, in accordance with 40 CFR 70.6(a)(1) and 40 CFR Parts 72.50 and 72.51.

AQD Response:

An Attestation of Midland Cogeneration Venture Limited Partnership to the Michigan Department of Environment, Great Lakes and Energy was provided by the company on October 28, 2019, as a response to EPA’s comment. It reads as follows:

Midland Cogeneration Venture Limited Partnership (“MCV”) is the owner and operator of an electric generation facility consisting of multiple gas-fired electric generation units that were in existence on November 15, 1990. As of that same date, MCV had, and continues to hold, a qualifying power purchase commitment to sell at least 15 percent of its total net output capacity. MCV is also a qualifying facility within the meaning of section 3(18)(B) of the Federal Power Act. *CMS Midland, Inc.*, 38 FERC 61,244 (1987) and Docket No. QF87-237. The Acid Rain permitting program implementation rules exclude, in part at 40 CFR 72.6(b)(5), the applicability of the program to a facility that satisfied the following:

A qualifying facility that:

- (i) Has, as of November 15, 1990, one or more qualifying power purchase commitments to sell at least 15 percent of its total planned net output capacity; and
- (ii) Consists of one or more units designated by the owner or operator with total installed net output capacity not exceeding 130 percent of its total planned net output capacity. If the emissions rates of the units are not the same, the Administrator may exercise discretion to designate which units are exempt.

Based upon a review of the aforementioned provisions, the MCV facility is a qualifying facility as specified in 40 CFR 72.6(b)(5) and not subject to the requirements of the Acid Rain Program.

2. EPA Comment:

Staff Report, EU-TURBINE12 Streamlining. The Staff Report indicates that EU-TURBINE12, SC I.1. streamlines the NOx emission limit in 40 CFR 60.332(a)(1) and the 98 pound/hour BACT limit. Although the Staff Report generally states that the BACT limit is more stringent, it does not provide supporting information comparing the specific NSPS concentration limit and the BACT limit. Please supplement the Staff Report as necessary to support EGLE’s determination that the NSPS limit may be subsumed under this BACT limit, in accordance with EPA’s March 5, 1996 “White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program” and EGLE’s “Staff Guidance on Streamlined/Subsumed Requirements in ROPs.”

AQD Response:

From 40 CFR Part 60.332 Standard for Nitrogen Oxides:

$$STD = 0.0075 \left(\frac{14.4}{Y} \right) + F$$

Where:

STD = allowable ISO corrected (if required as given in § 60.335(b)(1) NOx emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer’s rated heat rate at manufacturer’s rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(4) of this section.

For EU-TURBINE12, the natural gas fired turbine has a maximum heat input of 984 MMBtu/hr at ISO conditions and a generation capacity of approximately 86 MW at 100 percent load.

So, converting to kilojoules per watt hour:

$$\frac{984 \text{ MMBtu}}{\text{hr}} \left| \frac{1,055,055.85 \text{ kJ}}{1 \text{ MMBtu}} \right| \left| \frac{1 \text{ MW}}{86 \text{ MW}} \right| \left| \frac{1}{1 \times 10^6 \text{ Watts}} \right| \cong 12.1 \frac{\text{kJ}}{\text{Wh}}$$

Using 12.1 kJ/Wh for Y and an F of 0 because the fuel is natural gas results in the following NOx emission concentration:

$$0.0075 \left(\frac{14.4}{12.1} \right) + 0 = 0.0089 \text{ percent volume (89 parts per million (ppm)), dry, corrected 15\% O}_2$$

From the application package for PTI No. 759-87 Table 1 Emissions Information Sheet:

Summary of Gas Turbine Emissions for ABB GT11N EV^(d) (EU-TURBINE12)

Pollutant	Concentration (ppmv)	Higher Heating Value (lb/MMBtu)	Emission Rate (lb/hr)	Emission Rate (TPY) ^(a)
Particulate (PM10)			0.52	2.2
Sulfur Dioxide ^(b)			15.5	2.3
Carbon Monoxide		0.0264 (24-hr avg)	26.0	113.9
Volatile Organic Compounds			0.35	1.5
Nitrogen Oxides ^(c)	25 (24-hr avg)	0.10	89 (98)	(429.2)

(a) Based on 100% capacity factor and ISO conditions, 984.2 MMBtu/hr HHV.

(b) Based on maximum sulfur content of 5.5 grains per 100 standard cubic feet and monthly average sulfur content of 0.5 grains per 100 standard cubic feet.

(c) Nitrogen oxides are as 100% NO₂.

(d) Exhaust gas temperature and flow rate remain essentially unchanged.

As shown above, for EU-TURBINE12 the corresponding NOx emission limit as allowed under Subpart GG is 89 ppm, dry, corrected to 15% O₂. The permitted emission limit using dry-low NOx burner is 25 ppm and corresponding pound per hour emission limit are below the Subpart GG limit.

3. EPA Comment:

Staff Report, FG-SITURBINES Streamlining. The Staff Report indicates that FG-SITURBINES, SC I.1. streamlines the NOx emission limit in 40 CFR 60.332(a)(1) and the 159 pound/hour BACT limit. Although the Staff Report generally states that the BACT limit is more stringent, it does not provide supporting information comparing the specific NSPS concentration limit and the BACT limit. Please supplement the Staff Report as necessary to support EGLE's determination that the NSPS limit may be subsumed under this BACT limit, in accordance with EPA's March 5, 1996 "White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program" and EGLE's "Staff Guidance on Streamlined/Subsumed Requirements in ROPs."

AQD Response:

From 40 CFR Part 60.332 Standard for Nitrogen Oxides:

$$STD = 0.0075 \left(\frac{14.4}{Y} \right) + F$$

Where:

STD = allowable ISO corrected (if required as given in § 60.335(b)(1) NOx emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(4) of this section.

For FG-SITURBINES the natural gas fired turbines have a maximum heat input of 984 MMBtu/hr at ISO conditions and a generation capacity of approximately 100 MW at 100 percent load.

So, converting to kilojoules per watt hour:

$$\frac{984 \text{ MMBtu}}{\text{hr}} \left| \frac{1,055,055.85 \text{ kJ}}{1 \text{ MMBtu}} \right| \frac{1 \text{ MW}}{100 \text{ MW}} \left| \frac{1}{1 \times 10^6 \text{ Watts}} \right| \cong 10.4 \frac{\text{kJ}}{\text{Wh}}$$

Using 10.4 kJ/Wh for Y and an F of 0 because the fuel is natural gas results in the following NOx emission concentration:

$$0.0075 \left(\frac{14.4}{10.4} \right) + 0 = 0.010 \text{ percent volume (100 parts per million (ppm)), dry, corrected 15\% O}_2$$

From the application package for PTI No. 759-87 Table 1 Emissions Information Sheet:

Summary of ABB GT11N Gast Turbine Emission Limits Permit No. 759-87 (FG-SITURBINES)

Pollutant	Concentration (ppmv)	Higher Heating Value (lb/MMBtu)	Emission Rate (lb/hr)	Emission Rate (TPY) ^(a)
Particulate (PM10)			0.52	2.2
Sulfur Dioxide ^(b)			15.5	2.3
Carbon Monoxide		0.0264 (24-hr avg)	26.0	113.9
Volatile Organic Compounds			0.35	1.5
Nitrogen Oxides ^(c)	42 (24-hr avg)		159	697

(a) Based on 100% capacity factor and ISO conditions, 984.2 MMBtu/hr HHV.

(b) Based on maximum sulfur content of 5.5 grains per 100 standard cubic feet and monthly average sulfur content of 0.5 grains per 100 standard cubic feet.

(c) Nitrogen oxides are as 100% NO₂.

(d) Exhaust gas temperature and flow rate remain essentially unchanged.

As shown above, for FG-SITURBINES the corresponding NO_x emission limit as allowed under Subpart GG is 100 ppm, dry, corrected to 15% O₂. The permitted emission limit using dry-low NO_x burner of 42 ppm and corresponding pound per hour emission limit are well below the Subpart GG limit.

4. EPA Comment:

FG-BOILERS1-6, conditions I.1, I.2, and I.3. These PM and PM10 limits identify SC V.1 as the associated Monitoring/Testing Method, which requires performance testing as requested by the permitting authority. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with these PM and PM10 limits on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

Performance testing for PM and PM10 has been conducted on each boiler in FG-BOILERS1-6 in October 2008 and February 2009, and October 2014. Each boiler tested below the permit limits of 0.0075 lb/MMBtu PM, 0.0075 lb/MMBtu PM10, and 2.8 lb/hr PM10 during each test. The AQD believes these historical results, in conjunction with the work practice standards required by SC III.1, III.5, III.6 and IX.6 under FG-BOILERMACT, are sufficient to ensure compliance with SC I.1, I.2, and I.3. For these reasons, the AQD does not believe additional ongoing monitoring requirements are necessary.

Changes made to the September 2, 2019 Draft ROP for FG-BOILERS1-6:

- SC I.1 – Added SC III.1 (from FG-BOILERS1-6), and SC III.1, III.5, III.6., and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods
- SC I.2 – Added SC III.1 (from FG-BOILERS1-6), and SC III.1, III.5, III.6., and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods
- SC I.3 – Added SC III.1 (from FG-BOILERS1-6), and SC III.1, III.5, III.6., and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods

5. EPA Comment:

FG-BOILERS1-6, conditions I.10 and I.11. These VOC limits identify SC V.1 as the associated Monitoring/Testing Method, which requires performance testing as requested by the permitting authority. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with these VOC limits on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

Performance testing for VOC has been conducted on each boiler in FG-BOILERS1-6 in October 2008 and February 2009, and October 2014. Each boiler tested below the permit limits of 0.0054 lb/MMBtu VOC and 2.0 lb/hr VOC during each test. The AQD believes these historical results, in conjunction with the work practice standards required by SC III.1, III.5, III.6 and IX.6 under FG-BOILERMACT, are sufficient to ensure compliance with SC I.10 and I.11. For these reasons, the AQD does not believe additional ongoing monitoring requirements are necessary.

Changes made to the September 2, 2019 Draft ROP for FG-BOILERS1-6:

- SC I.10 – Added SC III.1 (from FG-BOILERS1-6), and SC III.1, III.5, III.6, and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods
- SC I.11 – Added SC III.1 (from FG-BOILERS1-6), and SC III.1, III.5, III.6, and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods

6. EPA Comment:

FG-BOILERS1-6, condition I.12. This opacity limit does not identify any associated Monitoring/Testing Method. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with the opacity limit, in accordance with any monitoring required by the underlying applicable requirements as well as 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

The AQD added two new conditions as Monitoring/Testing Methods for this opacity limit, which require a certified visible emission reading be taken at least once every three months, and records of the certified visible emission readings be kept on file for at least five years. The AQD believes that the boilers being natural gas-fired (SC III.1), the ongoing work practice standards required in FG-BOILERMACT (SC III.1, III.5, III.6, IX.6), and a certified visible emission reading conducted at least once every three months (SC V.3, VI.8) is sufficient to ensure compliance with SC I.12. For these reasons, the AQD does not believe additional ongoing monitoring requirements are necessary.

Changes made to the September 2, 2019 Draft ROP for FG-BOILERS1-6:

- SC I.12 – Moved to the Emission Limits table and added SC III.1, V.3 and VI.8 (from FG-BOILERS1-6) and SC III.1, III.5, III.6, and IX.6 from FG-BOILERMACT as Monitoring/Testing Methods.
- SC V.3 – New condition which states:

- “A certified visible emission reading (i.e., Federal Reference Method 9 (40 CFR Part 60, Appendix A)) shall be taken at least once every three months during normal operation of FG-BOILERS1-6. **(R 336.1213(3))**”
- SC VI.8 – New condition which states:
 - “The permittee shall keep, in a satisfactory manner, records of the visible emission readings for FG-BOILERS1-6. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1213(3))**”

7. EPA Comment:

FG-BOILERMACT includes conditions required by the Industrial, Commercial, and Institutional Boilers and Process Heaters MACT, 40 CFR Part 63, Subpart DDDDD. To ensure consistency, clarity, and to assure that the permit includes all applicable requirements (including startup/shutdown provisions and updated electronic submittal provisions) pursuant to 40 CFR 70.6(a)(1), please consider updating this section of the permit in accordance with the most recent Michigan EGLE’s MACT permit condition templates. In particular, see Conditions III.7, VI.4, VI.5, and VII.18 in EGLE’s Existing Gas 1 Template.

AQD Response:

FG-BOILERMACT was updated in accordance with the most recent EGLE MACT permit condition template for 40 CFR Part 63, Subpart DDDDD.

Changes made to the September 2, 2019 Draft ROP for FG-BOILERMACT:

- Updated the following conditions with Michigan’s most recent EGLE MACT template language:
 - SC II.1
 - SC III.1, III.2, III.5
 - SC VI.1
 - SC VII.11, VII.16, VII.18
 - SC IX.3 – IX.6
- Added the following conditions from Michigan’s most recent EGLE MACT template language:
 - SC III. 3, III.4, III.6, III.7
 - SC VI.2 – VI.6
 - SC VII.4 – VII.15, VII.17
 - SC IX.1, IX.2, IX.7

8. EPA Comment:

FG-TURB/DB12, condition I.2. This CO limit identified SC V.1 as the associated Monitoring/Testing Method, which requires performance testing every five years. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring

and recordkeeping sufficient to assure compliance with the CO limit on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

EU-TURBINE12 and EU-DUCTBURNER12 are unlike the other units. EU-TURBINE12 is equipped with a dry, low NO_x burner. The highest CO levels should occur when the turbine is run at 100% load and the duct burner at maximum firing rate. Historical test results were reviewed, and the single highest CO level found was during the conditions anticipated yet was only 40% of the limit of 60.9 pounds per hour. All other test results were at 30% of the limit or below. Based on those results, the AQD believes additional ongoing monitoring requirements are not necessary and kept the testing frequency intact (now stated in SC V.2).

Changes made to the September 2, 2019 Draft ROP for FG-TURB/DB12:

- SC I.2 – Added SC V.2 as a Monitoring/Testing Method
- SC V.1 – Reworded for clarity and consistency with updated EGLE testing language:
 - “The permittee shall verify CO emission rates from FG-TURB/DB12 by testing at the owner’s expense, in accordance with Department requirements. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 60, Appendix A. Testing must be done for EU-TURBINE12 at 50 percent and 100 percent of base load. Testing must also be done for EU-TURBINE12 at maximum load with EU-DUCTBURNER12 at maximum firing rate. An alternative method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The final plan must describe the normal operating range for FG-TURB/DB12. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.² (R 336.2001, R 336.2003, R 336.2004, R 336.2810, 40 CFR 52.21 (j))”
- SC V.2 – New condition which states:
 - “The permittee shall verify the CO emission rates from FG-TURB/DB12, at a minimum, every five years from the date of the last test. (R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)”

9. EPA Comment:

FG-TURB/DB12, conditions I.7 and I.8. These opacity limits identify SC V.2 and SC VI.6 as the associated Monitoring/Testing Method, which require a certified visible emission reading every six months. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with these opacity limits on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1). In addition, note that FG-TURB/DB12, condition I.7 may be missing a “footnote 2” designation.

AQD Response:

SC V.2 has been renumbered as SC V.4, and the frequency of certified visible emission readings was changed from at least once every six months to at least once every three months. For SC I.8, a new Monitoring/Testing Method was added (SC V.5), which requires a certified visible emission reading be conducted at least once annually during startup, shutdown, or malfunction. Another new condition was added under Process/Operational Restrictions (SC III.2), which requires only pipeline quality natural

gas be used as fuel for FG-TURB/DB12. The AQD believes that FG-TURB/DB12 being natural gas fired and a certified visible emission reading conducted at least once every three months during normal operation (once annually during startup, shutdown, or malfunction) is sufficient to ensure compliance with SC I.7 and I.8. For these reasons, the AQD does not believe additional ongoing monitoring requirements are necessary.

Changes made to the September 2, 2019 Draft ROP for FG-TURB/DB12:

- SC I.7 – Added a footnote 2 designation in the “Limit” column. SC V.2 was changed to SC V.4 in the “Monitoring/Testing Method” column. Added SC III.2 as a Monitoring/Testing Method.
- SC I.8 – Changed SC V.2 in the “Monitoring/Testing Method” column to SC V.5. Added SC III.2 as a Monitoring/Testing Method.
- SC III.2 – New conditions which states:
 - “The permittee shall use only pipeline quality natural gas as fuel for FG-TURB/DB12. **(R 336.1213(3))**”
- SC V.4 – Changed “at least once every six months” to “at least once every three months”
- SC V.5 – New condition which states:
 - “A certified visible emission reading (i.e., Federal Reference Method 9 (40 CFR Part 60, Appendix A) shall be taken at least once annually during startup, shutdown, or malfunction of FG-TURB/DB12. **(R 336.1213(3))**”

10. EPA Comment:

FG-SITURBINES, condition I.2. This CO limit identifies SC V.1 as the associated Monitoring/Testing Method, which requires performance testing every 2 years for one of the turbines. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with the CO limit on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

The turbines in FG-SITURBINES are all the same model installed at the same time. PTI Nos. 316-05B and 241-09 both required testing of units T03 through T08 with PTI No. 241-09 being the most recent permit. Testing at loads of 50% and 100% was required of one unit every two years. Historical test results were reviewed and indicated emissions far below the permitted level of 26 pounds of CO per hour. Oftentimes the levels were near zero. Based on those results, the AQD believes additional ongoing monitoring requirements are not necessary and kept the testing frequency intact. However, clarification was made to the testing requirements to ensure a different turbine is tested each time until all turbines (T03 through T08) are tested, at which point the testing cycle repeats. The clarification is now found in SC V.2.

Changes made to the September 2, 2019 Draft ROP for FG-SITURBINES:

- SC I.2 – Added SC V.2 as a Monitoring/Testing Method
- SC V.1 – Reworded for clarity and consistency with updated EGLE testing language:

- “The permittee shall verify CO emission rates from one turbine (EU-T03 through EU-T08) in FG-SITURBINES by testing at owner’s expense, in accordance with Department requirements. Testing must be done for one turbine at 50 percent and 100 percent of base load. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must describe the normal operating range for each turbine. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.² (R 336.2001, R 336.2003, R 336.2004, R 336.2810, 40 CFR 52.21 (j))”
- SC V.2 – New condition which states:
 - “The permittee shall verify the CO emission rates from one turbine (EU-T03 through EU-T08) in FG-SITURBINES, at a minimum, every two years from the date of the last test. A different turbine shall be tested every two years thereafter until all turbines have been tested. This cycle shall repeat after all turbines have been tested. (R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)”
- SC V.3 – Was previously numbered as SC V.4

11. EPA Comment:

FG-SITURBINES, conditions I.8 and I.9. These opacity limits identify SC V.2 and SC VI.3 as the Monitoring/Testing Method, which require a certified visible emission reading every six months. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with these opacity limits on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

SC V.2 has been renumbered as SC V.4, and the frequency of certified visible emission readings was changed from at least once every six months to at least once every three months. For SC I.9, a new Monitoring/Testing Method was added (SC V.5), which requires a certified visible emission reading be conducted at least once annually during startup, shutdown, or malfunction. Another new condition was added under Process/Operational Restrictions (SC III.4) which requires only pipeline quality natural gas be used as fuel for FG-SITURBINES. The AQD believes that FG-SITURBINES being natural gas fired and a certified visible emission reading conducted at least once every three months during normal operation (once annually during startup, shutdown, or malfunction) is sufficient to ensure compliance with SC I.8 and I.9. For these reasons, the AQD does not believe additional ongoing monitoring requirements are necessary.

Changes made to the September 2, 2019 Draft ROP for FG-SITURBINES:

- SC I.8 – Changed SC V.2 in the “Monitoring/Testing Method” column to SC V.4. Added SC III.4 as a Monitoring/Testing Method.
- SC I.9 – Changed SC V.2 in the “Monitoring/Testing Method” column to SC V.5. Added SC III.4 as a Monitoring/Testing Method.
- SC III.4 – New condition which states:

- “The permittee shall use only pipeline quality natural gas as fuel for FG-SITURBINES. (R 336.1213(3))”
- SC V.4 – Changed “at least once every six months” to “at least once every three months”
- SC V.5 – New condition which states:
 - “A certified visible emission reading (i.e., Federal Reference Method 9 (40 CFR Part 60, Appendix A)) shall be taken at least once annually during startup, shutdown, or malfunction of FG-SITURBINES. (R 336.1213(3))”

12. EPA Comment:

FG-SITURB/DB, condition I.2. This CO limit identifies SC V.1 as the associated Monitoring/Testing Method, which requires performance testing every two years for one of the turbines and respective duct burner. Please revise the permit and/or provide further explanation in the Staff Report as appropriate to assure that the permit also includes monitoring and recordkeeping sufficient to assure compliance with the CO limit on an ongoing basis, in accordance with 40 CFR 70.6(a)(3) and (c)(1).

AQD Response:

The turbines and duct burners in FG-SITURB/DB are all the same model installed at the same time. PTI Nos. 316-05B and 241-09 both required testing of units T09, T10, T11, T13, and T14 with PTI No. 241-09 being the most recent permit issued. Testing was required with the turbines at maximum load with the respective duct burners at maximum firing rates. The test was to occur on one turbine / duct burner set every two years. Historical test results were reviewed and revealed one test at 90% of permitted levels. Another test event was at 77% of the limit. All other results were below 70% of the permitted level of 246 pounds of CO per hour. Based on those results, the AQD believes additional ongoing monitoring requirements are not necessary and kept the testing frequency intact but increased the number of turbine / duct burner sets to be tested each time to two. The testing requirements now specify two different turbines and respective duct burners are tested each time until all turbines and respective duct burners are tested, at which point the testing cycle repeats. The requirements are now stated in SC V.2.

Changes made to the September 2, 2019 Draft ROP for FG-SITURB/DB:

- SC I.2 – Added SC V.2 as a Monitoring/Testing Method
- SC V.1 – Reworded for clarity and consistency with updated EGLE testing language. Also changed the requirement to test one turbine/respective duct burner every two years to two turbines/respective duct burners every two years:
 - “The permittee shall verify CO emission rates from two turbines (EU-T09, 10, 11, 13, 14) and respective duct burners (EU-DUCTBURNER09, 10, 11, 13, 14) in FG-SITURB/DB by testing at owner’s expense, in accordance with Department requirements. Testing must be done for two turbines at maximum load with the respective duct burners at maximum firing rate. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must describe the normal operating range for each turbine. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results