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August 2, 2021

Ms. Caryn Owens
Cadillac District Office
EGLE AQD
120 West Chapin Street
Cadillac, MI 49601-2158

Subject: SRN #B2796 Rule 216(2) ROP Minor Modification Application
DTE Electric Company – Dean Peakers
Section 5 of MI-ROP-B2796-2015c
FG-CTG-DP

Dear Ms. Owens,

Enclosed is an application for a ROP Minor Modification under Rule 216(2) for ROP No. MI-ROP-B2796-2015c issued to DTE Electric Company – Dean Peakers located at 4490 North River Road in East China, Michigan 48054. This ROP modification is to roll PTI 116-01A into the ROP and only affects FG-CTG-DP in Section 5 of the ROP.

When incorporating this PTI in the ROP, please remove obsolete PEMS conditions and streamline the new conditions related to the installation of CEMS NOx monitors. Note that FG-CTG-DP is currently in Section 5 of the ROP and was requested to be consolidated into Section 3 of the new ROP (along with Sections 2 & 4 of the current ROP) in the ROP renewal application submitted on November 27, 2019.

DTE requests this ROP minor modification application is processed as part of the pending ROP renewal for ROP No. MI-ROP-B2796-2015c. Should you have any questions regarding this ROP minor modification application, please contact me at lisa.fishbeck@dteenergy.com or (313) 235-3389.

Sincerely,

Lisa R. Fishbeck

Lisa R. Fishbeck, CHMM
Senior Environmental Engineer, Emissions Quality
Environmental Management & Safety (EM&S)
DTE Energy Corporate Services, LLC

Enclosure: MI-ROP-B2796-2015c Minor Modification Application comprised of:

1. M-001: ROP Rule 216 Modification Application Form
2. C-001: ROP Application Certification Form
3. AI-001: Additional Information Form AI-FG-CTG-DP
4. PTI 116-01A

Cc: Ms. Caryn Owens, EGLE AQD, Cadillac District Environmental



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RENEWABLE OPERATING PERMIT
M-001: RULE 215 CHANGE NOTIFICATION
RULE 216 AMENDMENT/MODIFICATION APPLICATION

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This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment.

1. SRN B2796	2. ROP Number MI-ROP-B2796-2015c Section 5	3. County St. Clair
4. Stationary Source Name DTE Electric Company - Dean Peakers		
5. Location Address 4490 North River Road		6. City East China
<p>7. Submittal Type - <i>The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.</i></p> <p><input type="checkbox"/> Rule 215(1) Notification of change. <i>Complete Items 8 – 10 and 14</i></p> <p><input type="checkbox"/> Rule 215(2) Notification of change. <i>Complete Items 8 – 10 and 14</i></p> <p><input type="checkbox"/> Rule 215(3) Notification of change. <i>Complete Items 8 – 11 and 14</i></p> <p><input type="checkbox"/> Rule 215(5) Notification of change. <i>Complete Items 8 – 10 and 14</i></p> <p><input type="checkbox"/> Rule 216(1)(a)(i)-(iv) Administrative Amendment. <i>Complete Items 8 – 10 and 14</i></p> <p><input type="checkbox"/> Rule 216(1)(a)(v) Administrative Amendment. <i>Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.</i></p> <p><input checked="" type="checkbox"/> Rule 216(2) Minor Modification. <i>Complete Items 8 – 12 and 14</i></p> <p><input type="checkbox"/> Rule 216(3) Significant Modification. <i>Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.</i></p> <p><input type="checkbox"/> Rule 216(4) State-Only Modification. <i>Complete Items 8 – 12 and 14</i></p>		
8. Effective date of the change. (MM/DD/YYYY) <i>See detailed instructions.</i> <u>7/19/2021</u>		9. Change in emissions? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>10. Description of Change - <i>Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).</i></p> <p>Incorporate PTI 116-01A into the ROP. Remove obsolete PEMS conditions & streamline new conditions related to the installation of continuous emissions monitoring system (CEMS) for NOx on each EU in FG-CTG-DP (EU-CTG12-2-DP, EU-CTG12-1-DP, EU-CTG11-1-DP, & EU-CTG11-2-DP). There are no changes in emissions or pollutants.</p>		
11. New Source Review Permit(s) to Install (PTI) associated with this application? If Yes, enter the PTI Number(s) <u>116-01A</u> - - - - -		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>12. Compliance Status - <i>A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.</i></p> <p>a. Is the change identified above in compliance with the associated applicable requirement(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>c. If the change includes a future applicable requirement(s), will timely compliance be achieved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>		
13. Operator's Additional Information ID - <i>Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.</i>		AI -FG-CTG-DP
14. Contact Name Lisa Fishbeck	Telephone No. (313) 235-3389	E-mail Address lisa.fishbeck@dteenergy.com
15. This submittal also updates the ROP renewal application submitted on <u>10/19/2020 & 11/27/2019</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A <i>(If yes, a mark-up of the affected pages of the ROP must be attached.)</i>		

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

**RENEWABLE OPERATING PERMIT APPLICATION**
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: B2796

Section Number (if applicable): 5

1. Additional Information ID
AI-FG-CTG-DP**Additional Information**

2. Is This Information Confidential?

 Yes No

Enclosed is PTI 116-01A for Dean Peakers to roll into ROP No. MI-ROP-B2796-2015c.

COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU-CTG12-2-DP	Dean Peakers CTG 12-2 natural gas-fired, simple-cycle combustion turbine generator with dry low-NOx burner peaking unit nominally rated at 82.4 megawatts at ISO conditions.	5-10-2002	FG-CTG-DP
EU-CTG12-1-DP	Dean Peakers CTG 12-1 natural gas- fired, simple-cycle combustion turbine generator with dry low-NOx burner peaking unit nominally rated at 82.4 megawatts at ISO conditions.	5-13-2002	FG-CTG-DP
EU-CTG11-1-DP	Dean Peakers CTG 11-1 natural gas- fired, simple-cycle combustion turbine generator with dry low-NOx burner peaking unit nominally rated at 82.4 megawatts at ISO conditions.	5-4-2002	FG-CTG-DP
EU-CTG11-2-DP	Dean Peakers CTG 11-2 natural gas- fired, simple-cycle combustion turbine generator with dry low-NOx burner peaking unit nominally rated at 82.4 megawatts at ISO conditions	4-21-2002	FG-CTG-DP

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**FG-CTG-DP
FLEXIBLE GROUP CONDITIONS**
DESCRIPTION

Dean Peakers - Four (4) natural gas-fired simple cycle combustion turbine generator peaking units each nominally rated at 82.4 MW at ISO conditions. Peak mode means operation is above the nominally rated capacity of the turbine, as specified by equipment manufacturer, to supply additional output on a short-term basis with the potential for greater than normal wear on the turbine and increased frequency for periodic inspection and maintenance of the turbine. Base mode includes all operation up to 100% of nominally rated capacity excluding startups/shutdowns/malfunctions Combustion turbines are equipped with dry low-NOx burners.

Emission Unit:

EU-CTG11-1-DP Dean Peaker CTG Unit 11-1 natural gas-fired combustion turbine generator
 EU-CTG11-2-DP Dean Peaker CTG Unit 11-2. natural gas-fired combustion turbine generator
 EU-CTG12-1-DP Dean Peaker CTG Unit 12-1. natural gas-fired combustion turbine generator
 EU-CTG12-2-DP Dean Peaker CTG Unit 12-2. natural gas-fired combustion turbine generator

POLLUTION CONTROL EQUIPMENT

Dry Low-NOx Burners

I. EMISSION LIMIT(S)

Pollutant	Limit ^a	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	9 ppm by volume at 15% oxygen & on a dry gas basis	Base load, average of all operating hours in a calendar day, excluding startup, shutdown and malfunction	Each emission unit in FG-CTG-DP	SC V.1, and Appendix 7-DP	R 336.1205(1(a) & (b), 40 CFR 52.21(j)
2. NOx	21 ppm by volume at 15% oxygen & on a dry gas basis	Peak mode, average of all operating hours in a calendar day excluding startup, shutdown and malfunction	Each emission unit in FG-CTG-DP	SC V.1 and Appendix 7-DP	R 336.1205(1(a) & (b), 40 CFR 52.21(j),)
3. NOx	60 ppm by volume at 15% oxygen & on a dry basis	Hourly	Each emission unit in FG-CTG-DP	SC IV.2	40 CFR 52.21 (c) & (d), 40 CFR 52.21(j)
4. NOx	100 ppm by volume at 15% oxygen & dry gas basis	Hourly, rolling arithmetic 4-unit operating hour average, determined at the end of each Unit Operating Hour, excluding startup, shutdown, and malfunction	Each emission unit in FG-CTG-DP	SC IV.2	40CFR 60.332(a)(1), 40CFR 60.8(c)
5. NOx	230 tons per year	Based on a rolling 12-month period, as determined at the end of each month	FG-CTG-DP	SC IV.2, SC VI.4 and Appendix 7-DP	R 336.1205(1(a) & (b), 40 CFR 52.21(j)

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn pipeline quality natural gas in each turbine. (R 336.1225, R 336.1702(a), 40 CFR 52.21, 40 CFR 60.333(b))
2. The permittee shall operate not the turbines in FG-CTG-DP at base load for more than a total of 12,400 hours per 12-month rolling time period as determined at the end of each calendar month. (R 336.1205(1)(a) & (b), 40 CFR 52.21(j))
3. The permittee shall not operate the turbines in FG-CTG-DP at peak load for more than a total of 800 hours per 12-month rolling time period as determined at the end of each calendar month. (R 336.1205(1)(a) & (b), 40 CFR 52.21(j))
4. The permittee must minimize the NO_x, CO and PM-10 emission rates during startup and shutdown in accordance with the turbine manufacturer recommendations. (R 336.1912, 40 CFR 52.21(j))
5. The total hours for startup and shutdown for FG-CTG DP shall not exceed 500 hours per turbine per 12-month rolling time period as determined at the end of each calendar month. Startup is defined as the period of time from initiation of combustion firing until the unit reaches steady state operation (i.e., when pre-mix operation is achieved) Shutdown is defined as that period of time from the initial lowering of the turbine output, with the intent to shut down, until the point at which the combustion process has stopped. (40 CFR 52.21(j))
6. The permittee shall not operate FG-CTG-DP unless all provisions of the Federal Prevention of Significant Deterioration regulations, 40 CFR 52.21, are met. (40 CFR 52.21)
7. The permittee shall maintain and implement the EGLE approved plan describing how emissions are minimized during startup(s), shutdown(s) and malfunction(s). The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. Alternative plans or modifications to the approved plan must be approved by the District Supervisor. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. (R 336.1911, R 336.1912, 40 CFR 52.21)

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each turbine with a dry low-NO_x combustor. (R 336.1910, 40 CFR 52.21(j))
2. The permittee shall install, calibrate, maintain, and operate devices or equipment to monitor and record the NO_x emissions and oxygen (O₂) or (CO₂) content of the exhaust gas from each turbine in FG-CTG-DP on a continuous basis, and to meet the timelines and reporting requirements as described in Appendix 3-DP. The Continuous Emission Monitoring System (CEMS) shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2 for NO_x and PS 3 for O₂ or CO₂ of Appendix B to 40 CFR Part 60. (R 336.1205(1)(a) & (b), R 336.2150(1)(b), (d), and (e), 40 CFR 52.21(c) & (d), 40 CFR 60.13 40 CFR 75.12(d)(2), 40 CFR 72.12(c), 40 CFR Part 75 Appendix B & F)

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall conduct NO_x and CO emission rate testing, at owner's expense, for each turbine at least once every 20 calendar quarters. NO_x and CO emissions testing will be conducted at two operating load points, one at maximum load and one other mid load. Testing shall be performed using approved EPA Test Methods listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 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 permittee shall notify the AQD no less than 7 days prior to the anticipated test date. The permittee must submit

VII. REPORTING

1. After CEMS are installed, the permittee shall report NO_x and either O₂ or CO₂ emissions in accordance with 40 CFR Part 75 within 30 days following the end of each calendar quarter. **(40 CFR 75.64)**
2. After NO_x CEMS installed, in accordance with 40 CFR 60.7(c) & (d), the permittee shall submit two copies of an excess emission report (EER) and monitoring system performance report in an acceptable format to the AQD District Supervisor and the TPU Supervisor within 30 days following the end of each calendar quarter. The monitoring system performance report shall follow the format of Figure 1 in 40 CFR 60.7(d). The NO_x excess emissions (EER) shall include the following information:
 - a. A report of each exceedance above specified permit limits for NO_x. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
 - b. A report of all periods of CEMS downtime and corrective action.
 - c. A report of the total operating time of each combustion turbine in FG-CTG-DP during the reporting period.
 - d. A report of any periods that the CEMS exceeds the instrument range.
 - e. If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.**(40 CFR 60.7(c) & (d))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-TURBINE1	108 x 228	56	R 336.1225, 40CFR52.21(c) & (d)
2. SV-TURBINE2	108 x 228	56	R 336.1225, 40CFR52.21(c) & (d)
3. SV-TURBINE3	108 x 228	56	R 336.1225, 40CFR52.21(c) & (d)
4. SV-TURBINE4	108 x 228	56	R 336.1225, 40CFR52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall conduct a visual inspection of the silencer elements associated with each turbine once each quarter that the turbine is operated. The visual inspection will evaluate whether or not silencer material has been lost due to operation of the turbines. If there is evidence that silencer material has been lost, the permittee shall notify the District Office of the positive results and take immediate action to replace the silencer elements. Records of the quarterly visual inspections shall be kept on file for a period of at least five years and made available to the AQD upon request. **(R 336.1901)**
2. The permittee shall comply with all the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and GG, as they apply to FG-CTG-DP. **(40 CFR 60, Subparts A and GG)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

DTE Electric Company Belle River Power Plant (B2796)
Permit No. 116-01A

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When the NO_x continuous emission monitoring system uses CO₂ as the diluent, use the following conversion procedure:

$$E = K C_h F_c \frac{100}{\%CO_2}$$

where:

K = 1.194×10^{-7} (lb/dscf)/ppm NO_x.

E = Pollutant emissions during unit operation, lb/mmBtu.

C_h = Hourly average pollutant concentration during unit operation, ppm.

%O₂, %CO₂ = Oxygen or carbon dioxide volume during unit operation (expressed as percent O₂ or CO₂)