ROP Renewal Application

Livingston Generating Station

CMS Generation Michigan Power, LLC
Livingston Generating Station
155 North Townline Road
Gaylord, Michigan

NTH Project No. 73-170014-20
November 28, 2017

NTH Consultants, Ltd.
608 S. Washington Ave.
Lansing, MI 48933

CMS ENERGY

Dearborn Industrial Generation LLC

Mr. Shane Nixon
MDEQ – Air Quality Division
Cadillac District Office
120 West Chapin Street
Cadillac, MI 49601

November 28, 2017

Re: Renewal Application for Renewable Operating Permit (ROP)
Livingston Generating Station (SRN: N6526), Gaylord, Michigan

Dear Mr. Nixon:

CMS Generation Michigan Power LLC - Livingston Generating Station (LGS) (SRN: N6526) is submitting the attached Renewable Operating Permit (ROP) renewal application for our generation facility located at 155 North Townline Road in Gaylord, Michigan.

LGS is operating pursuant to ROP No. MI-ROP-N6526-2014a that was issued on January 28, 2014, and revised on June 16, 2016. As required by Michigan Air Pollution Control Rule R 336.1210(9), the facility must submit an administratively complete ROP renewal application not more than 18 months, but not less than 6 months, prior to the expiration date of the current ROP. LGS' current ROP expires January 28, 2019; the ROP renewal application must be submitted and deemed administratively complete by July 28, 2018. The ROP renewal application is being submitted electronically, in addition to paper hard copy, to allow 15 days for an administrative completeness determination pursuant to Rule R 336.1210(2)(a)(i)(B).

LGS operates four (4) 39-Megawatt Dresser-Rand natural gas-fired simple-cycle combustion turbines, and is subject to the Acid Rain Program and the Cross State Air Pollution Rule (CSAPR) pursuant to 40 CFR Parts 72 and 97, respectively. An Acid Rain Permit Application form for permit renewal has been included as a part of this ROP renewal application. Additionally, LGS operates the turbines pursuant to Compliance Assurance Monitoring (CAM) and a Continuous Compliance Protocol.

LGS is not proposing additions, deletions or changes to the existing conditions contained in the ROP.

The ROP renewal application and supporting documentation are enclosed. If there are questions regarding this ROP renewal application, please contact Mr. Paul Snoes at 313-336-7189.

Sincerely,

Jimmy Chong
Asset Manager

cc: Rebecca Radulski, MDEQ
Brian Carley, MDEQ, Jackson District Office (Acid Rain/CSAPR only)
Paul Snoes, Dearborn Industrial Generation, LLC
Chris Occhipinti, NTH Consultants, Ltd.
DEQ-ROP@michigan.gov

Table of Contents

1.0 INTRODUCTION

CMS Generation Michigan Power LLC - Livingston Generating Station (LGS) is an existing electric power generation plant located at 155 North Townline Road in Gaylord, Otsego County, Michigan. The facility is a “peaking plant,” meaning it operates for short periods of “peak load” when demand for electricity is high. The facility contains four (4) identical 39-Megawatt (MW) Dresser-Rand natural gas-fired simple-cycle combustion turbines with two (2) engines each, driving electric generators. The turbines are equipped with water injection systems for controlling emissions of nitrogen oxides (NO_x). Additionally, the facility contains natural gas-fired heaters for building heat. LGS is currently operating pursuant to Michigan Department of Environmental Quality (MDEQ) Renewable Operating Permit (ROP) No. MI-ROP-N6526-2014a.

ROP No. MI-ROP-N6526-2014a was issued on January 28, 2014, revised on June 16, 2016, and expires on January 28, 2019. As required by Michigan Air Pollution Control Rule R 336.1210(9), the facility must submit an administratively complete ROP renewal application not more than 18 months, but not less than 6 months, prior to the expiration date of the current ROP. The current ROP expires January 28, 2019; the ROP renewal application must be submitted and deemed administratively complete by July 28, 2018.

LGS is currently monitoring and recording NO_x emissions pursuant to the Acid Rain Program (40 CFR Part 75, Appendix E) and the ROP by maintaining a data acquisition system (DAS), as specified in the Continuous Compliance Protocol. LGS also monitors and records carbon monoxide (CO) emissions using the DAS. LGS will continue to maintain and reference the Continuous Compliance Protocol for compliance with NO_x and CO emission limits. LGS is also subject to the provisions of the Cross State Air Pollution Rule (CSAPR) codified at 40 CFR Part 97, Subparts AAAAA, CCCCC, and EEEEE. These subparts contain requirements for the CSAPR NO_x annual, sulfur dioxide (SO_2) Group 1 annual, and NO_x Group 2 Ozone Season Trading Programs.

The turbines are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR Part 64, for the NO_x emission limit of 75 parts per million by volume (ppmv) at 15% oxygen (O_2) on a dry basis at each turbine. The appended CAM plan provides monitoring parameters of the water injection system that provide reasonable assurance of compliance with the 75 ppmvd NO_x limit for each unit.

The enclosed ROP renewal application satisfies the requirements of Rule 210(9). The ROP renewal application has been created using the ROP Renewal Application Form (EQP 6000), revised as of April 2017. The certified ROP application is being submitted electronically, in addition to paper copy, to allow 15 days for an administrative completeness determination pursuant to Rule R 336.1210(2)(a)(i)(B). The ROP Renewal Application Form has been populated according to guidance provided by the Air Quality Division (AQD), and the paper copy of the renewal application has been organized according to the AQD instructions. The ROP application is certified by the Designated Representative (DR) via the included C-001 form.

LGS is not proposing additions, deletions, or changes to the existing conditions contained in the ROP. This is noted in the mark-up copy of ROP No. MI-ROP-N6526-2014a contained in Appendix A. Copies of the Continuous Compliance Protocol and CAM Plan are included in Appendix B and C, respectively, and the Acid Rain Permit Application for permit renewal is included in Appendix D.

DEQ Michigan Department Of Environmental Quality - Air Quality Division

RENEWABLE OPERATING PERMIT APPLICATION
C-001: CERTIFICATION

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 provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type **C-001**	SRN N6526

Stationary Source Name CMS Generation Michigan Power, LLC - Livingston Generating Station	
City Gaylord	County Otsego

SUBMITTAL CERTIFICATION INFORMATION

1. Type of Submittal *Check only one box.*

☐ Initial Application (Rule 210) ☐ Notification / Administrative Amendment / Modification (Rules 215/216)

☒ Renewal (Rule 210) ☐ Other, describe on AI-001

2. If this ROP has more than one Section, list the Section(s) that this Certification applies to _____

3. Submittal Media ☒ E-mail ☐ FTP ☐ Disk ☒ Paper

4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.

AI

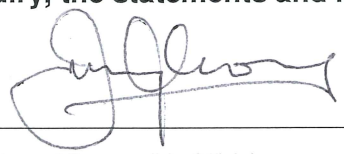
CONTACT INFORMATION

Contact Name Paul Snoes	Title DIG Health & Safety Coordinator
Phone number 313-336-7189	E-mail address Paul.snoes@cmsenergy.com

This form must be signed and dated by a Responsible Official.

Responsible Official Name Jimmy Chong			Title Asset Manager	
Mailing address 2400 Miller Road				
City Dearborn	State MI	ZIP Code 48121	County Wayne	Country United States

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this submittal are true, accurate and complete.



Signature of Responsible Official

11/28/17

Date

RENEWABLE OPERATING PERMIT
RENEWAL APPLICATION FORM

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. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.

GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at http://michigan.gov/air (select the Permits Tab, "Renewable Operating Permits (ROP)/Title V", then "ROP Forms & Templates").

PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

SOURCE INFORMATION

SRN	SIC Code	NAICS Code	Existing ROP Number	Section Number (if applicable)
N6526	4911	221112	MI-ROP-N6526-2014a	NA

Source Name: CMS Generation Michigan Power, LLC; Livingston Generating Station

Street Address: 155 North Townline Road

City	State	ZIP Code	County
Gaylord	MI	49735	Otsego

Section/Town/Range (if address not available):

Source Description:
The Livingston Generating Station is an electric power plant located on North Townline Road a short distance north of State Highway M-32, about two miles west of Gaylord, Michigan. It is a "peaking plant," meaning that it operates mainly for short periods of "peak load" when demand for electricity is high. The facility contains four Dresser-Rand natural gas fired turbine units, with two engines each, driving electric generators. The turbines are equipped with water injection systems for nitrogen oxides air emissions control. The turbine units are rated at 39 MW each.

☐ Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.

OWNER INFORMATION

Owner Name	Section Number (if applicable)
CMS Energy Corporation	

Mailing address (☐ check if same as source address)
One Energy Plaza

City	State	ZIP Code	County	Country
Jackson	MI	49201	Jackson	USA

☐ Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

SRN: N6526	Section Number (if applicable): NA

PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

CONTACT INFORMATION

Contact 1 Name	Title			
Paul Snoes	DIG Health & Safety Coordinator			
Mailing address (☐ check if same as source address) 2400 Miller Road				
City	State	ZIP Code	County	Country
Dearborn	MI	48121	Wayne	USA
Phone number	E-mail address			
313-336-7189	Paul.Snoes@cmsenergy.com			

Contact 2 Name (optional)	Title			
Mailing address (☐ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number	E-mail address			

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name	Title			
Jimmy Chong	Asset Manager			
Mailing address (☐ check if same as source address) 2400 Miller Road				
City	State	ZIP Code	County	Country
Dearborn	MI	48121	Wayne	USA
Phone number	E-mail address			
313-336-7189	Jim.Chong@cmsenergy.com			

Responsible Official 2 Name (optional)	Title			
Mailing address (☐ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number	E-mail address			

☐ Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID:

SRN: N6526	Section Number (if applicable): NA

PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

Listing of ROP Application Contents. Check the box for the items included with your application.

☒ Completed ROP Renewal Application Form (and any AI-001 Forms) (required)	☐ Compliance Plan/Schedule of Compliance
☒ Mark-up copy of existing ROP using official version from the AQD website (required)	☐ Stack information
☐ Copies of all Permit(s) to Install that have not been incorporated into existing ROP (required)	☒ Acid Rain Permit Initial/Renewal Application
☒ HAP/Criteria Pollutant Potential to Emit Calculations	☒ Cross State Air Pollution Rule (CSAPR) Information
☐ MAERS Forms (to report emissions not previously submitted)	☐ Confidential Information
☐ Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP	☒ Paper copy of all documentation provided (required)
☒ Compliance Assurance Monitoring (CAM) Plan	☒ Electronic documents provided (optional)
☐ Other Plans (e.g. Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.)	☒ Other, explain: Continuous Compliance Protocol

Compliance Statement

This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. ☒ Yes ☐ No

This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. ☒ Yes ☐ No

This source will meet in a timely manner applicable requirements that become effective during the permit term. ☒ Yes ☐ No

The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.

If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.

Name and Title of the Responsible Official (Print or Type)

Jimmy Chong, Asset Manager

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Signature of Responsible Official **Date**

PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

C1.	Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application.	☐ Yes ☒ No
C2.	Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82)	☐ Yes ☒ No
C3.	Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)	☐ Yes ☒ No
	If Yes, a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA?	☐ Yes ☐ No
C4.	Does the source belong to one of the source categories that require quantification of fugitive emissions?	☒ Yes ☐ No
	If Yes, identify the category on an AI-001 Form and include the fugitive emissions in the PTE calculations for the source. *See ROP Renewal Application instructions.*	
C5.	Does this stationary source have the potential to emit (PTE) of 100 tons per year or more of any criteria pollutant (PM-10, PM 2.5, VOC, NOx, SO_2, CO, lead)?	☒ Yes ☐ No
	If Yes, include potential emission calculations for each identified pollutant on an AI-001 Form.	
C6.	Does this stationary source emit any hazardous air pollutants (HAPs) regulated by the federal Clean Air Act, Section 112?	☒ Yes ☐ No
	If Yes, include potential and actual emission calculations for HAPs on an AI-001 Form. Fugitive emissions **must** be included in HAP calculations.	
C7.	Are any emission units subject to the Cross State Air Pollution Rule (CSAPR)? If Yes, identify the specific emission unit(s) subject to CSAPR on an AI-001 Form.	☒ Yes ☐ No
C8.	Are any emission units subject to the federal Acid Rain Program? If Yes, identify the specific emission unit(s) subject to the Federal Acid Rain Program on an AI-001 Form.	☒ Yes ☐ No
	Is an Acid Rain Permit Renewal Application included with this application?	☒ Yes ☐ No
C9.	Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)?	☒ Yes ☐ No
	If Yes, identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to the MDEQ, one must be included with the ROP renewal application on an AI-001 Form.	
	Is a CAM plan included with this application?	☒ Yes ☐ No
C10.	Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement?	☒ Yes ☐ No
	If Yes, then a copy must be submitted as part of the ROP renewal application.	
C11.	Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?	☐ Yes ☒ No
	If Yes, then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form.	

☒ Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: AI-PartC

PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☒ Yes ☐ No

If No, go to Part E.

Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).

Emission Unit ID	**Emission Unit Description**	**Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)]	**Rule 212(4) Citation** [e.g. Rule 212(4)(c)]
DVHTR01	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR02	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR03	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR04	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR05	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR06	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR07	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR08	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)
DVHTR09	100,000 Btu/hr natural gas heater	Rule 282(2)(b)(i)	Rule 212(4)(b)

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID: **AI-**

SRN: N6526	Section Number (if applicable): NA

PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to **all** emission units and **all** applicable requirements in the existing ROP.

E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP? If Yes, identify changes and additions on Part F, Part G and/or Part H.	☐ Yes ☒ No
E2. For each emission unit(s) identified in the existing ROP, all stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were not reported in the most recent MAERS reporting year? If Yes, identity the stack(s) that was/were not reported on applicable MAERS form(s).	☐ Yes ☒ No
E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI? If Yes, complete Part F with the appropriate information.	☐ Yes ☒ No
E4. Have any emission units identified in the existing ROP been dismantled? If Yes, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form.	☐ Yes ☒ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: **AI-**

SRN: N6526	Section Number (if applicable): NA

PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. If No, go to Part G. ☐ Yes ☒ No

Permit to Install Number	Emission Units/Flexible Group ID(s)	Description (*Include Process Equipment, Control Devices and Monitoring Devices*)	Date Emission Unit was Installed/ Modified/ Reconstructed

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. ☐ Yes ☐ No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. ☐ Yes ☐ No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identity the stack(s) that were not reported on the applicable MAERS form(s). ☐ Yes ☐ No

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. ☐ Yes ☐ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**

SRN: N6526	Section Number (if applicable): NA

PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. ☐ Yes ☒ No

Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.

Origin of Applicable Requirements	**Emission Unit Description – *Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices***	**Date Emission Unit was Installed/ Modified/ Reconstructed**
☐ Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation		
☐ Rule 287(2)(c) surface coating line		
☐ Rule 290 process with limited emissions		

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

SRN: N6526	Section Number (if applicable): NA

PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below.	☐ Yes ☒ No
H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP.	☐ Yes ☐ No
H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP.	☐ Yes ☐ No
H4. Does the source propose to add new state or federal regulations to the existing ROP? If Yes, on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify <u>each</u> state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement.	☐ Yes ☐ No
H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If Yes, list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP.	☐ Yes ☐ No
H6. Does the source propose to add, change and/or delete **source-wide** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H7. Are you proposing to **streamline** any requirements? If Yes, identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below.	☐ Yes ☐ No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H8. Does the source propose to add, change and/or delete **emission limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H9. Does the source propose to add, change and/or delete **material limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H10. Does the source propose to add, change and/or delete **process/operational restriction** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H11. Does the source propose to add, change and/or delete **design/equipment parameter** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H12. Does the source propose to add, change and/or delete **testing/sampling** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H13. Does the source propose to add, change and/or delete **monitoring/recordkeeping** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H14. Does the source propose to add, change and/or delete **reporting** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☐ No
☐ Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-**	

Michigan Department Of Environmental Quality - Air Quality Division

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.

Form Type **AI-001**	SRN N6526

1. Operator's Additional Information ID
AI PartC

Additional Information

2. Is This Information Confidential? ☐ Yes ☐ No

3. Narrative

Part C, Question C4: This stationary source belongs to one of the source categories that require quantification of fugitive emissions.
The fugitive emissions are considered negligible from the source.

Part C, Question C5: This stationary source has the potential to emit (PTE) of more than 100 tons per year of NOx and CO.

Pollutant	Annual PTE (tons/year)
NOx	224.4
CO	224.2

Calculations are provided in the attached table (AI-PartC - Tables 1 and 2)

Part 6, Question C6: This stationary source emits hazardous air pollutants (HAPs) shown in the attached table (AI-Part C - Table 3).
HAPs PTE:
Max single HAP: 6.8 tpy
Aggregate HAP: 9.9 tpy
2016 HAPs Actuals: 5.4E-02 tpy

Part C, Question C7: The following emissions units are subject to the Cross State Air Pollutation Rule (CSAPR):
EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04.

Part C, Question C8: The following emissions units are subject to the federal Acid Rain program:
EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04.

Part C, Question C9: The following emissions units are subject to compliance assurance monitoring (CAM) for the NOx emission limit of 75 parts per million by volume (ppmv) at 15% oxygen (O2) on a dry basis, at each turbine:
EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04.

Part C, Question C10: A continuous compliance protocol for NOx and CO emissions is attached in Appendix C for EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04.

AI-PartC - Table 1. Turbine Specification and Criteria Pollutant Potential to Emit (PTE)

Turbine Specifications		
Number of Turbines	4	
Turbine heat input (per unit)	550	MMBtu/hr
Natural Gas Heating Value	1,020	Btu/scf
Operation	8,760	hrs/yr
2016 Actual heat input (combined)	104,010	MMBtu
Pollutant	**PTE (tpy)**	**PTE Basis**
NO_x	224	ROP, FGCOMBTURB SC I.3
CO	224	ROP, FGCOMBTURB SC I.6

AI-PartC - Table 2. Heater Specification and Criteria Polutant PTE

Heater Specifications		
Number of Heaters	9	
Heat input (per unit)	100,000	Btu/hr
Natural Gas Heating Value	1,020	Btu/scf
Natural Gas throughput (per unit)	9.80E-05	MMscf/hr
Operation	8,760	hrs/yr
2016 Actual heat input (combined)	0.1899	MMscf

Criteria Pollutant	**Emission Factor**	**Emission Factor Unit**	**Emission Factor Basis**	**Annual PTE (tpy)**
NO_x	94	lb/MMscf	AP-42 Table 1.4-1	0.36
CO	40	lb/MMscf	AP-42 Table 1.4-1	0.15

AI-PartC - Table 3. Turbine and Heater Hazardous Air Pollutant (HAP) Emissions

Hazardous Air Pollutants (HAPs)	**Emission Factor**	**Emission Factor Unit**	**Emission Factor Basis**	**PTE**		**2016 Actual Emissions**	
				Heaters	**Turbines**	**Heaters**	**Turbines**
				(tpy)	**(tpy)**	**(tpy)**	**(tpy)**
Acetaldehyde	4.0E-05	lb/MMBtu	AP-42 Table 3.1-3		3.9E-01		2.1E-03
Acrolein	6.4E-06	lb/MMBtu	AP-42 Table 3.1-3		6.2E-02		3.3E-04
Arsenic	2.0E-04	lb/MMscf	AP-42 Table 1.4-4	7.73E-07		1.90E-08	
Benzene (Heaters)	2.1E-03	lb/MMscf	AP-42 Table 1.4-3	8.12E-06		1.99E-07	
Benzene (Turbines)	1.2E-05	lb/MMBtu	AP-42 Table 3.1-3		1.2E-01		6.2E-04
Beryllium	1.2E-05	lb/MMscf	AP-42 Table 1.4-4	4.64E-08		1.14E-09	
1,3 - Butadiene	4.3E-07	lb/MMBtu	AP-42 Table 3.1-3		4.1E-03		2.2E-05
Cadmium	1.1E-03	lb/MMscf	AP-42 Table 1.4-4	4.25E-06		1.04E-07	
Chromium	1.4E-03	lb/MMscf	AP-42 Table 1.4-4	5.41E-06		1.33E-07	
Cobalt	8.4E-05	lb/MMscf	AP-42 Table 1.4-4	3.25E-07		7.98E-09	
Dichlorobenzene	1.2E-03	lb/MMscf	AP-42 Table 1.4-3	4.64E-06		1.14E-07	
Ethylbenzene	3.2E-05	lb/MMBtu	AP-42 Table 3.1-3		3.1E-01		1.7E-03
Formaldehyde (Heaters)	7.5E-02	lb/MMscf	AP-42 Table 1.4-3	2.90E-04		7.12E-06	
Formaldehyde (Turbines)	7.1E-04	lb/MMBtu	AP-42 Table 3.1-3		6.8E+00		3.7E-02
Hexane	1.8E+00	lb/MMscf	AP-42 Table 1.4-3	6.96E-03		1.71E-04	
Manganese	3.8E-04	lb/MMscf	AP-42 Table 1.4-4	1.47E-06		3.61E-08	
Mercury	2.6E-04	lb/MMscf	AP-42 Table 1.4-4	1.00E-06		2.47E-08	
Nickel	2.1E-03	lb/MMscf	AP-42 Table 1.4-4	8.12E-06		1.99E-07	
Selenium	2.4E-05	lb/MMscf	AP-42 Table 1.4-4	9.28E-08		2.28E-09	
Toluene (Heaters)	3.4E-03	lb/MMscf	AP-42 Table 1.4-3	1.31E-05		3.23E-07	
Toluene (Turbines)	1.3E-04	lb/MMBtu	AP-42 Table 3.1-3		1.3E+00		6.8E-03
Xylenes	6.4E-05	lb/MMBtu	AP-42 Table 3.1-3		6.2E-01		3.3E-03
Polycylic Organic Matter (POMs)	**Emission Factor**	**Emission Factor Unit**	**Emission Factor Basis**	**(tpy)**	**(tpy)**	**(tpy)**	**(tpy)**
2-Methylnaphthalene	2.4E-05	lb/MMscf	AP-42 Table 1.4-3	9.28E-08		2.28E-09	
3-Methylcholanthrene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
7,12-Dimethylbenz(a)anthracene	1.6E-05	lb/MMscf	AP-42 Table 1.4-3	6.18E-08		1.52E-09	
Acenaphthene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Acenaphthylene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Anthracene	2.4E-06	lb/MMscf	AP-42 Table 1.4-3	9.28E-09		2.28E-10	
Benz(a)anthracene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Benzo(a)pyrene	1.2E-06	lb/MMscf	AP-42 Table 1.4-3	4.64E-09		1.14E-10	
Benzo(b)fluoranthene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Benzo(g,h,i)perylene	1.2E-06	lb/MMscf	AP-42 Table 1.4-3	4.64E-09		1.14E-10	
Benzo(k)fluoranthene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Chrysene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Dibenz(a,h)anthracene	1.2E-06	lb/MMscf	AP-42 Table 1.4-3	4.64E-09		1.14E-10	
Fluoranthene	3.0E-06	lb/MMscf	AP-42 Table 1.4-3	1.16E-08		2.85E-10	
Fluorene	2.8E-06	lb/MMscf	AP-42 Table 1.4-3	1.08E-08		2.66E-10	
Indeno(1,2,3,c,d)pyrene	1.8E-06	lb/MMscf	AP-42 Table 1.4-3	6.96E-09		1.71E-10	
Naphthalene (Heaters)	6.1E-04	lb/MMscf	AP-42 Table 1.4-3	2.36E-06		5.79E-08	
Naphthalene (Turbines)	1.3E-06	lb/MMBtu	AP-42 Table 3.1-3		1.3E-02		6.8E-05
Phenanthrene	1.7E-05	lb/MMscf	AP-42 Table 1.4-3	6.57E-08		1.61E-09	
Polycyclic aromatic hydrocarbons (PAHs)	2.2E-06	lb/MMBtu	AP-42 Table 3.1-3		2.1E-02		1.1E-04
Propylene Oxide	2.9E-05	lb/MMBtu	AP-42 Table 3.1-3		2.8E-01		1.5E-03
Pyrene	5.0E-06	lb/MMscf	AP-42 Table 1.4-3	1.93E-08		4.75E-10	
			Maximum Single HAP	7.0E-03	6.8	1.7E-04	3.7E-02
			Aggregate HAPs	**7.3E-03**	**9.9**	**1.8E-04**	**5.3E-02**

APPENDIX A

// MARK-UP OF ROP

KEEP ALL CONDITIONS – NO CHANGES, ADDITIONS, OR DELETIONS

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

EFFECTIVE DATE: ~~January 28, 2014~~
REVISION DATE: ~~June 16, 2016~~

ISSUED TO

CMS Generation Michigan Power LLC
Livingston Generating Station

State Registration Number (SRN): N6526

LOCATED AT

155 North Townline Road, Gaylord, Otsego County, Michigan 49735

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N6526-~~2014a~~

Expiration Date: ~~January 28, 2019~~

Administratively Complete ROP Renewal Application Due Between
~~July 28, 2017~~ and ~~July 28, 2018~~

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-N6526-2014a

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

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Janis Denman, Cadillac District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environmental Quality (MDEQ) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined, subsumed and/or are state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq.,

and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following: **(R 336.1301(1))**
    a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. 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 appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor 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 conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA. **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.

37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR, Part 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR, Part 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR, Part 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR, Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule. [2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA. [2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI 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 the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI 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. The written request shall be sent to the appropriate AQD District Supervisor, MDEQ. [2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. [2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

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
EUCOMBTURB01	Dresser-Rand ER-224 combustion turbine, 39 MW, Unit 1, with water injection for control of nitrogen oxides (NOx)	10/6/1998	FGCOMBTURB
EUCOMBTURB02	Dresser-Rand ER-224 combustion turbine, 39 MW, Unit 2, with water injection for control of nitrogen oxides (NOx)	10/6/1998	FGCOMBTURB
EUCOMBTURB03	Dresser-Rand ER-224 combustion turbine, 39 MW, Unit 3, with water injection for control of nitrogen oxides (NOx)	10/6/1998	FGCOMBTURB
EUCOMBTURB04	Dresser-Rand ER-224 combustion turbine, 39 MW, Unit 4, with water injection for control of nitrogen oxides (NOx)	10/6/1998	FGCOMBTURB

D. FLEXIBLE GROUP CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

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

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCOMBTURB	Four Dresser-Rand ER-224 combustion turbines rated at 39 MW each, equipped with water injection for control of nitrogen oxides (NOx)	EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04

FGCOMBTURB
FLEXIBLE GROUP CONDITIONS

DESCRIPTION: Four Dresser-Rand ER-224 combustion turbines rated at 39 MW each

Emission Units: EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, EUCOMBTURB04

POLLUTION CONTROL EQUIPMENT: Water Injection

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	75 parts per million by volume at 15 percent oxygen on a dry basis.[2]	Test Protocol*	EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, and EUCOMBTURB04, individually	Condition V.1	**40 CFR 60.332 40 CFR 52.21(c) and (d) R 336.1205(1)(a) R 336.1205(3)**
2. NOx	624.0 pounds/hour[2]		FGCOMBTURB	Condition VI.6 and VI.7	**40 CFR 52.21(c) and (d) R 336.1205(1)(a) R 336.1205(3)**
3. NOx	224 tons/year[2]	12-month rolling time period as determined at the end of each calendar month	FGCOMBTURB	Condition VI.6 and VI.7	**40 CFR 52.21(c) and (d) R 336.1205(1)(a), R 336.1205(3)**
4. CO	0.48 pounds per million BTU heat input[2]	Test Protocol*	EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03, and EUCOMBTURB04, individually	Condition V.2	**40 CFR 52.21(d) R 336.1205(1)(a), R 336.1205(3)**
5. CO	844.0 pounds/hour[2]		FGCOMBTURB	Condition VI.6 and VI.7	**40 CFR 52.21(d) R 336.1205(1)(a), R 336.1205(3)**
6. CO	224.0 tons/year[2]	12-month rolling time period as determined at the end of each calendar month	FGCOMBTURB	Condition VI.6 and VI.7	**40 CFR 52.21(d) R 336.1205(1)(a), R 336.1205(3)**

*Test Protocol shall specify the averaging time.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	**NA**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall burn only natural gas as defined in 40 CFR 60.331(u) in the combustion turbines.[2] **(R 336.1301(1), 40 CFR 60.331(u))**

   In accordance with Rule 213(2) and Rule 213(6), compliance with this streamlined operational limit shall be considered compliance with the operational limit established by **R 336.1301(1) and 40 CFR 60.331(u)**; and also compliance with the operational limit established by **40 CFR 60.333(b)**, an additional applicable requirement that has been subsumed within this condition.

2. The permittee shall not operate any of the combustion turbine units at or beyond a 10.0% capacity factor, averaged over three calendar years, or a 20.0% capacity factor for any one calendar year, without the increased monitoring equipment and recordkeeping as specified in Federal Acid Rain regulations. **(40 CFR 75.12(d)(2))**

3. Except for purposes of start-up, shutdown, and testing, the permittee shall not operate any combustion unit except at a percent load and average hourly water to fuel ratio within a range demonstrated for that individual unit, by stack testing, to be in compliance with NOx and CO limits. **(R 336.1205(1)(a), R 336.1205(3), 40 CFR 52.21)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain the four combustion turbine units with a working water injection system. **(40 CFR 52.21(j))**

2. The permittee shall equip and maintain the four combustion turbine units with a continuous monitoring system to monitor and record fuel consumption and water to fuel ratio for each turbine. **(40 CFR 60.334(a))**.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. To establish compliance with NOx emission limits, the permittee shall test each combustion turbine unit in accordance with Subparts A and GG of 40 CFR, Part 60 and Appendix E of 40 CFR, Part 75 or other protocol approved in advance by the AQD. The permittee shall by this testing determine the range of water to fuel ratios within which the combustion turbine units comply with their NOx emission limits. Testing shall be conducted at least once each 20 calendar quarters and within 90 days after any combustion turbine change-out. **(R 336.1213(3)(a), 40 CFR 60.335, 40 CFR, Part 75)**

2. To establish compliance with CO emission limits, the permittee shall test each combustion turbine unit in accordance with 40 CFR, Part 60, Appendix A, Method 10, or other method approved in advance by the AQD. Testing shall be conducted at least once each 20 calendar quarters and within 90 days after any combustion turbine change-out. **(R 336.1213(3)(a), 40 CFR 52.21)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall continuously monitor and record the fuel and water injection flows, by volume, for each combustion turbine unit, at all times the unit is operating. Data recorded during monitoring malfunctions, repair activities, and QA/QC operations shall not be used for 40 CFR, Part 64 compliance. **(R 336.1213(3), 40 CFR 60.334(a), 40 CFR 64.6(c)(1)(iii), 40 CFR 64.7(c), 40 CFR 64.6(c)(3))**

2. The permittee shall continuously calculate and record the water to fuel ratio, by volume, for each combustion turbine unit. Data recorded during monitoring malfunctions, repair activities, and QA/QC operations shall not be used for 40 CFR, Part 64 compliance. **(R 336.1213(3), 40 CFR 60.334(a), 40 CFR 64.6(c)(1)(iii), 40 CFR 64.7(c), 40 CFR 64.6(c)(3))**

3. The permittee shall record the hours of operation of each combustion turbine unit for each calendar month. **(R 336.1213(3))**

4. The permittee shall calculate the annual capacity factor for the facility for each calendar year. **(R 336.1213(3), 40 CFR 75.12(d)(2))**

5. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage on an hourly and monthly basis for each combustion turbine unit. The permittee shall keep all records on file and make them available to the Air Quality Division upon request. **(R 336.1205(1)(a), R 336.1205(3), 40 CFR 52.21)**

6. The permittee shall continuously monitor and record the operating load with the associated water to fuel ratio, proven by stack testing, for each combustion turbine unit. The permittee shall keep all records on file and make them available to the Air Quality Division upon request. **(R 336.1205(1)(a), R 336.1205(3), 40 CFR 52.21)**

7. The permittee shall calculate and record the NOx and CO emissions on an hourly, monthly, and 12 month rolling time period basis, in the manner specified in the Continuous Compliance Protocol. The permittee shall keep all records on file and make them available to the Air Quality Division upon request. **(R 336.1205(1)(a), R 336.1205(3), 40 CFR 52.21)**

8. The permittee shall demonstrate that the gaseous fuel burned in FGCOMBTURB is natural gas, as defined in 40 CFR 60.331(u) by using one of the following sources of information: **(R 336.1213(3), 40 CFR 60.334(h)(3))**
   a. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total fuel sulfur content of the fuel is 20 grains/100 scf or less; or
   b. Representative fuel sampling date which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of Appendix D to 40 CFR, Part 75 is required.

9. The permittee shall use continuous monitoring of fuel consumption and of the ratio of water to fuel, in accordance with the provisions of 40 CFR 60.332, as an indicator of the proper functioning of the water injection system. The appropriate range of water-to-fuel ratio defining proper function of the water injection system is indicated by graphs or figures of heat input vs. water-to-fuel ratio developed to demonstrate compliance under 40 CFR 60.335. **(40 CFR 64.6(c)1(i and ii))**

10. An excursion for NOx shall be any one hour period in which the average water to fuel ratio falls below the minimum determined by stack tests to demonstrate compliance at the current operating heat input. **(40 CFR 60.334(j)(1)(i)(A)), 40 CFR 64.6(c)(2))**

11. Upon detecting an excursion or exceedance, the permittee shall restore operation of the affected combustion turbine unit and its water injection system to compliance as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown, or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of the excursion or exceedance and documentation of any corrective actions taken. Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator actions (such as through response by a computerized control system) or any necessary follow-up actions to return operation to compliance with all emission limits. **(40 CFR 64.7(d))**

12. The permittee shall properly maintain the systems for monitoring fuel and injection water flow for each combustion turbine unit, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

13. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring

malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, in frequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 64.7(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration, and cause of excursions or exceedances and the corrective actions taken. If there were no excursions or exceedances in the reporting period, then this report shall include a statement that there were no excursions or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on downtime of the water-to-fuel ratio monitoring system and associated data acquisition system. If there were no periods of downtime in the reporting period, then the report shall include a statement to that effect. **(40 CFR 64.9(a)(2)(ii))**

6. The permittee shall submit semiannual monitoring system performance and excess NOx emission reports within 30 days following the end of each reporting period. For any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined by stack testing to demonstrate compliance with the 75 ppm NOx emission limit, the following information will be provided:
   a. Average water-to-fuel ratio
   b. Average fuel consumption rate
   c. Gas turbine load (MW)
   d. The graphs or figures developed under compliance testing to show the correlation between water-to-fuel ratio and NOx emissions

   The report shall also state all times during which the water-to-fuel ratio monitoring system was inoperative, when it was repaired, or when it was adjusted. If there were no excess emissions and the monitoring system was never inoperative, repaired, or adjusted during a quarter, the report shall state these facts. **(40 CFR 60.334(j)(1)and (5), 40 CFR 60.7(c))**

7. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.12001(3))**

8. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test date. **(R 336.2001(4))**

9. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the test. **(R 336.2001(5))**

See Appendix 8

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. SVUNIT01	250.8 x 145.2[2]	39[2]	**40 CFR 52.21(c) and (d)**
2. SVUNIT02	250.8 x 145.2[2]	39[2]	**40 CFR 52.21(c) and (d)**
3. SVUNIT03	250.8 x 145.2[2]	39[2]	**40 CFR 52.21(c) and (d)**
4. SVUNIT04	250.8 x 145.2[2]	39[2]	**40 CFR 52.21(c) and (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall develop and shall maintain, on site, a continuous compliance plan which explains the procedures used to document proper operation of the NOx emission controls. The plan shall include parameters monitored, their acceptable ranges, and the basis for the parameters and ranges selected. The plan shall be updated following each emission test approved by the AQD to incorporate the emission rates and compliant ranges of unit load and fuel to water ratio established in that test. **(40 CFR 60.334(g))**

2. The permittee shall comply with the acid rain permitting provisions of 40 CFR, Part 72, as outlined in a complete Phase II, Acid Rain Permit issued by the AQD. Phase II, Acid Rain Permit No. MI-AR-55102-2014 is hereby incorporated into this ROP as Appendix 9. **(R 336.1299(d))**

3. The permittee shall not allow the emission of an air pollutant to exceed the amount of any emission allowances that an affected source lawfully holds as of the allowance transfer deadline pursuant to Rule 299(d) and 40 CFR, Part 72.9(c)(1)(i). **(R 336.1213(10))**

4. The permittee shall comply with the provisions of the Transport Rule NOX Annual Trading Program, as specified in 40 CFR, Part 97 Subpart AAAAA, and identified in Appendix 10. **(40 CFR Part 97 Subpart AAAAA)**

5. The permittee shall comply with the provisions of the Transport Rule NOX Ozone Trading Program, as specified in 40 CFR, Part 97 Subpart BBBBB, and identified in Appendix 10. **(40 CFR Part 97 Subpart BBBBB)**

6. The permittee shall comply with the provisions of the Transport Rule SO2 Group 1 Trading Program, as specified in 40 CFR, Part 97 Subpart CCCCC, and identified in Appendix 10. **(40 CFR Part 97 Subpart CCCCC)**

7. The permittee shall promptly notify the AQD for the need to modify the CAM Plan if the existing plan is found to be inadequate. In this case, the permittee shall submit a proposed modification to the ROP if necessary. **(40 CFR 64.7(e))**

8. The permittee shall comply with all applicable requirements of 40 CFR, Part 64. **(40 CFR, Part 64)**

9. The permittee shall comply with all applicable requirements of the Standards of Performance for Stationary Gas Turbines, Subparts A and GG. **(40 CFR 60.330 through 60.335)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

APPENDICES

Appendix 1. Abbreviations and Acronyms

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

AQD	Air Quality Division	MM	Million
acfm	Actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	MW	Megawatts
BTU	British Thermal Unit	NA	Not Applicable
°C	Degrees Celsius	NAAQS	National Ambient Air Quality Standards
CAA	Federal Clean Air Act	NESHAP	National Emission Standard for Hazardous Air Pollutants
CAM	Compliance Assurance Monitoring	NMOC	Non-methane Organic Compounds
CEM	Continuous Emission Monitoring	NOx	Oxides of Nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	Carbon Monoxide	NSR	New Source Review
COM	Continuous Opacity Monitoring	PM	Particulate Matter
department	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns in diameter
dscf	Dry standard cubic foot	pph	Pound per hour
dscm	Dry standard cubic meter	ppm	Parts per million
EPA	United States Environmental Protection Agency	ppmv	Parts per million by volume
EU	Emission Unit	ppmw	Parts per million by weight
°F	Degrees Fahrenheit	PS	Performance Specification
FG	Flexible Group	PSD	Prevention of Significant Deterioration
GACS	Gallon of Applied Coating Solids	psia	Pounds per square inch absolute
GC	General Condition	psig	Pounds per square inch gauge
gr	Grains	PeTE	Permanent Total Enclosure
HAP	Hazardous Air Pollutant	PTI	Permit to Install
Hg	Mercury	RACT	Reasonable Available Control Technology
hr	Hour	ROP	Renewable Operating Permit
HP	Horsepower	SC	Special Condition
H_2S	Hydrogen Sulfide	scf	Standard cubic feet
HVLP	High Volume Low Pressure *	sec	Seconds
ID	Identification (Number)	SCR	Selective Catalytic Reduction
IRSL	Initial Risk Screening Level	SO_2	Sulfur Dioxide
ITSL	Initial Threshold Screening Level	SRN	State Registration Number
LAER	Lowest Achievable Emission Rate	TAC	Toxic Air Contaminant
lb	Pound	Temp	Temperature
m	Meter	THC	Total Hydrocarbons
MACT	Maximum Achievable Control Technology	tpy	Tons per year
MAERS	Michigan Air Emissions Reporting System	µg	Microgram
MAP	Malfunction Abatement Plan	VE	Visible Emissions
MDEQ	Michigan Department of Environmental Quality	VOC	Volatile Organic Compounds
mg	Milligram	yr	Year
mm	Millimeter		

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N6526-2009. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N6526-2009 is being reissued as Source-Wide PTI No. MI-PTI-6526-2014.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
250-09	201000083*	Monitoring and recordkeeping revisions	FGCOMBTURB

The following ROP amendments or modifications were issued after the effective date of ROP No. MI-ROP-N6526-2014.

Permit to Install Number	ROP Revision Application Number/Issuance Date	Description of Change	Corresponding Emission Unit(s) or Flexible Group(s)
NA	201500158/ June 16, 2016	Reopening to update from CAIR to CSAPR.	FGCOMBTURB

Appendix 7. Emission Calculations

Specific emission calculations to be used with monitoring, testing or recordkeeping data are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible group Special Conditions. Therefore, this appendix is not applicable.

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the MDEQ, AQD, Report Certification form (EQP 5736) and MDEQ, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

Appendix 9. Phase II Acid Rain Permit

Michigan Department Of Environmental Quality
Air Quality Division

PHASE II ACID RAIN PERMIT
Permit No. MI-AR-55102-~~2014~~

Permittee	CMS Generation Michigan Power LLC Livingston Generating Station
Address	155 North Townline Road, Gaylord, Michigan 49735
SRN	N6526
ORIS code	55102
Issue Date	~~January 28, 2014~~
Effective:	Issuance date of this facility's Renewable Operating Permit at the facility in accordance with 40 CFR 72.73.
Expiration	This permit shall expire when the facility's Renewable Operating Permit expires, in accordance with 40 CFR 72.73.
ROP No.	MI-ROP-N6526-~~2014~~

The Acid Rain Permit Contents

1. A statement of basis prepared by the Air Quality Division (AQD) containing:

   References to statutory and regulatory authorities, and with comments, notes, and justification that apply to the source in general;

2. Terms and conditions including:

   A table of sulfur dioxide allowances to be allocated during the term of the permit, if applicable, authorized by this permit during Phase II. Unless they are subject to sections 405(g)(2) or (3) of the Clean Air Act, new units are not allocated allowances in 40 CFR, Part 73 and must obtain allowances by other means (sec. 403(e) of the Clean Air Act).;

   Comments, notes and justifications regarding permit decisions and changes made to the permit application forms during the review process, and any additional requirements; and,

   Any applicable nitrogen oxides compliance plan. Unless they are coal fired utility units regulated pursuant to sections 404, 405, or 409 of the Clean Air Act, new units are not subject to the acid rain nitrogen oxides requirements [40 CFR 76.1(a)].

3. The permit application that this source submitted, as corrected by the AQD. The owners and operators of the source must comply with the standard requirements and special provisions set forth in the application.

Statement of Basis

Statutory and Regulatory Authorities.

In accordance with the Natural Resources and Environmental Protection Act, 1994 PA 451 and Titles IV and V of the Clean Air Act, the Michigan Department of Environmental Quality, Air Quality Division (AQD), issues this permit pursuant to the provisions of R 336.1210 to R 336.1218, and R 336.1299(d).

For further information contact:

Brian Carley
Environmental Quality Specialist
Michigan Department of Environmental Quality
Air Quality Division
301 Louis Glick Highway
Jackson, Michigan 49201
Telephone: (517) 780-7843
Facsimile: (517) 780-7855

There are no comments, notes and/or justification that apply to the source in general for this section.

Terms and Conditions:

Phase II Sulfur Dioxide Allowance Allocation and Nitrogen Oxides Requirements for each affected unit.

		2014	2015	2016	2017	2018
Unit 1	SO_2 allowances	This affected unit shall hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under § 73.34(c) of this chapter) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and comply with the applicable Acid Rain emissions limitation for sulfur dioxide in accordance with 40 CFR 72.9 (c).				

		2014	2015	2016	2017	2018
Unit 2	SO_2 allowances	This affected unit shall hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under § 73.34(c) of this chapter) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and comply with the applicable Acid Rain emissions limitation for sulfur dioxide in accordance with 40 CFR 72.9 (c).				

		2014	2015	2016	2017	2018
Unit 3	SO_2 allowances	This affected unit shall hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under § 73.34(c) of this chapter) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and comply with the applicable Acid Rain emissions limitation for sulfur dioxide in accordance with 40 CFR 72.9 (c).				

		2014	2015	2016	2017	2018
Unit 4	SO_2 allowances	This affected unit shall hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under § 73.34(c) of this chapter) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and comply with the applicable Acid Rain emissions limitation for sulfur dioxide in accordance with 40 CFR 72.9 (c).				

Comments, notes and justifications regarding permit decisions, and changes made to the permit application forms during the review process: None.

Permit Application: (attached)

Acid Rain Permit application submitted ~~January 14, 2013~~

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258
Approval expires 11/30/2012

Acid Rain Permit Application

For more information, see instructions and 40 CFR 72.30 and 72.31.

This submission is: ~ new ~ revised ~ for Acid Rain permit renewal

STEP 1

Identify the facility name, State, and plant (ORIS) code.

Facility (Source) Name	State	Plant Code
Livingston Generating Station	Michigan	55102

STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a."

a	b
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)
1	Yes
2	Yes
3	Yes
4	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes

EPA Form 7610-16 (Revised 12-2009)

Livingston Generating Station

Facility (Source) Name (from STEP 1)

STEP 3

Read the standard requirements.

Permit Requirements

(1) The designated representative of each affected source and each affected unit at the source shall:

(i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:

(i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and

(ii) Have an Acid Rain Permit.

Monitoring Requirements

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

(1) The owners and operators of each source and each affected unit at the source shall:

(i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and

(ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:

(i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or

(ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

Livingston Generating Station
Facility (Source) Name (from STEP 1)

Sulfur Dioxide Requirements, Cont'd.

STEP 3, Cont'd.

(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements

(1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
(2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
(i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
(ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
(i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;

Livingston Generating Station

Facility (Source) Name (from STEP 1)

Recordkeeping and Reporting Requirements, Cont'd.

STEP 3, Cont'd.

(ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
(iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:
(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating

Livingston Generating Station
Facility (Source) Name (from STEP 1)

Effect on Other Authorities, Cont'd.

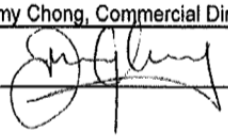
STEP 3, Cont'd.

to applicable National Ambient Air Quality Standards or State Implementation Plans;
(2) Limiting the number of allowances a source can hold; *provided,* that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;
(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

Certification

STEP 4
Read the certification statement, sign, and date.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Jimmy Chong, Commercial Director	
Signature 	Date 12/21/2012

Appendix 10. Transport Rule (TR) Trading Program Title V Requirements

Description of TR Monitoring Provisions

The TR subject units, and the unit-specific monitoring provisions, at this source are identified in the following tables. These units are subject to the requirements for the TR NO_X Annual Trading Program, TR NO_X Ozone Season Trading Program, and TR SO_2 Group 1 Trading Program, which are included below as Sections I, II, and III, respectively.

Each unit will use one of the following as the monitoring methodology for each parameter as provided below and shall comply with the general monitoring, recordkeeping, reporting and other requirements in conditions 1 through 5 below and in paragraph (b) of Sections I, II, and III:

- Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR part 75, subpart B (for SO2 monitoring) and 40 CFR part 75, subpart H (for NOX monitoring)
- Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D
- Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E
- Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19
- EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E

Unit ID: 1	
Parameter	Monitoring Methodology
SO_2	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D
NOx	Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E
Heat Input	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D

Unit ID: 2	
Parameter	Monitoring Methodology
SO_2	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D
NOx	Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E
Heat Input	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D

Unit ID: 3	
Parameter	Monitoring Methodology
SO_2	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D
NOx	Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E
Heat Input	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D

Unit ID: 4	
Parameter	Monitoring Methodology
SO_2	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part

	75, appendix D
NOx	Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E
Heat Input	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D

1. The above description of the monitoring used by a unit does not change, create an exemption from, or otherwise affect the monitoring, recordkeeping, and reporting requirements applicable to the unit under 40 CFR 97.430 through 97.435 (TR NO_X Annual Trading Program), 97.530 through 97.535 (TR NO_X Ozone Season Trading Program), and 97.630 through 97.635 (TR SO_2 Group 1 Trading Program). The monitoring, recordkeeping and reporting requirements applicable to each unit are included below in the standard conditions for the applicable TR trading programs.

2. Owners and operators must submit to the Administrator a monitoring plan for each unit in accordance with 40 CFR 75.53, 75.62 and 75.73, as applicable. The monitoring plan for each unit is available at the EPA's website at http://www.epa.gov/airmarkets/emissions/monitoringplans.html.

3. Owners and operators that want to use an alternative monitoring system must submit to the Administrator a petition requesting approval of the alternative monitoring system in accordance with 40 CFR part 75, subpart E and 40 CFR 75.66 and 97.435 (TR NO_X Annual Trading Program), 97.535 (TR NO_X Ozone Season Trading Program), and/or 97.635 (TR SO_2 Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative monitoring system is available on the EPA's website at http://www.epa.gov/airmarkets/emissions/petitions.html.

4. Owners and operators that want to use an alternative to any monitoring, recordkeeping, or reporting requirement under 40 CFR 97.430 through 97.434 (TR NO_X Annual Trading Program), 97.530 through 97.534 (TR NO_X Ozone Season Trading Program), and/or 97.630 through 97.634 (TR SO_2 Group 1 Trading Program) must submit to the Administrator a petition requesting approval of the alternative in accordance with 40 CFR 75.66 and 97.435 (TR NO_X Annual Trading Program), 97.535 (TR NO_X Ozone Season Trading Program), and/or 97.635 (TR SO_2 Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative to a monitoring, recordkeeping, or reporting requirement is available on the EPA's website at http://www.epa.gov/airmarkets/emissions/petitions.html.

5. The descriptions of monitoring applicable to the unit included above meet the requirement of 40 CFR 97.430 through 97.434 (TR NO_X Annual Trading Program), 97.530 through 97.534 (TR NO_X Ozone Season Trading Program), and 97.630 through 97.634 (TR SO_2 Group 1 Trading Program), and therefore minor permit modification procedures, in accordance with 40 CFR 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B), may be used to add or change this unit's monitoring system description.

SECTION I: TR NO_X Annual Trading Program requirements (40 CFR 97.406)

(a) Designated representative requirements.
The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.413 through 97.418.

(b) Emissions monitoring, reporting, and recordkeeping requirements.
(1) The owners and operators, and the designated representative, of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.430 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.431 (initial monitoring system certification and recertification procedures), 97.432 (monitoring system out-of-control periods), 97.433 (notifications concerning monitoring), 97.434 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.435 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.430 through 97.435 shall be used to calculate allocations of TR NO_X Annual allowances under 40 CFR 97.411(a)(2) and (b) and 97.412 and to determine compliance with the TR NO_X Annual emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.430 through 97.435 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_X emissions requirements.

(1) TR NO_X Annual emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall hold, in the source's compliance account, TR NO_X Annual allowances available for deduction for such control period under 40 CFR 97.424(a) in an amount not less than the tons of total NO_X emissions for such control period from all TR NO_X Annual units at the source.

(ii). If total NO_X emissions during a control period in a given year from the TR NO_X Annual units at a TR NO_X Annual source are in excess of the TR NO_X Annual emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR NO_X Annual unit at the source shall hold the TR NO_X Annual allowances required for deduction under 40 CFR 97.424(d); and

(B). The owners and operators of the source and each TR NO_X Annual unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.

(2) TR NO_X Annual assurance provisions.

(i). If total NO_X emissions during a control period in a given year from all TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such State exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_X emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_X Annual allowances available for deduction for such control period under 40 CFR 97.425(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.425(b), of multiplying—(A) The quotient of the amount by which the common designated representative's share of such NO_X emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such control period, by which each common designated representative's share of such NO_X emissions exceeds the respective common designated representative's assurance level; and (B) The amount by which total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR NO_X Annual allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the State and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total NO_X emissions exceed the sum, for such control period, of the

state NO_X Annual trading budget under 40 CFR 97.410(a) and the state's variability limit under 40 CFR 97.410(b).

(iv). It shall not be a violation of 40 CFR part 97, subpart AAAAA or of the Clean Air Act if total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the State and Indian country within the borders of such State during a control period exceed the state assurance level or if a common designated representative's share of total NO_X emissions from the TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR NO_X Annual allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR NO_X Annual allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.

(3) Compliance periods.

(i). A TR NO_X Annual unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015, or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(ii). A TR NO_X Annual unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR NO_X Annual allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_X Annual allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR NO_X Annual allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_X Annual allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR NO_X Annual allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart AAAAA.

(6) Limited authorization. A TR NO_X Annual allowance is a limited authorization to emit one ton of NO_X during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR NO_X Annual Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR part 97, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR NO_X Annual allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_X Annual allowances in accordance with 40 CFR part 97, subpart AAAAA.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.430 through 97.435, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.406(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.

(i). The certificate of representation under 40 CFR 97.416 for the designated representative for the source and each TR NO_X Annual unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.416 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart AAAAA.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_X Annual Trading Program.

(2) The designated representative of a TR NO_X Annual source and each TR NO_X Annual unit at the source shall make all submissions required under the TR NO_X Annual Trading Program, except as provided in 40 CFR 97.418. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

(1) Any provision of the TR NO_X Annual Trading Program that applies to a TR NO_X Annual source or the designated representative of a TR NO_X Annual source shall also apply to the owners and operators of such source and of the TR NO_X Annual units at the source.

(2) Any provision of the TR NO_X Annual Trading Program that applies to a TR NO_X Annual unit or the designated representative of a TR NO_X Annual unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_X Annual Trading Program or exemption under 40 CFR 97.405 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_X Annual source or TR NO_X Annual unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

SECTION II: TR NO_X Ozone Season Trading Program Requirements (40 CFR 97.506)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.513 through 97.518.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the designated representative, of each TR NO_X Ozone Season source and each TR NO_X Ozone Season unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.530 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.531 (initial monitoring system certification and recertification procedures), 97.532 (monitoring system out-of-control periods), 97.533 (notifications concerning monitoring), 97.534 (recordkeeping and reporting,

including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.535 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.530 through 97.535 shall be used to calculate allocations of TR NO_X Ozone Season allowances under 40 CFR 97.511(a)(2) and (b) and 97.512 and to determine compliance with the TR NO_X Ozone Season emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.530 through 97.535 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_X emissions requirements.

(1) TR NO_X Ozone Season emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_X Ozone Season source and each TR NO_X Ozone Season unit at the source shall hold, in the source's compliance account, TR NO_X Ozone Season allowances available for deduction for such control period under 40 CFR 97.524(a) in an amount not less than the tons of total NO_X emissions for such control period from all TR NO_X Ozone Season units at the source.

(ii). If total NO_X emissions during a control period in a given year from the TR NO_X Ozone Season units at a TR NO_X Ozone Season source are in excess of the TR NO_X Ozone Season emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR NO_X Ozone Season unit at the source shall hold the TR NO_X Ozone Season allowances required for deduction under 40 CFR 97.524(d); and

(B). The owners and operators of the source and each TR NO_X Ozone Season unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart BBBBB and the Clean Air Act.

(2) TR NO_X Ozone Season assurance provisions.

(i). If total NO_X emissions during a control period in a given year from all TR NO_X Ozone Season units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_X emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_X Ozone Season allowances available for deduction for such control period under 40 CFR 97.525(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.525(b), of multiplying—

(A). The quotient of the amount by which the common designated representative's share of such NO_X emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such control period, by which each common designated representative's share of such NO_X emissions exceeds the respective common designated representative's assurance level; and

(B). The amount by which total NO_X emissions from all TR NO_X Ozone Season units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR NO_X Ozone Season allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total NO_X emissions from all TR NO_X Ozone Season units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total NO_X emissions exceed the sum, for such control period, of the State NO_X Ozone Season trading budget under 40 CFR 97.510(a) and the state's variability limit under 40 CFR 97.510(b).

(iv). It shall not be a violation of 40 CFR part 97, subpart BBBBB or of the Clean Air Act if total NO_X emissions from all TR NO_X Ozone Season units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state during a control period exceed the state assurance level or if a common designated representative's share of total NO_X emissions from the TR NO_X Ozone Season units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR NO_X Ozone Season allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR NO_X Ozone Season allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart BBBBB and the Clean Air Act.

(3) Compliance periods.

(i). A TR NO_X Ozone Season unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of May 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.

(ii). A TR NO_X Ozone Season unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of May 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR NO_X Ozone Season allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_X Ozone Season allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR NO_X Ozone Season allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_X Ozone Season allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR NO_X Ozone Season allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart BBBBB.

(6) Limited authorization. A TR NO_X Ozone Season allowance is a limited authorization to emit one ton of NO_X during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR NO_X Ozone Season Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR part 97, subpart BBBBB, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR NO_X Ozone Season allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_X Ozone Season allowances in accordance with 40 CFR part 97, subpart BBBBB.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.530 through 97.535, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to

40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.506(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR NO_X Ozone Season source and each TR NO_X Ozone Season unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.

(i). The certificate of representation under 40 CFR 97.516 for the designated representative for the source and each TR NO_X Ozone Season unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.516 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart BBBBB.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_X Ozone Season Trading Program.

(2) The designated representative of a TR NO_X Ozone Season source and each TR NO_X Ozone Season unit at the source shall make all submissions required under the TR NO_X Ozone Season Trading Program, except as provided in 40 CFR 97.518. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

(1) Any provision of the TR NO_X Ozone Season Trading Program that applies to a TR NO_X Ozone Season source or the designated representative of a TR NO_X Ozone Season source shall also apply to the owners and operators of such source and of the TR NO_X Ozone Season units at the source.

(2) Any provision of the TR NO_X Ozone Season Trading Program that applies to a TR NO_X Ozone Season unit or the designated representative of a TR NO_X Ozone Season unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_X Ozone Season Trading Program or exemption under 40 CFR 97.505 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_X Ozone Season source or TR NO_X Ozone Season unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

SECTION III: TR SO_2 Group 1 Trading Program requirements (40 CFR 97.606)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.613 through 97.618.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the designated representative, of each TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.630 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.631 (initial monitoring system certification and recertification procedures), 97.632 (monitoring system out-of-control periods), 97.633 (notifications concerning monitoring), 97.634 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.635 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.630 through 97.635 shall be used to calculate allocations of TR SO_2 Group 1 allowances under 40 CFR 97.611(a)(2) and (b) and 97.612 and to determine compliance with the TR SO_2 Group 1 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.630 through 97.635 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) SO_2 emissions requirements.

(1) TR SO_2 Group 1 emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR SO_2 Group 1 source and each TR SO2 Group 1 unit at the source shall hold, in the source's compliance account, TR SO_2 Group 1 allowances available for deduction for such control period under 40 CFR 97.624(a) in an amount not less than the tons of total SO_2 emissions for such control period from all TR SO_2 Group 1 units at the source.

(ii). If total SO_2 emissions during a control period in a given year from the TR SO_2 Group 1 units at a TR SO_2 Group 1 source are in excess of the TR SO_2 Group 1 emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR SO_2 Group 1 unit at the source shall hold the TR SO_2 Group 1 allowances required for deduction under 40 CFR 97.624(d); and

(B). The owners and operators of the source and each TR SO_2 Group 1 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation 40 CFR part 97, subpart CCCCC and the Clean Air Act.

(2) TR SO_2 Group 1 assurance provisions.

(i). If total SO_2 emissions during a control period in a given year from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such SO_2 emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR SO_2 Group 1 allowances available for deduction for such control period under 40 CFR 97.625(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.625(b), of multiplying—

(A). The quotient of the amount by which the common designated representative's share of such SO_2 emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such control period, by which each common designated representative's share of such SO_2 emissions exceeds the respective common designated representative's assurance level; and

(B). The amount by which total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR SO_2 Group 1 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total SO_2 emissions exceed the sum, for such control period, of the state SO_2 Group 1 trading budget under 40 CFR 97.610(a) and the state's variability limit under 40 CFR 97.610(b).

(iv). It shall not be a violation of 40 CFR part 97, subpart CCCCC or of the Clean Air Act if total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period exceed the state assurance level or if a common designated representative's share of total SO_2 emissions from the TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR SO_2 Group 1 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR SO_2 Group 1 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart CCCCC and the Clean Air Act.

(3) Compliance periods.

(i). A TR SO_2 Group 1 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.

(ii). A TR SO_2 Group 1 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR SO_2 Group 1 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR SO_2 Group 1 allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR SO_2 Group 1 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR SO_2 Group 1 allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR SO_2 Group 1 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart CCCCC.

(6) Limited authorization. A TR SO_2 Group 1 allowance is a limited authorization to emit one ton of SO_2 during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR SO_2 Group 1 Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR part 97, subpart CCCCC, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR SO_2 Group 1 allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR SO_2 Group 1 allowances in accordance with 40 CFR part 97, subpart CCCCC.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.630 through 97.635, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR part 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E), Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.606(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.

(i). The certificate of representation under 40 CFR 97.616 for the designated representative for the source and each TR SO_2 Group 1 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.616 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart CCCCC.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR SO_2 Group 1 Trading Program.

(2) The designated representative of a TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall make all submissions required under the TR SO_2 Group 1 Trading Program, except as provided in 40 CFR 97.618. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

(1) Any provision of the TR SO_2 Group 1 Trading Program that applies to a TR SO_2 Group 1 source or the designated representative of a TR SO_2 Group 1 source shall also apply to the owners and operators of such source and of the TR SO_2 Group 1 units at the source.

(2) Any provision of the TR SO_2 Group 1 Trading Program that applies to a TR SO_2 Group 1 unit or the designated representative of a TR SO_2 Group 1 unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR SO_2 Group 1 Trading Program or exemption under 40 CFR 97.605 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR SO_2 Group 1 source or TR SO_2 Group 1 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

APPENDIX B

// CONTINUOUS COMPLIANCE PROTOCOL

Environmental Manual	Subject # : **AQ-120A** Subject Topic: **Continuous Compliance Protocol** Procedure # : **AQ-100** Procedure Title: **Air Quality Requirements** Issue Date:

CONTINUOUS COMPLIANCE PROTOCOL

For

CMS Generation – Michigan Power, LLC
Livingston Generating Station Units 1 – 4
Gaylord, Michigan

October 25, 1999
Revised December 2006
Updated January 2008
Updated May 2008
Updated January 2009
Revised November 2010
Revised July 2012
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Updated November 2017

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1.0 INTRODUCTION

CMS Generation-Michigan Power, LLC's (Michigan Power) Livingston Generating Station, located in Gaylord, Michigan, operates four (4) natural gas-fired combustion turbines (Units 1-4). Table 1 summarizes the emissions limits for nitrogen oxides (NO_x) and carbon monoxide (CO) specified by the facility's Renewable Operating Permit (ROP) No. MI-ROP-N6526-2014a.

Table 1: ROP NO_x and CO Emission Limits

Pollutant	Limit	Time Period/Operating Scenario
NO_x	75 ppmv corrected to 15% oxygen (O_2)	Test Protocol
NO_x	624.0 pounds per hour (lb/hr)	
NO_x	224 tons/year	12-month rolling
CO	0.48 lb/MMBtu	Test Protocol
CO	844.0 lb/hr	
CO	224.0 tons/year	12-month rolling

This protocol fulfills the requirement specified in Special Condition (SC) FGCOMBTURB VI.7 and IX.1 of the ROP, and is used to demonstrate compliance with the NO_x and CO emission limits contained in the ROP. Additionally, this protocol addresses sulfur dioxide (SO_2) monitoring concerning compliance with 40 CFR Part 60, Subpart GG and the federal Acid Rain Program.

A current copy of this plan shall be retained by Michigan Power. Table 2 outlines the plan revisions.

Table 2: Plan Revision Log

Revision Date	Revision
October 25, 1999	Original release
December 2006	Revision to the plan in accordance with regulatory changes to Acid Rain Regulations (i.e. 40 CFR Parts 72 and 75), 40 CFR Part 60, Subpart GG, an ROP Minor Modification issued June 2006, and to revise the data acquisition system (DAS) calculations based on the most recent emission testing results.
January 2008	Update the DAS calculations based on NO_x and CO emission testing conducted in August and October 2007.
May 2008	Revision to the plan to correct the calculations for CO from a single polynomial equation to a set of equations (for each turbine) that consist of linear segments, based on data from the most recent stack testing. The resulting correlation curves are consistent with how the NO_x correlation curves are determined and set up.
January 2009	Revision to the plant to incorporate changes to the renewed ROP No. MI-ROP-N6526-2009, issued January 14, 2009.
November 2010	Revision to the plant to incorporate changes added by Permit to Install 250-09 and an ROP Minor Modification submitted to the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) on September 8, 2010.
July 2012	Revision to the plan to incorporate the change in state agency name and inclusion of the need to verify a newly replaced engine within 90 days of its placement into service.
April 2015	Update the DAS calculations based on NO_x and CO emission testing conducted in June 2012.
November 2017	Update the DAS calculations based on NO_x and CO emission testing conducted in June 2017.

2.0 FACILITY DESCRIPTION

The Livingston Generating Station is located at 155 North Townline Road, Gaylord, Michigan, 49735. Units 1 through 4 are refurbished, identical Dresser-Rand simple cycle combustion turbines nominally rated at 39 megawatts (MW) each (550 MMBtu/hr heat input) at base load. The units combust natural gas or pipeline natural gas only. Flue gases from each unit exhaust through separate stacks, which have an exit height of 39 feet above ground level.

Each of the four units are dispatched as peaking units, as defined in 40 CFR §72.2 and each unit uses water injection for NO_x control. A 40 CFR Part 75 compliant DAS is used to continuously record and report NO_x and CO emissions data for each of the four units.

Each of the four units shall not be operated at or beyond a 10.0% capacity factor, averaged over three calendar years, or a 20.0% capacity factor any one calendar year without the increased monitoring equipment and recordkeeping as specified in federal Acid Rain regulations and FGCOMBTURB SC III.2. Consistent with the "Capacity factor" definition in 40 CFR §72.2, capacity factor is calculated as Gross MW-hrs generated / (Hours in calendar year(s) * 39 MW).

Except during periods of startup, shutdown, and testing, each of the four units shall be operated at a percent load and average hourly water-to-fuel ratio (WFR) within a range demonstrated for that individual unit, by stack testing, to be in compliance with NO_x and CO limits. The most recent ranges developed during testing were between 85 and 100 percent of the achievable megawatt capacity, for each unit, which is nominally 39 MW (550 MMBtu/hr heat input). Table 3 summarizes the most recent NO_x and CO test results and vendor recommended WFR ranges for each unit (during testing, it is verified that the actual WFR is within the vendor recommended range).

Table 3: 2017 Stack Test Results

Unit	Average NOx Concentration at 15% O_2 (ppm)	Average CO Emission Rate (lb/MMBtu)	Vendor Recommended Water-to-Fuel Ratio
1	71 – 75	0.30 – 0.36	0.200 – 0.500
2	66 – 75	0.35 – 0.44	0.170 – 0.500
3	60 – 62	0.32 – 0.37	0.180 – 0.500
4	65 – 69	0.32 – 0.35	0.190 – 0.500

The DAS continuously monitors the load levels, fuel consumption, and WFR for each turbine.

3.0 CONTINUOUS COMPLIANCE PROTOCOL

The subsections presented below provide information concerning the procedures that have been implemented by Michigan Power to determine continuous compliance with the applicable NO_x and CO permit limits. Monitoring of SO_2 emissions is also addressed concerning compliance with 40 CFR Part 60, Subpart GG and the federal Acid Rain Program. A site-specific test protocol that describes the test procedures referenced below in greater detail, and a Monitoring Plan that complies with the requirements specified in 40 CFR Part 75 and the Michigan Air Use Permit Technical Manual, were previously submitted to the MDEQ.

Note:
Although the site's DAS typically interpolates the hourly average emissions of NO_x and CO it uses the equations derived from the applicable correlation curves, and calculates the mass emissions rates in lbs/hr and 12-month rolling tons/year to show compliance with the current ROP and PTI emission limits. These functions may also be completed in an Excel spreadsheet or another software program (when necessary) to demonstrate compliance.

3.1.1 Nitrogen Oxides

Compliance with the 75 ppmv limit –

Each of the four turbines have been tested in accordance with Subparts A and GG of 40 CFR Part 60 and Appendix E to 40 CFR Part 75 to verify compliance with the NO_x emission limit. June 2017 test results indicate that the turbines are in compliance with the New Source Performance Standard (NSPS) Subpart GG NO_x emission limit of 75 ppmv corrected to 15% O_2, and that the water injection rate was set to maintain emissions below this limit at all tested operating loads. The monitoring associated with this limit is continuous monitoring of the WFR and the fuel flow, as described in the compliance assurance monitoring (CAM) plan. Fuel nitrogen content analysis is not necessary in this instance because the fuel burned is natural gas or pipeline natural gas (both contain a negligible amount of fuel-bound nitrogen). Furthermore, the NO_x emission limit, as established pursuant to 40 CFR §63.332(a)(1), is not based upon a fuel-bound nitrogen allowance. Therefore, the monitoring of fuel bound nitrogen content is not required. The 40 CFR Part 75 Appendix E requirements are further explained below following the next two basis of compliance provisions.

Compliance with the 624.0 pounds per hour (combined) limit –

In accordance with the Clean Air Act Title IV Acid Rain monitoring requirements, a NO_x emissions estimation protocol is used to determine the hourly NO_x emission rate. Appendix E to 40 CFR Part 75 stipulates the requirements of this protocol. Performance testing was conducted at four operating loads and the relationship between heat input and NO_x emission rates (lb/MMBtu) was determined for each unit. During operations of the turbines, the fuel flow is continuously monitored to determine the heat input. The curve derived during the most recent performance testing is then used by the DAS to determine the hourly NO_x emissions for each turbine. The DAS sums the hourly mass emissions from each turbine to determine compliance with the combined 624.0 lb/hr limit for Units 1-4.

Compliance with the 224 tons per 12-month rolling time period (combined) limit –

The DAS sums the hourly mass emissions to determine a monthly total. The DAS also calculates the 12-month rolling total tons of NO_x emissions to determine compliance with the Units 1-4 224 tons per 12-month rolling time period combined limit (by summing NO_x emissions from a given month and previous 11 months).

Appendix E Protocol –

The protocol specified in Appendix E to 40 CFR Part 75 is utilized to determine mass emissions of NO_x for each unit. In accordance with Appendix E, performance tests were conducted on each unit to determine the relationship between NO_x emission rate and unit heat input. Heat input was determined using fuel flow and a gross calorific value (GCV) based on samples collected during the initial compliance test program.

In accordance with Appendix E to 40 CFR Part 75, four turbine operating parameters, indicative of NO_x formation and proper turbine operation, were also recorded during the initial testing. The four turbine operating parameters for each of the four units are:

(1) WFR;

(2) Compressor inlet temperature;
(3) Compressor discharge pressure; and
(4) Exhaust temperature.

These four operating parameters are continuously monitored by the DAS to ensure that the NO_x formation characteristics of the unit remain consistent with those experienced during the performance tests and consistent with normal operations for the parameters (as provided by the turbine vendor). They are not used to calculate NO_x emissions. In accordance with Appendix E, the NO_x emission rate-heat input correlation is re-verified, and modified if necessary, if the manufacturer's recommended range for any of the four operating parameters is continuously exceeded for more that sixteen (16) consecutive unit operating hours. Furthermore, the NO_x emission rate-heat input correlation is also re-verified a minimum of once every twenty (20) calendar quarters or within 90 days of an engine being replaced.

Performance testing was used to demonstrate initial compliance with the permitted NO_x emission limits. Subsequently, NO_x performance testing was conducted in 2007, 2012 and again in 2017 to satisfy SC V.1 of FGCOMBTURB in the ROP by testing each combustion turbine at least once every 20 calendar quarters. The test data is used to demonstrate compliance with the NO_x emission limit of 75 ppmv corrected to 15% O_2. Testing was conducted in accordance with 40 CFR Part 60, Subparts A and GG, and Appendix E to 40 CFR Part 75, using the procedures specified in EPA Reference Methods 7E, as identified in the approved Stack Testing Protocol. Each combustion turbine was tested at four evenly spaced load points in a range between 85 and 100% of the maximum achievable load. .

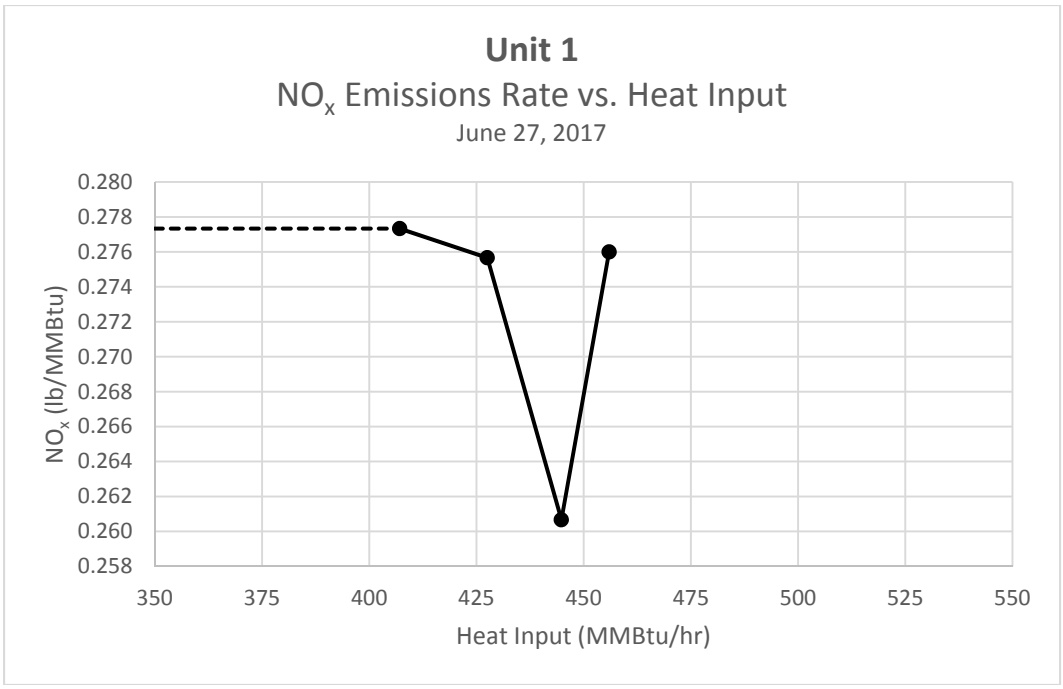
A fuel flow meter is used to continuously measure fuel consumption using procedures specified in Appendix D to 40 CFR Part 75. The fuel flow signal is continuously recorded by the DAS. In accordance with Section 2.3.4.1 of Appendix D, fuel samples are periodically analyzed to determine the GCV of the fuel. The GCV is used by the DAS to calculate heat input (HI) according to Section 2.1.3.2 of Appendix E to 40 CFR Part 75, using equation F-20 of Appendix F to 40 CFR Part 75, as follows:

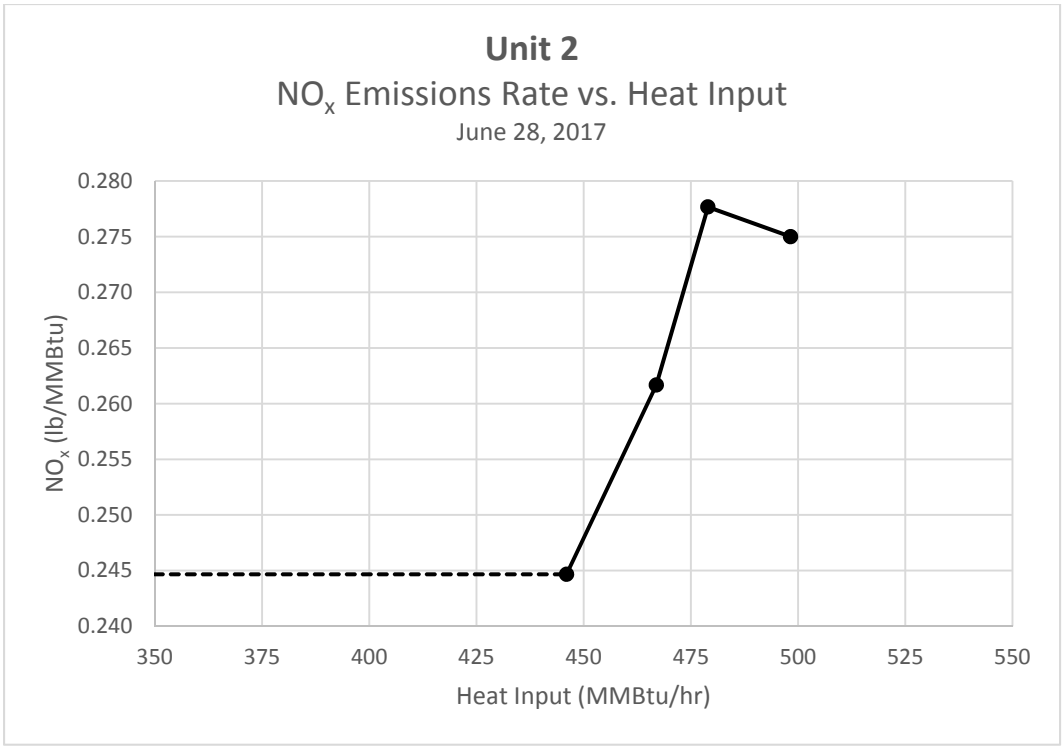
$$HI = \frac{Q \times GCV}{10{,}000}$$

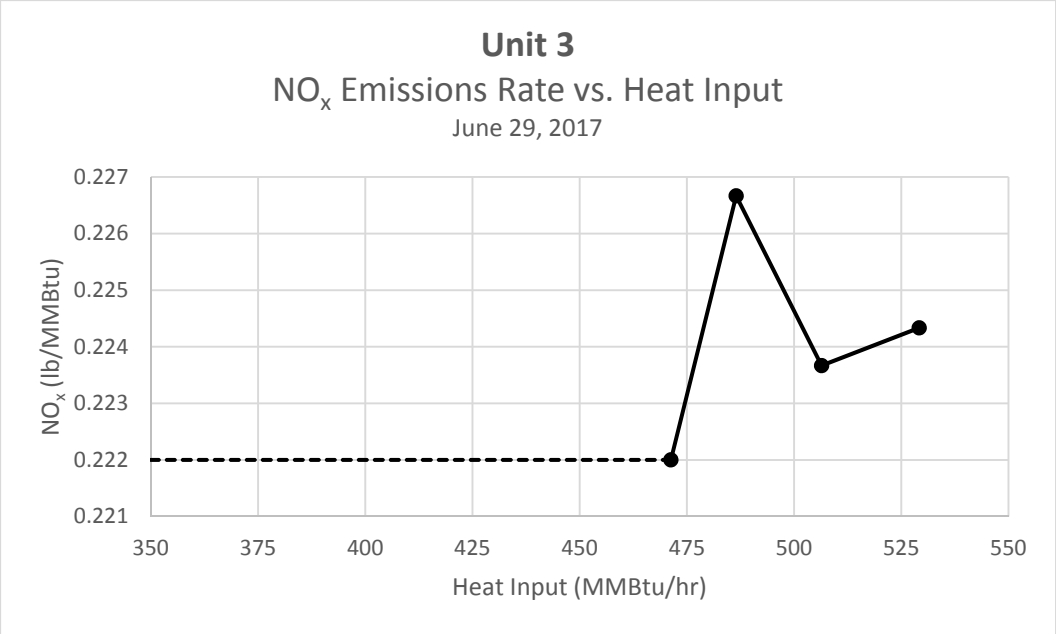
Where:

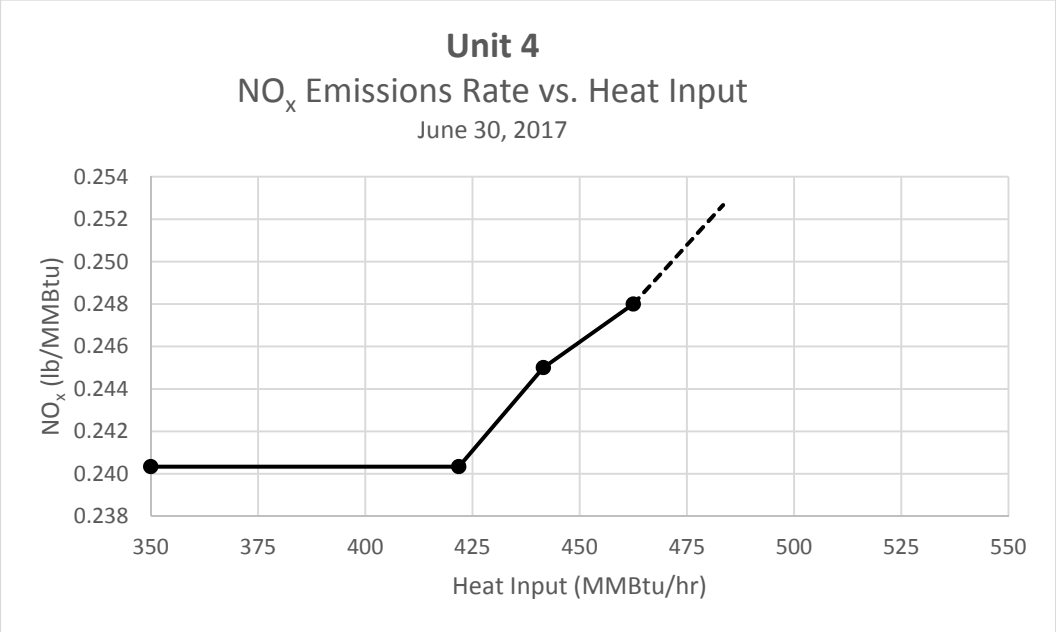
HI = Heat input, MMBtu/hr
Q = Metered fuel flow, hundred cubic feet per hour
GCV = Gross Calorific Value, Btu/scf
10,000 = Conversion factor, Btu-100 scf/MMBtu-scf

The DAS then interpolates the hourly average NO_x emission rate using the following correlation graphs for Units 1-4.


Unit 1
NOx Emissions Rate vs. Heat Input
June 27, 2017
NOx (lb/MMBtu)
0.280
0.278
0.276
0.274
0.272
0.270
0.268
0.266
0.264
0.262
0.260
0.258
350
375
400
425
450
475
500
525
550
Heat Input (MMBtu/hr)


Unit 2
NOx Emissions Rate vs. Heat Input
June 28, 2017
NOx (lb/MMBtu)
0.280
0.275
0.270
0.265
0.260
0.255
0.250
0.245
0.240
350
375
400
425
450
475
500
525
550
Heat Input (MMBtu/hr)





The following equation is used by the DAS to calculate the NO_x emissions in pounds per hour:

NO_x (lb/hr) = NO_x (lb/MMBtu) x Heat Input (MMBtu/hr)

3.1.2 Carbon Monoxide

Compliance with the 0.48 pound per million Btu heat input limit –
Each of the four turbines has been tested in accordance with 40 CFR Part 60, Method 10, as identified in the approved Stack Testing Protocol. The 2017 test results are used

to demonstrate that each turbine is in compliance with the 0.48 lb/MMBtu limit.

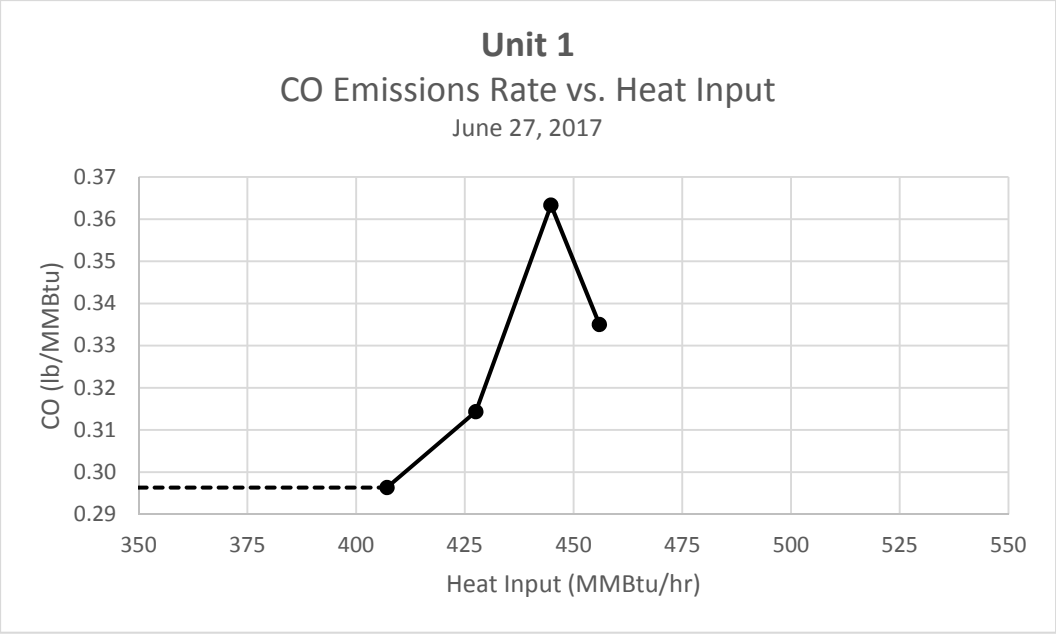
Compliance with the 844.0 pounds per hour (combined) limit –
Similar to the hourly NO_x basis of compliance explained above, hourly CO compliance will be determined during operation of the turbines. The fuel flow is continuously monitored to determine the heat input. Equations derived during the emission testing are then used by the DAS to calculate hourly CO mass emissions for each turbine. The DAS sums the hourly mass emissions from each turbine to determine compliance with the combined 844.0 pound limit for Units 1-4. This process is further explained below in the discussion on the CO Emission Protocol.

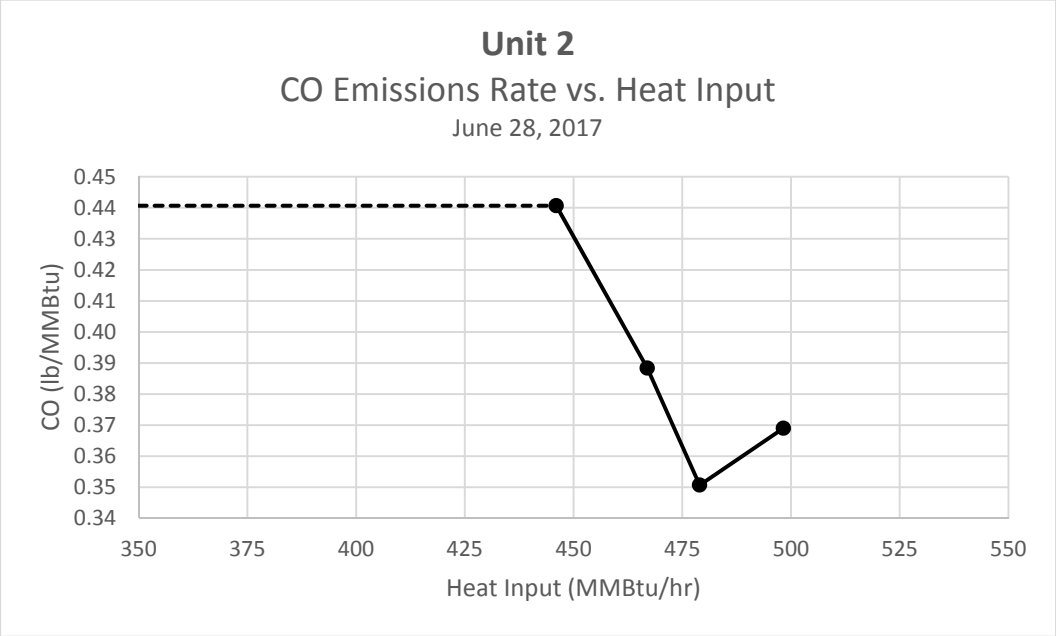
Compliance with the 224.0 tons per 12-month rolling time period (combined) limit-
The DAS sums the hourly mass emissions from the turbines to determine a monthly total. The DAS also calculates the 12-month rolling total tons of CO emissions to determine compliance with the Units 1-4 224.0 tons per 12-month rolling time period combined limit (by summing CO emissions from a given month and previous 11 months).

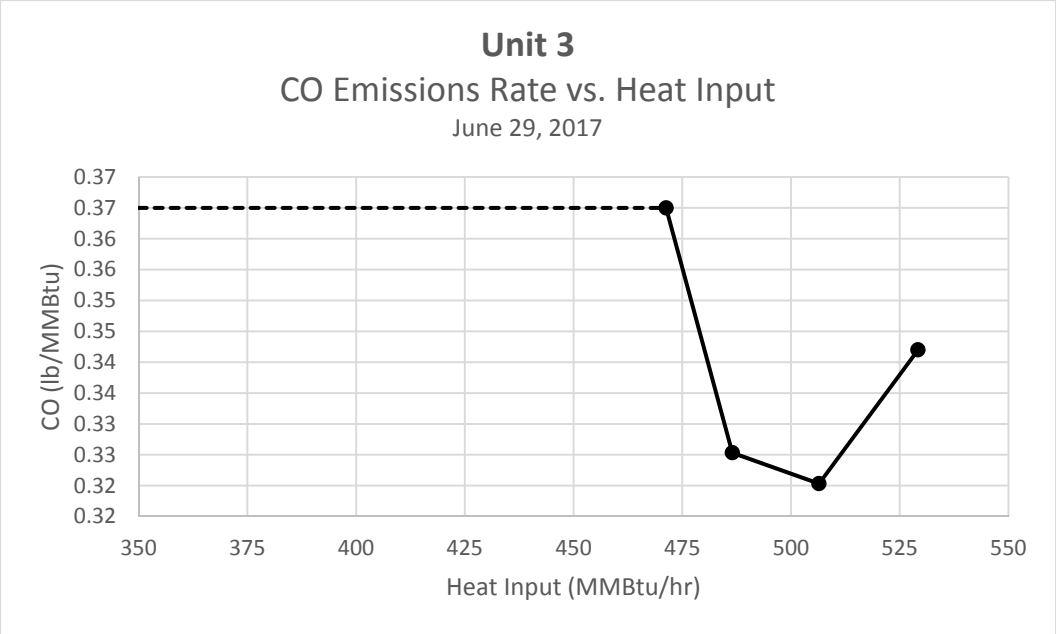
CO Emission Protocol –
Michigan Power used initial testing procedures similar to those specified in Appendix E to 40 CFR Part 75 to determine continuous compliance with the permitted CO limits. As described in Section 3.1.1 of this protocol, each combustion turbine was tested for CO at four evenly spaced load points in the range of the normal expected operation. Testing was performed in accordance with EPA Reference Method 10. A set of equations that consist of linear segments, representing the relationship between CO emissions and heat input, was developed from the test data and is used to determine CO emissions during turbine operations. This approach is consistent with how the NO_x correlation curves are determined and set-up.

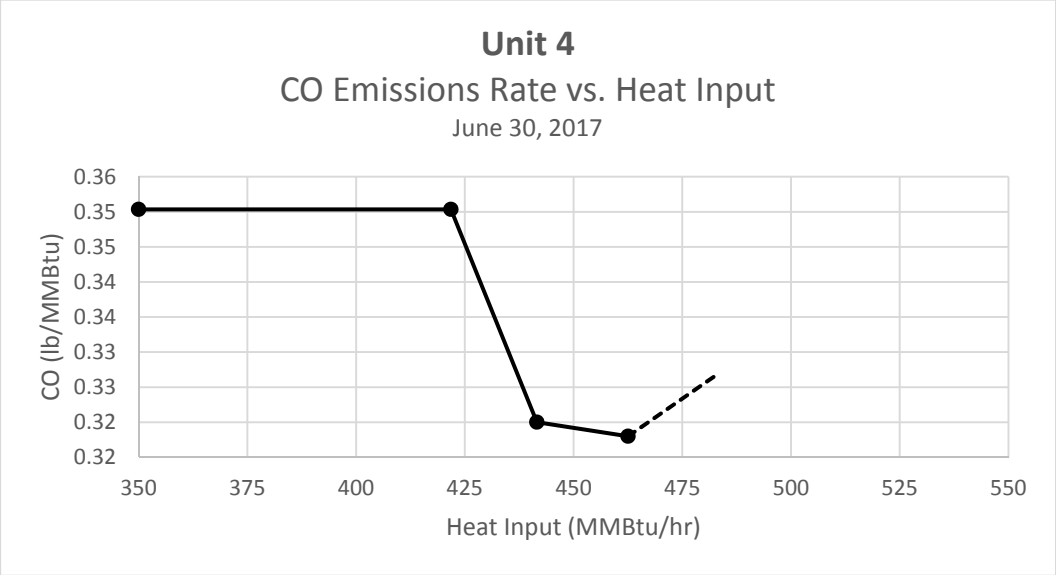
As with the 40 CFR Part 75 Appendix E NO_x correlation, the four operating parameters discussed above in Section 3.1.1 are continuously monitored by the DAS to ensure that the turbine operational characteristics remain consistent with those ranges expected for normal operating conditions. Whenever any of the four operating parameters exceed the manufacture's recommended range for more than sixteen (16) consecutive unit operating hours, the CO emissions testing will be repeated.

The DAS interpolates the hourly average CO emissions using the following correlation graphs.


Unit 1
CO Emissions Rate vs. Heat Input
June 27, 2017
CO (lb/MMBtu)
0.37
0.36
0.35
0.34
0.33
0.32
0.31
0.30
0.29
350
375
400
425
450
475
500
525
550
Heat Input (MMBtu/hr)


Unit 2
CO Emissions Rate vs. Heat Input
June 28, 2017
CO (lb/MMBtu)
0.45
0.44
0.43
0.42
0.41
0.40
0.39
0.38
0.37
0.36
0.35
0.34
350
375
400
425
450
475
500
525
550
Heat Input (MMBtu/hr)





The following equation is used by the DAS to calculate the CO emissions in pounds per hour:

CO (lb/hr) = CO (lb/MMBtu) x Heat Input (MMBtu/hr)

3.1.3 Fuel Sulfur

Compliance with 40 CFR Part 60, Subpart GG –
The sulfur content of the natural gas fired in the turbines is limited to no more than 0.8% by weight pursuant to 40 CFR Part 60, Subpart GG [see 40 CFR §60.333(b)]. Although a Custom Sampling and Analysis Plan had been submitted to the MDEQ AQD for

approval, revisions to Subpart GG are such that the Custom Sampling and Analysis Plan is no longer necessary to demonstrate compliance with Subpart GG. Consistent with 40 CFR §60.334(h)(3), the facility will demonstrate that the natural gas fired in the turbines meets the definition of "natural gas" under 40 CFR §60.331(u) using one of the following sources of information:

- The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or
- Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data must be consistent with Sections 2.3.1.4 or 2.3.2.4 of Appendix D to 40 CFR Part 75.

Of the preceding options, the facility currently obtains an annual representative fuel sample that is analyzed for compliance purposes. The annual analyses show that the sulfur content of the gaseous fuel is below 20 grains/100 scf. This analysis, together with the fuel GCVs, shows that the natural gas fired in the turbines meets the definition of natural gas in 40 CFR §60.331(u).

Alternately, the site may choose to utilize contract/tariff sheets for compliance purposes. The natural gas combusted at the facility is supplied by Michigan Consolidated Gas Company (Mich Con). The Mich Con tariff sheet specifies that the natural gas shall meet the following specifications: 1) shall contain no more than 5 grains of total sulfur per 100 cubic feet, and 2) shall have a total heating value of no less than 950 Btu per cubic foot and no more than 1,100 Btu per cubic foot. [The sulfur content specifications are contained in Section F3.1, while the heating value specifications are contained in Section F3.2]. Therefore, if the facility chooses this option, based upon the preceding specifications as contained in a current valid tariff sheet, the natural gas fired in the turbines meets the definition of natural gas in 40 CFR §60.331(u).

Compliance with 40 CFR Part 75, Appendix D –
The federal Acid Rain Program requires that the SO_2 emissions from the combustion turbines be continuously monitored, recorded and reported. This is accomplished through the monitoring approach contained in 40 CFR Part 75, Appendix D. Under this approach, SO_2 mass emissions are estimated based upon fuel flow, heating value and fuel sulfur content. Livingston Generating Station's Fuel Sampling and Analysis Requirements Summary has been updated and details the fuel sulfur recordkeeping and reporting requirements for the turbines.

3.1.4 Fuel Consumption

Fuel consumption for each unit is determined using vortex fuel flowmeters which transmit a signal to the DAS. The DAS records the amount of fuel combusted by each unit as well as the total fuel combusted by all four units.

4.0 EXCESS EMISSIONS REPORTING

Pursuant to 40 CFR Part 60, Subpart GG, excess emissions of NO_x will be reported in accordance with 40 CFR §60.7(c). Additionally, monitor system performance shall be reported semiannually, as specified in FGCOMBTURB SC VII.6.

For any one-hour period during which the average WFR, as measured by the DAS, falls below the WFR determined by stack testing to demonstrate compliance with the 75 ppmv NO_x limit, the semiannual report shall contain the following information:

- Average WFR
- Average fuel consumption rate
- Gas turbine load (MW)
- Graphs or figures developed under compliance testing to show the correlation between the WFR and NO_x emissions
- Statement of all times during which the WFR monitoring system was inoperative, when it was repaired, or when it was adjusted

If there were no excess emissions, and the monitoring system was never inoperative, repaired or adjusted during a quarter, the report shall state these facts.

Additionally, pursuant to Michigan Air Pollution Control Rule R 336.1213(3)(c), excess emissions will be promptly reported for periods when:

- The four turbines combined exceed 624.0 lbs/hr of NO_x emissions
- The four turbines combined exceed 224 tons per 12-month rolling time period of NO_x emissions
- Each turbine exceeds 0.48 lb/MMBtu of CO emissions
- The four turbines combined exceed 844.0 lbs/hr of CO emissions
- The four turbines combined exceed 224.0 tons per 12-month rolling time period of CO emissions

APPENDIX C

// COMPLIANCE ASSURANCE MONITORING PLAN

Compliance Assurance Monitoring (CAM) Plan
CMS Generation Michigan Power L.L.C.
Livingston Generating Station
Water Injection System

Revised: November 2017
By: NTH Consultants, Ltd.

I. BACKGROUND

Emission Unit

Description: Units 1-4 are identical Dresser-Rand simple cycle natural gas-fired combustion turbines. Each unit is rated at 39 MW (550 MMBtu/hr heat input) and is equipped with a water injection system for control of nitrogen oxide (NO_x). Flue gases from each unit exhaust through separate stacks.

Identification: EUCOMBTURB01, EUCOMBTURB02, EUCOMBTURB03 and EUCOMBTURB04

Facility: CMS Generation Michigan Power L.L.C.
Livingston Generating Station
155 North Townline Road
Gaylord, MI 49735

Emission Limit, Applicable Regulations, Monitoring Requirements

Renewable Operating Permit No: MI-ROP-N6526-2014a

Emission Limits:

Nitrogen Oxide (NO_x): Livingston Combustion Turbines, Units 1-4:

- Each Unit: 75 parts per million by volume (ppmv) corrected to 15% oxygen (O_2) on a dry basis
(40 CFR 60.332, 40 CFR 52.21(c) & (d), R 336.1205(1)(a), and Rule 336.1205(3))

Monitoring Requirements:

Nitrogen Oxide (NO_x): Compliance with the 75 ppm NO_x limit for each unit is verified by conducting periodic stack testing.

Water-to-fuel ratio (WFR) is the primary parameter used for providing reasonable assurance of compliance with the NO_x emission limit. The fuel flow and injection water flow are continuously monitored and the WFR is continuously calculated for each combustion unit.

Control Technology and CAM Applicability for Nitrogen Oxide Emissions

Each natural gas-fired combustion turbine is subject to the NO_x emission limit of 75 ppmv corrected to 15% O_2 on a dry basis. Pre-control potential NO_x emissions exceed the major source threshold of 250 tons per year. Therefore, each unit is equipped with a water injection system for control of NO_x emissions. Although natural gas has a low fuel-bound nitrogen content, water injection further

reduces NO_x formation by acting as a heat sink, lowering the combustion temperature and reducing thermal NO_x. The reduction efficiency of NO_x increases as the WFR increases, up to an optimum level, beyond which water injection interferes with combustion. For utility and large turbines, water injection reduces NO_x levels by approximately 70 to 80 percent from uncontrolled levels.

Injection rates are defined by the WFR, which is based on manufacturer recommendations and verified through emission testing. Recent emission testing, conducted in June 2017, verified compliance with the 75 ppmv NO_x emission limit at WFRs within the vendor recommended ranges for each of the four units. Stack test results of NO_x emissions and vendor-recommended WFR ranges are identified for each unit in Section IV.

II. MONITORING APPROACH

The key elements of the monitoring approach for NO_x emissions are presented in Table 1. WFR is measured in accordance with 40 CFR Part 75, Appendix E, and fuel flow is measured by a vortex fuel flowmeter in accordance with 40 CFR Part 75, Appendix D. WFR will be used as the performance indicator for providing reasonable assurance of compliance with the NO_x emission limits, and is the selected indicator for defining a CAM reportable excursion.

Table 1: NO_x Emissions Monitoring Approach

A. Indicator	Each of the four turbines has been tested and the water injection rate was set to maintain emissions below the emission limit at the tested operating loads. Continuous monitoring of the WFR and fuel flow is conducted.
B. Indicator Range	An excursion is defined as any one-hour period during which the average WFR is less than the minimum WFR for the unit based on vendor recommendations, as verified during the most recent performance test.

III. PERFORMANCE CRITERIA

The key elements of the WFR performance criteria are presented in Table 2.

Table 2: Water-to-Fuel Ratio Performance Criteria

A. Data Representativeness	Injection water flow and fuel flow measurements are made at the applicable inlet feed lines.
B. Verification of Operational Status	Visual observation.
C. QA/QC Practices and Criteria	Water and fuel flow meters will be calibrated at least once every five (5) years.
D. Monitoring Frequency	Continuous, defined as once every 60 seconds while combusting fuel.
E. Data Collection Procedure	WFR is continuously calculated by the DAS and maintained for five years.
F. Averaging Period	One unit operating hour.

IV. JUSTIFICATION

Rationale for Selection of Performance Indicator and Indicator Range, and Results of Performance Testing

WFR was selected as the primary performance indicator because it is indicative of good operation and maintenance of the water injection system. When the water injection system is operating properly, NO_x emissions will be reduced to meet the specified ppm limit.

Injection water flow and fuel flow parameters are continuously monitored by the site's DAS to calculate WFR, and ensure that the NO_x formation characteristics of the unit remain consistent with those experienced during performance testing and consistent with normal operating parameters (as provided by the turbine vendor). The water injection rate is monitored once every 60 seconds when combusting fuel. An hourly WFR is calculated based on an average of all readings taken within the block hour.

The indicator for determining a reportable CAM excursion is any one-hour period during which the average WFR is less than the minimum WFR for the unit based on vendor recommendations and verified during the most recent performance test. This duration is long enough to indicate a potential problem with the control equipment or combustion turbine operation, and initiate corrective action. CAM excursions trigger an internal investigation, corrective action(s) and CAM exceedance/excursion summary reporting.

In June 2017, performance testing was performed on Units 1-4. Performance tests consisted of three, twenty four (24) minute test runs, conducted at four operational loads between 85 and 100 percent of the achievable megawatt capacity, for each unit. The purpose of this testing was to determine the relationship between NO_x emissions and heat input rate, as well as verify that the turbine parameters indicative of NO_x emissions remain within the vendor recommended ranges. The testing was also used to verify that the combustion turbine units continue to comply with the 75 ppmv NO_x emission limit for each unit.

Each turbine was in compliance with the NO_x emission limit of 75 ppmv. Table 3 summarizes the calculated NO_x concentrations by volume at 15% O_2 during the performance test, and includes the vendor recommended WFRs (during testing, it is verified that the actual WFR is within the vendor recommended range):

Table 3: June 2017 Stack Test Results and Vendor WFR

Unit	Average NOx Concentration at 15% O_2 (ppm)	Vendor Recommended Water-to-Fuel Ratio
1	71 – 75	0.200 – 0.500
2	66 – 75	0.170 – 0.500
3	60 – 62	0.180 – 0.500
4	65 – 69	0.190 – 0.500

APPENDIX D

// ACID RAIN PERMIT APPLICATION

FOR PERMIT RENEWAL

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258
Approval expires 11/30/2018

Acid Rain Permit Application

For more information, see instructions and 40 CFR 72.30 and 72.31.

This submission is: ☐ **new** ☐ **revised** ☒ **for ARP permit renewal**

STEP 1

Identify the facility name, State, and plant (ORIS) code.

Facility (Source) Name	State	Plant Code
Livingston Generating Station	Michigan	55102

STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a."

a	b
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)
1	Yes
2	Yes
3	Yes
4	Yes

Livingston Generating Station
Facility (Source) Name (from STEP 1)

STEP 3

Read the standard requirements.

Permit Requirements

(1) The designated representative of each affected source and each affected unit at the source shall:
  (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
  (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:
  (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
  (ii) Have an Acid Rain Permit.

Monitoring Requirements

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

(1) The owners and operators of each source and each affected unit at the source shall:
  (i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and
  (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
  (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
  (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.

(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.

(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Livingston Generating Station
Facility (Source) Name (from STEP 1)

STEP 3, Cont'd.

Excess Emissions Requirements

(1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
(2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
  (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
  (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
  (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
  (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
  (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
  (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Livingston Generating Station
Facility (Source) Name (from STEP 1)

STEP 3, Cont'd.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;

(2) Limiting the number of allowances a source can hold; provided, that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;

(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;

(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,

(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

STEP 4

Read the certification statement, sign, and date.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Jimmy Chong, Asset Manager	
Signature	Date