Lakeshore Cinemas

164 Lakeshore Blvd.
Tecumseh, ON
N9K 1G5 519-979-2400 ext. 229

DATE: October 13, 2017
INVOICE # 1102172

Bill To: Att: Karina Richters
City of Windsor

P.O. #	Sales Rep. Name	Ship Date	Ship Via	Terms	Due Date
	Stefan Kern				11/2/2017

Product ID	Description	Quantity	Unit Price	Line Total
	Theater Rental Nov 2 @ 10:00am *(Before the Flood)*	1	1,000.00	$1,000.00
			SUBTOTAL	$1,000.00
			HST 13.00%	$130.00
			PST	
			TOTAL	$1,130.00
			PAID	
			TOTAL DUE	

THANK YOU FOR YOUR BUSINESS!

6.1

WECEC Coordinator Monthly Report

– October 2017 –

Ongoing Initiatives

1. Updates

A. Potential Free Movie Screening of "Before the Flood"

Every year the Detroit River Canadian Cleanup has great success coordinating a free Movie Screening of an environmental, usually water related film. There is always good attendance and a speakers panel is offered after the movie to spur discussion.

This is an activity to engage the public and students on the topic of climate change and actions the City of Windsor is taking to both adapt and mitigate. This would be a great activity for WECEC to organize in the fall of 2017 since there are funds left to be spent. The film "Before the Flood" is allowed to be screened and a download of the film has been provided. This is a big name film about climate change that would get a considerable draw from the public. A panel of climate change experts could be coordinated for a discussion afterwards.

Before the Flood, presented by National Geographic, features Leonardo DiCaprio on a journey as a United Nations Messenger of Peace, traveling to five continents and the Arctic to witness climate change firsthand. He goes on expeditions with scientists uncovering the reality of climate change and meets with political leaders fighting against inaction.

The cost to screen the film at Lakeshore Cinema is $1130 per screening. The date set is November 2, 2017. We are moving forward with the evening screening, currently created agenda for local high-schools for the daytime showing. Additional costs include bussing the students to and from the screening.

B. Environmental Master Plan Public Consultation

- Consultation period started October 18, 2017 to end January 1, 2018.
- Upcoming public consultation dates:
    - November 4, Ojibway Nature Centre
    - November 13, University of Windsor
    - November 14, Optimist Centre
    - November 16, WFCU Centre
    - *Tentative*: *November 29, St. Clair College*

C. Introducing New Team Member

Introducing Kelsey Williams who is replacing Averil while she's away on maternity leave.

Kelsey joins us with a rich educational background starting with an undergraduate degree in Environmental Studies with a Minor in Anthropology (University of Windsor), an Advanced Diploma in Geographic Sciences (Centre of Geographic Sciences) and finally a Masters of Resource and Environmental Management (Dalhousie University).

Kelsey will be assisting on numerous projects and will be continuing to support each of you on our numerous partnerships.

2. Reports to Council

None pending at this time.

WECEC Budget – Summary

2017 Budget			
Item	**Credit**	**Estimated Expenditure**	**Status**
2017 Budget	$8,000.00		
Pat on the Back		$2,321.01	Spent
Potential Movie Screening		$5228.99	Proposed
Website Hosting Fee		$400.00	Committed
Website Domain Renewal		$50.00	Committed
TOTALS	$8,000	$8,000	
NON-ALLOCATED REMAINING		**$0**	

Executive Summary

The Essex County Field Naturalists' club, with permission from the Windsor Port Authority, and in partnership with the Detroit River Canadian Cleanup, Citizen Environment Alliance and Essex Region Conservation Authority were given the opportunity to undertake a biological inventory of the Ojibway Shores property. Data was collected solely on a volunteer basis and findings were verified by local experts. Using 4-season data collected from 2014 & 2015 and an Ecological Land Classification in 2016, this report provides a summary of the findings as well as an evaluation of the significance of the property based on provincial guidelines. The purpose of this report is to characterize the natural heritage significance of the property and its inhabitants and is intended to be used as a resource for future discussions on the land-use and fate of Ojibway Shores.

Ten evaluation criteria for 'natural heritage significance of the property' were developed by the study team. Other natural heritage inventories completed across the Province were reviewed in order to assess the current standards for natural heritage inventories and evaluations. Of the 10 criteria considered, Ojibway Shores met 9 of 10 criteria considered to be significant natural heritage. The 'satisfied' criteria were as follows: Significant Wetland, Habitat of Threatened and Endangered Species, Significant Woodlands, Significant Wildlife Habitat, Ecological Function, Diversity, Significant Species, Significant Communities, and Condition. Satisfying even one of the first 5 criteria typically qualifies a property with significant natural heritage. Scoring 9 of 10 possible criteria strongly indicates the importance and potential benefit of preserving a property's natural heritage.

Ojibway Shores, owned by the Windsor Port Authority, is 33.6 acres (13.5 ha) with approximately 500 linear meters of natural (undeveloped) shoreline. The property has a rich history of use, dating back to the 18th century. Although the property remains undeveloped, it has seen a number of disturbances (natural and anthropogenic) resulting in areas of varied microtopography, soils and hydrology. Significant aspects of this property include:

- Last remaining stretch of undeveloped, natural shoreline in Windsor on the Detroit River
- Last remaining opportunity to physically link the Detroit River directly to the Ojibway Complex
- Size and location significant to function as an ecological connection
- Currently supporting native species from a "soft" shoreline and river bottom
- Is in close proximity to potential additional shoreline projects

This area provides ecological linkage to the Detroit River International Wildlife Refuge and the Ojibway Prairie Complex, the latter is home to over 160 provincially rare plants and animals. Ojibway Shores' natural shoreline and Broadway Drain provide movement corridors, allowing species to maintain genetic diversity. The sandy shoreline provides nesting habitat for turtles (including the endangered Spiny Softshell) and the drain provides overwintering habitat for snakes. Total linkage potential from the Detroit River into the Ojibway Complex is approximately 250 acres (101.0 ha) (with a few smaller parcels included). The overall shoreline

potential is over 1250 m (1¼ km) in a natural state or with potential to restore based on ecological design for the bridge plaza complex and the Brighton Beach Power Plant.

Overall, 554 different species were documented on the property (293 fauna, 261 flora) over the course of the inventory. Twenty-eight (28) federally or provincially protected species were identified. A total of 141 species of birds have been documented on the property, over half of the 252 total species recorded in the Ojibway Prairie Complex. This significant number of species in an already species rich area indicates that Ojibway Shores is an important stop-over for migratory birds which includes eight Species at Risk; Bald Eagle, Barn Swallow, Bobolink, Canada Warbler, Common Nighthawk, Peregrine Falcon, Red-headed Woodpecker, and Wood Thrush.

From the 2016 Ecological Land Classification (ELC), 8 distinct vegetation communities were delineated, one of which is provincially rare (FODM7-4 Fresh–Moist Black Walnut Lowland Deciduous Forest, Table 5). By provincial standards, this many vegetation communities are considered to be 'high diversity', the second highest category for the 'potential quality' of habitat. Coupled with the Provincially Significant Wetland designation on a portion of the property and its direct linkage to other natural areas, Ojibway Shores serves as an important corridor habitat for numerous species that are recognized as rare, threatened and common.

Undertaking this study has provided a unique opportunity to study an unaltered piece of habitat in an otherwise developed area. Despite such close proximity to development and residing in a bi-national Area of Concern (AOC –Detroit River), Ojibway Shores supports a number of species and likely supports many more living adjacent to the property. Given the species diversity and habitat heterogeneity, this property would be a great candidate for preservation and habitat enhancement.

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

October 11, 2017

Mr. Jimmy Chong, Commercial Director
Dearborn Industrial Generation, L.L.C.
2400 Miller Road
Dearborn, Michigan 48121

Dear Mr. Chong:

This letter is in reference to your Permit to Install (PTI) application, identified as No. 56-17, State Registration Number N6631. The application was received on April 3, 2017, for a new simple cycle combustion turbine generator located at 2400 Miller Road, Dearborn, Michigan.

Review of your application is complete. We have announced a public comment period as required by state and federal regulations, on the intent of the Michigan Department of Environmental Quality (MDEQ) to approve the permit. The public comment period will begin on October 11, 2017, and will end on November 13, 2017. An informational session and public hearing have been scheduled on November 16, 2017; however, they will be held only if requested in writing by November 13, 2017. If a hearing is requested, the comment period will be extended until the close of the hearing. You may submit comments during the comment period and are encouraged to appear at the information session and public hearing, if held, on behalf of your PTI application.

After resolving any issues raised during the public comment period and/or the hearing, a final decision will be made on your permit application.

By law, construction of the proposed process should not begin until you receive an approved Permit to Install. *This letter is not an approved permit to install* and only references a proposed action on your application.

Enclosed are copies of the "Notice of Air Pollution Comment Period and Public Hearing," the "Proposed Project Summary," the "Fact Sheet," and the draft conditions regarding our analysis of your proposed project.

If you have any questions, please feel free to contact me. You may call me on November 14, 2017, to determine if a hearing was requested.

Sincerely,

Melissa Byrnes

Melissa Byrnes, Senior Environmental Engineer
Air Quality Division
Permit Section
517-284-6790

Enclosures
cc/enc: Mayor John B. O'Reilly, Jr, City of Dearborn
Mayor Drew Dilkens, City of Windsor
Ms. Madeleine Godwin, Ontario Ministry of the Environment, Windsor
Mr. Mike Moroney, Ministry of the Environment, Sarnia/Windsor District
Mr. Mark Smith, Ministry of the Environment, Windsor Area Office
Ms. Karen Clark, Ministry of the Environment, Air Policy and Climate Change Branch
Mr. Chris Manzon, Pollution Control Services, City of Windsor
Mr. Mark J. Burrows, International Joint Commission
Ms. Averil Parent, City of Windsor
Ms. Genevieve Damico, U.S. Environmental Protection Agency, Region 5
Mr. Constantine Blathras, U.S. Environmental Protection Agency, Region 5
Ms. Stephanie Diaz, U.S. Environmental Protection Agency, Region 5
Ms. Cathy Garrett, Wayne County Clerk
Ms. Ilona Varga, Wayne County Commissioner
Dr. Joneigh Khaldun, City of Detroit, Executive Director and Health Officer
Mr. Raymond Scott, City of Detroit, Buildings, Safety Engineering and Environmental Department (BSEED)
Mr. Paul Max, City of Detroit, BSEED
Mr. Chris Occhipinti, NTH Consultants, Ltd.
Ms. Melanie Brown, MDEQ
Mr. Jeffrey Korniski, MDEQ
Ms. Wilhemina McLemore, MDEQ

STATE OF MICHIGAN
Rick Snyder, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION
CONSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30260 • LANSING, MICHIGAN 48909-7760
www.michigan.gov/air

PUBLIC PARTICIPATION DOCUMENTS

For

Dearborn Industrial Generation, L.L.C.

Dearborn, Michigan

PERMIT APPLICATION NUMBER

56-17

October 11, 2017

FACT SHEET

October 11, 2017

Purpose and Summary

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. 56-17 from Dearborn Industrial Generation, L.L.C. (DIG). The permit application is for the proposed installation and operation of a new simple-cycle natural gas-fueled combustion turbine generator (CTG).

The proposed project is subject to permitting requirements of the Department's Rules for Air Pollution Control. The AQD has evaluated this proposal and made a preliminary determination that the project will not violate any of the MDEQ's rules, nor the health protective National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration (PSD) air quality increments. The PSD increments are intended to allow industrial growth in an area while ensuring that the area will continue to meet the NAAQS.

Prior to acting on this application, the AQD is holding a public comment period and a public hearing, if requested in writing, to allow all interested parties the opportunity to comment on the proposed PTI. The public hearing, if requested, will be held on November 16, 2017, at 7:00 p.m. at Henry Ford College, MTEC Building Auditorium, 3601 Schaefer Road, Dearborn, Michigan. If a hearing is requested, an information session will be held prior to the hearing at 6:00 p.m. All relevant information received during the comment period and hearing, if held, will be considered by the decision maker prior to taking final action on the application.

Background Information

DIG operates an existing power plant located at 2400 Miller Road, Dearborn, Wayne County, Michigan. The existing facility includes three (3) natural gas-fueled CTGs, three (3) boilers which burn natural gas or a combination of natural gas and blast furnace gas (BFG), two (2) open flares used to combust excess BFG, and two (2) diesel-fueled emergency generators.

One (1) of DIG's existing CTGs (EUCTG1) is simple cycle unit used exclusively during periods of high electricity demand. The other two (2) CTGs (EUCTG2 and EUCTG3) are identical combined-cycle used for baseload electric generation. DIG receives the BFG it burns in its three (3) boilers from the nearby AK Steel Corporation as a by-product of their iron and steel making operations. Steam generated by the combined-cycle CTGs and boilers is diverted to a steam turbine, which generates electricity for sale.

The current facility operates under Renewable Operating Permit (ROP) MI-ROP-N6631-2012a which covers all existing equipment. The facility is classified as a major source with respect to PSD.

Proposed Project

The new project proposes to install an additional natural gas-fueled simple-cycle CTG. The new unit will provide increased peak generating capacity at DIG. The proposed CTG will be rated up to 263 megawatts (MW) net electrical output and would operate during periods of peak electrical demand. No auxiliary or support equipment is proposed to be installed along with the CTG.

Present Air Quality in the Region

The facility is located in Wayne County, which is meeting all of the NAAQS standards, set by the United States Environmental Protection Agency (USEPA), except for sulfur dioxide (SO_2). These air quality standards are for particulate matter equal to or less than 10 microns in diameter (PM10), particulate matter equal to or less than 2.5 microns in diameter (PM2.5), ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), SO_2, and lead. These standards are set at levels designed to protect the public health.

The AQD operates several air monitors in Wayne County, the closest is in Dearborn. PM10, PM2.5, trace metals, as well as certain carbonyls and volatile organic carbons are monitored at this site.

The MDEQ's nearest ozone monitors are at Allen Park and Detroit-E. Seven Mile. The MDEQ's nearest NO_2 monitor is in Detroit-E. Seven Mile. The concentration of ozone is slightly above the ozone NAAQS standard; however, the E-Seven Mile monitor is over 10 miles northeast of DIG such that the emissions of DIG are not expected to influence the ozone measurement at the monitoring location. The elevated ozone is believed to be cause by facilities closer to the E-Seven Mile monitor. The MDEQ's nearest CO monitor is in Allen Park. The concentrations at these monitors are well below the NOx and CO NAAQS standards.

Pollutant Emissions

The potential emissions from the project are greater than the significant emission rate (SER) for CO, nitrogen oxides (NO_x), PM10, PM2.5, volatile organic compounds (VOC), and greenhouse gases (GHGs, measured as carbon dioxide equivalents, CO_2e). Since the existing facility is a major PSD source, the new project must undergo PSD review for those pollutants.

The following table provides the estimated emissions for each regulated pollutant:

Table A – Project Emission Summary

Pollutant	Potential Emissions (tons per year)	SER (tons per year)	Subject to PSD/NANSR[1]?
CO[2]	913	100	**Yes**
NO_x[2]	416	40	**Yes**
PM	23	25	No
PM10	80	15	**Yes**
PM2.5	80	10	**Yes**
SO_2	34	40	No
VOC[2]	167	40	**Yes**
CO_2e	1,453,169	75,000[3]	**Yes**
Lead	negligible	0.6	No
Fluorides	negligible	3.0	No
Hydrogen Sulfide (H_2S)	negligible	10.0	No
Sulfuric Acid (H_2SO_4)	3.4	7	No

[1] The source is located in a nonattainment area for SO_2; therefore, SO_2 applicability is for nonattainment new source review (NANSR) rather than PSD.

[2] Startup and shutdown emissions are included in the annual emission rates for NO_x, CO, and VOC and are based on an estimated 800 hours of startup and shutdown per year.

[3] A recent decision by the Supreme Court (Utility Air Regulatory Group v. U.S. EPA), No. 12-1146 (June 23, 2014) determined that PSD review for GHGs is only required if one or more of the other regulated new source review pollutants exceeds a PSD threshold.

Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Minor/Major Modification Determination for Attainment Pollutants** – The facility is located in Wayne County which is currently attainment for all criteria air pollutants, except SO_2 (the eastern part of Wayne County). The existing facility is a major source under the PSD regulations. The facility is "a fossil fuel fired steam electric plant of more than 250 MMBtu/hr heat input," which is one of 28 source categories listed in the PSD regulations that has a PSD major source threshold of 100 tons per year (tpy). A modification at the facility where the emissions of any regulated pollutant will increase by more than the significant level for that pollutant, will be subject to PSD requirements for that pollutant.

- **Minor/Major Modification Determination for Nonattainment Pollutants** – An increase in SO_2 emissions above the significant level of 40 tpy will result in the change being subject to major nonattainment New Source Review (NANSR). The proposed emission increase of SO_2 from the project is 34 tpy which is less than significant value of 40 tpy. As such, the proposed SO_2 increase is not subject to major NANSR.

- **Prevention of Significant Deterioration (PSD) Regulations** – Since the existing plant is a major PSD source, and the new CTG will result in a significant emissions increase for CO, NO_x, PM10, PM2.5, VOCs, and CO_2e, the project is subject to PSD review for those pollutants. Review under the PSD regulations requires Best Available Control Technology (BACT), a source impact analysis, an air quality impact analysis, and an additional impact analysis for each regulated air pollutant for which the project will result in significant emissions.

  BACT emission limits are included in the proposed permit for the CTG. Below is a summary of the pollution control technologies that will be required to achieve the BACT limits. Please see Appendix 2 for a more detailed discussion of the PSD BACT analysis.

  The CTG will feature a dry low NO_x (DLN) combustor design. This design relies on sophisticated fuel flow and air flow control systems, and a combustor design that premixes the air and fuel, resulting in lower flame temperatures and lower NO_x emissions. The combustion controls ensure even heating, and no "hot spots" which would result in higher NO_x emissions, and which could potentially damage the turbine. Other PTI applications have identified this same type of design as "internal Flue Gas Recirculation (FGR)" which refers to the premixed fuel and air, which produces a reduced heating value gas and lower flame temperatures. This technology, which incorporates fuel and air premixing or internal FGR has also been called "ultra-low NOx burner" design in other PTI applications.

  The CTG will also have a combustion inlet air filter to remove filterable particulates present in the ambient air, which could damage the turbine.

- **Federal NSPS Regulations** – New Source Performance Standards (NSPS) were established under Title 40 of the Code of Federal Regulations (40 CFR) Part 60. Two of the NSPS regulations apply to the CTG.

  The CTG is subject to the NSPS for Stationary Combustion Turbines, 40 CFR Part 60 Subpart KKKK. This regulation restricts emissions of NO_x and SO_2. NO_x will be monitored with a Continuous Emission Monitoring System (CEMS) or Predictive Emissions Monitoring System (PEMS) device, and compliance with the SO_2 emissions limits will be demonstrated by keeping records of the sulfur content in the natural gas.

  The CTG is also subject to the NSPS for Greenhouse Gas Emissions for Electric Generating Units, 40 CFR Part 60 Subpart TTTT. The CTG must meet an input-based energy efficiency standard, which is included in the proposed permit as a limit of 120 lbs CO_2 per MMBtu. Compliance must be demonstrated by maintaining purchase records of natural gas combusted.

- **Federal NESHAP Regulations** – National Emission Standards for Hazardous Air Pollutants (NEHAP) were established under 40 CFR Part 61 or Part 63.

  The CTG is subject to the NESHAP for Stationary Combustion Turbines, 40 CFR 63 Subpart YYYY, however, due to a court decision, the only part of the rule that applies is a notification requirement.

- **Rule 702 VOC Emissions** – This rule requires an evaluation of the following four items to determine what will result in the lowest maximum allowable emission rate of VOCs:

  a. BACT or a limit listed by the department on its own initiative
  b. New Source Performance Standards (NSPS)
  c. VOC emission rate specified in another permit
  d. VOC emission rate specified in the Part 6 rules for existing sources

  An evaluation of these four items determined that a VOC BACT limit (702(a)) would dictate the lowest maximum allowable emission rate of VOCs from the CTG.

  702(a) VOC BACT for the CT: The proposed BACT limit for the CTG is 1.6 ppmvd (parts per million, by volume, dry) VOC, measured as methane at 15 percent oxygen. The VOC limit is based on the use of good combustion practices and exclude startup and shutdown. Compliance will be demonstrated by stack testing.

- **Rule 224 TBACT Analysis** – This rule requires best available control technology (BACT) for all toxic air contaminants (TACs) which will be emitted. The equipment is already required to meet BACT for VOCs and for particulates, so T-BACT does not apply to the TACs that are emitted as VOCs or particulates.

- **Rule 225 Toxics Analysis** – The MDEQ Rules for Air Pollution Control require the ambient air concentration of TACs be compared against health-based screening levels. The AQD staff reviewed the air quality modeling and evaluation of TAC impacts that were included in the application. The review found that all TACs show impacts less than the established health-based screening levels and will comply with the requirements of Rule 225.

- **Criteria Pollutants Modeling Analysis -** Computer dispersion modeling was performed to predict the impacts of the proposed CO, NO_2, PM10, PM2.5, and SO_2 emissions. Each pollutant had modeled ambient air impacts that were less than their respective significant impact levels (SILs). The SILs, which are much lower than the NAAQS, are used as an initial screening tool: modeled impacts that are less than the SIL are not expected to cause a violation of the NAAQS or to exceed the allowable PSD increments. If a SIL is exceeded, then further assessment is appropriate.

  The following table shows the result of the SIL modeling for this proposed project.

Table B - Preliminary Modeling Impacts

Pollutant	Averaging Time	NAAQS ($\mu g/m^3$)	SIL ($\mu g/m^3$)	Highest Predicted Impact ($\mu g/m^3$)	Greater than SIL / Additional Modeling Required?
PM10	Annual	NA	1	0.0144	No
PM10	24-hr	150	5	0.18	No
PM2.5	Annual	12.0	0.3	0.0138	No
PM2.5	24-hr	32	1.2	0.15	No
SO_2	Annual	NA	1	0.00774	No
SO_2	24-hr	NA	5	0.10	No
SO_2	3-hr	1,300	25	0.28	No
SO_2	1-hr	196	7.8	0.26	No
CO	8-hr	10,000	500	72.23	No
CO	1-hr	40,000	2,000	103.40	No
NO_2 *	Annual	100	1	0.0928	No
NO_2 *	1-hr	188	7.5	4.99	No
*The U.S. EPA's Tier 2 Ambient Ratio Method was used for NO_x to NO_2 conversion: 0.80 NO_2/NO_x for 1-hour and 0.75 NO_2/NO_x for the annual time period.					

- **Additional Impact Analysis –** An additional impact analysis is required for new major sources and major modifications pursuant to 40 CFR Part 52.21(o) and Michigan Rule 336.2815. This analysis is necessary to evaluate the impacts from the proposed project for soils, vegetation, visibility and growth.

  Soils, Vegetation, and Wildlife – The application includes a comparison of the modeled impacts from the project against "Sensitive Screening Concentrations" developed by the USEPA to protect plants, soils and animals. The maximum predicted project impacts are much lower than the USEPA's screening levels.

  Visibility – The nearest Class I area is the Otter Creek Wilderness area, which is located approximately 473 kilometers from DIG, in West Virginia. The project emissions are less than the SIL and are not expected to affect visibility at Otter Creek or any other Class I area. Additionally, a "Q/d" ratio was calculated (where Q is the annualized 24 hour maximum emissions of PM10, NO_x, SO_2, H_2SO_4 combined, and d is the distance from the proposed project to the Class I area in kilometers). The resulting value was less than 1. Typically, a Q/d ratio of less than 10 is used as an indication that further visibility analysis is not warranted.

  Growth – The project is not expected to result in new local industrial or institutional growth.

Key Aspects of Proposed Permit Conditions

- **Emission Limits** – Emission limits are included in the proposed permit for the CTG.

  NO_x, CO, and VOC limits were established for the combustion turbine (EUCTG4) based on PSD BACT. Emission limits in units of concentration, parts per million by volume at 15 percent oxygen on a dry gas basis (ppmvd), do not include startup and shutdown. Emission limits in units of pounds per hour (pph), include startup and shutdown emissions. In addition, the proposed permit contains PSD BACT limits on PM10, PM2.5, and greenhouse gases (regulated as CO_2e) for EUCTG4.

  Some limits are based on the federal NSPS regulations. There is a NO_x emission limit from NSPS KKKK and CO_2 energy output-based limit is from NSPS TTTT.

- **Material Limits** – The proposed permit includes material limit requirements:

  That only pipeline natural gas be burned in EUCTG4.

  EUCTG4 has a limit of 1 grain sulfur per 100 standard cubic feet natural gas, which is equal to the short-term SO_2 emission limit of 7.7 pph and less than the NSPS KKKK requirement. Compliance with the fuel sulfur content limit will ensure that emissions are no greater than what was evaluated for the permit review.

- **Process/Operational Restrictions** – A Malfunction Abatement Plan (MAP) and a plan to minimize emissions during startup and shutdown are required for EUCTG4. The proposed permit limits the number of startup and shutdown events for EUCTG4 to 800 per year for each.

- **Emission Control Device Requirements** – The proposed permit requires that EUCTG4 be equipped with both dry low NO_x burners and combustion air inlet filters.

- **Testing & Monitoring Requirements** – The proposed permit includes the following requirements:
  EUCTG4:
  - Verify PM, PM10, PM2.5, and VOC emission rates through performance stack testing.
  - Install CEMS or PEMS for NO_x and CO.
  - Monitor and record: natural gas usage, total sulfur content of the natural gas, emissions data, and startup/shutdown events.

- **Federal Regulations** – The proposed permit includes applicable emission limits, recordkeeping requirements, and reporting requirements necessary to achieve compliance with NSPS 40 CFR Part 60 Subpart KKKK, NSPS 40 CFR Part 60 Subpart TTTT, and NESHAP 40 CFR 63 Subpart YYYY.

Conclusion

Based on the analyses conducted to date, staff concludes that the proposed project would comply with all applicable state and federal air quality requirements. Staff also concludes that this project, as proposed, would not violate the federal NAAQS or the state and federal PSD increments.

Based on these conclusions, staff has developed proposed permit terms and conditions which would ensure that the proposed facility design and operation are enforceable and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicant to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, please contact Ms. Melissa Byrnes, AQD, at 517-284-6790.

Appendix 1
STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1291	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations Best Available Control Technology (BACT)	The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.
R 336.2901 to R 336.2903 and R 336.2908	Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities. As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide (SO_2). Portions of Michigan are currently non-attainment for SO_2. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology (BACT)**	The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act **Maximum Achievable Control Technology (MACT)** **Section 112g**	In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met: 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An "Air Use Permit," sometimes called a "Permit to Install," provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the proposed permit conditions provided to determine which regulations apply.

Appendix 2. Best Available Control Technology Analysis (Michigan Rule 336.2810 and 40 CFR 52.21(j))

A requirement of PSD New Source Review is a Best Available Control Technology (BACT) analysis. For this application, the top-down BACT approach per the USEPA DRAFT New Source Review Workshop Manual (October 1990) was utilized. The top-down approach considers all available emission reduction options and proceeds in a five-step process as follows:

1. Identify all control technologies;
2. Eliminate technically infeasible options;
3. Rank the remaining control technologies by control effectiveness;
4. Evaluate the most effective controls and document the results;
5. Select BACT (e.g., the most effective option not rejected is BACT).

The proposed project is subject to a BACT analysis for NO_x, CO, VOCs, PM10, PM2.5, and CO_2e. The following is a summary of the BACT analysis for the proposed CTG.

NOx BACT

Step 1: Identify NO_x Control Technologies

The following NO_x control technologies are identified for the CTG:

- Dry Low NO_x Combustor Design (DLN)
- Selective Catalytic Reduction (SCR)
- Selective Non-Catalytic Reduction (SNCR)
- Water or steam injection
- Non-Selective Catalytic Reduction (NSCR)
- EMxGT (Formerly SCONOx™)
- Xonon Cool Combustion™ (XONON)
- Efficient Combustion

Step 2: Eliminate Technically Infeasible Options

The following control technologies are ruled out as technically infeasible.

Water or steam injection is not compatible with low NO_x burners, which are proposed for this project, because the water or steam injection could cause damage to the combustion system and related components and would reduce the energy efficiency of the CTG.

SNCR is a post combustion system that injects ammonia or urea into combustion flue gases without a catalyst, to form molecular nitrogen and water. This reaction occurs at flue gas temperatures of 1,600°F to 2,100°F. The exhaust gases from the CT will be approximately 800°F to 1200°F. At these lower temperatures, SNCR would be less effective at controlling NO_x. This technology is not considered a technically feasible control alternative because there is not an appropriate temperature range for ammonia injection and adequate reduction of NOx in the exhaust gases.

NSCR is a post combustion system that utilizes a three-way catalytic converter to reduce emissions of NO_x, CO, and VOC from the flue gas. The exhaust must have a low oxygen content (1 percent or lower) in order for CO and NO_x to react to remove oxygen from the NO_x molecules. The CTG exhaust will have oxygen levels in the range of 13 to 16 percent, which would render this type of control ineffective.

EMxGT (Formerly SCONOx™) is a technology that combines catalytic oxidation and absorption. This technology has not been demonstrated in practice on a larger utility CTG. Therefore, EMxTM is not considered as an available technology and therefore is not a technically feasible control alternative for this project.

Xonon Cool Combustion™ uses a catalyst instead of a flame in the combustion process, enabling combustion at temperatures below the threshold at which thermal NO_x forms. This technology has not been demonstrated in practice on a larger utility CTG. Therefore, Xonon Cool Combustion™ is not considered a technically feasible control alternative for this project.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options ranked in order from most effective to least effective are:

1. DLN with SCR: 80-99 percent NO_x reduction
2. DLN: 70-80 percent NO_x reduction

Step 4: Evaluate Energy Costs, Environmental Costs, and Economic Feasibility

The SCR control technology with DLN was determined to be economically infeasible with costs of $50,184 per ton of NO_x controlled.

Step 5: Select BACT

The proposed BACT control technology is the most effective option that is technically feasible: DLN. The BACT limit during normal operation of the CTG (which does not include startup and shutdown) is 9 ppmvd at 15 percent O_2. Compliance will be monitored using CEMS or PEMS.

Since startup and shutdown events (loads less than 50 percent of capacity and at or above 0°F) will be roughly 10 minutes in duration, monitoring actual emissions and testing are impractical. DIG used vendor information to estimate emissions. The BACT limits for startup and shutdown events are based on work practice standards. The CTG will be limited to 800 startup events and 800 shutdown events per 12-month rolling time period basis. The proposed draft also requires DIG to follow an approved plan for startup and shutdown events. Compliance will be monitored through startup and shutdown event recordkeeping.

All mass emission limits are protective of the applicable NAAQS and PSD increments.

Most entries in the USEPA's RACT/BACT LAER Clearinghouse (RBLC) for this source type and size of unit, were found to have comparable limits of 9 ppmvd, some with different averaging periods. Many entries do not list the exhaust concentration in ppm and only include an emission rate in terms of pounds per hour. Some of the permits listed in the RBLC have a value less than 9 ppmvd as BACT for NO_x; however, to the AQD's knowledge, none of these have been demonstrated in practice. Therefore, the AQD agrees with the value of 9 ppmvd as BACT for this turbine.

<u>CO and VOC BACT</u>

As both CO and VOC emissions can often be reduced using the same type of control equipment, a combined BACT analysis was performed for both CO and VOCs together.

Step 1: Identify CO and VOC Control Technologies

The following CO and VOC control technologies are identified for the CTG:

- Thermal Oxidation
- Oxidation Catalyst for CO
- Non-Selective Catalytic Reduction (NSCR)
- Good Combustion Practices (Efficient Combustion)

Step 2: Eliminate Technically Infeasible Options

Thermal oxidation increases the temperature of the flue gas above the auto-ignition temperature of CO and other hydrocarbons, which is 1,300°F, to induce combustion of flue gas contaminants (CO and VOC). This technology is typically designed for process streams that have high concentrations of VOC. The CTG exhaust will have relatively low concentrations of CO and VOCs. Thermal oxidation would require significant amounts of additional fuel combustion. This technology is not considered a technically feasible control alternative for this project.

As stated above, NSCR is a post combustion system that utilizes a three-way catalytic converter to reduce emissions of NO_x, CO, and VOC from the flue gas. The exhaust must have a low oxygen content (1 percent or lower) in order for CO and NO_x to react to remove oxygen from the CO molecules. The CTG exhaust will have oxygen levels in the range of 13 to 16 percent, which would render this type of control ineffective.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options ranked in order from most effective to least effective are:

1. Oxidation Catalyst: 80-95 percent reduction
2. Good Combustion Practices (Efficient Combustion)

Step 4: Evaluate Energy Costs, Environmental Costs, and Economic Feasibility

The oxidation catalyst control technology was determined to be economically infeasible with total combined costs of $32,000 per ton of CO and VOC controlled together.

Step 5: Select BACT

The proposed BACT control technology is the most effective option that is technically feasible: Good Combustion Practices. The BACT limit during normal operation of the CTG (which does not include startup and shutdown) is 9 ppmvd at 15 percent O_2 for CO and is 5.8 pph (approximately 1.6 ppmvd) for VOC. Compliance for CO will be monitored using CEMS or PEMS and stack testing will be used for VOC.

Like NO_x, CO emissions are also higher during startup and shutdown events, for the same reasons. The combustors are not optimized for low CO emissions during these events. The use of best practices to minimize the time spent in startup and shutdown modes is proposed as BACT. The CTG will be limited to 800 startup events and 800 shutdown events per 12-month rolling time period basis.

CO emission limits will be monitored using a CO CEMS or PEMS. VOC emission limit will be determined through stack testing, and record keeping. Averaging times for the normal operation emission limit will be based on testing protocols. Compliance with the BACT limits also requires the company to submit a plan that describes how emissions will be minimized during startup and shutdown.

All mass emission limits are protective of the applicable NAAQS and PSD increments.

The proposed BACT values are consistent with other RBLC entries. Most other recent permits for this source type and size of unit, were found to have the same limits of 9 ppmvd for CO, although all had different averaging periods. VOC emission limits were in units of either pph or ppmvd and were all very close to 5.8 pph or 1.6 ppmvd as proposed. The AQD agrees with the CO and VOC values proposed for this turbine.

PM10 and PM2.5 BACT

Step 1: Identify PM10, and PM2.5 Control Technologies

The following PM, PM10, and PM2.5 control technologies are identified for the CTG:

- Fabric Filter Control
- Electrostatic Precipitator (ESP)
- Wet ESP
- Venturi Scrubber
- Combustion Air Inlet Filter
- Low Sulfur Fuel
- Good Combustion Practices

Step 2: Eliminate Technically Infeasible Options

No options are eliminated as technically infeasible, although add-on PM control technologies are not generally used in practice on CTGs.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options ranked in order from most effective to least effective are:

1. Fabric Filter Control: 99.9 percent reduction of filterable PM
2. Electrostatic Precipitator (ESP): 99.4 percent reduction of filterable PM
3. Wet ESP: 99.2 percent reduction of PM
4. Venturi Scrubber: 99.0 percent reduction of PM

Lower reduction options:

5. Combustion Air Inlet Filter
6. Low Sulfur Fuel
7. Good Combustion Practices

Step 4: Evaluate Energy Costs, Environmental Costs, and Economic Feasibility

The use of pipeline natural gas, inlet air conditioning, and good combustion practices were used for the emission calculations. All reductions in emissions were with these potential control options already incorporated as baseline conditions. DIG provided an economic analysis for the rest of the control options.

The cost analysis was performed conservatively for 100 percent capture of PM2.5, where PM10 calculations equal PM2.5. Fabric filter baghouses were evaluated at the same capture efficiency, even though they would be less efficient with condensable particulate capture. DIG calculated the total cost effectiveness, in units of dollars per ton of particulate removed, for each control technology (see below) and determined they were not economically feasible.

- Pulse Jet Fabric Filter Baghouse: minimum of $305,585 per ton
- Mechanical Shaker Fabric Filter Baghouse: minimum of $ 261,050 per ton
- Reverse-Air Fabric Filter Baghouse: minimum of $ 376,029 per ton
- Dry ESP (Wire-Plate Type): minimum of $ 216,516 per ton
- Dry ESP (Wire-Pipe Type): minimum of $ 323,235 per ton
- Wet ESP (Wire-Plate Type): minimum of $ 378,133 per ton
- Wet ESP (Wire-Pipe Type): minimum of $ 536,672 per ton
- Venturi Scrubber: minimum of $ 256,622 per ton

The add-on control costs of the above technologies are not considered to be economically feasible.

Step 5: Select BACT

The combustion inlet air filter removes filterable particulates present in the ambient air, which could damage the turbine. These filters can utilize high-efficiency filters capable of filtering particles less than 10 µm in diameter. The combustion air inlet filter will help ensure that measured filterable PM emissions are low, however, it serves as more than just air pollution control equipment, because it is also necessary to help protect the turbine.

The proposed BACT limits are 18.2 pph for both PM10 and PM2.5, based on the use of a combustion inlet air filter, low sulfur content in the natural gas fuel, and good combustion practices. Emission limits will be determined through stack testing, and record keeping.

There is a wide range of emission limits in the RBLC which are based upon BACT for natural gas fired turbines being the use of natural gas and good combustion practices. The emission limit entries range from 8.6 pph to 84.1 pph for turbine similar in make, model, and size. The AQD concurs with the BACT limits proposed by the applicant.

<u>CO_2e BACT</u>

Step 1: Identify CO_2e Control Technologies

The following CO_2e control technologies are identified for the CTG:

- Carbon Capture and Sequestration (CCS)
- Low Carbon Fuel
- Energy Efficiency

Step 2: Eliminate Technically Infeasible Options

No options are ruled out as technically infeasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

Terrestrial Sequestration is capable, theoretically, of removing 100 percent of the CO_2 from the air. Thus, it is the highest ranked option, followed by CCS, low carbon fuel, and then energy efficiency.

Step 4: Evaluate Energy Costs, Environmental Costs, and Economic Feasibility

CCS was estimated to cost over $33 per ton of CO_2 removed, with an estimated annual cost of over $42 million. Therefore, this option was ruled out, as it is not economically feasible.

Step 5: Select BACT

The proposed BACT limit is 1,453,169 tpy CO_2e, achieved through energy efficiency and low carbon fuel. The AQD agrees with the proposed BACT for CO_2e.

Texas CEQ "Readily Available Permit"

The state of Texas has established a "presumptive BACT" for simple cycle turbines when the project is a minor source and limited to 2500 hours per year. The proposed simple cycle turbine is different, as it is a major modification to an existing source and the operating hours will not be limited. However, the limits proposed as BACT are the same as the Texas "presumptive BACT".

NOTICE of AIR POLLUTION COMMENT PERIOD and PUBLIC HEARING

The Michigan Department of Environmental Quality (MDEQ) is holding a public comment period from October 11, 2017 until November 13, 2017, and a public hearing, if requested, on November 16, 2017, for Dearborn Industrial Generation, L.L.C.'s proposed installation and operation of a new simple cycle combustion turbine generator. The facility is located at 2400 Miller Road, Dearborn, Michigan. The public comment period and, if requested, public hearing is to allow all interested parties the opportunity to comment on the proposed conditional approval of a Permit to Install (PTI). It has been preliminarily determined that the installation of the new simple cycle combustion turbine generator will not violate any of the MDEQ's rules nor the National Ambient Air Quality Standards.

This proposal is subject to the state and federal Prevention of Significant Deterioration (PSD) rules and regulations for a major modification to an existing major stationary source based on the emissions of nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter equal to or less than 10 microns in diameter (PM10), particulate matter equal to or less than 2.5 microns in diameter (PM2.5), volatile organic compounds, and greenhouse gases (GHGs, measured as carbon dioxide equivalents, CO2e). The proposed new simple cycle combustion turbine generator will consume only insignificant amounts of the federal PSD air quality increments for NO_2, CO, PM10, PM2.5, and sulfur dioxide.

Additionally, the installation of the new simple cycle combustion turbine generator will require revisions to Renewable Operating Permit (ROP) No. MI-ROP-N6631 (SRN N6631). This public comment period meets the public participation requirements for a future administrative amendment to the ROP.

Copies of the MDEQ's fact sheet(s) and proposed permit conditions are available for review at the following locations, or you may request a copy be mailed to you by calling 517-284-6793. Please reference PTI Application Number 56-17.

AIR QUALITY DIVISION (AQD) Internet Home Page: http://www.michigan.gov/air

DETROIT: MDEQ, AQD, Cadillac Place, Suite 2-300, 3058 West Grand Boulevard (Phone: 313-456-4683)

LANSING: MDEQ, AQD, Constitution Hall, 525 West Allegan Street (Phone: 517-284-6793)

DEARBORN: City Hall, 16901 Michigan Avenue (Phone: 313-943-2000)

The public is encouraged to present written views on the proposed permit action. Written comments or a hearing request should be sent to Ms. Annette Switzer, Permit Section Manager, MDEQ, AQD, P.O. Box 30260, Lansing, Michigan, 48909-7760. Comments may also be submitted from the webpage http://www.deq.state.mi.us/aps/cwerp.shtml (click on "Submit Comment" under the Dearborn Industrial Generation, L.L.C., PTI No. 56-17 listing). All statements received by November 13, 2017, will be considered by the decision-maker prior to final permit action. If a hearing is requested, the comment period will be extended until the close of the hearing.

Only if requested in writing by November 13, 2017, the informational session and public hearing will be held on November 16, 2017 in the Henry Ford College, MTEC Building Auditorium, 3601 Schaefer Road, Dearborn, Michigan. The informational session will begin at 6:00 p.m., at which time AQD staff will be available to answer questions. The public hearing will begin at 7:00 p.m. The sole purpose of the public hearing will be to take formal testimony on the record. Those interested may contact the AQD at 517-284-6790 on November 14, 2017, to determine if a hearing was requested and will be held.

Individuals needing accommodations for effective participation at the hearing should contact Ms. Lisa Shooltz at 517-284-6793 one week in advance to request mobility, visual, hearing, or other assistance.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Ms. Annette Switzer, Permit Section Manager

Michigan Department of Environmental Quality
Air Quality Division

Proposed Project Summary

Dearborn Industrial Generation, L.L.C., Dearborn, MI

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), is asking for comments from the public on a proposed action for Dearborn Industrial Generation, L.L.C. (DIG). The AQD will accept comments on the proposed Permit to Install (PTI) until the end of the comment period on November 13, 2017 or at the public hearing, if one is requested, on November 16, 2017. We will review all comments before we make a final decision on the proposal.

What does the company do?

The company operates an existing power plant located at 2400 Miller Road, Dearborn, Michigan. The existing plant consists of three electric power generating natural gas-fueled combustion turbine generators (CTG), three boilers that burn natural gas or blast furnace gas (BFG), two flares that control the excess BFG, and two diesel-fueled emergency generators.

What is a PTI and why is one needed?

A PTI, commonly known as an air use permit, is required for projects that involve installing, constructing, reconstructing, relocating, or modifying most process or process equipment that emits, or may emit, air contaminants. A new PTI is also required if a company wants to make changes to their current air permit.

The AQD has reviewed the proposed project, and written proposed permit conditions that include requirements to make sure the project complies with all applicable laws and regulations.

What does the company want to do under the PTI application?

DIG has submitted a PTI application for a new natural gas-fueled simple cycle CTG. Figure 1 on page 3 of this document shows an example of a combustion turbine electric generation process. The new CTG will provide increased electric generating capacity, during periods of peak electrical demand. The proposed CTG will have a rating of 263 megawatts (MW) and will be equipped with burners that reduce the emissions of nitrogen oxides (NOx). The existing equipment at the facility will continue to operate under the facility's current permit.

What else can you tell me about this change?

The existing power plant is considered a "major" source of air emissions under the Prevention of Significant Deterioration (PSD) regulations. The emissions from the proposed project are greater than the significant emission levels, so this project is required to comply with the PSD permitting rules. This means that the emissions must comply with Best Available Control Technology (BACT). BACT is an emission limitation based on the maximum reduction achievable for each pollutant. This must take into account energy, environmental and economic impacts, and other costs. The emission limits for the project are the lowest limits that are technically and economically feasible for the equipment.

In addition to the PSD permitting requirements, the equipment must also meet other federal standards, including the New Source Performance Standards and the National Emission Standards for Hazardous Air Pollutants. These federal standards define maximum emission rates for certain pollutants that are emitted from the CTG. The CTG is also subject to an energy-efficiency standard which limits emissions of greenhouse gases based on the heat input.

Michigan's Air Pollution Control Rules also require BACT for volatile organic compound emissions, and require that toxic air contaminant emissions, which are produced during the combustion of natural gas, comply with health-based standards.

Will the facility continue to meet the air quality standards?

Air dispersion computer modeling was used to evaluate the impacts of the proposed project's emissions on the air quality in the surrounding area. The impacts of the emissions will be less than state and federal health

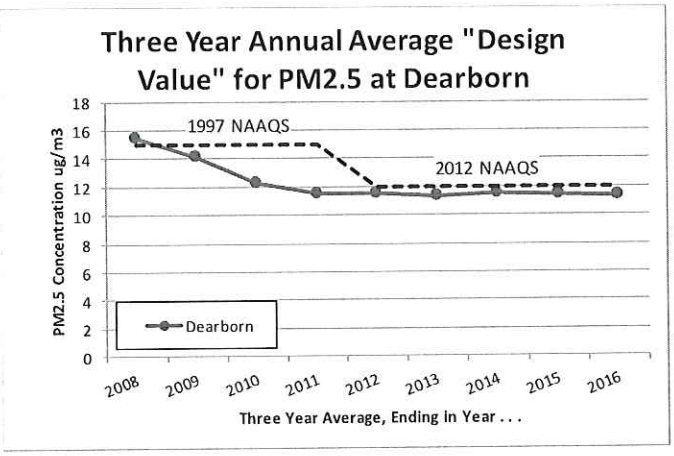
protective standards. These standards were developed by the United States Environmental Protection Agency.

The modeling also shows that all toxic air contaminant impacts will be less than the screening levels, which were developed by the AQD to be protective of public health.

What is the current air quality in the area?

The facility is located in Wayne County, Michigan which is meeting all of the National Ambient Air Quality Standards (NAAQS), except for sulfur dioxide (SO_2). The nearest monitoring station, in Dearborn, monitors for fine particulate matter (PM2.5). Figure 2 shows the concentrations at this monitor.

Figure 2. Three year average of the annual average particulate matter less than or equal to 2.5 microns in diameter (PM2.5) concentration at Dearborn



The MDEQ's nearest ozone monitors are Allen Park and Detroit-E. Seven Mile. The MDEQ's nearest nitrogen dioxide (NO2) monitor is in Detroit-E. Seven Mile. The MDEQ's nearest carbon monoxide (CO) monitor is in Allen Park. Figures 3, 4, and 5 show the concentrations at these monitors are well below the NOx and CO NAAQS standards.

Figure 3. Three year average of the 4th high ozone concentration at Allen Park and Detroit-E. Seven Mile

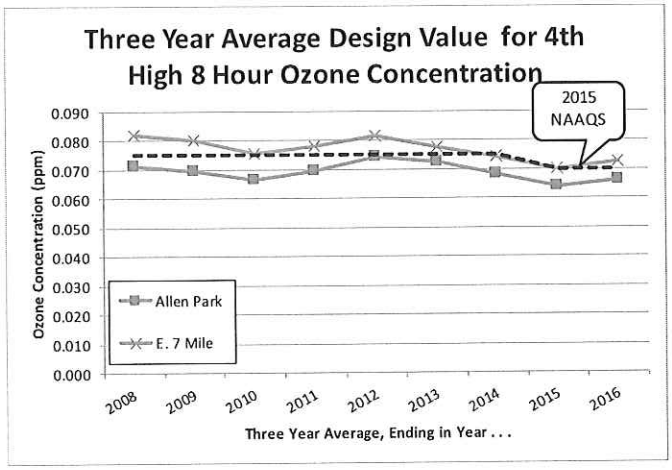


Figure 4. 98th Percentile of the 1-Hour Average Concentration of NO_2 at Detroit-E. Seven Mile

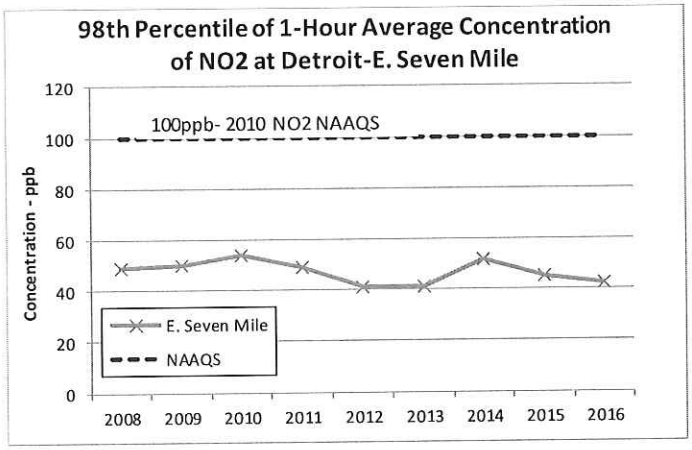
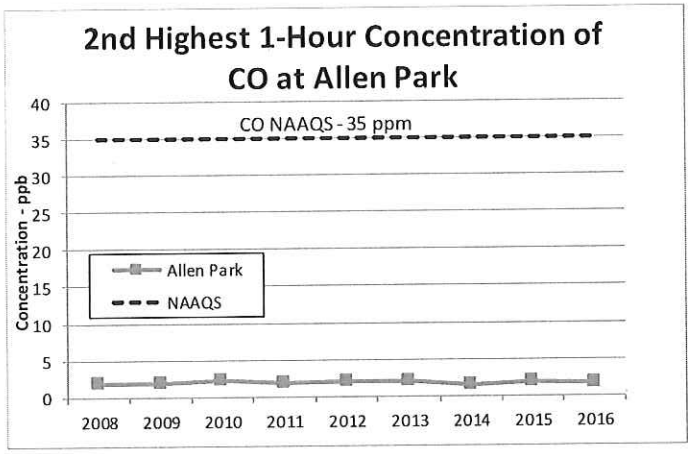


Figure 5. Second highest maximum 1-hour concentration of CO at Allen Park



Where can I find more information?

There are two ways to find more information about the PTI application: the Public Participation Fact Sheet has additional details about the project and how it will meet the rules and regulations, and AQD staff can provide additional information upon request. Here are some examples of information you may find useful:

- A summary of the reviews completed by the AQD staff.
- How the project will affect air quality and public health.
- A summary of what the proposed permit would require the company to do.
- A summary of the allowed emissions that are included in the proposed permit.
- The rules and regulations that apply to the project.
- Example emission calculations.

Summary:

The AQD has reviewed the PTI application for the proposed project and prepared a proposed permit for the facility. If approved, the proposed permit will ensure the facility meets the applicable air quality requirements. Therefore, we are proposing to approve the permit.

Before the AQD takes action on the proposed PTI, we are requesting comments from the public. The AQD will review all comments received during the public comment period and public hearing, if one is requested, and will decide whether to approve or deny the proposed PTI. If approved, the AQD may decide to add or change permit conditions based on the comments.

Who can I contact?

For more information about the proposed PTI, please contact Ms. Melissa Byrnes, AQD, at: Byrnesm@michigan.gov or 517-284-6790.

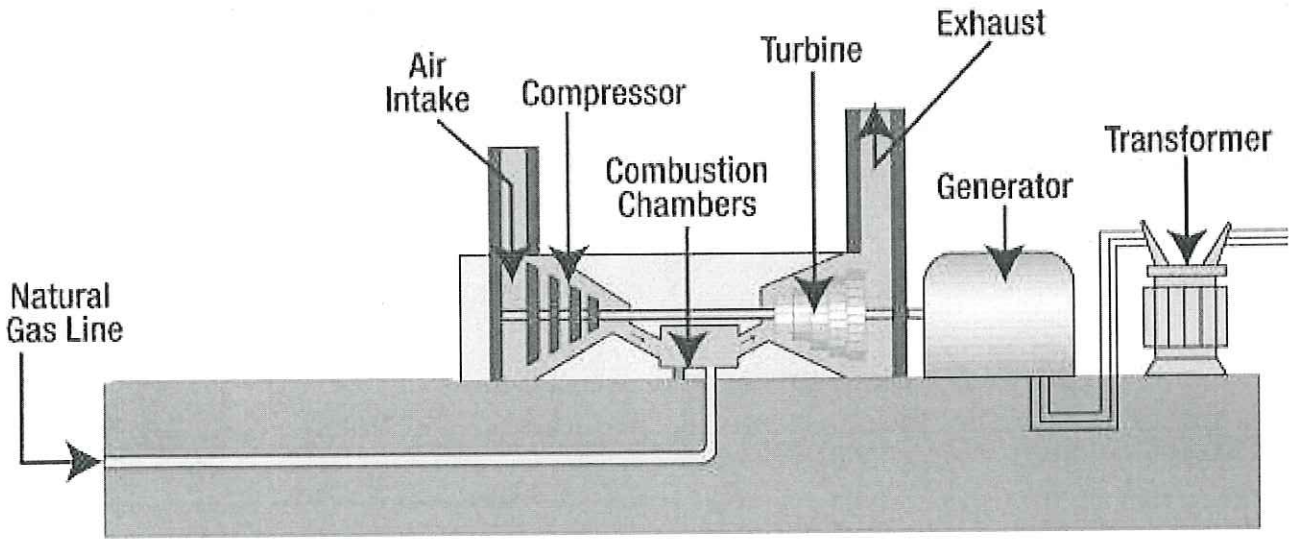


Figure 1: Example of natural gas-fueled turbine electric generation process

Fresh atmospheric air flows through a compressor that brings it to higher pressure. Natural gas is mixed with the air and ignited in the combustion chamber producing high-temperature high pressure combustion gas. This combustion gas then enters a turbine, where it spins the turbine blades on its path to reach a lower pressure at the exhaust. The turbine blades are attached to a shaft that is used to drive the compressor and electric generator. The transformer is used to change the voltage of the power to meet utility requirements.

Michigan's Environmental Justice Policy promotes the fair, non-discriminatory treatment and meaningful involvement of Michigan's residents regarding the development, implementation, and enforcement of environmental laws, regulations, and policies by this state. Fair, non-discriminatory treatment intends that no group of people, including racial, ethnic, or low-income populations, will bear a disproportionately greater burden resulting from environmental laws, regulations, policies, and decision-making. Meaningful involvement of residents ensures an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
		gr	Grains
EU	Emission Unit	HAP	Hazardous Air Pollutant
FG	Flexible Group	Hg	Mercury
GACS	Gallons of Applied Coating Solids	hr	Hour
GC	General Condition	HP	Horsepower
GHGs	Greenhouse Gases	H_2S	Hydrogen Sulfide
HVLP	High Volume Low Pressure*	kW	Kilowatt
ID	Identification	lb	Pound
IRSL	Initial Risk Screening Level	m	Meter
ITSL	Initial Threshold Screening Level	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NMOC	Non-methane Organic Compounds
MDEQ	Michigan Department of Environmental Quality	NO_x	Oxides of Nitrogen
		ng	Nanogram
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NA	Not Applicable	PM10	Particulate Matter equal to or less than 10 microns in diameter
NAAQS	National Ambient Air Quality Standards		
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonable Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO_2	Sulfur Dioxide
SCR	Selective Catalytic Reduction	TAC	Toxic Air Contaminant
SNCR	Selective Non-Catalytic Reduction	Temp	Temperature
SRN	State Registration Number	THC	Total Hydrocarbons
TEQ	Toxicity Equivalence Quotient	tpy	Tons per year
USEPA/EPA	United States Environmental Protection Agency	µg	Microgram
		µm	Micrometer or Micron
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

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

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

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

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUCTG4	One simple cycle General Electric Model 7FA.05 combustion turbine. The turbine is fueled exclusively with pipeline quality natural gas and has a nominal heat input rating of 2,762 MM Btu per hour at ISO conditions. The rated output capacity of the unit is approximately 263 megawatts at ISO conditions.	To be determined	FGNSPSKKKK
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

The following conditions apply to: EUCTG4

DESCRIPTION: One simple cycle General Electric Model 7FA.05 combustion turbine. The turbine is fueled exclusively with pipeline quality natural gas and has a nominal heat input rating of 2,762 MM Btu per hour at ISO conditions. The rated output capacity of the unit is approximately 263 megawatts at ISO conditions.

Flexible Group ID: FGNSPSKKKK

POLLUTION CONTROL EQUIPMENT: Dry low NOx combustion system to control NOx emissions and combustion air inlet filter.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx as NO_2	9 ppmvd[A,B], while operating in dry low NOx mode	4-hour rolling average	EUCTG4	SC VI.3, SC VI.8	R 336.1205(1)(a) & (b), R 336.2810
2. NOx as NO_2	128.6 pph	4-hour rolling average	EUCTG4	SC VI.3, SC VI.8	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
3. CO	9 ppmvd[A,B]	4-hour rolling average	EUCTG4	SC VI.4, SC VI.8	R 336.1205(1)(a) & (b), R 336.2810
4. CO	1,728 pph	4-hour rolling average	EUCTG4	SC VI.4, SC VI.8	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
5. VOC	5.8 pph[A,B]	4-hour rolling average	EUCTG4	SC V.1, SC VI.8	R 336.1205(1)(a) & (b), R 336.1702(a), R 336.2810

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
6. PM2.5	18.2 pph	Hourly	EUCTG4	SC V.1, SC VI.8	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
7. PM10	18.2 pph	Hourly	EUCTG4	SC V.1, SC VI.8	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
8. PM	23 tpy	12-month rolling time period as determined at the end of each calendar month[C]	EUCTG4	SC V.1, SC VI.5, SC VI.9	R 336.1205(1)(a) & (b)
9. SO_2	34 tpy	12-month rolling time period as determined at the end of each calendar month[C]	EUCTG4	SC VI.2, SC VI.6, SC VI.9	R 336.1205(1)(a) & (b)
10. GHGs as CO_2e	1,453,169 tpy	12-month rolling time period as determined at the end of each calendar month[C]	EUCTG4	SC VI.2, SC VI.7, SC VI.9	R 336.1205(1)(a) & (b), 40 CFR 52.21(j)
11. CO_2	120 lb CO_2/MMBtu	Based on fuel purchase records	EUCTG4	SC VI.2, SC VI.8	R 336.1205(1)(a) & (b), 40 CFR 60.5520(a), Table 2 of 40 CFR Part 60 Subpart TTTT

ppmvd = parts per million by volume at 15 percent oxygen on a dry gas basis.
kg/GJ = kilograms per gigajoule

[A] Does not include startup and shutdown.

[B] Steady -state operation is considered loads greater than 75 percent of peak load and at or above 0°F. These emission limits do not include startup and shutdown. Startup and shutdown is considered the ramping up or ramping down of the turbine through loads 75 percent or less.

[C] Compliance is determined monthly at the end of the initial and each subsequent 12-operating-month period. The first month of the initial compliance period is defined as the end of the 12th month following initial commercial operation.

II. MATERIAL LIMITS

1. The permittee shall burn only pipeline quality natural gas in EUCTG4. **(R 336.1205(1)(a), R 336.1225, R 336.1702(a), R 336.2810, 40 CFR 52.21(j))**

2. The pipeline quality natural gas shall not have a total sulfur content in excess of 1 grain of sulfur per 100 standard cubic feet of gas based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Within 180 days of trial operation, the permittee shall submit, implement, and maintain a MAP as described in Rule 911(2) for EUCTG4. The MAP shall, at a minimum, specify the following:
   a. A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b. An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 60 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 60 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1911)**

2. The permittee shall not operate EUCTG4 unless the AQD District Supervisor has approved a plan that describes how emissions will be minimized during startup and shutdown. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1912)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The maximum nominal rating of EUCTG4 shall not exceed 2,762 MMBtu/hr at ISO conditions. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 228.2810, 40 CFR 52.21(j))**

2. The permittee shall not operate EUCTG4 unless its respective dry low NO_x burner and combustion air inlet filter is installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining EUCTG4 in accordance with an approved MAP as required in SC III.1. **(R 336.1205(1)(a) & (b), R 336.1910, R 336.2803, R 336.2804, R 336.2810)**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas flow rate for EUCTG4 on a continuous basis. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices or equipment to monitor and record the NO_x emissions and O_2 or CO_2 content of the exhaust gas from EUCTG4 on a continuous basis. The permittee shall install and operate a CEMS or equivalent Predictive Emission Monitoring System (PEMS) to meet the timelines, requirements and reporting detailed in Appendix A. If the permittee chooses to use a PEMS in lieu of a CEMS to monitor NOx emissions, the permittee shall submit a petition to the Environmental Protection Agency (EPA) Clean Air Markets Division for approval and certification of an alternative monitoring system or component according to the procedure in Subpart E of 40 CFR Part 75. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4340(b), 40 CFR 60.4345, 40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**

5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the CO emissions and O_2 or CO_2 content of the exhaust gas from EUCTG4 on a continuous basis. The permittee shall install and operate a CEMS or equivalent PEMS to meet the timelines, requirements and reporting detailed in Appendix A. If the permittee chooses to use a PEMS in lieu of a CEMS to monitor CO emissions, the permittee shall submit a petition to the Environmental Protection Agency (EPA) Clean Air Markets Division for approval and certification of an alternative monitoring system or component according to the procedure in Subpart E of 40 CFR Part 75. **(R 336.1205(1)(a) & (b), R 336.2804, R 336.2810)**

V. TESTING/SAMPLING

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

1. Within 180 days after commencement of initial startup, the permittee shall verify VOC, PM10, PM2.5 emission rates, and PM emission factor from EUCTG4 at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. The hourly emission rate shall be determined by the average of three test runs per the method requirements. Testing shall be performed using an approved EPA Method listed:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10/PM2.5	40 CFR Part 51, Appendix M
VOC	40 CFR Part 60, Appendix A, or Method 320 of Appendix A of 40 CFR Part 63

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j))**

2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUCTG4 on an hourly and monthly basis. The heating value of the natural gas in BTU per cubic foot shall be determined on a monthly basis from one sample taken from the main gas pipeline to the facility on the permittee's property. Upon request, the AQD District Supervisor may authorize a different sampling method and/or sampling schedule. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j), 40 CFR Part 75, Appendix D)**

3. The permittee shall monitor and record the NOx (as NO_2) emissions from EUCTG4 on a continuous basis. The permittee shall operate each CEMS or equivalent PEMS to meet the timelines, requirements and reporting detailed in Appendix A and shall use the CEMS or equivalent PEMS data for determining compliance with SC I.1 and SC I.2. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**

4. The permittee shall monitor and record the CO emissions and the O_2 or CO_2 content from EUCTG4 on a continuous basis. The permittee shall operate each CEMS or equivalent PEMS to meet the timelines, requirements and reporting detailed in Appendix A and shall use the CEMS or equivalent PEMS data for determining compliance with SC I.3, and SC I.4. **(R 336.1205(1)(a) & (b), R 336.2810)**

5. The permittee shall calculate and record, in a satisfactory manner, records of monthly and 12-month rolling PM mass emissions for EUCTG4, as required by SC I.8. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix A unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b))**

6. The permittee shall calculate and record, in a satisfactory manner, records of monthly and 12-month rolling SO_2 mass emissions for EUCTG4, as required by SC I.9. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix A unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b))**

7. The permittee shall calculate and record, in a satisfactory manner, records of monthly and 12-month rolling total CO_2e mass emissions for EUCTG4, as required by SC I.10. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix B unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

8. The permittee shall maintain, in a satisfactory manner, purchase records of the natural gas combusted in EUCTG4. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.5520(a) & (d)(1))**

9. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit for EUCTG4. This information shall include, but shall not be limited to the following:
   a. Compliance tests and any testing required under the special conditions of this permit;
   b. Monitoring data;
   c. Total sulfur content of the natural gas as required by 40 CFR 60.4365(a);
   d. Verification of the nominal input rating in ISO, of EUCTG4;
   e. All records as required by 40 CFR 60.7, including the initial startup notification and performance tests;
   f. Monthly hours of operation including all startup and shutdown events;
   g. All calculations necessary to show compliance with the limits contained in this permit;
   h. All records related to, or as required by, the MAP.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor and shall be consistent with the requirements of 40 CFR 60.7. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.1912, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.7)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each unit in EUCTG4. **(R 336.1201(7)(a))**

2. The permittee shall provide written notification of the date construction commences and the actual date of initial startup of EUCTG4, in accordance with 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7(a), 40 CFR 60.5550(a))**

3. The permittee shall prepare and submit the notifications specified in 40 CFR 60.19, as applicable, and 40 CFR 75.61, as applicable, for EUCTG4. **(40 CFR 60.5550(a) & (b))**

VIII. STACK/VENT RESTRICTIONS

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 Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCTG4	224	60	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) in lieu of a CEMS to monitor NOx emissions, the permittee shall submit a protocol for approval by Environmental Protection Agency (EPA). **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**

2. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) in lieu of a CEMS to monitor CO emissions, the permittee shall follow the protocol delineated in Performance Specification 16 in Appendix B of 40 CFR Part 60. **(40 CFR Part 60 Appendix B).**

3. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and KKKK, as they apply to EUCTG4. **(40 CFR Part 60 Subparts A & KKKK)**

4. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and TTTT, as they apply to EUCTG4. **(40 CFR Part 60 Subparts A and TTTT)**

5. The permittee shall comply with all provisions of the federal Cross-State Air Pollution Rule (CSAPR) as specified in 40 CFR Part 97, as they apply to EUCTG4. **(40 CFR Part 97)**

6. The permittee shall comply with all provisions of the federal Standards of Continuous Emission Monitoring as specified in 40 CFR Part 75, as they apply to EUCTG4. **(40 CFR Part 75).**

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

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
FGNSPSKKKK	This flexible group consists of two simple cycle turbines and two combined cycle turbines, subject to NSPS KKKK.	EUCTG1, EUCTG2, EUCTG3, EUCTG4

The following conditions apply to: FGNSPSKKKK

DESCRIPTION: This flexible group consists of two simple cycle turbines and two combined cycle turbines, subject to NSPS KKKK.

Emission Units: EUCTG1, EUCTG2, EUCTG3, EUCTG4

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustors.

I. EMISSION LIMITS

Pollutant	Limit[D]	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	15 ppm at 15 percent O_2 or 54 ng/Joules of useful output (0.43 lb/MWh)	30-day rolling average, using a CEMS or equivalent	EUCTG2, EUCTG3 (Limits apply to each combined cycle unit listed)	SC V.1, SC VI.1	40 CFR 60.4320(a)
2. NOx	15 ppm at 15 percent O_2 or 54 ng/Joules of useful output (0.43 lb/MWh)	4-unit operating hour rolling average, using a CEMS or equivalent	EUCTG1, EUCTG4 (Limits apply to each simple cycle unit listed)	SC V.1, SC VI.1	40 CFR 60.4320(a)

[D] Table 1 of 40 CFR Part 60 Subpart KKKK also allows 96 ppm at 15 percent O_2 or 590 ng/J of useful output (4.7 lb/MWh) when the turbines are operating at less than 75 percent of peak load, or temperatures less than 0°F.

II. MATERIAL LIMITS

1. The permittee shall not burn in FGNSPSKKKK any fuel which contains total potential sulfur emissions in excess of 26 ng SO_2/Joules (0.060 lb SO_2/MMBtu) heat input. **(40 CFR Part 60.4330(a)(2))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall operate and maintain the stationary combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. **(40 CFR 60.4333(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. If the permittee does not use the continuous emissions monitoring or equivalent predictive emissions monitoring system (PEMS), allowance as specified in SC VI.1, then within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, federal Standards of Performance for New Stationary Sources require verification of NOx emission rates from each turbine included in FGNSPSKKKK, by testing at owner's expense, in accordance with 40 CFR Parts 60.8 and 60.4400.
   a. The permittee shall conduct three separate test runs, at least 20 minutes each, at ambient temperatures greater than 0 °F, and at any load condition within ±25 percent of 100 percent peak load.
   b. Testing must be conducted annually (at least every 14 calendar months).
   c. If the stack test result is less than or equal to 75 percent of the NOx limits in SC I.1, the test plan can be changed to once every two years (at least every 26 calendar months). If subsequent test results yield NOx emissions greater than 75 percent of the NOx limit in SC I.1, annual testing must be resumed.
   d. Subsequent stack testing is not required if the permittee shows continuous compliance with the NOx emission limits with a CEMS or equivalent PEMS pursuant to 40 CFR 60.4340(b)(ii), as specified in SC VI.1.
   e. Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable Federal Reference Methods, 40 CFR Part 60 Appendix A.

   No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] **(40 CFR 60.4340(a), 40 CFR 60.4375(b), 40 CFR 60.4400(a), 40 CFR Part 60 Subpart KKKK)**

VI. MONITORING/RECORDKEEPING

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

1. In lieu of the stack testing required in SC V.1, the permittee may instead install, calibrate, maintain and operate a continuous emission monitoring system (CEMs) or equivalent PEMS as described in 40 CFR 60.4335(b) and 60.4345.
   (40 CFR 60.4340(b))

2. The permittee shall monitor the sulfur content in the fuel once per turbine operating day, using the methods described in 40 CFR 60.4415, or alternate methods as described in 40 CFR 60.4360. The permittee may use a custom monitoring schedule pursuant to 40 CFR 60.4370(c) if the schedule has been approved by the EPA Administrator. Sulfur in fuel monitoring is not required if it is demonstrated that the potential sulfur emissions do not exceed 26 ng SO_2/Joules (0.060 lb SO_2/MMBtu) heat input. The demonstration shall include one of the following:
   a. The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content is 20 grains of sulfur per 100 standard cubic feet or less; or
   b. Representative fuel sampling data, as specified in 40 CFR Part 75, Appendix D, Section 2.3.1.4 or 2.3.2.4, shows that the sulfur content does not exceed 26 ng SO_2/Joules (0.060 lb SO_2/MMBtu) heat input.
   (40 CFR 60.4360, 40 CFR 60.4370)

3. The permittee shall keep, in a satisfactory manner, records of the sulfur content of the fuel once each operating day for FGNSPSKKKK, as required by SC VI.2. This condition does not apply if it is demonstrated that the potential sulfur emissions do not exceed 26 ng SO_2/Joules (0.060 lb SO_2/MMBtu) per MMBtu heat input pursuant to 40 CFR 60.4365. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4370)**

VII. REPORTING

1. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7)**

2. The permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 40 CFR 60.4380(b). An excess emission is any unit operating period in which the 4-hour or 30-day rolling average NO_x emission rate exceeds the applicable emission limit in 40 CFR 60.4320. Monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO_x concentration, CO_2 or O_2 concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4380(b), 40 CFR 60.4395)**

3. If the permittee is required to monitor the sulfur content in the fuel pursuant to SC VI.2 and 40 CFR 60.4360, the permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 60.4385. An excess emission is each turbine operating hour beginning on the date and hour that any sample shows an exceedance in the applicable sulfur limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit. Monitor downtime begins when a required sample is not taken by its due date or the date and hour that invalid results are obtained. Monitor downtime ends on the date and hour of the next valid sample. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4385, 40 CFR 60.4395)**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subpart A and Subpart KKKK, as they apply to FGNSPSKKKK. **(40 CFR Part 60 Subparts A & KKKK)**

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).

APPENDIX A
Continuous Emission Monitoring System (CEMS) and Predictive Emission Monitoring System (PEMS) Requirements

1. Within 30 calendar days after commencement of initial start-up, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS/PEMS.

2. Within 150 calendar days after commencement of initial start-up, the permittee shall submit two copies of a complete test plan for the CEMS/PEMS to the AQD for approval.

3. Within 180 calendar days after commencement of initial start-up, the permittee shall complete the installation and testing of the CEMS/PEMS.

4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS/PEMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table:

Pollutant	Applicable PS
NOx	2
O_2 & CO_2	3
CO	4
PEMS	16

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

6. The CEMS/PEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and the PS, listed in the table above, of Appendix B to 40 CFR Part 60.
   If a PEMS is installed in lieu of a CEMS, the PEMS shall be installed, maintained, and operated in accordance with PS 16 of Appendix B to 40 CFR Part 60, as proposed or promulgated or, with approval from the AQD District Supervisor and EPA Clean Air Markets Division, the permittee may install a PEMS for NOx in accordance with Part 75, Appendix B requirements, as stated in 40 CFR 60.4340(b)(2)(iv).

7. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS/PEMS set forth in Appendix F of 40 CFR Part 60. As an alternative, the permittee may perform the Quality Assurance Procedures for CEMS/PEMS set forth in Appendix B of 40 CFR Part 75 for the EUCTG4. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR Part 60).

8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a. A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b. A report of all periods of CEMS/PEMS downtime and corrective action.
   c. A report of the total operating time of EUCTG4, during the reporting period.
   d. A report of any periods that the CEMS/PEMS exceeds the instrument range.
   e. If no exceedances or CEMS/PEMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

APPENDIX B
CO_2e Emission Calculations

For EUCTG4:

CO2e emissions (tons/month) = [Fuel Usage (MMscf/month) x Higher Heating Value (MMBTU/MMscf)] x [CO2 EF (kg/MMBTU) x CO2 GWP + CH4 EF (kg/MMBTU) x CH4 GWP + N2O EF (kg/MMBTU) x N2O GWP] x 2.2046 lb/kg x 1/2000 (ton/lb)

Where:
Fuel Usage (MMscf/month) = monthly fuel usage data from fuel flow meter, billing records, and/or purchase records
Heat Content (MMBTU/MMscf) = standard value in AP-42 for natural gas or supplier data, if available
CO_2 EF (kg/MMBTU) = emission limit from 40 CFR Part 60, Subpart TTTT of 120 lb CO_2/MMBtu
CH_4 EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)
N_2O EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)
CO_2 GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)
CH_4 GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)
N_2O GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)