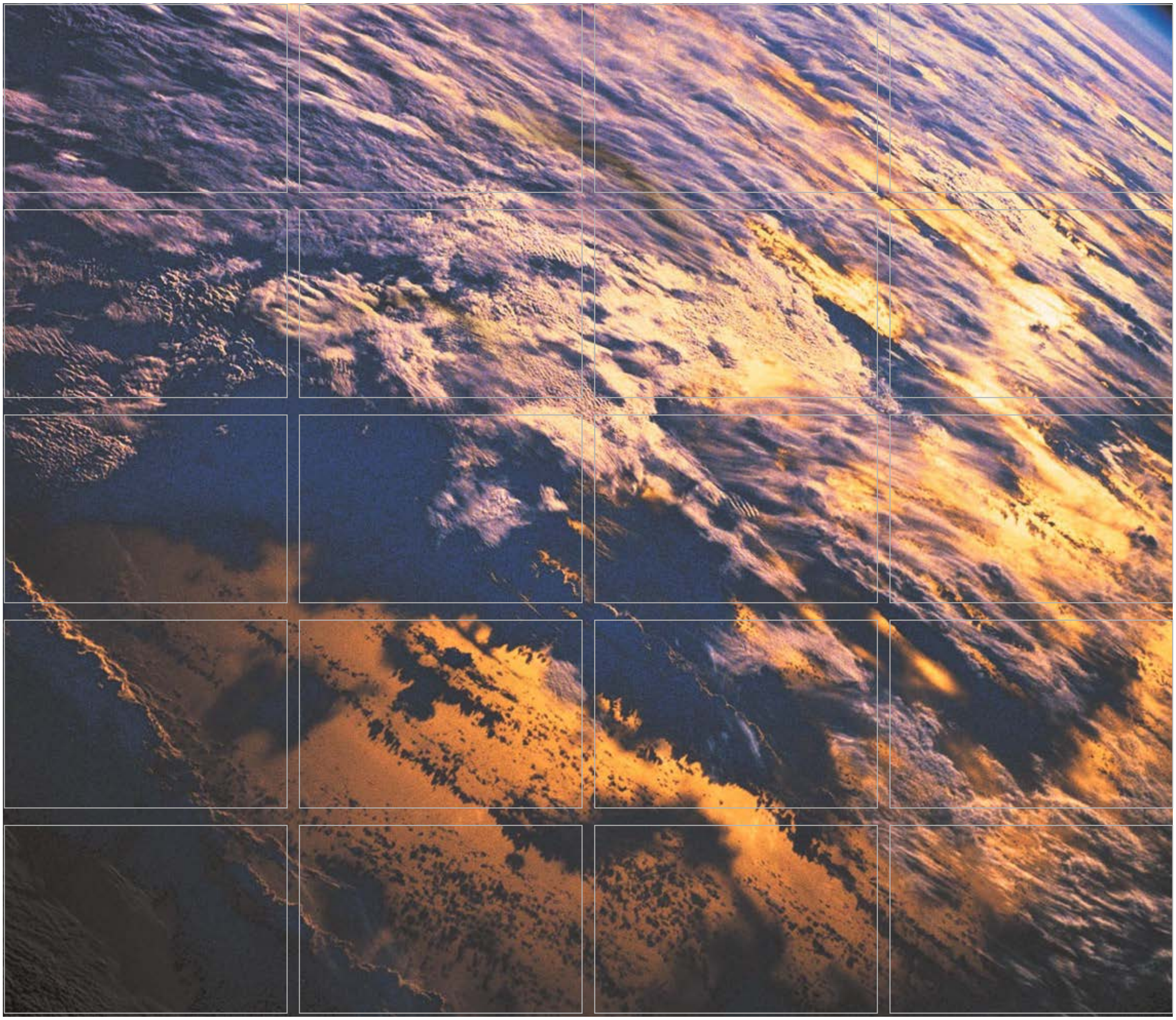

ESC Brooke County Power I, LLC

Air Permit Application
Combined-Cycle Power Plant Project
Follansbee, Brooke County, West Virginia

March 2016

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

ESC Brooke County Power I, LLC (ESC) proposes to construct, install, and operate a proposed new natural gas and ethane fueled combined-cycle combustion turbine (CT) electric power plant (Project).

The Project site is located in the City of Follansbee, Brooke County, West Virginia. The Project site is zoned for industrial use, and provides multiple strategic advantages that will allow the plant to produce low cost, base load electricity. The proposed primary point of interconnection is along the Tidd-Wylie Ridge 345 kilovolt (kV) line controlled by First Energy (Mon Power) near the project site. Plant output will be sold into the Pennsylvania-New Jersey-Maryland Interconnection LLC (PJM) regional electric grid.

This new plant requires preconstruction approval of an air permit under the federal Prevention of Significant Deterioration (PSD) program (40 CFR 52.21) and under West Virginia Department of Environmental Protection (WVDEP or The Department) 45 CSR 13 and 14.

The emission sources associated with the Project are:

- Two (2) General Electric (GE) Frame 7HA.01 advanced combined-cycle combustion turbines (CTs), fueled by natural gas (raw or pipeline quality), ethane, or a blend of these fuels;
- Two Heat Recovery Steam Generators (HRSGs), one for each CT;
- One (1) Auxiliary Boiler with a maximum heat input of 111.9 million British Thermal Units per hour (MMBtu/hr), burning natural gas (raw or pipeline quality), ethane, or a blend of these fuels;
- One (1) Fuel Gas Heater with a maximum heat input of 5.4 MMBtu/hr, burning natural gas (raw or pipeline quality), ethane, or a blend of these fuels;
- One (1) 2,000 kilowatt (kW) diesel Emergency Generator fueled by ultra-low sulfur diesel (ULSD) fuel;

- One (1) 315 horsepower (hp) emergency diesel Fire Water Pump fueled by ULSD;
- One (1) wet, mechanical draft Cooling Tower; and
- Diesel fuel, lubricating oil, and aqueous ammonia storage tanks.

Appendix A contains conceptual plant layout drawings.

1.1.1 *Combustion Turbines*

Electricity will be generated using two (2) combustion turbines, each with a design maximum heat input of approximately 2,907 million British Thermal Units per hour (MMBtu/hr)[1], on a Higher Heating Value (HHV) basis. Each combustion turbine will drive a combustion turbine generator. Electricity generated by the combustion turbine generators will be routed through a dedicated tap and sold on the PJM grid.

The highly efficient combustion turbines, Brooke County Combustion Turbines 1 and 2 (BCCT-1 and BCCT-2), will be equipped with inlet air evaporative cooling systems, which are used to increase the density of the combustion air, thereby increasing fuel and mass flow and, in turn, power output. The air density increase will be accomplished by evaporating water in the inlet air, which will decrease air temperature and correspondingly increase air density.

Each combustion turbine will be coupled with a HRSG to produce steam for a shared steam turbine that will drive a steam turbine generator to generate additional electric power output. A HRSG contains a series of heat exchangers designed to recover the heat from the combustion turbines exhaust gas and produce steam, as in a boiler.

The fuel for the Combustion Turbines will be natural gas (raw or pipeline quality), ethane, or a blend of these fuels. Steam generated in the two

[1] Combustion turbine output and heat input vary by several factors, including ambient temperature, relative humidity, fuel, load level, whether evaporative cooling systems are in use, etc. 2,907 MMBtu/hr is the expected heat input for a single combustion turbine at a -20 ˚F ambient temperature design condition, 80% relative humidity, at base load, firing ethane, and with the evaporative cooling system off.

HRSGs is routed to a single steam driven turbine with a dedicated electric generator. This generator produces additional electricity that will also be routed through a dedicated tap and sold on the grid.

The Combustion Turbines will be equipped with dry low-NO_x (DLN) combustors, or a similar advanced low-NO_x combustion technology. These combustion controls, along with Selective Catalytic Reduction (SCR) systems, will control emissions of nitrogen oxides (NO_x) from the Combustion Turbines. Oxidation Catalysts will be used to control carbon monoxide (CO) and volatile organic compounds (VOC) emissions from the Combustion Turbines. The SCRs and Oxidation Catalysts will be incorporated into the HRSGs, at locations where the emission control reactions can efficiently be stimulated.

SCR involves the injection of aqueous ammonia (NH_3) with a concentration of less than 20% by weight into the combustion turbine exhaust gas streams. Ammonia reacts with NO_x emissions from the combustion turbines, reducing NO_x to elemental nitrogen (N_2) and water vapor (H_2O). The aqueous ammonia will be stored on-site in one (1) storage tank with a capacity of approximately 35,000 gallons. The aqueous ammonia storage tank will not normally vent to the atmosphere. It will be equipped with pressure relief valves that would only vent in the event of an emergency. The Oxidation Catalysts do not require the use of reagents.

Each CT/HRSG module will have its own exhaust stack. Each stack will have a height of 185 feet above grade.

For permitting and emissions estimating purposes, this application assumes that the Combustion Turbines will operate 8,760 hours per year (hr/yr).

1.1.2 Auxiliary Boiler

A 111.9 MMBtu/hr Auxiliary Boiler (AB-1) will be used to produce steam for plant support. The Auxiliary Boiler will burn natural gas (raw or pipeline quality), ethane, or a blend of these fuels. The Auxiliary Boiler will be equipped with low-NO_x burners (LNB) to control NO_x emissions.

For permitting and emissions estimating purposes, this application assumes that the Auxiliary Boiler will operate the equivalent of 4,576 hr/yr.

1.1.3 Fuel Gas Heater

A 5.4 MMBtu/hr Fuel Gas Heater (FGH-1) will be used to preheat the gaseous fuel received by the plant. Preheating the fuel prior to combustion in the CTs (BCCT-1 and BCCT-2) increases their efficiency, safeguards the fuel pipelines from icing, and protects the CTs from fuel condensates.

For permitting and emissions estimating purposes, this application assumes that the Fuel Gas Heater will operate 8,760 hr/yr.

1.1.4 Emergency Generator

A 2,000 kW Emergency Generator (EG-1) will be used for emergency backup electric power. The fuel for the Emergency Generator will be ULSD with a sulfur content no greater than 0.0015% by weight. The Emergency Generator will be periodically operated for short periods per manufacturer's maintenance instructions to ensure operational readiness in the event of an emergency.

The ULSD fuel for the Emergency Generator will be stored in a 3,000-gallon (nominal) Emergency Generator Tank (ST-2).

The Emergency Generator will operate no more than 100 hr/yr for maintenance and readiness testing. Other than maintenance and readiness testing, these engines will be used only for emergency purposes. For permitting and emissions estimating purposes, this application assumes that the Emergency Generator will operate a maximum of 100 hr/yr.

1.1.5 Fire Water Pump

A 315 hp Fire Water Pump (FP-1) will be used for plant fire protection. The fuel for the Fire Water Pump will also be ULSD, with a sulfur content no greater than 0.0015% by weight. The Fire Water Pump will also be periodically operated for short periods per manufacturer's maintenance instructions to ensure operational readiness in the event of an emergency.

The ULSD fuel for the Fire Water Pump will be stored in a 500-gallon (nominal) Fire Water Pump Tank (ST-1).

The Fire Water Pump will operate no more than 100 hr/yr for maintenance and readiness testing. Other than maintenance and readiness testing, the Fire Water Pump will be used only for emergency purposes. For permitting and emissions estimating purposes, this application assumes that the Fire Water Pump will operate a maximum of 100 hr/yr.

1.1.6 Cooling Tower

A wet, mechanical draft Cooling Tower (BCT-1) will be used to cool the plant's condenser, which is used to turn saturated steam from the steam turbine generator back into water for re-use in the HRSGs. Make-up water is added to the Cooling Tower as necessary to account for water evaporated in the Cooling Tower. Exhaust from the Cooling Tower will be vented through emission point BCT-1.

The make-up cooling water for the Cooling Tower will come from the Ohio River. High efficiency drift eliminators will be used to minimize cooling tower drift and thus control particulate matter (PM) emissions from the Cooling Tower. For permitting and emissions estimating purposes, this application assumes that the Cooling Tower will operate 8,760 hr/yr.

1.2 PROJECT SCHEDULE

ESC wishes to obtain WVDEP air permit approval by October 2016 to provide sufficient time for equipment ordering, fabrication, construction, and installation, and achieve commercial operation in June 2020.

1.3 APPLICATION ORGANIZATION

This application is organized into the following major sections:

- Section 2.0 provides a description of the existing site conditions;
- Section 3.0 includes the analysis of potential air quality impacts from the Project; and
- Section 4.0 summarizes conclusions;
- Section 5.0 discusses the air permit application;
- Appendix A contains conceptual plant layout drawings;
- Appendix B contains RACT/BACT/LAER Clearinghouse (RBLC) search summaries;
- Appendix C contains a supplemental discussion and cost effectiveness evaluation for GHG BACT;
- Appendix D contains a comparison of combustion turbine GHG emission rates and heat rates;
- Appendix E contains completed and certified versions of all the relevant WVDEP Division of Air Quality application forms and attachments; and
- Appendix F contains a check for $14,500, payable to the "WVDEP Air Pollution Control Fund", for the applicable air permitting fees.

2.0 EXISTING AIR QUALITY

The United States Environmental Protection Agency (USEPA) and state agencies, such as the West Virginia Department of Environmental Protection (WVDEP), monitor concentrations of the "criteria" pollutants NO_X, sulfur dioxide (SO_2), PM, ozone, CO, and lead (Pb) in ambient air at various locations throughout the United States. If monitoring data indicates that the concentration of a pollutant exceeds the National Ambient Air Quality Standard (NAAQS) in any area, then that area is classified as a "non-attainment area" for that pollutant, meaning that the area is not meeting the ambient standard. Conversely, any area in which the concentration of a criteria pollutant is below the NAAQS is classified as an "attainment area" indicating that the NAAQS is being met.

The attainment/non-attainment designations are made by states and USEPA on a pollutant-by-pollutant basis. Therefore, the air quality in an area may be designated attainment for some pollutants and non-attainment for other pollutants at the same time. For example, many cities are designated non-attainment for ozone, but are in attainment for the other criteria pollutants.

Since the late 1980s, the NAAQS for PM covered "PM_{10}," which represents PM less than 10 microns in diameter. In 1997, USEPA revised the NAAQS for PM and added a new standard for $PM_{2.5}$, which is PM less than 2.5 microns in diameter. $PM_{2.5}$, or "fine particulates," is a pollutant of concern because the small size of the particles allows them to be inhaled deeply into the lungs, and the particles contribute to atmospheric haze and other air quality issues.

The Project location in Brooke County is in attainment of the NAAQS for all criteria pollutants except SO_2, which is discussed in more detail below.

2.1 SO_2 (2010 1-HOUR NAAQS)

Effective October 4, 2013, parts of Brooke County, specifically the Clay, Franklin, and Washington Tax Districts, are designated as non-attainment for the 2010 1-hour SO_2 NAAQS of 75 parts per billion (ppb). The proposed Project is located in the Clay Tax District. Therefore, the proposed Project area is considered non-attainment for SO_2.

3.0 AIR PERMITTING CONSIDERATIONS

3.1 OVERVIEW

Potential air pollutant emissions from the Project are evaluated to ensure that the Project will meet all applicable regulatory limits and requirements. The proposed Project is also evaluated to determine whether its emissions are predicted to have any significant impacts on the existing ambient air quality in the region. This evaluation is to be completed through air quality dispersion modeling studies that predict the ambient air concentrations resulting from emission sources associated with the proposed Project. This ambient impact assessment will follow a protocol that is being filed separately simultaneous with this application.

3.2 REGULATORY CONSIDERATIONS

The USEPA has defined concentration-based NAAQS for several pollutants, which are set at concentrations considered protective of the public health and welfare. Specifically, the NAAQS have been defined for six (6) "criteria" pollutants, which are PM, SO_2, CO, nitrogen dioxide (NO_2), ozone, and Pb. Three (3) forms of PM are regulated: total suspended particulate (known as PM or TSP), PM_{10}, and $PM_{2.5}$. The air quality in Brooke County and the vicinity of the proposed Project is in attainment (or unclassifiable) for all pollutants except SO_2. As discussed in Section 2.1 above, the part of Brooke County in which the proposed project is located is classified as non-attainment for SO_2.

Potential emissions from new and modified sources in attainment areas are evaluated through the Prevention of Significant Deterioration (PSD) program. The goal of the PSD program is to ensure that emissions from major sources do not degrade air quality. Triggering PSD requires air pollution control known as the Best Available Control Technology (BACT) and additional impact assessments.

The proposed ESC Project has the potential to emit the criteria pollutants PM, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and Pb; ozone precursors; several hazardous air pollutants (HAPs); and greenhouse gases (GHGs).

Potential emissions from new and modified emission sources in non-attainment areas are evaluated through the Non-Attainment New Source Review (NA-NSR) permitting program. The goal of the NA-NSR program is to allow construction of new emission sources and modifications to existing sources, while ensuring that progress is made towards attainment of the NAAQS. Triggering NA-NSR for a given pollutant requires mitigation of adverse air quality impacts through implementation of the most stringent levels of air pollution control, known as the Lowest Achievable Emission Rate (LAER), as well as requiring emission "offsets" to be obtained for subject pollutants.

Because the area in which the proposed Project will be located is non-attainment for SO_2, and attainment/unclassifiable for the other criteria pollutants, applicability of both the PSD and NA-NSR regulations were assessed to ensure no adverse impacts would be caused by the Project. These evaluations are contained in Sections 3.4 (PSD) and 3.5 (NA-NSR).

Other federal and State air quality regulations apply to the proposed Project. These regulations apply either because of the type of emission source to be constructed, or because of the pollutants to be emitted from the Project. These regulations, discussed in Section 3.6, specify limits on pollutant emissions, and impose monitoring, recordkeeping, and reporting requirements.

3.3 AIR CONTAMINANT EMISSIONS

3.3.1 Emission Sources

The primary emission sources that occur as part of the planned ESC Project include:

- Two (2) GE Frame 7HA.01 advanced combined-cycle Combustion Turbines, each with a design maximum heat input of 2,907 MMBtu/hr, and each with a HRSG not equipped with duct burners;
- One (1) 111.9 MMBtu/hr Auxiliary Boiler;
- One (1) 2,000 kW Emergency Generator;
- One (1) 315 hp Emergency Fire Water Pump;
- One (1) wet mechanical draft Cooling Tower.

Table 3-1 summarizes the specifications for the proposed equipment.

Table 3-1 Project Air Contaminant Emission Sources

Component (Number of Units)	Type/Model	Size/Capacity	Fuel(s)	Proposed Maximum Operations
Combustion Turbines (2) with HRSGs	GE Frame 7HA.01	2,907 MMBtu/hr (per CT)	Natural gas (raw or pipeline quality), ethane or blend of these fuels (up to 100% of either fuel)	8,760 hr/yr per CT
Auxiliary Boiler (1)	To be determined prior to construction	111.9 MMBtu/hr	Natural gas (raw or pipeline quality), ethane or blend of these fuels (up to 100% of either fuel)	4,576 hr/yr
Fuel Gas Heater (1)	To be determined prior to construction	5.4 MMBtu/hr	Natural gas (raw or pipeline quality), ethane or blend of these fuels (up to 100% of either fuel)	8,760 hr/yr
Emergency Generator (1)	To be determined prior to construction	2,000 kW	ULSD	100 hr/hr (limited to emergency use and 100 hr/yr for maintenance and readiness testing)
Emergency Fire Water Pump (1)	To be determined prior to construction	315 hp	ULSD	100 hr/yr (limited to emergency use and 100 hr/yr for maintenance and readiness testing)
Cooling Tower (1)	To be determined prior to construction	204,000 gallons per minute (gpm)	N/A	8,760 hr/yr

3.3.2 *Potential Emissions*

Potential emissions from the Project emission sources are estimated using various calculation methodologies including vendor data, emission factors from USEPA's Compilation of Air Pollutant Emission Factors (AP-42) publication, material balances, New Source Performance Standards (NSPS) emission standards, USEPA's Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98), and/or engineering calculations. Backup emission calculations are provided in Attachment N of the Air Permit Application Forms package in **Appendix D** of this application.

3.3.2.1 Combustion Turbines

3.3.2.1.1 Steady State Operations

Potential emissions of NO_x, CO, SO_2, PM, PM_{10}, $PM_{2.5}$, VOC, sulfuric acid (H_2SO_4), and carbon dioxide (CO_2) from the Combustion Turbines are based on vendor specifications provided by GE and take into account the effects of control technology.

Potential short-term (lb/hr) emission rates are based on the GE data, which encompasses the expected range of combustion turbine operating loads and ambient temperatures, with and without the use of inlet air evaporative cooling. The GE data addresses natural gas firing, the firing of a blend of natural gas and ethane, and firing 100% ethane. From the GE data, the potential short-term emission rates for NO_x, CO, SO_2, PM, PM_{10}, $PM_{2.5}$, VOC, H_2SO_4, and CO_2 for the Combustion Turbines are established by selecting the maximum lb/hr emission rates across the expected operating load and ambient temperature ranges. SO_2 emissions are adjusted to reflect a revised sulfur content specification of 0.4 gr/100 scf. Potential annual (tons/yr) emissions are calculated by multiplying the maximum short-term emission rates by 8,760 hr/yr, then dividing by 2,000 to convert pounds to tons.

Lead emissions are estimated using AP-42 emission factors.

Maximum short-term and annual emissions from the Combustion Turbines during steady state operations are summarized in Table 3-2.

Table 3-2 Steady State Emissions – Combustion Turbines[1]

Pollutant	1 CT Maximum Short Term Emissions (lb/hr)	1 CT Maximum Annual Emissions (ton/yr)	2 CTs Maximum Short Term Emissions (lb/hr)	2 CTs Maximum Annual Emissions (ton/yr)
VOC[2]	7.43	32.5	14.9	65.1
NO_x[3]	21.4	93.7	42.8	187.5
CO	13.0	56.9	26.0	113.9
SO_2	4.56	20.0	9.1	39.9
$PM/PM_{10}/PM_{2.5}$	15.5	67.9	31.0	135.8
Pb	0.0014	0.006	0.003	0.012
H_2SO_4	2.93	12.82	5.86	25.6
CO_2	383,000	1,677,540	766,000	3,355,080
CH_4	6.4	28.1	12.8	56.1
N_2O	0.6	2.8	1.3	5.6
GHG (Mass Basis)	383,007	1,677,571	766,014	3,355,142
GHG (CO_2e Basis)	383,351	1,679,078	766,702	3,358,156

(1) Emissions are post-HRSG stack emissions.
(2) VOC emissions are expressed as methane (CH_4).
(3) NO_x emissions are expressed as nitrogen dioxide (NO_2).

3.3.2.1.2 *Startups and Shutdowns*

For purposes of the application, a Combustion Turbine is estimated to undergo 260 startups per year. Of these 260 startups, approximately 208 are expected to be hot startups, 40 are expected to be warm startups, and 12 are expected to be cold startups. Accordingly, approximately 260 shutdowns per year are expected.

A hot start is defined as a start following 8 hours of shutdown or less. A cold start is defined as a start following 72 hours of shutdown or more. Any start following more than 8 hours of shutdown or less than 72 hours of shutdown is classified as a warm start. Table 3-3 summarizes startup and shutdown emissions and event durations for each Combustion Turbine, as well as the total startup and shutdown emissions from the two (2) Combustion Turbines. To maximize operational flexibility, given the unpredictability of the number and types of startup and shutdown events that may actually occur, ESC is requesting combined annual emission limits for startup and shutdown events in the air permit, without a limit on the specific numbers of hot, warm, and cold starts.

Table 3-3 Startup and Shutdown Emissions – Combustion Turbines[(1), (2)]

Type	Pollutant	Emissions (lb/event)	Duration (min/event)	No. Events per Year	Total Duration (hr/yr)	Emissions (lb/yr)	Emissions (tons/yr) 1 CT	Emissions (tons/yr) 2 CT
	NO_x (as NO_2)							
Startups	Hot	38	20	208	69.3	7,904	4.0	7.9
	Warm	92	40	40	26.7	3,680	1.8	3.7
	Cold	174	55	12	11.0	2,088	1.0	2.1
Shutdowns		3.4	12	260	52.0	884	0.4	0.9
					Total	14,556	7.3	14.6
	CO							
Startups	Hot	156	20	208	69.3	32,448	16.2	32.4
	Warm	161	40	40	26.7	6,440	3.2	6.4
	Cold	693	55	12	11.0	8,316	4.2	8.3
Shutdowns		125	12	260	52.0	32,500	16.3	32.5
					Total	79,704	39.9	79.7
	VOC (as CH_4)							
Startups	Hot	14	20	208	69.3	2,912	1.5	2.9
	Warm	15	40	40	26.7	600	0.3	0.6
	Cold	71	55	12	11.0	852	0.4	0.9
Shutdowns		28	12	260	52.0	7,280	3.6	7.3
					Total	11,644	5.8	11.6
	PM/PM_{10}/$PM_{2.5}$							
Startups	Hot	3.3	20	208	69.3	686	0.3	0.7
	Warm	6.7	40	40	26.7	268	0.1	0.3
	Cold	9.2	55	12	11.0	110	0.06	0.11
Shutdowns		2	12	260	52.0	520	0.3	0.5
					Total	1,585	0.8	1.6

(1) Startup and shutdown emission rates obtained from GE performance data.
(2) Startup and shutdown emission rates were not calculated for SO_2, Pb, H_2SO_4, or GHGs. Worst-case emissions for these pollutants were assumed to result from steady-state operation.

3.3.2.1.3 *Total Combustion Turbine Emissions*

Table 3-4 summarizes the total annual emissions from the Combustion Turbines, including emissions from steady state operations, and startup and shutdown events.

Table 3-4 Total Emissions – Combustion Turbines[1]

Pollutant	Maximum Annual Steady State Emissions: 2 CTs (tons/yr)	Startup and Shutdown Emissions: 2 CTs (tons/yr)	Total Emissions: 2 CTs (tons/yr)
VOC	65.1	11.6	76.7
NO_x	187.5	14.6	202.0
CO	113.9	79.7	193.6
SO_2	39.9	-- [1]	39.9
$PM/PM_{10}/PM_{2.5}$	135.8	1.6	137.4
Pb	0.012	-- [1]	0.012
H_2SO_4	25.6	-- [1]	25.6
GHG (CO_2e Basis)	3,358,156	-- [1]	3,358,156

[1] Startup and shutdown emission rates were not calculated for SO_2, Pb, H_2SO_4, or GHGs. Worst-case emissions for those pollutants were assumed to result from steady-state operation.

3.3.2.2 *Auxiliary Boiler*

Auxiliary Boiler emissions are based on performance information from a potential vendor. PM_{10} and $PM_{2.5}$ emissions are assumed equal to PM emissions. Short-term SO_2 emissions are conservatively based on a sulfur content of the fuel of 0.4 grains per 100 standard cubic feet (gr/100 scf). In addition, AP-42 factors are used for estimating emissions of Pb and HAPs from the boiler. HAP emissions are discussed in Section 3.3.3. The following assumptions were made to calculate Auxiliary Boiler emissions:

- Use of natural gas (raw or pipeline quality), ethane, or a blend of these fuels;
- Use of low-NO_x burners with flue gas recirculation (FGR) for NO_x control; and
- Maximum annual heat input of 512,140 MMBtu per year (MMBtu/yr), which is equivalent to 4,576 hr/yr of operation at a maximum heat input of 111.9 MMBtu/hr.

Potential emissions of regulated pollutants from the Auxiliary Boiler are summarized in Table 3-5.

Table 3-5 Potential Emissions - Auxiliary Boiler

Pollutant	**Maximum Short Term Emission Rate (lb/ hr)**	**Maximum Annual Emissions (tons/yr)**
VOC	0.90	2.05
NO_x	1.23	2.82
CO	4.14	9.47
SO_2	0.12	0.28
$PM/PM_{10}/PM_{2.5}$	0.87	1.99
Pb	5.43E-05	1.24E-04
H_2SO_4	9.51E-03	2.18E-02
GHG (CO_2e Basis)	14,768	33,790

3.3.2.3 Fuel Gas Heater

The vendor for the Fuel Gas Heater has not yet been selected. Fuel Gas Heater Emissions are estimated using emission factors from AP-42. PM_{10} and $PM_{2.5}$ emissions are assumed to equal PM emissions. Short-term SO_2 emissions were conservatively based on a fuel sulfur content of 0.4 gr/100 scf. HAP emissions are discussed in Section 3.3.3. The following assumptions were made to calculate Fuel Gas Heater emissions:

- Use of natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane; and
- 8,760 hr/yr of operation.

Potential emissions from the Fuel Gas Heater are summarized in Table 3-6.

Table 3-6 Potential Emissions - Fuel Gas Heater

Regulated Pollutant	Maximum Short Term Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
VOC	0.04	0.17
NO_X	0.19	0.85
CO	0.21	0.92
SO_2	0.01	0.03
$PM/PM_{10}/PM_{2.5}$	0.04	0.18
Pb	2.62E-06	1.15E-05
H_2SO_4	4.59E-04	2.01E-03
GHG (CO_2e Basis)	712	3,120

3.3.2.4 *Emergency Generator and Fire Water Pump*

Potential emissions of regulated pollutants from the Emergency Generator and Fire Water Pump are summarized in Tables 3-7 and 3-8, respectively. The vendor for the Emergency Generator has not yet been selected. Emissions for the Emergency Generator were estimated based on emission factors from potential vendors, and/or the applicable NSPS emission standards for stationary compression ignition (CI) reciprocating internal combustion engines (RICE) specified in 40 CFR 60, Subpart IIII.

PM_{10} and $PM_{2.5}$ emissions are assumed to equal PM emissions. The emission factors assume operation at full load, which is reasonable given its expected use.

The vendor for the Fire Water Pump has not yet been selected. However, the Fire Water Pump emissions will not exceed the emission limits specified in NSPS Subpart IIII. As such, NO_x, PM and PM_{10}, and CO emissions from the Fire Water Pump are based on the applicable emission standards for these pollutants in NSPS Subpart IIII. Emissions of VOC, SO_2 and HAPs and were based on AP-42 emission factors.

Per 40 CFR 60, Subpart IIII, total hours for maintenance and readiness testing will not exceed 100 hr/yr. Other than maintenance and readiness testing, these units are utilized only for emergency purposes, and guidance for estimating potential emissions from emergency units is to assume maximum annual operation of 100 hr/yr. For both the Fire Water Pump and the Emergency Generator, potential emissions are calculated based on 100 hr/yr of operation.

HAP emission estimates are discussed in Section 3.3.3.

Table 3-7 Potential Emissions - Emergency Generator

Pollutant	Emergency Generator Maximum Short Term Emissions (lb/hr)	Emergency Generator Maximum Annual Emissions (tons/yr)
VOC	0.65	0.03
NO_x	32.22	1.61
CO	1.77	0.09
SO_2	0.03	0.001
$PM/PM_{10}/PM_{2.5}$	0.15	0.01
Pb	---	---
H_2SO_4	---	---
GHG (CO_2e Basis)	3,161	158

Table 3-8 Potential Emissions - Fire Water Pump

Pollutant	Fire Water Pump Maximum Short Term Emissions (lb/hr)	Fire Water Pump Maximum Annual Emissions (tons/yr)
VOC	0.06	0.003
NO_x	1.87	0.09
CO	0.31	0.02
SO_2	0.003	1.6E-04
$PM/PM_{10}/PM_{2.5}$	0.05	0.003
Pb	---	---
H_2SO_4	---	---
GHG (CO_2e Basis)	344	17

3.3.2.5 *Cooling Tower*

Potential emissions from the proposed Cooling Tower are limited to PM emissions. The drift emissions from the Cooling Tower are limited to the particulate associated with dissolved solids in liquid droplets that become entrained in the air stream exiting the Cooling Tower. The particle size distribution is dependent on several factors including the design of the Cooling Tower, the efficiency of the drift eliminators, and the concentration of total dissolved solids (TDS) in the circulating water.

PM emission estimates from the proposed Cooling Tower are based on a water circulation rate of 204,000 gallons per minute (gpm), a drift rate of

0.0005% of the circulating water rate, and a maximum TDS content in the circulating water of 12,000 milligrams per liter (mg/L).

Based on the Reisman and Frisbie method, "Calculating Realistic PM_{10} Emissions from Cooling Towers" (Reisman and Frisbie, 2002), PM_{10} emissions are estimated to be less than 5% of the PM emissions at the assumed TDS concentration (i.e. a maximum of 12,000 mg/L in the circulating water). Likewise, $PM_{2.5}$ emissions are estimated to be less than 0.1% of the PM emissions at the assumed TDS concentration.

Potential emissions from the Cooling Tower are summarized in Table 3-9.

Table 3-9 Potential Emissions – Cooling Tower

Pollutant	Maximum Short Term Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
PM	6.15	26.9
PM_{10}	0.27	1.2
$PM_{2.5}$	0.01	0.022

3.3.2.6 Project Emissions Summary

Table 3-10 summarizes the potential short-term emissions rates for the proposed Project. Potential annual emissions from the Project are summarized in Table 3-11.

Table 3-10 Short-Term Emissions Summary

Emission Unit	VOC	NO_X	CO	SO_2	PM	PM_{10} and $PM_{2.5}$[5]	Pb	H_2SO_4
Combustion Turbine (each)[1]	7.43 lb/hr	21.4 lb/hr	13.0 lb/hr	4.6 lb/hr	15.5 lb/hr	15.5 lb/hr	0.001 lb/hr	2.93 lb/hr
Auxiliary Boiler [2]	0.90 lb/hr	1.23 lb/hr	4.14 lb/hr	0.12 lb/hr	0.87 lb/hr	0.87 lb/hr	---	---
Fuel Gas Heater [2]	0.04 lb/hr	0.19 lb/hr	0.21 lb/hr	0.01 lb/hr	0.04 lb/hr	0.04 lb/hr	---	---
Emergency Generator [3]	0.65 lb/hr	32.22 lb/hr	1.77 lb/hr	0.03 lb/hr	0.15 lb/hr	0.15 lb/hr	---	---
Fire Water Pump [3]	0.06 lb/hr	1.87 lb/hr	0.31 lb/hr	0.003 lb/hr	0.05 lb/hr	0.05 lb/hr	---	---
Cooling Tower [4]	---	---	---	---	6.15 lb/hr	0.27/0.01 lb/hr	---	---

[1]Emissions based on GE-supplied data, except for Pb, which is based on AP-42, Section 1.4.

[2]All emissions factors from a potential vendor, except for SO_2 and Pb, which are based on AP-42, Section 1.4.

[3]NO_x, CO, VOC, PM, and PM_{10} emission factors based on NSPS Subpart IIII and/or vendor information. SO_2 emissions are based on the maximum sulfur content of ULSD fuel (0.0015% by weight).

[4]Emissions based on a maximum TDS concentration of 12,000 mg/L in the circulating water, and the Reisman/Frisbie method to estimate the PM_{10} and $PM_{2.5}$ fractions.

[5]Assumes $PM_{2.5}$ is equivalent to PM_{10}, except for the Cooling Tower.

Table 3-11 Annual Emissions Summary (tons/yr)

Unit	VOC	NO_x	CO	SO_2	PM_{10}	PM	$PM_{2.5}$	Pb	H_2SO_4	CO_2e
CTs (2): Steady State	65.1	187.5	113.9	39.9	135.8	135.8	135.8	0.012	25.6	3,358,156
CTs (2): Startups & Shutdowns	11.6	14.6	79.7	--	1.6	1.6	1.6	-- (1)	--	--
Auxiliary Boiler	2.05	2.82	9.47	0.28	1.99	1.99	1.99	1.2E-04	0.022	33,790
Fuel Gas Heater	0.17	0.85	0.92	0.03	0.18	0.18	0.18	--	--	3,120
Emergency Generator	0.03	1.61	0.09	0.001	0.01	0.01	0.01	--	--	158
Fire Water Pump	0.003	0.09	0.02	1.59E-04	0.003	0.003	0.003	--	--	17
Cooling Tower	--	--	--	--	1.20	26.95	0.02	--	--	--
Circuit Breakers	--	--	--	--	--	--	--	--	--	58
Total	**79.0**	**207.4**	**204.1**	**40.3**	**140.8**	**166.5**	**139.6**	**0.013**	**25.7**	**3,395,300**

3.3.3 Hazardous Air Pollutant Emissions

With the exception of formaldehyde emissions from the CTs/HRSGs, appropriate AP-42 sections (Section 1.4 for External Combustion Sources - Natural Gas, Section 3.1 for Stationary Internal Combustion Sources – Stationary Gas Turbines, Section 3.3 for Gasoline and Diesel Industrial Engines, and Section 3.4 for Large Stationary Diesel and All Stationary Dual-fuel Engines) provide emission factors for organic and metal compounds resulting from combustion, some of which are HAPs.

Formaldehyde emissions from the CTs/HRSGs are based on an EPA emission factor for CTs.[2] The formaldehyde emission factor of 3.0E-04 was obtained by taking the formaldehyde factor in Table 3 of EPA's August 21, 2001 memo of 2.92E-03 lb/MMBtu, which was rounded up to 3.0E-03

[2] EPA, Office of Air Quality Planning and Standards (OAQPS), Emission Standards Division, Combustion Group, *Hazardous Air Pollutant (HAP) Emission Control Technology for New Stationary Combustion Turbines*, Sims Roy, Docket A-95-51, August 21, 2001, Table 3.

lb/MMBtu. A control efficiency of 90% was then applied to account for the use of Oxidation Catalysts, which results in a controlled formaldehyde emission factor of 3.0E-04 lb/MMBtu.

A removal efficiency of 90% was applied to all other organic HAP emissions from the CTs/HRSGs, to account for the use of Oxidation Catalysts.

Estimated HAP emissions from the proposed Project are summarized in Table 3-12. A facility would be considered a "major" source of HAPs if it has the potential to emit 10 tons/yr or more of any individual HAP, or 25 tons/yr or more of all HAPs combined. As shown in Table 3-12, maximum emissions of any single HAP are 7.66 tons/yr (formaldehyde), and estimated total HAP emissions from the Project are 8.9 tons/yr. Therefore, the Project is not a major source of HAPs.

Table 3-12 HAP Emissions Summary

Hazardous Air Pollutant (HAP)	Two CTs (lb/hr)	Auxiliary Boiler (lb/hr)	Fuel Gas Heater (lb/hr)	Emergency Generator (lb/hr)	Fire Water Pump (lb/hr)	Facility Total (tons/yr)
2-Methylnaphthalene	NA	2.61E-06	1.26E-07	NA	NA	6.52E-06
Acetaldehyde	2.33E-02	NA	NA	4.87E-04	1.61E-03	1.02E-01
Acrolein	3.72E-03	NA	NA	1.52E-04	7.88E-04	1.63E-02
Arsenic	NA	2.17E-05	1.05E-06	NA	NA	5.43E-05
Benzene	6.98E-03	2.28E-04	1.10E-05	1.50E-02	1.96E-03	3.20E-02
Cadmium	NA	NA	NA	NA	NA	0.00E+00
Chromium	NA	1.52E-04	7.34E-06	NA	NA	3.80E-04
Cobalt	NA	9.13E-06	4.40E-07	NA	NA	2.28E-05
Dichlorobenzene	NA	1.30E-04	6.29E-06	NA	NA	3.26E-04
Ethylbenzene	1.86E-02	NA	NA	NA	NA	8.15E-02
Fluoranthene	NA	3.26E-07	1.57E-08	NA	NA	8.15E-07
Fluorene	NA	3.04E-07	1.47E-08	NA	NA	7.60E-07
Formaldehyde	1.74E+00	8.15E-03	3.93E-04	1.52E-03	2.48E-03	7.66E+00
Hexane	NA	1.96E-01	9.43E-03	NA	NA	4.89E-01
Manganese	NA	4.13E-05	1.99E-06	NA	NA	1.03E-04
Mercury	NA	2.83E-05	1.36E-06	NA	NA	7.06E-05
Naphthalene	7.56E-04	6.63E-05	3.20E-06	2.51E-03	1.78E-04	3.61E-03
Nickel	NA	2.28E-04	1.10E-05	NA	NA	5.70E-04
Phenanathrene	NA	1.85E-06	8.91E-08	NA	NA	4.62E-06
POM	1.28E-03	NA	NA	4.10E-03	3.53E-04	5.82E-03
Pyrene	NA	5.43E-07	2.62E-08	NA	NA	1.36E-06
Toluene	7.56E-02	3.69E-04	1.78E-05	5.43E-03	8.59E-04	3.32E-01
Xylenes	3.72E-02	NA	NA	3.73E-03	5.99E-04	1.63E-01
Maximum Individual HAP						**7.66**
Total HAPs						**8.9**

3.3.4 Greenhouse Gas Emissions

3.3.4.1 Combustion Equipment

Potential GHG emissions [i.e. CO_2, methane (CH_4) and nitrous oxide (N_2O)] were estimated for all combustion sources associated with the Project. Potential emissions of CO_2 from the Combustion Turbines are based on vendor specifications provided by GE. For all other pollutants and combustion equipment, the emission factors and methodology were obtained from USEPA's Mandatory Greenhouse Gas Reporting Rule at 40 CFR 98. GHG emissions on an individual and carbon dioxide equivalent (CO_2e) basis are summarized in Table 3-12. In 40 CFR 98, USEPA defines CO_2e emissions to be equivalent to CO_2 emissions plus 25 times the CH_4 emissions plus 298 times the N_2O emissions, utilizing the applicable Global Warming Potentials (GWPs).

Potential GHG emissions from the Combustion Turbines, Auxiliary Boiler, Fuel Gas Heater, Emergency Generator, and Fire Water Pump are all based on their maximum annual heat inputs, the CO_2, CH_4 and N_2O emission factors listed in 40 CFR 98, Subpart C (General Stationary Fuel Combustion Sources), and the applicable GWPs.

3.3.4.2 Circuit Breakers

The Project includes the installation of circuit breakers that contain sulfur hexafluoride (SF_6), which is a GHG. Planned SF_6-containing circuit breakers include two (2) Generator Circuit Breakers, each with approximately 25 pounds (lb) of SF_6, and three (3) Switchyard Breakers, each with approximately 325 lb of SF_6.

SF_6 is a fluorinated compound with unique chemical properties that make it an efficient electrical insulator used for electrical insulation, arc quenching, and current interruption in high-voltage electrical equipment. SF_6 is used in sealed and safe systems, which under normal circumstances do not leak gas to the atmosphere. Hence, SF_6 leakage into the atmosphere is expected to be minimal.

Potential SF_6 fugitive emissions were calculated assuming a worst-case leak rate of 0.5% per year, which has been taken from USEPA's technical paper titled, "SF_6 Leak Rates from High Voltage Circuit Breakers - EPA Investigates Potential Greenhouse Gas Emissions Source," by J. Blackman, Program Manager, USEPA and M. Averyt, ICF Consulting, and Z.

Taylor, ICF Consulting. This leak rate was applied to the number of components and anticipated SF_6 content of each component, as described above. The annual CO_2e emission rate was calculated by multiplying the mass emission rate of SF_6 by its GWP of SF_6, 22,800.

Potential annual GHG emissions from the Project are summarized in Table 3-13.

Table 3-13 GHG Emissions Summary

Unit	CO_2 (tons/yr)	CH_4 (tons/yr)	N_2O (tons/yr)	SF_6 (tons/yr)	CO_2e (tons/yr)
CTs	3,355,080	56.1	5.6	--	3,358,156
Auxiliary Boiler	33,646	1.7	0.3	--	33,790
Fuel Gas Heater	3,107	0.2	0.03	--	3,120
Emergency Generator	158	0.01	0.0013	--	158.1
Fire Water Pump	17	0.001	0.0001	--	17.2
Circuit Breakers	--	--	--	2.56E-03	58.4
Total	**3,392,008**	58	6	2.56E-03	**3,395,300**

Emissions estimated based on 40 CFR 98, Subpart C.
CO_2e = CO_2 emissions + 25(CH_4 emissions) + 298(N_2O emissions) + 22,800(SF_6 emissions)

3.3.5 *Ammonia Emissions*

The SCRs that will control NO_x emissions from the Combustion Turbines requires the injection of aqueous ammonia with a concentration of less than 20% by weight into the exhaust gas streams. The aqueous ammonia will be injected via injection grids located upstream of each SCR catalyst. The SCR catalyst beds provide active sites where, as the exhaust gases pass through the beds, the vast majority of the ammonia reacts with NO and NO_{x2} in the exhaust stream, reducing it to elemental nitrogen and water vapor.

Small amounts of unreacted ammonia that pass through the catalysts and are emitted to the atmosphere are known as "ammonia slip". A review of recently permitted combined-cycle natural gas-fired combustion turbines projects, including those that have included similar model GE units (Frame 7HA), indicates that many are permitted with ammonia slip limits of 5 ppmvd @ 15% O_2. Accordingly, ESC proposes an ammonia slip design basis of 5 ppmvd @ 15% O_2, which is the basis for ammonia slip emission calculations.

3.4 PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

3.4.1 Applicability

The PSD regulations ensure that the air quality in attainment areas does not significantly deteriorate beyond baseline concentration levels. PSD regulations specifically apply to the construction of EPA-defined major stationary sources in areas designated as attainment or unclassified attainment for at least one of the criteria pollutants. WVDEP has adopted EPA's PSD regulations in their entirety and has incorporated them by reference in 45 CSR 14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration). New major stationary sources are defined either as:

- Any one of 28 specific source categories, including fossil fuel-fired steam electric plants with a heat input capacity greater than 250 MMBtu/hr, that have the potential to emit (PTE) of 100 tons/yr or more of any regulated NSR pollutant;
- Any stationary source not within the specific source categories, with the potential to emit 250 tons/yr or more of any regulated NSR pollutant; or
- Any physical change that would occur at a stationary source not otherwise qualifying under the previous criteria as a major stationary source, if the change would constitute a major stationary source by itself.

Combined-cycle CTs with HRSGs are considered fossil fuel-fired steam electric plants. Therefore, the applicable PSD major source threshold for the Project is 100 tons/yr of potential emissions. If it is determined that a pollutant exceeds the PSD major source threshold, then each of the remaining pollutants is subject to PSD review if the PTE exceeds the Significant Emission Rates (SERs) listed in Table 3-14. As shown in Table 3-14, the pollutants subject to PSD review are NO_x, CO, VOC, SO_2, PM, PM_{10}, $PM_{2.5}$, H_2SO_4, and GHG.

SO_2 is a non-attainment pollutant. Therefore, SO_2 emissions are not subject to PSD requirements. Rather, SO_2 emissions must be addressed under NA-NSR requirements. However, as discussed further in Section 3.5, SO_2 emissions do not trigger NA-NSR requirements.

Table 3-14 PSD and NA-NSR Applicability Summary

Pollutant	Potential Project Emissions (tons/yr)	PSD Significant Emissions Rate (tons/yr)	NA-NSR Major Threshold (tons/yr)	Triggers PSD or NA-NSR?
NO_X	207.4	40	PSD	**Yes**
CO	204.1	100	PSD	**Yes**
PM[1]	166.5	25	PSD	**Yes**
PM_{10}[1]	140.8	15	PSD	**Yes**
$PM_{2.5}$[1]	139.6	10	PSD	**Yes**
VOC	79.0	40	PSD	**Yes**
Pb	0.01	0.6	PSD	**No**
SO_2	40.3	NA-NSR	100	**No**
H_2SO_4	25.7	7	PSD	**Yes**
GHG (CO_2e)	3,395,300	100,000	PSD	**Yes**

[1] $PM_{2.5}$ and PM_{10} assumed to be equal to total PM, except for the Cooling Tower.

PSD review for major stationary sources includes the following requirements:

- Assessment of the existing air quality;
- Use of analytic dispersion models to demonstrate that the allowable emissions will not cause or contribute to air pollution in violation of a NAAQS or any applicable maximum allowable increase over baseline concentrations in the area (allowable PSD Increments for designated Class I, Class II, or Class III areas), and that the source will not adversely impair visibility, soils, and vegetation;
- Demonstration that BACT has been applied to the subject emission sources; and
- Ensuring that all emissions from the new source will meet each applicable emissions limitation under the State Implementation Plan (SIP) and each applicable emissions standard of performance under 40 CFR Parts 60 and 61 (NSPS and NESHAPs, respectively).

Under the PSD program, Class I areas are assigned to protect Federal wilderness areas such as national parks and wildlife refuges, where the least amount of air quality deterioration is allowed. Class I areas are designated as pristine natural areas or areas of natural significance. The Class II designation is used for all other areas, except heavily industrialized zones, which are Class III designations (40 CFR 51.166). Each classification differs in terms of the amount of growth allowed (PSD Increment) before significant deterioration of air quality occurs. If a proposed source is located within 100 km (62 miles) of a Class I area, the impacts must be evaluated at these areas based on the more stringent Class I PSD Increments, which are ambient increases in pollutant concentrations that must be met for a project to be approved. In addition, Federal Land Managers (FLMs) have discretion in determining which sources must evaluate impacts on Class I areas, often requiring Class I Area impact analyses for sources located outside the 100 km radius.

The Class I areas and distances from the Project site are:

- Otter Creek Wilderness – 165 km, managed by the US Forest Service (USFS),
- Dolly Sods Wilderness – 180 km, managed by USFS
- Shenandoah National Park – 259 km, managed by the National Park Service (NPS)

These areas will be evaluated and addressed in the separate air quality impact analysis report for the Project.

The PSD permit will contain emission limits and other operating, monitoring, record keeping, and reporting requirements. The emission limits contained in the PSD permit are required to represent BACT. BACT is determined on a case-by-case basis, taking into account energy, environmental, and economic impacts.

The Project's demonstration of BACT is included in Section 3.4.2. The air quality impact analysis performed to demonstrate compliance with all PSD requirements and NAAQS is presented in a separate report.

3.4.2 *Best Available Control Technology*

Based on projected potential emissions, BACT is required for NO_x, CO, PM, PM_{10}, $PM_{2.5}$, VOC, H_2SO_4, and GHG emissions from all Project emissions sources (Combustion Turbines, Auxiliary Boiler, Fuel Gas

Heater, Emergency Generator, Fire Water Pump, and Cooling Tower). This section summarizes the BACT determinations for these pollutants.

3.4.2.1 *BACT Analysis Process*

BACT is defined in 45 CSR 14-2.12 of the WVDEP air pollution control regulations as:

> 2.12. "Best available control technology (BACT)" means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each regulated NSR pollutant which would be emitted from any proposed major stationary source or major modification which the Secretary, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any federally enforceable emissions limitations or emissions limitations enforceable by the Secretary. If the Secretary determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

BACT analyses are conducted using USEPA's "top-down" BACT approach, as described in USEPA's *Draft New Source Review Workshop Manual*[3]. The five (5) basic steps of a top-down BACT analysis are:

Step 1: Identify potential control technologies

Step 2: Eliminate technically infeasible options

Step 3: Rank remaining control technologies by control effectiveness

Step 4: Evaluate the most effective controls and document results

Step 5: Select BACT

The first step is to identify potentially "available" control options for each emission unit triggering PSD, for each pollutant under review. Available options consist of a comprehensive list of those technologies with a potentially practical application to the emission unit in question. The list includes technologies used to satisfy BACT requirements, innovative technologies, and controls applied to similar source categories.

For this analysis, the following sources were investigated to identify potentially available control technologies:

- USEPA's RACT/BACT/LAER Clearinghouse (RBLC) database;
- USEPA's New Source Review website;
- In-house experts;
- Similar permitting projects;
- State air regulatory agency contacts;
- Technical books and articles;
- The USEPA Region 4 National Combustion Turbines Spreadsheet;[4]
- State permits issued for similar sources that have not yet been entered into the RBLC; and

[3] (USEPA 1990).

[4] Compiled by USEPA Region 4 staff, available at: http://widit.knu.ac.kr/epa/ebtpages/Air/Air_Pollutants/Hazardous_Air_Pollutants_HAPs/siteout/s2out7.htm

- Guidance documents and personal communications with state and federal agencies.

After identifying potential technologies, the second step is to eliminate technically infeasible options from further consideration. To be considered feasible for BACT, a technology must be both available and applicable.

The third step is to rank the technologies not eliminated in Step 2 in order of descending proven control and effectiveness for each pollutant of concern. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation. Potential adverse impacts, however, must still be identified and evaluated.

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts. The economic or "cost-effectiveness" analysis is conducted in a manner consistent with USEPA's *OAQPS Control Cost Manual, Fifth Edition*[5] and subsequent revisions.

The fifth and final step is to select as BACT the emission limit from application of the most effective of the remaining technologies under consideration for each pollutant of concern.

3.4.2.2 BACT Analyses

For the top-down BACT evaluation, a review was performed of the RBLC database, recent permits issued from across the U.S., the USEPA Region 4 Combustion Turbines Spreadsheet, and other available literature. **Appendix B** contains summaries of the RBLC search information.

3.4.2.2.1 NO_x BACT

<u>*Combustion Turbines*</u>

Step 1 - Identify Potential Control Technologies

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[5] (USEPA 1996)

Several combustion and post-combustion technologies are available for controlling CT NO_x emissions. Combustion controls minimize the amount of NO_x created during the combustion process, and post-combustion controls remove NO_x from the exhaust stream after the combustion has occurred.

The three (3) basic strategies for reducing NO_x the from the combustion process are:

(1) Reduction of the peak combustion temperatures;
(2) Reduction in the amount of time the air and fuel mixture is exposed to the high combustion temperature; and
(3) Reduction in the oxygen (O_2) level in the primary combustion zone.

The following discusses potential control technologies for the proposed combined-cycle Combustion Turbines:

Pre-Combustion Control Technologies
The two (2) pre-combustion control technologies that reduce NO_x emissions from combustion turbines are water or steam injection, and DLN combustors.

Water or Steam Injection
The injection of water or steam into a combustion turbine's combustors quenches the flame and absorbs heat, thus reducing combustion temperatures. The reduced temperatures in turn reduce the formation of thermal NO_x, but increase the concentration of CO. Combined with a post-combustion control technology, water or steam injection typically can achieve NO_x emissions of 25 ppmvd @15% O_2, but with the added economic, energy, and environmental expense of producing, storing, and consuming demineralized water.

DLN Combustors
Conventional combustors are diffusion-controlled, with fuel and air injected separately. This method of combustion results in combustion "hot spots," which produce higher levels of thermal NO_x, but reduce CO emissions. Lean premix and catalytic technologies are two available types of DLN combustors that are alternatives to conventional diffusion-controlled combustors. DLN combustors reduce the combustion hot spots that result in thermal NO_x formation.

With lean premix DLN combustors, the mechanisms for reducing thermal NO_x through formation are:

(1) using excess air to reduce flame temperatures (i.e., lean combustion);
(2) reducing combustor residence time to limit exposure in a high-temperature environment;
(3) mixing fuel and air in an initial "pre-combustion" stage to produce a lean and uniform fuel/air mixture that is delivered to a secondary stage where combustion takes place; and/or
(4) achieving two-stage combustion using a primary fuel-rich combustion stage to limit the amount of O_2 available to combine with elemental nitrogen (N_2) and then a secondary lean burn-stage to complete combustion in a cooler environment.

Lean premix DLN combustors have only been developed for gas fuel-fired combustion turbines. The more-advanced designs are capable of achieving 70 to 90% NO_x emission reductions, with resulting NO_x concentrations typically in the range of 9 to 25 ppmvd @15% O_2.

As the name implies, catalytic combustors use a catalyst to allow the combustion reactions to occur at lower peak flame temperatures, which reduce thermal NO_x formation. Catalytic combustors use a flameless catalytic combustion module, followed by completion of combustion at lower temperatures downstream of the catalyst.

Post-Combustion Control Technologies
The three (3) available post-combustion NO_x emission controls for combustion turbines are:

(1) SCR;
(2) SCONO$_x$™ (also known as EM$_x$™); and
(3) Selective Non-Catalytic Reduction (SNCR).

Both SCR and EMx™ use catalyst beds to control NO_x emissions. Combined with DLN combustors or water/steam injection, these technologies are capable of achieving NO_x emissions concentrations of 2 ppmvd @15% O_2 for combined-cycle combustion turbines. EM$_x$ ™uses a hydrogen regeneration gas to convert the NO_x to elemental nitrogen (N_2) and water. Like SCR, SNCR also uses ammonia to control NO_x emissions, but without a catalyst.

Selective Catalytic Reduction
SCR is a post-combustion control technology designed to control NO_x emissions from combustion turbines. SCR systems for combined-cycle combustion turbines are typically placed inside the HRSGs, and consist of

a catalyst bed with an ammonia injection grid located upstream of the catalyst. The ammonia, in this case aqueous ammonia with a concentration of less than 20% by weight, is vaporized and injected directly into the exhaust stream, where it reacts with NO_x and O_2 in the presence of the catalyst to form N_2 and water vapor.

These reactions normally occur at relatively high temperatures (e.g. 1,600 °F to 2,100 °F). However, the placement of a catalyst in the exhaust stream lowers the activation energy of the reaction, which allows the reaction to take place at lower temperatures (typically 650 °F to 850 °F).

The catalyst consists of a support system with a catalyst coating typically of titanium dioxide (TiO_2), vanadium pentoxide (V_2O_5), or zeolite. Typically, a small amount of ammonia is not consumed in the reactions and is emitted in the exhaust stream. These ammonia emissions are referred to as "ammonia slip."

***EM$_x$*™**

EM$_x$™ uses a single catalyst to remove NO_x emissions from combustion turbines exhaust gas by oxidizing nitric oxide (NO) to nitrogen dioxide (NO_2), and then absorbing the NO_2 onto a catalytic surface using a potassium carbonate (K_2CO_3) absorber coating. The potassium carbonate coating reacts with NO_2 to form potassium nitrites and nitrates, which are deposited onto the catalyst surface. The optimal temperature window for operation of the EMx™ catalyst is from 300 ˚F to 700 ˚F. EM$_x$™ does not use ammonia. Therefore, there are no ammonia emissions from this technology.

When all of the potassium carbonate absorber coating has been converted to N_2 compounds, NO_x can no longer be absorbed and the catalyst must be regenerated. Regeneration is accomplished by passing a dilute hydrogen-reducing gas across the surface of the catalyst in the absence of O_2. Hydrogen in the gas reacts with the nitrites and nitrates to form water and N_2. Carbon dioxide (CO_2) in the gas reacts with the potassium nitrite and nitrates to form potassium carbonate, which is the absorbing surface coating on the catalyst. The regeneration gas is produced by reacting natural gas with a carrier gas (such as steam) over a steam-reforming catalyst. The system does not produce any toxic by-products and does not require the delivery of additional chemicals to the site for its operation. Since the inputs that are utilized in EMx™ operation (natural gas, water, steam, electricity, and ambient air) are present at most power plants, the logistics of plant operation do not change when the system is installed.

Selective Non-Catalytic Reduction
Like SCR, Selective Non-Catalytic Reduction (SNCR) involves injection of ammonia or urea $CO(NH_2)_2$ with proprietary conditioners into the exhaust gas stream without a catalyst. SNCR technology requires temperatures in the range of 1,600 to 2,100 °F. SNCR is not available for combustion turbines, because combustion turbine exhaust temperatures are typically in the range of 1,000 °F, significantly below the 1,600 °F minimum temperature required for effective SNCR performance.

Step 2 - Eliminate Technically Infeasible Options

Pre-Combustion Control Technologies

Water or Steam Injection
The use of water or steam injection is considered a feasible technology for reducing NO_x emissions to about 25 ppmvd @ 15% O_2 when firing gaseous fuel under most ambient conditions. Combined with SCR, water or steam injection can achieve NO_x levels of 2 ppmvd @ 15% O_2, but at slightly lower thermal efficiencies compared to DLN combustors.

DLN Combustors
DLN combustors are a feasible technology for reducing NO_x emissions from the proposed Combustion Turbines. DLN combustors are capable of achieving NO_x emission of 9 to 25 ppmvd @ 15% O_2 over a relatively wide operating range (e.g. 50% to 100% load). When combined with SCR, DLN combustors can achieve NO_x emissions of 2 ppmvd @ 15% O_2.

Catalytic Combustors
A catalytic combustion technology known as XONON™ has been demonstrated successfully in a 1.5 MW simple-cycle combustion turbine pilot facility, and is commercially available for combustion turbines rated at up to 10 MW. However, catalytic combustors such as XONON™ have not been demonstrated on industrial H Class combustion turbines such as those proposed by ESC. Therefore, the XONON™ catalytic combustion technology is not considered feasible for the proposed Combustion Turbines.

Post-Combustion Control Technologies

Selective Catalytic Reduction
SCR, with an ammonia slip of less than 5 ppmvd @ 15% O_2, is considered a feasible technology for reducing combustion turbine NO_x emissions to 2

ppmvd @ 15% O_2 when firing gaseous fuel. SCR has been successfully installed and used on numerous simple-cycle and combined-cycle combustion turbines.

EMx™

The demonstrated application for EMx™ is currently limited to combined-cycle combustion turbines under approximately 50 MW in size. The Combustion Turbines proposed for this Project are nominal 300 MW units. Therefore, EMx™ technology is not considered feasible for achieving the proposed NO_x limit of 2.0 ppmvd @ 15% O_2.

Selective Non-Catalytic Reduction

SNCR requires a temperature window that is higher than the exhaust temperatures from gaseous fuel-fired combustion turbines. Therefore, SNCR is not considered technically feasible for the proposed Combustion Turbines.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Based on the preceding discussions, the use of water/steam injection, DLN combustors, and SCR are the technically feasible NO_x control technologies available for the proposed Combustion Turbines. DLN combustors were selected because they can achieve lower NO_x emission rates from the Combustion Turbines over either water or steam injection, without the economic, energy, and environmental dis-benefit of producing, storing, and consuming demineralized water and consumption of additional fuel to meet the rated plant output.

Furthermore, DLN combustors result in slight improvements in thermal efficiency over water/steam injection NO_x control alternatives. When used in combination with SCR, these technologies can control NO_x emissions from the Combustion Turbines to 2.0 ppmvd @ 15% O_2.

There are potential environmental and energy impacts associated with the use of SCR. First, SCRs require replacement of the catalyst beds after several years. The waste catalyst must be disposed of in accordance with state and federal regulations regarding normal waste disposal. Because of the precious metal content of the catalysts, they may also be recycled to recover the precious metals. Sulfur compounds in the exhaust gas may react with the ammonia reagent, forming ammonia salts, which may increase PM, PM_{10}, and $PM_{2.5}$ emissions. SCRs also have energy impacts. Due to their location downstream of the combustion turbine exhaust, SCR catalysts increase the backpressure on the combustion turbines, which results in slightly decreased power output. This slightly decreased output leads to slightly increased pollutant emissions on a mass per unit power output basis.

Although there are potential environmental and energy impacts associated with the use of SCR, these impacts are not considered significant enough to preclude the use of SCR for NO_x emission control.

Available permits and BACT determinations were reviewed to identify NO_x emission rates that have been achieved in practice for other comparable gaseous fuel-fired combustion turbines projects. The majority of the projects had permitted NO_x emission rates equal to or greater than 2.0 ppmvd @ 15% O_2.

Only one (1) facility, for an IDC Bellingham combined-cycle plant proposed in Massachusetts, had a NO_x emission limit below the 2.0 ppmvd @ 15% O_2 level proposed as BACT by ESC. The IDC Bellingham facility was permitted with a not-to-exceed limit of 2.0 ppmvd @ 15% O_2, but the permit also required the unit to maintain emissions below 1.5 ppmvd @ 15% O_2 during normal operations. However, the IDC Bellingham facility was never built.

Therefore, these emission limits were not achieved in practice. As a result, ESC's proposed emission rate of 2.0 ppmvd @ 15% O_2 is the lowest NO_x emission rate achieved in practice for similar sources and, therefore, represents BACT for NO_x emissions.

Step 4 - Evaluate Most-Effective Controls and Document Results
Based on the information presented in this BACT analysis, the proposed NO_x emission rate of 2.0 ppmvd @ 15% O_2 is the lowest NO_x emission rate achieved in practice at similar sources. Therefore, an assessment of the economic and environmental impacts is not necessary.

Step 5 – Select BACT
The proposed BACT for NO_x emissions from the proposed Combustion Turbines is the use of DLN combustors and SCR, along with good combustion practices, to control NO_x emissions to 2.0 ppmvd @ 15% O_2. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Auxiliary Boiler

For the Auxiliary Boiler, ESC proposes to minimize NO_x emissions through good combustion practices and utilization of low-NO_x burners (LNB).

LNB are designed to recirculate hot, oxygen-depleted flue gas from the flame or firebox back into the combustion zone. By doing this, the average oxygen concentration is reduced in the flame without reducing the flame temperatures below which is necessary for optimal combustion efficiency. Reducing oxygen concentrations in the flame reduces the amount of fuel NO_x generated. Although these efficient combustion techniques are targeted to reduce NO_x emissions, they have a collateral impact of minimizing CO formation.

ESC proposes a NO_x emission concentration of 0.011 lb/MMBtu as BACT for the Auxiliary Boiler. A review of available permits and determinations for comparable boilers, ESC identified several recent permits for comparable boilers. The preponderance of the recently permitted boilers have NO_x emission limits of 0.011 lb/MMBtu.

There are several, but fewer, entries for boilers with permitted NO_x limits of 0.01 lb/MMBtu, including:

- A 73.3 MMBtu/hr boiler at Luminant's Eagle Mountain generating facility in Texas;
- A 45 MMBtu/hr boiler at CPV's Pondera King Energy Center in Texas;
- A 45 MMBtu/hr boiler at Old Dominion Electric Cooperative's Wildcat Point Generation Facility in Maryland;
- A 91.6 MMBtu/hr boiler at CPV Woodbridge Energy Center in New Jersey.

To the best of ESC's knowledge, none of the above plants have completed construction or commenced operation at this time. Also, the above referenced plants involved LAER, rather than BACT determinations.

Furthermore, given the low baseline annual NOx emissions for the proposed Auxiliary Boiler (2.82 tons/yr), the decrease in NO_x emissions if the boiler were required to achieve a NO_x emission level of 0.01 lb/MMBtu would be no more than 0.26 tons/yr.

Therefore, ESC proposes BACT for the Auxiliary Boiler at a NO_x emission level of 0.011 lb/MMBtu. This level will be achieved using LNB, along with good combustion practices. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Fuel Gas Heater

There is currently no technically feasible add-on control technology to reduce NO_x emissions from gaseous fuel-fired Fuel Gas Heaters of the size proposed for the ESC Project. NO_x is minimized in these units through good combustion practices, as well as LNB.

LNB are designed to recirculate hot, oxygen-depleted flue gas from the flame or firebox back into the combustion zone. By doing this, the average oxygen concentration is reduced in the flame without reducing the flame temperatures below which is necessary for optimal combustion efficiency. Reducing oxygen concentrations in the flame reduces the amount of fuel NO_x generated. Although these efficient combustion techniques are targeted to reduce NO_x emissions, they have a collateral impact of minimizing CO formation.

ESC proposes a NO_x emission level of 0.036 lb/MMBtu as BACT for the Fuel Gas Heater. Upon conducting a review of available permits and determinations for comparable boilers, ESC identified several recent permits for comparable heaters. The most common NO_x emission limit of recently permitted boilers is 0.035 lb/MMBtu, which is comparable to ESC's proposed limit. Examples include:

- A 9.5 MMBtu/hr fuel gas heater at the CPV St. Charles Energy Center in Maryland; and

- A 8.5 MMBtu/hr fuel gas heater at the Berks Hollow Energy Associates plant in Pennsylvania.

To the best of ESC's knowledge, none of the above plants have completed construction or commenced operation at this time. Also, the above referenced plants are believed to involve LAER, rather than BACT determinations.

There are two (2) entries with permitted NO_x limits below 0.035 lb/MMBtu:

- A 13.32 MMBtu/hr dew point heater at Interstate Power and Light's Marshalltown Generating Station in Iowa, which is permitted for 0.013 lb/MMBtu NO_x; and

- A 10 MMBtu/hr process heater at WTG Sonora Gas Plant LLC's Sonora Gas Plant in Texas which is permitted for 0.01 lb/MMBtu NO_x.

However, given the small size (5.4 MMBtu/hr) and low baseline level of annual NO_x emissions for the proposed Fuel Gas Heater (0.85 tons/yr), the decrease in NO_x emissions if the Fuel Gas Heater were required to achieve a NO_x emission level of 0.01 lb/MMBtu would be no more than 0.61 tons/yr.

Therefore, ESC proposes BACT for the Fuel Gas Heater at a NO_x emission level of 0.036 lb/MMBtu. This level will be achieved using good combustion practices, along with LNB and FGR. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Emergency Generator

ESC proposes BACT for NO_X and VOC for the 2,000 kW Emergency Generator as the applicable emission rates specified in 40 CFR 60, Subpart IIII. The Subpart IIII emission standard is 4.8 g/hp-hr for NO_X plus Non-Methane Hydrocarbons (NMHC).

The preponderance of the recently permitted emergency generators have NO_x emission limits of 4.8 g/hp-hr. There are several, although comparably fewer, determinations that list NO_x emission rates below 4.8 g/hp-hr, including:

- A 7.8 MMBtu/hr emergency generator at Hickory Run Energy Center in Pennsylvania, which is permitted for 1.46 g/hp-hr NO_x; and

- Eight (8) 757 hp emergency generators at PyraMax Ceramics, LLC in South Carolina, which are permitted for 2.98 g/hp-hr NO_x.

Given the intended use of the Emergency Generator only for emergency purposes, with its operations limited to emergency events and no more than 100 hr/yr for maintenance and readiness testing, the environmental benefit associated with establishing emission limits below the Subpart IIII limit of 4.8 g/hp-hr is small. However, as BACT for the Emergency Generator, ESC proposes an emission limit of 4.8 g/hp-hr for NO_x plus NMHC along with the use of ULSD fuel and good combustion practices, and limiting operations to emergency events and no more than 100 hr/yr for maintenance and readiness testing.

Fire Water Pump

ESC proposes BACT for NO_x and VOC for the 315-hp Fire Water Pump as 2.69 g/hp-hr, which is below the applicable emission rates specified in 40 CFR 60, Subpart IIII of 3.0 g/hp-hr for NO_x plus NMHC. The Fire Water Pump will use ULSD fuel to ensure operation even during periods when natural gas is unavailable.

The preponderance of the recently permitted Fire Water Pumps have NO_x emission limits in the range of 2.8 to 3.0 g/hp-hr. There are only two (2) determinations that list NO_x emission rates below 2.69 g/hp-hr. These are:

- A 300 hp fire water pump at Oregon Clean Energy Center in Ohio, which is permitted for 2.57 g/hp-hr NO_x; and

- A 3.25 MMBtu/hr fire water pump at Hickory Run Energy Center in Pennsylvania, which is permitted for 0.66 g/hp-hr NO_x.

To the best of ESC's knowledge, neither of the above plants have been constructed or commenced operation at this time.

Given the intended use of the Fire Water Pump only for emergency purposes, with its operations limited to emergency events and no more than 100 hr/yr for maintenance and readiness testing, the environmental benefit associated with establishing emission limits below the proposed limit of 2.69 g/hp-hr is small. Therefore, as BACT for the Fire Water Pump, ESC proposes an emission limit of 2.69 g/hp-hr for NO_x plus NMHC along with the use of ULSD fuel and good combustion practices, and limiting operations to emergency events and no more than 100 hr/yr for maintenance and readiness testing.

The proposed NO_x BACT for all sources are summarized in Table 3-15.

Table 3-15 Proposed NO_x BACT

Emission Source	Proposed NO_x BACT
Combustion Turbines	2 ppmvd @ 15% O_2 Use of SCR, dry low-NO_X combustor design, and efficient combustion (good combustion practices) .
Auxiliary Boiler	0.011 lb/MMBtu Use of good combustion practices and LNB.
Fuel Gas Heater	0.036 lb/MMBtu Use of good combustion practices and LNB.
Emergency Generator	4.8 g/hp-hr (NMHC+NO_X)[6] Use of ULSD fuel and good combustion practices; operation limited to emergency use and no more than 100 hr/yr for maintenance and readiness testing.
Fire Water Pump	2.69 g/hp-hr (NMHC+NO_X) Use of ULSD fuel and good combustion practices; operation limited to emergency use and no more than 100 hr/yr for maintenance and readiness testing.

3.4.2.2.2 CO BACT

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[6] The NSPS Subpart IIII NO_x + NMHC standard of 4.8 g/hp-hr was based on specific test procedures that engine manufacturers must use to certify their engines as NSPS compliant. These test procedures are outlined in 40 CFR 89 Subpart E (Exhaust Emission Test Procedures). These procedures involve testing an engine on a dynamometer in a test cycle, in a prescribed sequence of engine operating conditions that feature different time durations at different loads. These procedures require the determination of the concentration of each pollutant, exhaust volume, the fuel flow, and the power output during each operating mode. The measured values are weighted and used to calculate the g/hp-hr emission rate for each pollutant. Because the NSPS test is a weighted composite of emissions at various engine operating loads, it does not necessarily capture an engine's worst-case emission rates. For air permitting purposes, the worst-case NO_x emissions is 5.45 g/hp-hr, but the overall weighed emissions for the NSPS test–cycle are below the 4.8 g/hp-hr NOx + NMHC standard.

Combustion Turbines

Step 1 - Identify Potential Control Technologies
CO is formed during the combustion process as a result of incomplete combustion of the carbon present in the fuel. Effective combustor design and post-combustion control using an Oxidation Catalyst are the potential technologies for controlling CO emissions from combustion turbines. As noted above in the NO_x BACT analysis, the EMx™ and XONON™ technologies were determined not to be feasible for the proposed Combustion Turbines, so they have not been considered further here.

Combustion Controls
CO formation is minimized by designing the combustion system to allow complete mixing of the combustion air and fuel and maximize the oxidization of fuel carbon to CO_2. Higher combustion temperatures reduce CO formation, but increase NO_x formation. Water/steam injection or DLN combustors tend to lower combustion temperatures in order to reduce NO_x formation, potentially increasing CO formation. However, using good combustor design and following best operating practices minimizes CO formation while reducing combustion temperatures and NO_x emissions.

Oxidation Catalysts
Oxidation Catalysts typically use precious metal catalyst beds. Like SCR systems for combined-cycle combustion turbines, Oxidation Catalysts are typically located within the HRSG where the temperature is in the range of 700 °F to 1,100 °F. The catalyst enhances oxidation of CO to CO_2, without the addition of any chemical reagents, because there is sufficient O_2 in the exhaust gas stream for the oxidation reactions to proceed in the presence of the catalyst alone. Catalyst volume is dependent upon the exhaust flow, temperature, and the desired removal efficiency. The catalyst material is subject to loss of activity over time due to physical deterioration or chemical deactivation. Oxidation Catalyst vendors typically only guarantee catalyst life for three (3) years.

Both efficient combustion and add-on controls, such as Oxidation Catalysts, can be used alone or in combination to achieve CO emission reductions. Oxidation Catalysts have been successfully installed and used on numerous simple-cycle and combined-cycle combustion turbines.

Step 2 - Eliminate Technically Infeasible Options

Using good combustor design, following best operating practices, and using Oxidation Catalyst are technically feasible options for controlling CO emissions from the proposed Combustion Turbines.

There are potential environmental and energy impacts associated with the use of Oxidation Catalysts. Oxidation Catalysts require replacement of the catalyst beds after several years. The waste catalyst must be disposed of in accordance with state and federal regulations regarding normal waste disposal. Because of the precious metal content of the catalyst, they may also be recycled to recover the precious metals. Some of the SO_2 in the exhaust gas will oxidize to sulfur trioxide (SO_3). The higher the operating temperature, the higher the potential for oxidation of SO_2 to SO_3 oxidation. The SO_3 may react with moisture in the flue gas to form H_2SO_4. The increase in H_2SO_4 emission may increase PM_{10} and $PM_{2.5}$ emissions. The oxidation of CO results in increased CO_2 emissions, and CO_2 is a GHG. Oxidation Catalysts also have energy impacts. Due to their location downstream of the combustion turbine exhaust, Oxidation Catalysts increase the backpressure on combustion turbines, which results in slightly decreased power output. This decreased output leads to increased pollutant emissions on a mass per unit power output basis.

Although there are potential environmental and energy impacts associated with the use of Oxidation Catalysts, these impacts are not considered significant enough to preclude their use for CO emission control.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness
Based on the preceding discussion, good combustion practices and Oxidation Catalysts are both available and technically feasible technologies to control CO emissions from combustion turbines. Together, DLN combustors and good combustion practices, have been effective in minimizing CO emissions from combustion turbines. These are the only practical efficient combustion alternatives currently available and used on combined-cycle combustion turbines. ESC proposes to control CO emissions these techniques to meet a CO emission limit of 2.0 ppmvd @ 15% O_2.

Available permits and BACT determinations were reviewed to identify CO emission rates that have been achieved in practice for other comparable gaseous fuel-fired combustion turbine projects. The majority of the projects had permitted CO emission rates equal to or greater than 2.0 ppmvd @ 15% O_2. However, the following projects were identified that have CO emission rates lower than 2.0 ppmvd @ 15% O_2.

(1) Dominion Virginia Power Warren County Power Station;
(2) Kleen Energy Systems; and
(3) Astoria Energy LLC.

These projects are discussed in more detail below.

Dominion Virginia Power Warren County Power Station
This combined-cycle power plant is located in Front Royal, Warren County, Virginia. Originally developed by Competitive Power Ventures (CPV), the project was sold to Virginia Electric Power and Power Company (Dominion Virginia Power) in 2008.

A final PSD permit for a nominal 1,300 MW combined-cycle plant was issued by the Virginia Department of Environmental Quality (VDEQ) on December 21, 2010. This final PSD permit includes CO emission limits of 2.4 and 1.5 ppmvd @ 15% O_2, on a 1-hour averaging basis, for operating conditions with and without duct firing, respectively. The plant began commercial operation on December 10, 2014. The plant consists of three (3) Mitsubishi Model M501GAC combustion turbines. Given the lack of long-term operation and compliance with these emission limits, these CO emission levels are not considered "achieved in practice" at this time.

Kleen Energy Systems
The Kleen Energy Systems combined-cycle facility in Middletown, Connecticut began commercial operation in July 2011. The combustion turbines used by Kleen Energy Systems are Siemens SGT6-5000F. The permitted CO emission limits are 1.5 and 0.9 ppmvd @ 15% O_2 for operation with and without duct firing, respectively. Initial stack testing apparently demonstrated compliance with these CO emission limits.

Astoria Energy LLC
The Astoria Energy, LLC facility, located in the Astoria section of Queens, New York City is permitted for CO emissions of 1.5 ppmvd @ 15% O_2, with or without duct firing. The Astoria Energy plant began operation in 2011 and uses GE Frame 7FA combustion turbines. However, because the Astoria Energy plant was located in a CO non-attainment area, the 1.5 ppmvd @ 15% O_2 was a LAER, rather than BACT, limit.

Step 4 - Evaluate Most-Effective Controls and Document Results
The proposed CO emission rate of 2.0 ppmvd @ 15% O_2 is the lowest CO emission rate achieved or verified with long-term compliance records for other similar facilities. Since ESC is proposing to use combustion turbines with DLN combustors and Oxidation Catalysts to reduce CO and VOC

emissions (the top control alternative), an assessment of the economic and environmental impacts is not necessary.

Step 5 - Select BACT
BACT for CO emissions from the proposed Combustion Turbines is good combustion design and the use of Oxidation Catalysts to control CO emissions to 2.0 ppmvd @ 15% O_2. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Auxiliary Boiler

There is currently no technically feasible add-on control technology to reduce CO emissions from gaseous fuel-fired Auxiliary Boilers of the size proposed for the ESC Project. CO is minimized in these units through good combustion practices.

A review of available permits and determinations for comparable boilers, ESC identified several recent permits for comparable boilers. The preponderance of the recently permitted boilers have CO emission limits in the range of 0.035 to 0.038 lb/MMBtu.

There are several, but fewer, entries for boilers with permitted CO limits below the 0.035 to 0.038 lb/MMBtu range, including:

- A 33 MMBtu/hr boiler at CPV's St. Charles Energy Center in Maryland, which is permitted for 0.02 lb/MMBtu CO;
- A 41.64 MMBtu/hr boiler at MGM Mirage in Nevada, which is permitted for 0.0184 lb/MMBtu CO;
- A 31.38 MMBtu/hr boiler at Harrah's in Nevada, which is permitted for 0.0172 lb/MMBtu CO;
- A 60.1 MMBtu/hr boiler at Interstate Power and Light's Marshalltown Generating Station in Iowa, which is permitted for 0.00164 lb/MMBtu CO;
- A 44 MMBtu/hr boiler at MGM Mirage in Nevada, which is permitted for 0.0148 lb/MMBtu CO;
- 33.48 MMBtu/hr boilers at Harrah's in Nevada, which are permitted for 0.0075 lb/MMBtu CO; and
- 35.4 MMBtu/hr boilers at Harrah's in Nevada, which are permitted for 0.0073 lb/MMBtu CO.

To the best of ESC's knowledge, the two (2) boilers associated with power plants, CPV's St. Charles Energy Center and Interstate Power and Light's Marshalltown Generating Station, have completed construction or commenced operation at this time. Also, some of the above referenced boilers involved LAER, rather than BACT determinations.

Therefore, ESC proposes BACT for the Auxiliary Boiler at a CO emission level of 0.037 lb/MMBtu. This level will be achieved using good combustion practices. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Fuel Gas Heater

There is currently no technically feasible add-on control technology to reduce CO emissions from gaseous fuel-fired Fuel Gas Heaters of the size proposed for the ESC Project. CO is minimized in these units through good combustion practices that support effective combustion and minimize CO formation.

Upon conducting a review of available permits and determinations for comparable boilers/heaters, ESC did not identify any recent permits for with CO emission limits below the proposed limit of 0.039 lb/MMBtu.

Therefore, BACT is the use of good combustion practices to achieve an emission limit of 0.039 lb/MMBtu.

Emergency Generator and Fire Water Pump

ESC proposes that BACT for the Emergency Generator and Fire Water Pump is the CO emission rate of 0.3 g/hp-hr and 0.44 g/hp-hr, respectively. This is below the CO emission standard of 2.6 g/hp-hr specified in 40 CFR 60, Subpart IIII. This emergency equipment will be operated on ULSD fuel, with a sulfur content no greater than 0.0015% by weight.

Generally, for engines of these sizes proposed for the Project, good combustion practices are used to limit CO emissions. Review of recent permits and the RBLC for similar equipment indicates that good combustion practices are considered BACT. However, some of the BACT determinations resulted in lower emissions levels using good combustion practices.

The only determinations that list CO emission rates below 0.3 g/hp-hr are:

- Two (2) 1,341 hp emergency generators and three (3) fire water pumps at Lake Charles Gasification Facility in Louisiana, which are permitted for 0.21 and 0.29 g/hp-hr CO, respectively; and

- A 1,500 hp emergency generator at Peony Chemical Manufacturing Facility in Texas, which is permitted for 0.126 g/hp-hr CO.

Given the intended use of the Emergency Generator and Fire Water Pump only for emergency purposes, with its operations limited to emergency events and no more than 100 hr/yr for maintenance and readiness testing, the environmental benefits associated with establishing emission limits below the proposed limits of 0.3 and 0.44 g/hp-hr are small. Therefore, as BACT for the Emergency Generator and Fire Water Pump, ESC proposes emission limits of 0.3 and 0.44 g/hp-hr for CO, along with the use of ULSD fuel and good combustion practices, and limiting operations to emergency events and no more than 100 hr/yr for maintenance and readiness testing.

The proposed CO BACT for all sources is summarized in Table 3-16.

Table 3-16 Proposed CO BACT

Emission Source	Proposed CO BACT
Combustion Turbines	2 ppmvd @ 15% O_2 Use of Oxidation Catalysts and efficient combustion.
Auxiliary Boiler	0.037 lb/MMBtu Good combustion practices.
Fuel Gas Heater	0.039 lb/MMBtu Good combustion practices.
Emergency Generator	0.3 g/hp-hr Use of ULSD fuel and good combustion practices.
Fire Water Pump	0.44 g/hp-hr Use of ULSD fuel and good combustion practices.

3.4.2.2.3 PM, PM_{10}, and $PM_{2.5}$ BACT

Particulate matter emissions result from each combustion source associated with the Project, as well as the mechanical draft Cooling Tower. The following summarizes the BACT evaluation conducted for each piece of equipment with respect to PM, PM_{10}, and $PM_{2.5}$ emissions.

Combustion Turbines

PM from gaseous fuel combustion has been estimated to be less than 1 micron in equivalent aerodynamic diameter, has filterable and condensable fractions, and usually consists of hydrocarbons of larger molecular weight that are not fully combusted (USEPA, 2006). Because the particulate matter typically is less than 2.5 microns in diameter, this BACT discussion assumes the control technologies for PM, PM_{10}, and $PM_{2.5}$ are the same.

Step 1 – Identify Potential Control Technologies

Pre-Combustion Control Technologies
The major sources of PM, PM_{10}, and $PM_{2.5}$ emissions from gaseous fuel-fired combustion turbines equipped with SCR for post-combustion control of NO_x emissions are:

(1) the conversion of fuel sulfur to sulfates and ammonium sulfates;
(2) unburned hydrocarbons that can lead to the formation of PM in the exhaust stack; and
(3) PM in the ambient air entering the combustion turbines through their inlet air filtration systems, and the aqueous ammonia dilution air.

The use of clean-burning, low-sulfur fuels such as natural gas, ethane, or a blend of natural gas and ethane will result in minimal formation of PM, PM_{10}, and $PM_{2.5}$ during combustion. Best combustion practices will ensure proper air/fuel mixing ratios to achieve complete combustion, minimizing emissions of unburned hydrocarbons that can lead to the formation of PM emissions. In addition to good combustion practices, the use of high-efficiency filtration of the inlet air will minimize the entrainment of PM into the Combustion Turbine exhaust streams.

Post-Combustion Control Technologies
There are several post-combustion PM control systems potentially feasible to reduce PM and PM_{10} emissions from combustion turbines including:

(1) Cyclones/centrifugal collectors;
(2) Fabric filters/baghouses;
(3) Electrostatic precipitators (ESPs); and
(4) Scrubbers.

Cyclones/centrifugal collectors are generally used in industrial applications to control large diameter particles (>10 microns). Cyclones impart a centrifugal force on the gas stream, which directs entrained particles outward. Upon contact with an outer wall, the particles slide down the cyclone wall, and are collected at the bottom of the unit. The design of a centrifugal collector provides for a means of allowing the clean gas to exit through the top of the device. Cyclones are inefficient at removing particles in the ranges produced by a combined cycle plant.

Fabric filters/baghouses use a filter material to remove particles from a gas stream. The exhaust gas stream flows through filters/bags onto which particles are collected. Baghouses are typically employed for industrial applications to provide particulate emission control at relatively high efficiencies. Fabric filters are inefficient at removing particles in the ranges produced by a combined cycle plant.

ESPs are used on a wide variety of industrial sources, including certain boilers. ESPs use electrical forces to move particles out of a flowing gas stream onto collector plates. The particles are given an electric charge by forcing them to pass through a region of gaseous ion flow called a "corona". An electrical field generated by electrodes at the center of the gas stream forces the charged particles to ESP's collecting plates.

Removal of the particles from the collecting plates is required to maintain sufficient surface area to clean the flowing gas stream. Removal must be performed in a manner to minimize re-entrainment of the collected particles. The particles are typically removed from the plates by "rapping" or knocking them loose, and collecting the fallen particles in a hopper below the plates. ESPs are inefficient at removing particles in the ranges produced by a combined cycle plant.

Scrubber technology may also be employed to control PM in certain industrial applications. With wet scrubbers, flue gas passes through a water (or other solvent) stream, whereby particles in the gas stream are removed through inertial impaction and/or condensation of liquid droplets on the particles in the gas stream. Scrubbers are inefficient at removing particles in the ranges produced by a combined cycle plant.

Step 2 - Eliminate Technically Infeasible Options

The pre-combustion control technologies identified above (i.e. clean-burning, low-sulfur fuels, good combustion practices, high-efficiency filtration of the combustion turbine inlet air) are available and technically feasible for reducing PM emissions from combustion turbine exhaust streams.

Each of the post-combustion control technologies described above (i.e. cyclones, baghouses, ESPs, scrubbers) are generally available. However, none of these technologies is considered practical or technically feasible for installation on gaseous fuel-fired combustion turbines.

The particles emitted from gaseous fuel-fired are typically less than 1 micron in diameter. Cyclones are not effective on particles with diameters of 10 microns or less. Therefore, a cyclone/centrifugal collection device is not a technically feasible alternative.

Baghouses, ESPs, and scrubbers have never been applied to commercial combustion turbines burning gaseous fuels. Baghouses, ESPs, and scrubbers are typically used on solid or liquid-fuel fired sources with high PM emission concentrations, and are not used in gaseous fuel-fired applications, which have inherently low PM emission concentrations.

None of these control technologies is appropriate for use on gaseous fuel-fired combustion turbines because of their very low PM emissions levels, and the small aerodynamic diameter of PM from gaseous fuel combustion. Review of the RBLC, as well as USEPA and state permit databases, indicates that post-combustion controls have not been required as BACT for gaseous fuel-fired fired combined-cycle combustion turbines. Therefore, the use of baghouses, ESPs, and scrubbers is not considered technically feasible.

ESC proposes that PM, PM_{10}, and $PM_{2.5}$ BACT for the Combustion Turbines is the employment of good combustion practices, along with the use of clean fuels such as natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane; and inlet air filtration to achieve an emission limit of 7.6 lb/hr for PM, PM_{10}, and $PM_{2.5}$.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness
The use of clean-burning fuels, good combustion practices, and inlet air filtration are the technically feasible technologies to control PM, PM_{10}, and $PM_{2.5}$ emissions to no more than 15.3 lb/hr. This is equivalent to an emission rate of 0.0054 lb/MMBtu or less.

Review of recent permits and the RBLC for Combustion Turbines indicates that the proposed PM, PM_{10}, and $PM_{2.5}$ emission rates are lower than those specified in permits for similar plants, such as the International Station Power Plant, Mankato Energy Center, Caithness Bellport Energy Center, and Cricket Valley Energy Project. These projects tend to have PM, PM_{10}, and $PM_{2.5}$ emission rates on the order of 0.012 lb/MMBtu.

Step 4 - Evaluate Most Effective Controls and Document Results
Based on the information presented in this BACT analysis, using proposed good combustion practice, natural gas, ethane, or a blend of natural gas and ethane, and inlet air filtration to control PM, PM_{10}, and $PM_{2.5}$ emissions to no more than 0.0054 lb/MMBtu. This is consistent with BACT at other similar sources. Therefore, an assessment of the economic and environmental impacts is not necessary.

Step 5 – Select BACT

The proposed BACT for PM, PM_{10}, and $PM_{2.5}$ emissions from the Combustion Turbines is the use of clean-burning fuels, good combustion practices, and inlet air filtration to control PM, PM_{10}, and $PM_{2.5}$ emissions to no more than 0.0054 lb/hr. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Auxiliary Boiler

The technologies potentially available to control PM, PM_{10}, and $PM_{2.5}$ emissions from small boilers are:

(1) Cyclones/centrifugal collectors;
(2) Fabric filters/baghouses;
(3) ESPs; and
(4) Scrubbers.

However, a similar rationale eliminates the use of cyclones due to their inability to control particles smaller than 10 microns in diameter. In addition, the other add-on particulate control techniques have not been employed to remove PM from relatively small, natural gas-fired combustion units, such as the proposed Auxiliary Boiler.

A review of the RBLC, as well as USEPA and state permit databases indicates that there are no small boilers employing post-combustion control equipment to reduce PM, PM_{10}, and $PM_{2.5}$ to achieve BACT. The determinations for small boilers identify the selection of clean fuels (i.e., low-sulfur, low-ash content) and good combustion practices as BACT for PM, PM_{10}, and $PM_{2.5}$ emissions.

The proposed Auxiliary Boiler is a unit capable of firing natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane that will employ good combustion practices to minimize PM, PM_{10}, and $PM_{2.5}$ to achieve BACT emission levels.

Although BACT is a technology based standard, ESC evaluated the consistency of other relevant permits to identify the level of emissions determined as BACT. The proposed PM emission rate of 0.008 lb/MMBtu for the Auxiliary Boiler is comparable to most similar units noted in the RBLC and in recently issued permits.

A review of available permits and determinations for comparable boilers, ESC identified several recent permits for comparable boilers. The preponderance of the recently permitted boilers have PM emission limits in the range of 0.0007 to 0.008 lb/MMBtu.

There are several, but fewer, entries for boilers with permitted PM limits below the 0.007 lb/MMBtu, including:

- A 60 MMBtu/hr boiler at Cricket Valley Energy facility in New York, which is permitted for 0.005 lb/MMBtu;
- A 46 MMBtu/hr boiler at Klausner Holding USA, Inc. in South Carolina, which is permitted for 0.005 lb/MMBtu;
- A 40 MMBtu/hr boiler at Hickory Run Energy Station in Pennsylvania, which is permitted for 0.005 lb/MMBtu;
- A 40 MMBtu/hr boiler at the DTE Energy Company (DTE) Renaissance Power Plant in Michigan, which is permitted for 0.005 lb/MMBtu;
- A 93 MMBtu/hr boiler at the CPV St. Charles Energy Center in Maryland, which is permitted for 0.005 lb/MMBtu;
- A 21 MMBtu/hr boiler at Pioneer Valley Energy Center in Massachusetts, which is permitted for 0.0048 lb/MMBtu;
- A 29.4 MMBtu/hr boiler at Caithness Bellport Energy Center in New York, which is permitted for 0.003 lb/MMBtu;
- A 29.4 MMBtu/hr boiler at Caithness Bellport Energy Center in New York, which is permitted for 0.003 lb/MMBtu;

The RBLC and other permits reviewed for equipment that is installed and operating identify the use of natural gas and good combustion practices as BACT for PM, PM_{10}, and $PM_{2.5}$ for small boilers. Accordingly, the proposed BACT for PM, PM_{10}, and $PM_{2.5}$ is an emission limit of 0.008 lb/MMBtu achieved using natural gas, ethane, or a blend of these fuels, and good combustion practices. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Fuel Gas Heater

The technologies potentially available to control PM, PM_{10}, and $PM_{2.5}$ emissions from small boilers are:

(1) Cyclones/centrifugal collectors;
(2) Fabric filters/baghouses;

(3) ESPs; and
(4) Scrubbers.

However, a similar rationale eliminates the use of cyclones due to their inability to control particles smaller than 10 microns in diameter. In addition, the other add-on particulate control techniques have not been employed to remove PM from relatively small, natural gas-fired combustion units, such as the proposed Fuel Gas Heater.

A review of the RBLC, as well as USEPA and state permit databases indicates that there are no small boilers employing post-combustion control equipment to reduce PM, PM_{10}, and $PM_{2.5}$ to achieve BACT. The determinations for small boilers identify the selection of clean fuels (i.e., low-sulfur, low-ash content) and good combustion practices as BACT for PM, PM_{10}, and $PM_{2.5}$ emissions.

The proposed Fuel Gas Heater is a unit capable of firing natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane that will employ good combustion practices to minimize PM, PM_{10}, and $PM_{2.5}$ to achieve BACT emission levels.

Although BACT is a technology based standard, ESC evaluated the consistency of other relevant permits to identify the level of emissions determined as BACT. The proposed PM emission rate of 0.008 lb/MMBtu for the Fuel Gas Heater is comparable to similar units noted in the RBLC and in recently issued permits. There is one facility, the Wolverine Power Supply Cooperative, LLC with a proposed PM BACT limit of 0.11 lb/hr (0.00152 lb/MMBtu) for a Fuel Gas Heater firing diesel fuel.

The RBLC and other permits reviewed for equipment that is installed and operating identify the use of natural gas and good combustion practices as BACT for PM, PM_{10}, and $PM_{2.5}$ for small boilers ($\leq$100 MMBtu/hr). Accordingly, the proposed BACT for PM, PM_{10}, and $PM_{2.5}$ is an emission limit of 0.008 lb/MMBtu achieved using natural gas, ethane, or a blend of these fuels, along with good combustion practices.

Emergency Generator and Fire Water Pump

ESC proposes that BACT for PM, PM_{10}, and $PM_{2.5}$ is an emission limit of 0.025 g/hp-hr for the Emergency Generator and 0.075 g/hp-hr for the Fire Water Pump. The emission standard for CI RICE specified in 40 CFR 60, Subpart IIII is 0.15 g/hp-hr. Based on the definition of BACT, the facility must at a minimum meet or improve upon the limit established in the NSPS. The facility proposes to operate the emergency equipment using ULSD as fuel.

A literature review to establish a list of potential control technologies available for emergency engines concludes that there are currently no facilities employing post-combustion controls on RICE engines of these sizes to achieve BACT for PM, PM_{10}, and $PM_{2.5}$. The use of good combustion practices and clean fuels, such as ULSD, are relied upon to achieve BACT for PM, PM_{10}, and $PM_{2.5}$.

For the Emergency Generator, a review of recent permits and the RBLC includes determinations with emission levels as low as 0.02 g/hp-hr for similar sized engines, with BACT described as good combustion practices

(e.g. a 1,341 hp emergency generator at Lake Charles Gasification Facility in Louisiana, which has reportedly ceased development). As evidenced by the wide variety of emission levels listed in the RBLC, different engine vendors and models specify a wide range of PM, PM_{10}, and $PM_{2.5}$ emissions.

For the Fire Water Pump, a review of recent permits and the RBLC for similar equipment indicates values in line with a 0.15 g/hp-hr limit or higher (i.e., Live Oaks, Wolverine and Pioneer Valley). However, there are instances of permit limits as low as 0.01 gr/hp-hr (e.g. a 444 hp fire pump engine at SNF Flopam, Inc. in Louisiana).

Given the limited operating role of the equipment to support the facility during emergency periods and for periodic maintenance and readiness testing, and the small emission reductions associated with achieving the lower PM, PM_{10}, and $PM_{2.5}$ emission rates listed in the RBLC; there is no appreciable environmental benefit associated with achieving PM, PM_{10}, and $PM_{2.5}$ emission levels below the proposed values of 0.09 g/hp-hr and 0.15 g/hp-hr for the Emergency Generator and the Fire Water Pump, respectively. Therefore, BACT for PM, PM_{10}, and $PM_{2.5}$ for the Emergency Generator and Fire Water Pump is the exclusive use of ULSD and good combustion practices to achieve an emission limit of 0.025 g/hp-hr and 0.075 g/hp-hr, respectively.

Cooling Tower

Actual drift loss rates from wet cooling systems, including those proposed for this Project, are affected by a variety of factors, including the type and design of the cooling system, capacity, velocity of air flow, density of the air in the Cooling Tower, and the TDS concentration in the circulating water. Commercially available techniques used to limit PM, PM_{10}, and $PM_{2.5}$ drift from wet Cooling Towers, with the most efficient options presented first, are discussed below.

Drift eliminators are incorporated into Cooling Tower systems to remove as many water droplets from the air leaving the system as possible. Types of drift eliminators include herringbone (blade-type), wave form, and cellular (or honeycomb) designs; system materials of construction may include ceramics, fiber reinforced cement, fiberglass, metal, plastic, or wood. Designs may include other features, such as corrugations and water removal channels, to enhance the drift removal further. Drift eliminators are considered standard in the power sector. The drift rate as a percentage of circulating water flow rates varies with the specific project, and typically ranges from 0.01 to 0.0005% of circulating water flow rates. Higher efficiency drift eliminators can achieve drift loss rates of 0.0005% of the circulating water flow rates.

Another approach to reducing PM emissions is by limiting TDS concentrations in the circulating water. In general, water droplets released as drift from wet Cooling Towers contain TDS concentrations equivalent to the solids concentrations in the circulating water. Reducing the TDS concentrations in the water, including by managing the cycles of concentrations, minimizes drift. In any particular project, TDS concentrations are defined primarily by the water source and the concentration cycles.

Maintaining low air velocities is an additional technique to reduce PM emissions from Cooling Towers. Particulate entrainment rates are influenced by air velocities in the system, so maintaining low (or optimum design) air velocities can reduce the drift.

ESC proposes to install a Cooling Tower equipped with high-efficiency drift eliminators that will achieve a minimum of a 0.0005% drift, which is the most effective technique to reduce PM, PM_{10}, and $PM_{2.5}$ emissions based on a review of RBLC determinations, recent permits, and evaluation of available literature.

A review of the RBLC data and several other recently permitted Cooling Towers throughout the U.S. conclude that the levels proposed by ESC were either equivalent to, or lower than, those for other permitted sources. Therefore, the proposed BACT for the Cooling Tower is the installation of the high efficiency mist eliminators with a drift loss of 0.0005%.

The proposed PM, PM_{10}, and $PM_{2.5}$ BACT for all sources is summarized in Table 3-17.

Table 3-17 Proposed PM, PM_{10}, and $PM_{2.5}$ BACT

Emission Source	Proposed PM, PM_{10}, and $PM_{2.5}$ BACT
Combustion Turbines	0.00054 lb/MMBtu Use of natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane, good combustion practices, combustion turbine inlet air filtration.
Auxiliary Boiler	0.008 lb/MMBtu Use of natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane, and good combustion practices
Fuel Gas Heater	0.008 lb/MMBtu Use of natural gas (raw or pipeline quality), ethane, or a blend of natural gas and ethane, and good combustion practices
Emergency Generator	0.025 g/hp-hr Use of ULSD and good combustion practices
Fire Water Pump	0.075 g/hp-hr Use of ULSD and good combustion practices
Cooling tower	Use of high efficiency drift eliminators with a drift loss of $\leq$ 0.0005%

3.4.2.2.4 VOC BACT

Combustion Turbines

Step 1 – Identify Potential Control Technologies
Like CO emissions, VOC emissions occur from incomplete combustion.

Effective combustor design and post-combustion control using Oxidation Catalysts are the available technologies for controlling VOC emissions from combustion turbines. The GE Frame 7HA.01 industrial combustion turbines proposed by ESC are able to achieve relatively low uncontrolled VOC emissions because their combustors have firing temperatures of approximately 2,500 °F with exhaust temperatures of approximately 1,000 °F. A DLN combustor-equipped combustion turbines using an Oxidation Catalyst can achieve VOC emissions in the 1 to 2 ppmvd @ 15% O_2 range. As noted above in the NO_x BACT analysis, the EM_x™ and XONON™ technologies were determined not to be feasible for the proposed combustion turbines, so they have not been considered further here.

Good Combustion Controls

As previously discussed, VOCs are formed from incomplete combustion of the carbon present in the fuel. VOC formation is minimized by designing the combustors to completely oxidize the fuel carbon to CO_2. This is achieved by ensuring that the combustors are designed to allow complete mixing of the combustion air and fuel at combustion temperatures with an excess of combustion air. Higher combustion temperatures reduce VOC formation, but at the expense of increased NO_x formation. The use of water/steam injection or DLN combustors tends to lower combustion temperatures to reduce NO_x formation, but potentially increases VOC formation. However, good combustor design and best operating practices will minimize VOC formation while reducing the combustion temperatures and NO_x emissions.

Oxidation Catalysts

Oxidation Catalysts typically use precious metal catalyst beds. Like SCR systems for combined-cycle combustion turbines, Oxidation Catalysts are typically placed inside the HRSGs. The catalyst enhances oxidation of VOC to CO_2, without the addition of any chemical reagents. Oxidation Catalysts have been successfully installed on numerous simple- and combined-cycle combustion turbines.

Step 2 - Eliminate Technically Infeasible Options

Good combustor design and the use of Oxidation Catalysts are both technically feasible options for controlling VOC emissions from the proposed combustion turbines.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Based on the preceding discussions, using good combustor controls and Oxidation Catalysts are technically feasible combustion turbines VOC emission control technologies. ESC proposes to control VOC emissions using these techniques to meet VOC emission limits of 1.0 and 2.0 ppmvd @ 15% O_2 firing natural gas and up to 100% ethane, respectively.

Available permits and BACT determinations were reviewed to identify VOC emission rates that have been achieved in practice for other comparable gaseous fuel-fired combustion turbines projects. The majority of the projects had permitted VOC emission rates equal to or greater than the levels proposed by ESC (1.0 and 2.0 ppmvd @ 15% O_2 firing natural gas and up to 100% ethane, respectively).

However, the following projects were identified with VOC emission rates lower than those proposed by ESC.

(1) FPL Turkey Point Power Plant;
(2) FPL West County Energy Center;
(3) Georgia Power Plant McDonough-Atkinson;
(4) Calpine Russell City Energy Center; and
(5) Dominion Virginia Power Warren County Power Station.

These projects are discussed in more detail below.

FPL Turkey Point Power Plant
FPL's Turkey Point Power Plant Unit 5 is a combined-cycle plant located in Miami-Dade County, Florida. It has VOC permit limits of 1.9 and 1.3 ppmvd @ 15% O_2 with and without duct firing, respectively. The 1.3 ppmvd @ 15% O_2 limit without duct firing is less stringent than the 1.0 ppmvd @ 15% O_2 limit proposed by ESC. The 1.9 ppmvd @ 15% O_2 limit with duct firing is only slightly more stringent than the 2.0 ppmvd @ 15% O_2 limit proposed by ESC. Turkey Point Unit 5 consists of four (4) GE Frame 7FA combustion turbines, and began commercial operation in May 2007.

FPL West County Energy Center
FPL's West County Energy Center Unit 3 is a combined-cycle plant located in Loxahatchee, northern Palm Beach County, Florida. It has VOC permit limits of 1.5 and 1.2 ppmvd @ 15% O_2 with and without duct firing, respectively. The 1.2 ppmvd @ 15% O_2 limit without duct firing is less stringent than the 1.0 ppmvd @ 15% O_2 limit proposed by ESC. The 1.5 ppmvd @ 15% O_2 limit with duct firing is more stringent than the 2.0 ppmvd @ 15% O_2 limit proposed by ESC. West County Energy Center Unit 3 consists of three (3) Mitsubishi Power Systems Model M501G combustion turbines, and began commercial operation in June 2011. Given the lack of long-term operation and compliance with these emission limits,

these CO emission levels are not considered achieved in practice at this time.

Georgia Power Plant McDonough-Atkinson

Georgia Power's Plant McDonough-Atkinson Units 4, 5, and 6 are combined-cycle units located in Smyrna, Cobb County, Georgia. Each unit consists of two (2) Mitsubishi Heavy Industries, LTD (MHI) Model M501G combustion turbines. Each unit has VOC permit limits of 1.8 and 1.0 ppmvd @ 15% O_2 with and without duct firing, respectively. The 1.0 ppmvd @ 15% O_2 limit (1-hour basis) without duct firing matches the 1.0 ppmvd @ 15% O_2 limit proposed by ESC. The 1.8 ppmvd @ 15% O_2 limit (3-hour average) with duct firing is slightly more stringent than the 2.0 ppmvd @ 15% O_2 limit proposed by ESC. Units 4, 5, and 6 became operational in January 2012, May 2012, and October 2012, respectively. Given the lack of long-term operation and compliance with these emission limits, these CO emission levels are not considered achieved in practice at this time.

Calpine Russell City Energy Center

Calpine's Russell City Energy Center has a VOC permit limit of 1.0 ppmvd @ 15% O_2 with and without duct firing. The 1.0 ppmvd @ 15% O_2 limit without duct firing which matches the limit proposed by ESC. The 1.0 ppmvd @ 15% O_2 limit with duct firing is more stringent than the limit proposed by ESC. However, construction of the Russell City Energy Center has not been completed. Therefore, long-term demonstration of compliance with this VOC emission rate and averaging period has not been demonstrated in practice.

Dominion Virginia Power Warren County Power Station

This combined-cycle power plant is located in Front Royal, Warren County, Virginia. Originally developed by Competitive Power Ventures (CPV), the project was sold to Virginia Electric Power and Power Company (Dominion Virginia Power) in 2008.

A final PSD permit for a nominal 1,300 MW combined-cycle plant was issued by the Virginia Department of Environmental Quality (VDEQ) on December 21, 2010. This final PSD permit includes VOC emission limits of 1.6 and 0.7 ppmvd @ 15% O_2, on a 3-hour average basis, for operating conditions with and without duct firing, respectively. The facility was permitted with Oxidation Catalysts and good combustion practices for CO emission control. The plant began commercial operation on December 10, 2014. The plant consists of three (3) Mitsubishi Model M501GAC combustion turbines. Given the lack of long-term operation and compliance with these emission limits, these VOC emission levels are not considered "achieved in practice" at this time.

Step 4 - Evaluate Most Effective Controls and Document Results
The proposed VOC emission rates of 1.0 and 2.0 ppmvd @ 15% O_2 firing natural gas and up to 100% ethane, respectively, are the lowest VOC emission rates achieved or permitted for other similar facilities. Therefore, an assessment of the economic and environmental impacts is not necessary.

Step 5 - Select BACT
ESC proposes that BACT for VOC emissions from the combustion turbines is good combustion design and the use of Oxidation Catalysts to achieve VOC emissions rates of 1.0 and 2.0 ppmvd @ 15% O_2 firing natural gas and up to 100% ethane, respectively.

The proposed VOC emission rates of 1.0 and 2.0 ppmvd @ 15% O_2 firing natural gas, ethane, or a blend of these fuels, are the lowest VOC emission rates demonstrated in practice or permitted for other facilities using good combustion practices and Oxidation Catalysts. There is little or no BACT precedent for ethane firing.

Auxiliary Boiler

There is currently no technically feasible add-on control technology to reduce VOC emissions from gaseous fuel-fired Auxiliary Boilers of the size proposed for the ESC Project. VOC emissions are minimized in these units through good combustion practices, ULNB, and FGR, which support effective combustion that minimizes VOC formation.

ESC proposes a VOC emission level of 0.008 lb/MMBtu as BACT for the Auxiliary Boiler. A review of available permits and RBLC determinations for small boilers identified several recent permits with VOC limits. Several RBLC determinations have VOC emission levels in the 0.002 to 0.006 lb/MMBtu range. One recent permit, Cricket Valley Energy Center in New York, is the only permit reviewed with a value below 0.002 lb/MMBtu. The permitted VOC emission limit for the 60 MMBtu/hr auxiliary boiler at Cricket Valley Energy Center is 0.0015 lb/MMBtu. However, because the Cricket Valley Energy Center has not been constructed at this time, the VOC value of 0.0015 lb/MMBtu has not been achieved in practice.

However, given the low baseline level of annual VOC emissions for the proposed Auxiliary Boiler (2.05 tons/yr), the decrease in VOC emissions if the Auxiliary Boiler were required to achieve a VOC emission level of 0.002 lb/MMBtu would be no more than 1.54 tons/yr. Therefore, ESC concludes that BACT for VOC is an emission level of 0.008 lb/MMBtu. ESC will achieve this emission level by using natural gas, ethane, or a blend of these fuels, and employing good combustion practices. There is little or no BACT precedent for ethane firing. ESC believes that it is appropriate to propose the same BACT level for ethane firing as for natural gas firing.

Fuel Gas Heater

There is currently no technically feasible add-on control technology to reduce VOC emissions from gaseous fuel-fired Fuel Gas Heaters of the size proposed for the ESC Project. VOC emissions are minimized in these units through good combustion practices, LNB, and FGR, which support effective combustion that minimizes VOC formation.

A review of available permits and RBLC determinations for small boilers identified several recent permits with VOC limits. The most stringent permit limits are generally in the range of 0.0015 lb/MMBtu to 0.006 lb/MMBtu. Projects containing VOC limits at the lower end of this range (Green Energy Partners at 0.002 lb/MMBtu, Hickory Run at 0.0015 lb/MMBtu, Cricket Valley at 0.0015 lb/MMBtu and Pioneer Valley at 0.003 lb/MMBtu) have not yet been constructed and, therefore, are not considered demonstrated. Moreover, the more recent VOC permit limits are in 0.005 to 0.006 lb/MMBtu range. ESC proposes a VOC emission level of 0.007 lb/MMBtu as BACT for the Fuel Gas Heater.

However, given the small size (5.4 MMBtu/hr) and low baseline level of annual VOC emissions for the proposed Fuel Gas Heater (0.17 tons/yr), the decrease in VOC emissions if the Fuel Gas Heater were required to achieve a VOC emission level of 0.002 lb/MMBtu would be no more than 0.12 tons/yr. Therefore, ESC concludes that BACT for VOC is an emission level of 0.007 lb/MMBtu. ESC will achieve this emission level by using natural gas, ethane, or a blend of these fuels, and employing good combustion practices.

Emergency Generator and Fire Water Pump

See NO_x BACT evaluations in Section 3.4.2.2.1 which addresses NO_x plus NMHC as NO_x and VOC BACT.

The proposed VOC BACT for all sources is summarized in Table 3-18.

Table 3-18 Proposed VOC BACT

Emission Source	Proposed VOC BACT
Combustion Turbines	1 ppmvd @ 15% O_2 (natural gas firing) 2 ppmvd @ 15% O_2 (ethane firing) Oxidation Catalysts and good combustion practices
Auxiliary Boiler	0.008 lb/MMBtu Use of natural gas, ethane, or a blend of these fuels, and good combustion practices
Fuel Gas Heater	0.007 lb/MMBtu Use of natural gas, ethane, or a blend of these fuels, and good combustion practices
Emergency Generator	4.8 g/hp-hr NMHC+NO_X Use of ULSD and good combustion practices
Fire Water Pump	3.0 g/hp-hr NMHC+NO_X Use of ULSD and good combustion practices

3.4.2.2.5 H_2SO_4 BACT

Combustion Turbines

Step 1 – Identify Potential Control Technologies

SO_2 is generated during the combustion process as a result of the thermal oxidation of the sulfur contained in the fuel. While the SO_2 generally remains in a gaseous phase throughout the flue gas flow path, a small portion may be oxidized to SO_3. The SO_3 can subsequently combine with water vapor to form H_2SO_4. H_2SO_4 emissions from the Project are subject to BACT requirements (estimated potential emissions of H_2SO_4 will be greater than the 7 tons/yr PSD SER). This section summarizes the BACT analysis conducted for H_2SO_4.

Technologies generally employed to control SO_2 and H_2SO_4 mist emissions from combustion sources consist of fuel treatment and post-combustion add-on controls that rely on chemical reactions within the control device to reduce the concentration of SO_2 in the flue gas [also referred to as Flue Gas Desulfurization (FGD) systems]. Based upon a review of RBLC search results, existing permits for similar combined-cycle CTs, CT vendor information and technical literature, post-combustion controls have not been applied to CTs. Minimization of SO_2 and H_2SO_4 mist emissions has been achieved in practice through combustion of natural gas. ESC proposes to control H_2SO_4 mist emissions through the use of natural gas or ethane with a maximum sulfur content of 0.4 gr/100 scf, which equates to an H_2SO_4 emission limit of 0.001 lb/MMBtu.

The use of natural gas is the only available and, therefore, top level of control for SO_2 and H_2SO_4. Therefore, a ranking is not required to establish the technology.

Based on EPA "top-down" BACT analysis guidance, analyses of economic, energy and environmental impacts is not required in this case as the "top" or most stringent control technology is selected for SO_2 and H_2SO_4. Regardless, there are no potential energy, environmental, or economic impacts that would preclude the use of natural gas in the combined-cycle CT.

ESC proposes the use of natural gas, ethane, or a blend of these fuels in the CT to minimize emissions of SO_2 and H_2SO_4 mist, which represents the most stringent SO_2/H_2SO_4 control available for combined-cycle CT.

Limiting the amount of sulfur in the fuel is a common practice for natural gas-fired power plants. The practical limitation is considered region-specific, depending on the source/specifications of the natural gas in the pipeline supplying the plant. Most BACT limits for H_2SO_4 are expressed either as a limit on fuel sulfur content or as an H_2SO_4 emission rate in lb/MMBtu.

Recent sulfur contents range from 0.1 to 2 gr/100 scf, and SO_2 emission factors range from 0.0003 to 0.0057 lb/MMBtu. For the Project, ESC proposes a maximum pipeline sulfur content of 0.4 gr/100 scf. More stringent listed SO_2 and H_2SO_4 emission limits in the RBLC are specific to projects with more stringent natural gas sulfur content specifications that are applicable to the geographic location of those projects. As SO_2 and H_2SO_4 mist formation are directly related to fuel sulfur content, the applicable emissions limitations must also be directly linked to those specifications.

As the proposed SO_2 and H_2SO_4 emissions limits are equivalent to the most stringent identified limits that are considered achieved in practice, given the maximum expected natural gas sulfur content, they are sufficiently demonstrated as BACT for the combined-cycle CTs in this application.

Auxiliary Boiler and Fuel Gas Heater

Emissions of SO_2 and H_2SO_4 from the Auxiliary Boiler and Fuel Gas Heater result from oxidation of fuel sulfur. For SO_2 and H_2SO_4, this evaluation does not identify and discuss each of the five individual steps of the "top-down" BACT process, since there are no post-combustion control technologies available for SO_2 or H_2SO_4 emissions from small natural gas-fired boilers and fuel gas heaters.

There are no applicable NSPS SO_2 or H_2SO_4 standards applicable to natural gas-fired equipment of the size range specified for the proposed Auxiliary Boiler or Fuel Gas Heater.

ESC proposes the use of natural gas or ethane with a sulfur content of 0.4 gr/100 scf in the Auxiliary Boiler and Fuel Gas Heater to minimize emissions of SO_2 and H_2SO_4, which represents the most stringent controls available for this natural gas-fired equipment. The proposed SO_2 emission limit is 0.0015 lb/MMBtu, based on the assumption of 100% conversion of the sulfur in the fuel to SO_2. The proposed H_2SO_4 emission rate of 8.5E-05 lb/MMBtu is based on an assumed 5% conversion of fuel sulfur to H_2SO_4. The proposed limits are consistent with the most stringent limits identified, in consideration of the proposed fuel sulfur content of 0.4 gr/100 scf.

3.4.2.2.6 GHG BACT

The GHG Tailoring Rule regulates emissions from six (6) covered GHGs: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Typically, GHG emissions are listed in terms of CO_2e. GHG emissions associated with combustion equipment are limited to CO_2, CH_4 and N_2O. In calculating CO_2e emissions, GWPs are used to normalize emissions of pollutants such as CH_4 and N_2O, which are deemed to have a greater detrimental impact on a per pound basis than CO_2. The GWP for CO_2 is set at 1, while CH_4 and N_2O have GWPs of 25 and 298, respectively. The evaluation of technologies to minimize GHG emissions typically focuses on CO_2 emissions and mechanisms to reduce CO_2 emissions, which dominates the CO_2e emission value for combustion based equipment. As such, the BACT evaluation presented in this document refers to CO_2 as the primary GHG pollutant for proposed Project equipment.

In general, there are two strategies available to minimize GHG emissions for electric generating units (EGUs): (1) add-on control via carbon capture systems to strip CO_2 from the flue gas stream for subsequent re-use or sequestration, and (2) energy efficiency methods.

An important consideration for power plants is the source definition. USEPA permit guidance indicates that the Clean Air Act does not provide latitude for a permitting authority to redefine a source as part of a BACT evaluation. The proposed Project is a base load electric generating facility using gaseous fuel-fired combined-cycle combustion turbines technology. Only technologies that are relevant to the proposed equipment and fit within the business objectives of a facility should be considered in Step 1 of a BACT evaluation. For example, factors such as fuel type (coal versus solar or wind), or operational parameters (i.e., base load versus peak shaving) would be considered part of the “source definition” for power plants.

Combustion Turbines

Step 1 – Identify Potential Control Technologies

Carbon Capture and Storage

Carbon capture and storage (CCS) is the only potentially available add-on control option at this time. In order to capture CO_2 emissions from the flue gas, CO_2 must be separated from the exhaust stream. This can be accomplished by a variety of technologies that may include:

- Pre-combustion systems designed to separate CO_2 and hydrogen in the high-pressure synthetic gas typically produced at Integrated Gasification Combined-Cycle (IGCC) power plants; and

- Post-combustion systems that separate CO_2 from flue gas such as:

    - Chemical absorption using an aqueous solution of amines as chemical solvents; or

    - Physical absorption using physical absorption processes such as Rectisol or Selexol.

Separation can be facilitated using oxygen combustion, which employs oxygen instead of ambient air for make-up air supplied for combustion. Applicability of different processes to particular applications will depend on temperature, pressure, CO_2 concentrations, and the presence or absence of contaminants in the gas or exhaust stream.

After CO_2 is separated, it must be prepared for beneficial reuse or transport to a sequestration or storage facility, if a storage facility is not locally available for direct injection. In order to transport CO_2, it must be compressed and delivered via pipeline to a storage facility. Although beneficial reuse options are developing, such as the use of captured material to enhance oil or gas recovery from well fields in the petroleum industry, currently, the demand for CO_2 for such applications is well below the quantity of CO_2 that is available for capture from EGUs.

Without a market to use the recovered CO_2, the material would instead require sequestration, or permanent storage. Sequestration of CO_2 is generally accomplished by injecting captured CO_2 at high pressures into deep subsurface formations for long-term storage. These subsurface formations must be either local to the point of capture, or accessible via pipeline, to enable the transportation of recovered CO_2 to the permanent storage location. Storage facilities typically include:

1) Geologic formations;
2) Depleted oil and gas reservoirs;
3) Unmineable coal seams;
4) Saline formations;
5) Basalt formations; or
6) Terrestrial ecosystems.

Once injected, the pressurized CO_2 remains "supercritical" and behaves like a liquid. Supercritical CO_2 is denser and takes up less space than gaseous CO_2. Once injected, the CO_2 occupies pore spaces in the surrounding rock. Saline water that already resides in the pore space would be displaced by the denser CO_2. Over time, the CO_2 can dissolve in residual water, and chemical reactions between the dissolved CO_2 and rock can create solid carbonate minerals, more permanently trapping the CO_2.

Thermal Efficiency

An emissions reduction strategy focused on energy efficiency primarily deals with increasing the thermal efficiency of a combustion turbines. Higher thermal efficiency means that less fuel is required for a given output, which results in lower GHG emissions. Maximizing EGU efficiency is an alternative available to reduce the consumption of fuel required to generate a fixed amount of output. The largest efficiency losses for a combined-cycle combustion turbines are inherent in the design of the combustion turbines and the heat recovery system. The mechanical input to the combustion turbines compressor consumes energy, and is integral to how a combustion turbines works. Therefore, there is no opportunity for efficiency gains other than the differences in design between manufacturers or models. Heat recovery in the exhaust gas is another point of efficiency loss. Heat recovery efficiency depends upon the design of the heat recovery system, and varies between manufacturers and models.

The efficiency of the Combustion Turbines employed can vary widely. One alternative to reduce CO_2 emissions is to maximize combustion turbines efficiency through various design techniques. Any increase in energy efficiency within the operation of the combustion turbines yields reductions in the generation of CO_2 emissions on a per unit output basis. For example, combustion turbines suppliers typically offer several different models with a variety of efficiency ratings. The efficiency ratings of the proposed ESC Combustion Turbines compare quite favorably to those for other similar large combined-cycle projects.

Combustion Air Cooling

A common method used to improve the energy efficiency of combustion turbines is to cool the combustion air entering the combustion turbines during the summer months. Cooling the combustion air via heat exchanger systems maximizes the expansion of the air molecules and enhances the work the expanding gases perform on the turbines blades, hence producing higher amounts of electricity. A higher electric output improves the overall efficiency of the EGU. Based on general guidance available and recent analyses conducted regarding combustion air cooling, achievable reductions in fuel usage and CO_2 emissions may range from 10 – 15%[7] .

Lower Carbon Fuels

Carbon dioxide is produced as a combustion product of any carbon-containing fuel. All fossil fuels contain varying amounts of fuel-bound carbon that is converted during the combustion process to produce CO and CO_2. However, the use of lower carbon content gaseous fuels such as natural gas or ethane, compared to the use of higher carbon-containing fuels such as coal, pet-coke or residual fuel oils, can reduce CO_2 emissions from combustion.

Natural gas and ethane combustion result in significantly lower GHG emissions than coal combustion (117.0 lb/MMBtu and 131.4 lb/MMBtu, for natural gas and ethane, respectively, versus 205.6 lb/MMBtu for bituminous coal).[8] Therefore, the use of lower carbon containing fuels in combustion turbines is an effective means to reduce the generation of CO_2 during the combustion process. An added advantage is the significant improvement in efficiency of advanced new combustion turbines compared to older, existing coal-fired units.

Step 2 - Eliminate Technically Infeasible Options

Carbon Capture and Storage

In general, the availability of add-on control options to remove GHGs from an EGU exhaust stream is limited. CCS is the only potentially available add-on control option at this time, and even this technology is limited and infantile in its development.

Although numerous carbon capture, storage, and beneficial CO_2 use demonstration projects are in various stages of planning and implementation across the globe, including several in the U.S. that are funded by the Department of Energy (DOE), the technologies needed for a

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[7] (Hyperion Energy Center Best Available Control Technology (BACT) Analysis for Emissions of Carbon Dioxide, March 2009).

[8] 40 CFR 98, Subpart C, Table C-1.

full-scale generating facility are not yet commercially available. In fact, President Obama formed an Interagency Task Force on Carbon Capture and Storage, co-chaired by DOE and USEPA, in early 2010 to develop a federal strategy for overcoming the barriers to the widespread, cost-effective deployment of CCS within 10 years, with an ultimate goal of bringing several commercial demonstration projects online by 2016[9].

Without a market to use the recovered CO_2, the material would instead require sequestration, or permanent storage. The geological formations near the ESC Project provide limited, if any, alternatives to adequately and permanently store recovered CO_2.

Extensive characterization studies would be needed to determine the extent and storage potential for CO_2 from ESC sources. These studies would take several years of investigation, including drilling characterization wells, and would likely require small-scale injection testing before determining their full-scale viability.

There are neither local geologic reservoirs, nor pipelines dedicated to CO_2 transport available near the proposed Project at this time. In addition, carbon capture technologies have yet to be demonstrated on a full-scale power generation facility. Therefore, options involving CCS are not currently considered feasible for this Project. Nevertheless, ESC is quantitatively evaluating cost-effectiveness of CCS as a hypothetical BACT option. This analysis is provided in **Appendix C**.

Thermal Efficiency
The use of combustion turbines with a higher thermal efficiency is a technically feasible alternative to one with a lower thermal efficiency rating.

Combustion Air Cooling
Although combustion air cooling is considered technically feasible, other options such as the use of more efficient combustion turbines are considered more effective in terms of overall net environmental benefit.

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[10] U.S. Interagency Task Force on Carbon Capture and Storage. "Report of the Interagency Task Force on Carbon Capture and Storage." August 2010. Available online: http://www.epa.gov/climatechange/downloads/CCS-Task-Force-Report-2010.pdf

The proposed combustion turbines will be equipped with inlet evaporative cooling systems, which are a form of combustion air cooling.

Lower Carbon Fuels
The use of lower carbon content gaseous fuels such as natural gas or ethane, compared to the use of higher carbon-containing fuels such as coal, pet-coke or residual fuel oils, is a technically feasible alternative to reduce CO_2 emissions.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness
ESC proposes to use a high thermal efficiency combustion turbines model, GE Frame 7HA.01, operated in combined-cycle mode. The proposed combustion turbines feature an extremely low heat rate when operating in combined-cycle mode, which translates to high efficiency because a low heat rates means less fuel is combusted to produce a unit amount of electric power output.

The table in **Appendix D** of this application contains a comparison of GHG emission rate and heat rate information for various combustion turbines projects, both simple-cycle and combined-cycle. Available information is regarding size, configuration, CO_2 or GHG emission rates, and heat rates is summarized. The relevant information for the ESC Combustion Turbines is included in this table.

Comparisons among the various combustion turbines are somewhat complicated in that different bases can be used to establish certain parameters. For example, combustion turbines outputs can be specified on a net or gross basis, and can vary based on fuel, load, ambient temperature, whether duct firing is occurring, and other factors. GHG emission rates can be specified on a LHV or HHV basis. Nevertheless, in context, the ESC Combustion Turbines compare favorably with other recent combustion turbines projects in terms of output-based GHG emission rates and heat rates, which indicates that the proposed combustion turbines represent an efficient design that has been accepted as BACT for GHGs in other PSD permits.

The proposed combustion turbines will be equipped with inlet evaporative cooling systems, which are a form of combustion air cooling.

ESC proposes the use of natural gas, ethane, or a blend of natural gas and ethane. Natural gas and ethane are lower carbon containing fuels that yield reduced GHG emissions.

Step 4 - Evaluate Most Effective Controls and Document Results
Based on the information presented in this BACT analysis and consistent with BACT at other similar sources, ESC proposes to employ the following GHG control techniques as part of this Project:

(1) Use of a high thermal efficiency combustion turbines model, GE Frame 7HA.01, operated in combined-cycle mode;
(2) Use of inlet evaporative cooling systems, which are a form of combustion air cooling;
(3) Use of lower carbon containing fuels (natural gas, ethane, or a blend of natural gas and ethane);

In addition, ESC proposes a facility-wide GHG emissions limit as GHG BACT for the Project. The proposed GHG emission limit from the Combustion Turbines, Auxiliary Boiler, Fuel Gas Heater, Emergency Generator, Fire Water Pump, and Circuit Breakers is 3,395,300 tons/yr, on a CO_2e basis. GHG emissions from the Project's combustion sources will be calculated in accordance with the methodology and emission factors noted in 40 CFR 98, Subparts C and D, as applicable. GHG emissions from the Project's Circuit Breakers will be calculated in accordance with the methodology and emission factors noted in 40 CFR 98, Subpart DD, as applicable.

Step 5 - Select BACT
For GHG BACT, ESC proposes to employ the following GHG control techniques:

(1) Use of a high thermal efficiency combustion turbines model, GE Frame 7HA.01, operated in combined-cycle mode;
(2) Use of inlet evaporative cooling systems, which are a form of combustion air cooling;
(3) Use of lower carbon containing fuels (natural gas or a blend of natural gas and up to 100% ethane);

ESC also proposes a facility-wide GHG emissions limit. The proposed GHG emission limit from the Combustion Turbines, Auxiliary Boiler, Fuel Gas Heater, Emergency Generator, Fire Water Pump, and Circuit Breakers is 3,395,300 tons/yr, on a CO_2e basis. GHG emissions from the Project's combustion sources will be calculated in accordance with the methodology and emission factors noted in 40 CFR 98, Subparts C and D, as applicable. GHG emissions from the Project's Circuit Breakers will be calculated in accordance with the methodology and emission factors noted in 40 CFR 98, Subpart DD, as applicable.

Auxiliary Boiler

There are currently no technically feasible add-on control technologies to reduce GHG emissions from the Auxiliary Boiler. Therefore, GHG emissions from these sources will be controlled by the use of natural gas and good combustion practices.

Fuel Gas Heater

There are currently no technically feasible add-on control technologies to reduce GHG emissions from the Fuel Gas Heater. Therefore, GHG emissions from these sources will be controlled by the use of natural gas and good combustion practices.

Emergency Generator and Fire Water Pump

There is currently no technically feasible add-on control technology to reduce GHG emissions from the Emergency Generator and Fire Water Pump. Therefore, ESC proposes to limit GHG emissions from these sources by using ULSD and good combustion practices.

Circuit Breakers

Sulfur hexafluoride (SF_6) gas is typically used in the circuit breakers associated with electricity generation equipment. Potential sources of SF_6 emissions include equipment leaks from SF_6 containing equipment, releases from gas cylinders used for equipment maintenance and repair operations, and SF_6 handling operations.

(1) Use of dielectric oil or compressed air circuit breakers that contain no SF_6 or other GHG pollutants; and
(2) Use of modern SF_6 circuit breakers designed to be totally enclosed systems.

Potential alternatives to SF_6 were addressed in the National Institute of Standards and Technology (NTIS) Technical Note 1425, *Gases for Electrical Insulation and Arc Interruption: Possible Present and Future Alternatives to Pure SF6.17.* According to this document, SF_6 is a superior dielectric gas for nearly all high voltage applications. It is easy to use, exhibits exceptional insulation and arc-interruption properties, and has proven its performance by many years of use and investigation. It is clearly superior in performance to the air and oil insulated equipment used prior to the development of SF_6-insulated equipment. The report concluded that although "…various gas mixtures show considerable promise for use in new equipment, particularly if the equipment is designed specifically for use with a gas mixture… it is clear that a significant amount of research must be performed for any new gas or gas mixture to be used in electrical equipment." Therefore, ESC believes there are currently no technically feasible options to the use of SF_6.

Circuit breakers with insulating gases other than SF_6 are not yet commercially available, and certainly any use of less effective insulation material to control emissions of just 58 tons/yr of CO_2e would not be warranted, even if it were available. As such, non-SF_6 circuit breakers will be eliminated. The only remaining feasible control is to use a modern, totally enclosed SF_6 circuit breakers.

In comparison to older SF_6 circuit breakers, modern breakers are designed as totally enclosed pressure systems with far lower potential for SF_6 emissions. Therefore, ESC proposes to implement modern state-of-the-art, gas-tight circuit breakers with the implementation of an inspection and maintenance program to identify and repair leaks. ESC will monitor SF_6 emissions from the circuit breakers annually according to the requirements of the Mandatory Greenhouse Gas Reporting Rule for Electrical Transmission and Distribution Equipment Use (40 CFR 98, Subpart DD). Annual emissions of SF_6 will be calculated according to the mass balance approach in Equation DD-1 of Subpart DD.

The proposed GHG BACT for all sources is summarized in Table 3-19.

Table 3-19 Proposed GHG BACT

Emission Source	Proposed GHG BACT
Combustion Turbines	Use of high thermal efficiency GE Frame 7HA.01 combustion turbines, use of lower carbon containing natural gas, ethane or a blend of natural gas and ethane
Auxiliary Boiler	Use of natural gas, ethane, or a blend of natural gas and ethane
Fuel Gas Heater	Use of natural gas, ethane, or a blend of natural gas and ethane
Emergency Generator	Use of ULSD fuel and good combustion practices
Fire Water Pump	Use of ULSD fuel and good combustion practices
Circuit Breakers	Totally enclosed SF_6 circuit breakers and leak detection and repair program

3.4.2.3 *Additional PSD Analyses*

The PSD regulations require additional analyses beyond BACT assessments. These additional analyses include:

- Assessment of compliance with NAAQS and PSD increments;
- An evaluation of whether the Project results in any impairment to visibility, soils, and vegetation that would occur as a result of the new source, and of general commercial, residential, industrial, and other growth associated with the new source. Furthermore, impacts on Class I areas must be analyzed to determine compliance with Class I increments and to assess the impacts of new emissions on air quality related values (AQRVs); and
- An evaluation of the Project's impacts on PSD Class I Areas.

These analyses will be addressed in the air quality dispersion modeling analyses that will be conducted in support of the air permitting.

3.5 NON-ATTAINMENT NEW SOURCE REVIEW (NA-NSR)

The ESC Project is located in Brooke County, which is designated as a non-attainment area for SO_2. If emissions of SO_2 from the Project are greater than 100 tons/yr, the Project will trigger the requirements of NA-NSR.

As indicated in Table 3-14, potential annual SO_2 emissions are less than the NA-NSR trigger threshold for new sources. Therefore, the proposed Project is not subject to NA-NSR for SO_2.

3.6 APPLICABLE REQUIREMENTS REVIEW

This section briefly outlines the federal and State air quality requirements to which the proposed ESC Project will be subject, in addition to the PSD and NA-NSR requirements presented previously.

3.6.1 Federal Requirements

3.6.1.1 New Source Performance Standards (NSPS)

3.6.1.1.1 Combustion Turbines

The combustion turbines are subject to 40 CFR 60 Subpart KKKK, "Standards of Performance for Stationary Combustion Turbines." All stationary gas turbines with a heat input at a peak load equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005 are subject to this NSPS Subpart KKKK. Note that stationary combustion turbines regulated under Subpart KKKK are exempt from the requirements of Subpart GG.

The Subpart KKKK emission limits are:

- NO_x – 15 ppmvd @ 15% O_2 or 0.43 lb/MW-hr gross energy output; and
- SO_2 – 0.90 lb/MW-hr gross energy output or 0.060 lb/MMBtu.

Subpart KKKK includes general compliance requirements (60.4333), monitoring requirements (60.4335-60.4370), reporting requirements (60.4375-60.4395), and performance testing (60.4400-60.4415). ESC will also be subject to applicable notification, monitoring and reporting and related applicable provisions of 40 CFR 60.7 and 60.8.

The proposed combustion turbines will meet the applicable emission limits and provisions of NSPS Subpart KKKK.

3.6.1.1.2 Auxiliary Boiler

The Auxiliary Boiler is subject to 40 CFR 60 Subpart Db, "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units" because the rated heat input of the Auxiliary Boiler, 111.9 MMBtu/hr, is greater than 100 MMBtu/hr and construction will commence after June 19, 1984. Subpart Db requirements for an auxiliary boiler that only burns natural gas or other gaseous fuels include:

- Per 40 CFR 60.44b and 60.46b, a NO_x emission limit of either 0.10 lb/MMBtu or 0.20 lb/MMBtu, (depending on whether the boiler has a low or high volumetric heat release rate), and associated performance testing;

- Per 40 CFR 60.48b(b), installation, calibration, maintenance, and operation of a Continuous Emission Monitoring System (CEMS) for NO_x and O_2 (or CO_2);

- Notification of the date of construction and actual startup (60.49b(a)); and

- Recordkeeping and reporting requirements (60.49b).

The proposed Auxiliary Boiler will meet the applicable emission limits and provisions of NSPS Subpart Db.

3.6.1.1.3 Fuel Gas Heater

The Fuel Gas Heater is not subject to any NSPS. 40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to units with rated heat inputs greater than 10 MMBtu/hr and less than 100 MMBtu/hr. With a maximum heat input of 5.4 MMBtu/hr, the Fuel Gas Heater is below the size threshold for 40 CFR 60 Subpart Dc applicability.

3.6.1.1.4 Emergency Generator and Fire Water Pump

The Emergency Generator and Fire Water Pump are subject to 40 CFR 60, Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" and the associated fuel, monitoring, compliance, testing, notification, reporting, and recordkeeping requirements (40 CFR 60.4200 *et seq*.) and related applicable provisions of 40 CFR 60.7 and 60.8. Emission limits for the Emergency Generator and Fire Water Pump are noted in Tables 3-7 and 3-8, respectively. Note that both engines are not subject to the Tier 4 requirements under Subpart IIII because they both will have cylinder displacement less than 10 liters per cylinder (L/cyl.).

The emission standards in NSPS Subpart IIII applicable to the Emergency Generator and Fire Water Pump are summarized in Table 3-20 below. The proposed Emergency Generator and Fire Water Pump will meet the applicable emission limits and provisions of NSPS Subpart IIII.

Table 3-20 Emission Standards for Emergency Engines (g/hp-hr)

Emergency Engine	Model Year	$NMHC+NO_X$	CO	PM
315 hp Fire Water Pump 225<kW<450 (300<hp<600)	2009 and after	3.0	2.6	0.15
2,000 kW Emergency Generator <10 L/cyl. and <2,237 kW (3,000 hp)	2006 and after	4.8	2.6	0.15

3.6.1.2 NSPS for GHGs (40 CFR Part 60)

NSPS Subpart TTTT "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units (EGUs)" became effective on October 23, 2015. NSPS Subpart TTTT establishes CO2 emission standards for certain EGUs. Pursuant to 40 CFR §60.5509(a), Subpart TTTT, as it pertains to stationary simple-cycle combustion turbines, applies to units that commenced "construction" after January 8, 2014 or commenced "reconstruction" after June 18, 2014 and that meet the relevant applicability conditions in 40 CFR §60.5509(a)(1) and (2), which are:

1. Have base load ratings greater than 250 MMBtu/hr; and
2. Serve generators capable of selling greater than 25 MW of electricity to a utility power distribution system.

The proposed CTs will be subject to this Subpart. NSPS Subpart TTTT limits CO_2 emissions from newly constructed CTs such as the proposed CTs, to 1,000 lb/MW-hr of electricity generated on a gross basis, on a 12-operating month rolling average. The proposed CTs will comply with this standard.

3.6.1.3 Acid Rain Program (40 CFR Parts 72-76, 45 CSR 33)

The Acid Rain Program is codified in 40 CFR Parts 72 through 78. This program aims to reduce acid rain by reduction of SO_2 and NO_x from utility units that have a nameplate electricity generation capacity greater than 25 MW. A "unit" is defined as a "fossil fuel-fired combustion device" and "fossil fuel-fired" is defined as "the combustion of fossil fuel, alone or in combination with any other fuel, independent of the percentage of fossil fuel consumed in any calendar year". Each of the Project's combined-cycle power blocks will have a generation capacity greater than 25 MW, and will be subject to Acid Rain program requirements. However, the units are not affected units under the NO_x Emission Reduction Program (40 CFR 76) as they are not coal-fired utility units.

Applicability of ARP regulations will require the Project to:

- Apply for a Phase II Acid Rain Permit to include the new utility units according to 40 CFR 72.30;
- Install CEMS to demonstrate compliance with the ARP provisions meeting the requirements specified in 40 CFR 75; and

- Hold allowances equivalent to annual SO_2 emissions.

The Acid Rain Permit application must be filed at least 24 months before the unit commences operation. The application must include the date that the units will commence commercial operation and the deadline for monitoring certification (90 days after commencement of commercial operation). ESC will file the appropriate paperwork to apply for the Project's Acid Rain Permit. With commencement of operation expected in the first or second quarter of 2020, the Acid Rain permit application must be submitted sometime in the first or second quarter of 2018.

The Project will operate in compliance with applicable provisions of the Title IV Acid Rain rules. The Project will also meet applicable Acid Rain requirements that become effective after the issuance of an Acid Rain Permit.

ESC will develop a Title IV Acid Rain monitoring plan as required under 40 CFR 72. The plan will include the installation, proper operation, and maintenance of continuous monitoring systems or approved monitoring provisions under 40 CFR 75 for NO_x, SO_2, O_2 or CO_2 (as a diluent) and opacity. Depending on the monitoring technology available at the time of installation, the plan will cite the specific operating practices and maintenance programs that will be applied to the instruments. The plan also will cite the specific form of records that will be maintained, their availability for inspection and the length of time that they will be archived. The plan will further cite that the Acid Rain Permit and applicable regulations will be reviewed at specific intervals for continued compliance and will cite the specific mechanism to be used to keep current on rule applicability.

3.6.1.4 *National Emissions Standards for Hazardous Air Pollutants*

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are federal HAP requirements in 40 CFR 63 that apply generally to "major" sources of HAPs, defined as facilities with the potential to emit 10 tons/yr or more of any single HAP, or 25 tons/yr or more of all HAPs. HAP standards, known as Maximum Achievable Control Technology (MACT) standards, for major HAP sources are established for classes or categories of sources. There are, at present, no source category MACT standards for combustion turbines such as the one proposed by ESC. Some MACT standards, known as "area source MACT" standards, apply to minor source HAP facilities.

The total potential HAP emissions for the facility are projected to be less than 25 tons/yr for all HAPs combined. Therefore, the Project is not considered a major HAP source, and so no source-specific MACT standards apply.

There is an area source MACT for industrial, commercial and institutional boilers and process heaters (40 CFR 63, Subpart JJJJJJ), known as "Boiler MACT". Boiler MACT does not apply to any of the proposed combustion sources because the only sources considered "affected sources" under Subpart JJJJJJ are the Auxiliary Boiler and Fuel Gas Heater and, according to 40 CFR 63.11195, natural gas-fired boilers/heaters are not subject to Subpart JJJJJJ.

The Emergency Generator and Fire Water Pump are subject to 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines ("RICE MACT") and the associated fuel, monitoring, compliance, testing, notification, reporting, and recordkeeping requirements.

3.6.1.5 Compliance Assurance Monitoring

Compliance Assurance Monitoring (CAM) applies to emissions units at "major" sources that are required to obtain a Title V operating permit, and that meet all three of the following criteria (40 CFR 64.2a):

> "(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;
>
> (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and
>
> (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100% of the amount, in tons/yr, required for a source to be classified as a major source."

Exemptions from CAM in 40 CFR 64.2(b)(1) include:

(i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 [NSPS] or 112 [NESHAP] of the Act.

(ii) Stratospheric ozone protection requirements under Title VI of the Act.

(iii) Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.

(iv) Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources.

(v) An emissions cap that meets the requirements specified in 70.4(b)(12) or 71.6(a)(13)(iii) of this chapter.

(vi) Emission limitations or standards for which a Part 70 or 71 [Title V operating] permit specifies a continuous compliance determination method, as defined in 64.1…

The proposed Project was evaluated for CAM applicability. Only the Combustion Turbines are equipped with control devices (SCR and Oxidation Catalysts) and have pre-controlled emissions of applicable regulated air pollutants emissions (NO_x and CO) in excess of 100 tons/yr. However, the Combustion Turbines are is subject to the NSPS Subpart KKKK, and will be equipped with Continuous Emissions Monitoring Systems (CEMS) for NO_x and CO, which are considered a continuous compliance determination method. Therefore, the Combustion Turbines are exempt from CAM under 40 CFR 64.2(a)(1) and (b)(1)(i).

3.6.1.6 *Chemical Accident Prevention Provisions*

These provisions, in 40 CFR 68, apply to a wide variety of facilities that handle, manufacture, store, or use toxic or highly flammable substances. Ammonia is one of the potentially covered substances. However, the ammonia reagent planned for the SCRs is aqueous ammonia, at a concentration of less than 20% by weight. The aqueous ammonia is planned to be stored in one (1) storage tank, with a capacity of 35,000 gallons. The use of aqueous ammonia with a concentration of less than 20% by weight ensures that the provisions of 40 CFR 68 will not apply.

3.6.1.7 *Cross-State Air Pollution Rule*

The Cross-State Air Pollution Rule (CSAPR), 40 CFR Parts 96 and 97, requires certain states, including West Virginia, to achieve significant, phased reductions in annual and ozone-season NO_x emissions (as a precursor to $PM_{2.5}$ and ozone formation) and annual SO_2 emissions (as a precursor to $PM_{2.5}$ formation), consistent with state-specific emissions budgets established by EPA.

As with the Acid Rain Program, CSAPR is based on a cap and trade system where each ton of emitted pollutant (e.g., ozone season NO_x) is offset through the allocation or purchase of allowances. Emissions monitoring is required using methods specified in 40 CFR Part 75. In addition to monitoring, CSAPR requires reporting, recordkeeping and compliance requirements.

The applicability criteria and definitions in CSAPR are similar to those in the Acid Rain Program. The rules generally apply to fossil fuel-fired units serving a generator with a nameplate capacity of more than 25 MW, and producing electricity for sale. Therefore, the proposed Combustion Turbine units are subject to CSAPR.

The Project will comply with the CSAPR requirements by implementing specified monitoring, recordkeeping, and reporting procedures (largely equivalent to procedures required under the ARP), acquiring the required allowances (if new unit allocations are insufficient to offset actual SO_2 and NO_x emissions) and complying with other applicable permitting and administrative requirements of the program.

3.6.1.8 *Mandatory Reporting of Greenhouse Gases*

The Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98) applies to direct GHG emitters, fossil fuel suppliers, industrial gas suppliers, and facilities that inject CO_2 underground for sequestration or other reasons. In general, the threshold for reporting is 25,000 metric tons or more of CO_{2e} per year. Reporting is at the facility level, except for certain suppliers of fossil fuels and industrial GHGs.

At the ESC facility, the Auxiliary Boiler and Fuel Gas Heater are addressed in Subpart C (General Stationary Fuel Combustion Sources), and the Combustion Turbines are addressed in Subpart D (Electricity Generation). Pursuant to 40 CFR 98.30(b)(2), emergency generators and emergency equipment as defined in 40 CFR 98.6 are not included in the source category under Subpart C. Therefore, the Emergency Generator and the Fire Water Pump are exempt from reporting under the rule.

Under Subparts C and D, emissions of CO_2, CH_4 and N_2O must be determined and reported to USEPA in accordance with the following requirements:

- Procedure to estimate emissions (98.33, 98.43);
- Monitoring and QA/QC Requirements (98.34, 98.44);
- Procedures for Estimating Missing Data (98.35, 98.45);
- Data Reporting Requirements (98.36, 98.46); and
- Records that Must Be Retained (98.37, 98.47).

ESC will be required to submit an annual report of GHG emissions and data. The facility will be required to use the electronic GHG reporting tool (e-GGRT) developed by USEPA. The annual report of the previous calendar year's data is due on March 31 of each year.

3.6.2 *State Requirements*

The proposed Project will be subject to a number of WVDEP air quality requirements including, but not limited to, the following:

3.6.2.1 *45 CSR 2 (To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)*

The Auxiliary Boiler is a natural gas-fired indirect heat exchanger with a design heat input capacity greater than 10 MMBtu/hr. The Auxiliary Boiler will comply with the applicable PM emission limits and visible emission standards in the rule. The visible emission standard in 45 CSR 2--3.1 is 10% percent opacity based on a six minute block average. The particulate emission standard in 45 CSR 2-4.1(b) for Type 'b' fuel burning units is based on 0.09 lb/MMBtu.

Note that the Fuel Gas Heater is a natural gas-fired indirect heat exchanger, but it has a design heat input capacity below 10 MMBtu/hr. Therefore, the Fuel Gas Heater is not subject to this rule.

3.6.2.2 *45 CSR 10 (To Prevent and Control Air Pollution from the Emission of Sulfur Oxides)*

The Auxiliary Boiler is a natural gas-fired indirect heat exchanger with a design heat input capacity greater than 10 MMBtu/hr. The Auxiliary Boiler will comply with the applicable SO_2 emission limits in the rule. The SO_2 emission standard in 45 CSR 10-3.2(c) for Type 'b' fuel burning units is based on 1.6 lb/MMBtu.

The Fuel Gas Heater is a natural gas-fired indirect heat exchanger, but it has a design heat input capacity below 10 MMBtu/hr. Therefore, the Fuel Gas Heater is not subject to this rule.

3.6.2.3 *45 CSR 11 (Prevention of Air Pollution Emergency Episodes)*

When requested by the WVDEP Director, ESC will prepare standby plans for reducing air pollutant emissions during Air Pollution Alerts, Air Pollution Warnings, and Air Pollution Emergencies.

3.6.2.4 *45 CSR 13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation)*

This permit application is being submitted pursuant to 45 CSR 13 for the construction of the proposed Project.

3.6.2.5 *45 CSR 14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration)*

As described above in Section 3.4, the proposed Project will be subject to PSD for NO_x, CO, PM, PM_{10}, $PM_{2.5}$, VOC, and GHGs.

3.6.2.6 *45 CSR 16 (Standards of Performance for New Stationary Sources)*

As described above in Section 3.6.1.1, the proposed combustion turbines will be subject to NSPS Subpart KKKK and Subpart TTTT in 40 CFR 60. The proposed Auxiliary Boiler will be subject to NSPS Subpart Db in 40 CFR 60. The proposed Emergency Generator and Fire Water Pump will be subject to NSPS Subpart IIII in 40 CFR 60.

The Fuel Gas Heater is below the size threshold for NSPS applicability.

3.6.2.7 45 CSR 19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution Which Cause or Contribute to Nonattainment)

As described above in Section 3.5, the proposed Project will not trigger NA-NSR for any non-attainment pollutants (i.e. SO_2).

3.6.2.8 45 CSR 27 (To Prevent and Control the Emissions of Toxic Air Pollutants)

The proposed Project will not utilize equipment that will be subject to the provisions of this rule.

3.6.2.9 45 CSR 30 (Requirements for Operating Permits)

The proposed Project will require a Title V Operating Permit. Pursuant to 45 CSR 30-4.1.a.2, ESC must file a complete application to obtain the Title V operating permit within 12 months after the Project commences operation, which is expected to occur in 2020.

3.6.2.10 45 CSR 33 (Acid Rain Provisions and Permits)

As described above in Section 3.6.1.3, the proposed combustion turbines will be subject to certain provisions of the Acid Rain program, including the permitting provisions.

3.6.2.11 45 CSR 34 (Emission Standards for Hazardous Air Pollutants)

As described above in Section 3.6.1.4, the Emergency Generator and Fire Water Pump are subject to 40 CFR 63, Subpart ZZZZ ("RICE MACT") and its associated fuel, monitoring, compliance, testing, notification, reporting, and recordkeeping requirements.

4.0 *SUMMARY*

The emissions sources evaluated in this application include the Combustion Turbines, Auxiliary Boiler, Fuel Gas Heater, Emergency Generator, Fire Water Pump, and Cooling Tower.

Emissions from the proposed Project trigger PSD requirements for NO_x, CO, PM, PM_{10}, $PM_{2.5}$, VOC, H_2SO_4, and GHG. No pollutants trigger NA-NSR. Emissions of all other regulated pollutants, including HAPs, will be below regulatory thresholds.

Because emissions of NO_x, CO, PM, PM_{10}, $PM_{2.5}$, VOC, and GHG trigger PSD, ESC is required to meet BACT for these pollutants, and conduct impact assessments to ensure that emissions will not adversely affect ambient air quality. BACT will be achieved using the following controls.

- NO_x emissions will be controlled using SCR and dry low-NO_x combustor technologies for the Combustion Turbines; LNB for the Auxiliary Boiler; LNB for the Fuel Gas Heater; and efficient combustion and limited hours of operation for the Emergency Generator and the Fire Water Pump.

- CO emissions from the Combustion Turbines will be controlled using Oxidation Catalysts and good combustion practices. CO emissions from the Auxiliary Boiler will be controlled using natural gas, ethane, or a blend of these fuels, as well as good combustion practices. CO emissions from the Emergency Generator and Fire Water Pump will be controlled using ULSD and good combustion practices.

- PM, PM_{10}, and $PM_{2.5}$ emissions from the Combustion Turbines will be controlled by the use of natural gas, ethane, or a blend of these fuels, along with filtration of the inlet air systems. PM, PM_{10}, and $PM_{2.5}$ emissions from the Auxiliary Boiler and Fuel Gas Heater will be controlled by the use of natural gas, ethane, or a blend of these fuels. PM, PM_{10}, and $PM_{2.5}$ emissions from the Emergency Generator and Fire Water Pump will be controlled by use of engines with emissions less than or equal to NSPS Subpart IIII standards, the ULSD and limited annual operating hours. PM, PM_{10}, and $PM_{2.5}$ emissions from the wet mechanical draft Cooling Tower will be controlled by using high efficiency drift eliminators with a drift loss not to exceed 0.0005%.

- VOC emissions from the Combustion Turbines will be controlled using Oxidation Catalysts and good combustion practices. VOC emissions from the Auxiliary Boiler and Fuel Gas Heater will be controlled by the use of natural gas, ethane, or a blend of these fuels, as well as good combustion practices. VOC emissions from the Emergency Generator and Fire Water Pump will be controlled using ULSD and good combustion practices.

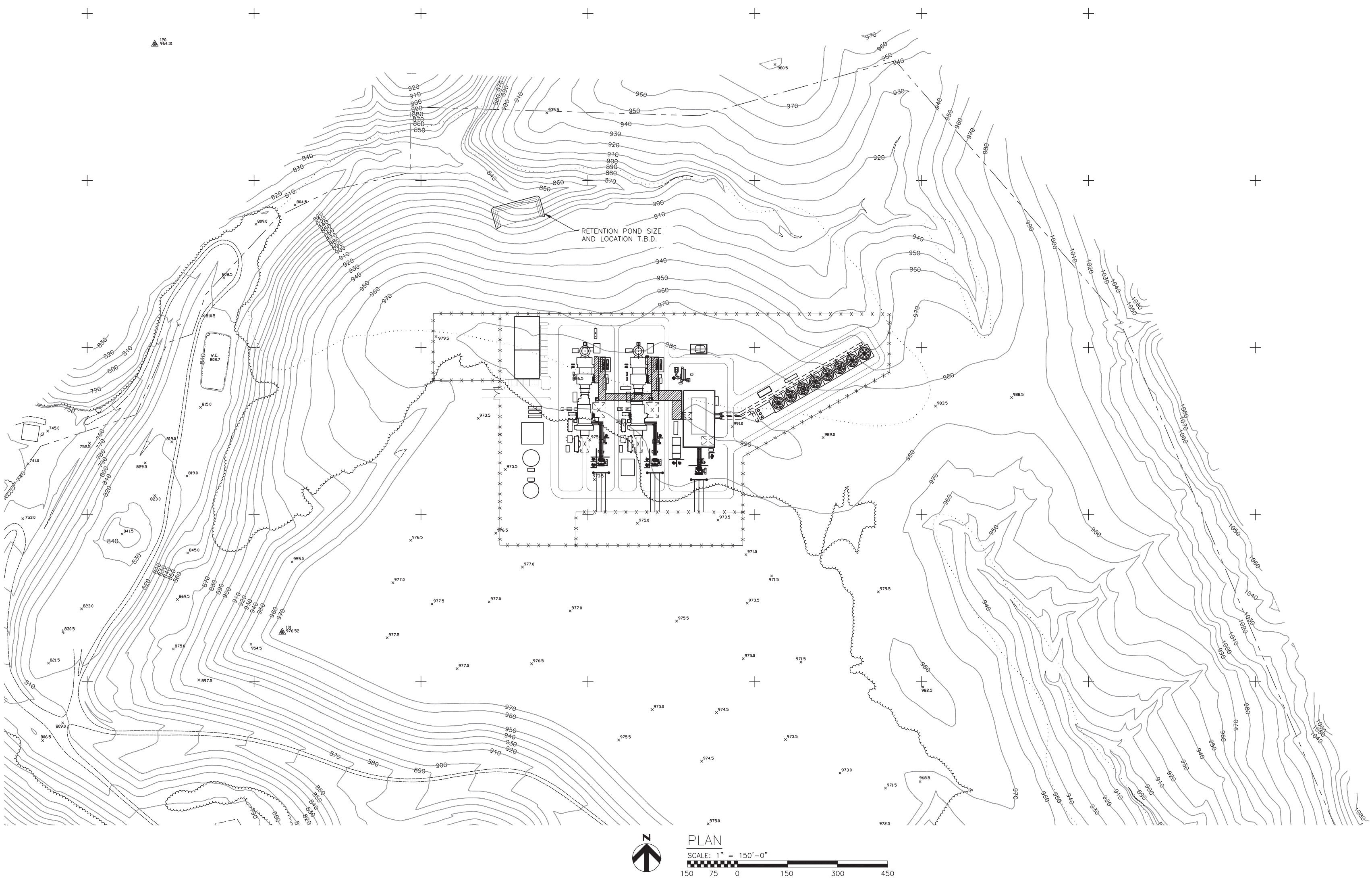
- GHG emissions from the Combustion Turbines will be controlled by using high efficiency combustion turbines, and the use of lower carbon containing fuels (i.e., natural gas, ethane, or a blend of these fuels). GHG emissions from the Auxiliary Boiler and Fuel Gas Heater will be minimized by the use of lower carbon containing fuels (i.e., natural gas, ethane, or a blend of these fuels). GHG emissions from the Emergency Generator and Fire Water Pump will be minimized by the use of ULSD and limited annual operating hours. GHG emissions from the Circuit Breakers will be controlled by using totally enclosed SF_6 circuit breakers and implementing a leak detection and repair program.

Emissions from the proposed Project are not predicted to cause any significant adverse impacts to air quality. Specifically, emissions from the proposed Project will not adversely affect ambient air quality or PSD increments. The Project's impacts on visibility in the surrounding Class I areas are likely to be minimal.

In conclusion, an evaluation of the Project and its potential emissions indicates that the ESC Project will meet all applicable State and federal air quality requirements.

Appendices

Appendix A – Conceptual Plant Layout Drawings



NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	DRAWN	ENGINEER	CHECKED	APPROVED
B	09/11/15	REVISED PER CLIENT COMMENTS	J_B	MSH	JAC	JWB
A	08/28/15	PRELIMINARY	KWS			

HDR

ENERGY SOLUTIONS CONSORTIUM, LLC.

GENERAL ARRANGEMENT
BROOKE SITE PLAN

OPTION 2

FILENAME SKC-202.DWG
SCALE 1"=150'-0"

SHEET **SKC-202**

Appendix B – RBLC Search Summaries

Facility Information			Process Information			Emission Limits					
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	CO	2	PPM	ROLLING 24-HR AVG	LAER	OXIDATION CATALYST
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	CO	4	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	SCR + OXIDATION CATALYST
*TX-0714	NRG Texas Power LLC, Cedar Bayou	TX	3/31/2015	Combined Cycle	187 MW/turbine	CO	15	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST
*TX-0714	NRG Texas Power LLC, S R Bertron	TX	12/19/2014	2 Combined Cycle	240 MW	CO	4	PPM	@ 15% O2, 1 -HR, 2 PPM @15%)2, Rolling 12-Mo	BACT-PSD	OXIDATION CATALYST
*CO-0076	Black Hills Electric Generation, LLC	CO	12/11/2014	4 GE LM6000 PF with HRSG	373 MMBtu/hr each	CO	38	lb/hr	4-HR Rolling AVG	BACT-PSD	OXIDATION CATALYST
*TX-0710	Victoria, WLE L.P.	TX	12/1/2014	GE 7FA.04	197 MW	CO	4	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
*WV-0025	Moundsville Power, LLC	WV	11/21/2014	2 GE 7FA.04 Turbines w/ Duct Burners	2159 MMBtu/hr	CO	9.2	lb/hr	@ 15% O2	BACT-PSD	OXIDATION CATALYST + COMBUSTION CONTROLS
*TX-0712	Southern Power Company Trinidad Generating Facility	TX	11/20/2014	Mitsubishi Heavy Industries J model with HRSG and Duct Burner	497 MW	CO	4	PPM	@ 15% O2, 24-HR Rolling AVG	BACT-PSD	OXIDATION CATALYST
*TX-0689	NRG TEXAS POWER CEDAR BAYOU ELECTRIC GENERATION STATION	TX	8/29/2014	225.00 MW Siemens Model F5, GE7Fa, or Mitsubishi Heavy Industry G Frame.NG Fired Combined Cycle Turbine	225 MW	CO	2	PPM	ROLLING 12 MONTHS	BACT-PSD	OXIDATION CATALYST
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	CO	1.5	PPMVD	@15%O2 3-HR ROLLING AVE BASED ON 1-HR BLOCK	BACT-PSD	OXIDATION CATALYST
*TX-0713	TENASKA BROWNSVILLE PARTNERS, LLC TENASKA BROWNSVILLE GENERATING STATION	TX	4/29/2014	two CTs (2x1 CCGT), although the final design selected by Tenaska may only consist of one CT (1x1 CCGT).	884 MW gross	CO	2	PPMVD	@ 15% O2, 24-HR Rolling AVG	BACT-PSD	OXIDATION CATALYST
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 COMBINED CYCLE	2258 MMBtu/hr	CO	2	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST

Facility Information			Process Information			Emission Limits					
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/8/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	1000 MW	CO	1.5	PPMVD	@ 15% O2 3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD; 13767.0000 LB/EVENT FOR ALL STARTUPS	BACT-PSD	OXIDATION CATALYST
*TX-0660	FGE POWER LLC FGE TEXAS POWER I AND FGE TEXAS POWER II	TX	3/24/2014	Four (4) Alstom GT24 CTGs, each with a HRSG and DBs	409 MMBtu/hr Each	CO	2	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/7/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	CO	2	PPMVD	3-HR ROLLING AVE BASED ON 1-HR BLOCK AVE	BACT-PSD	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	CO	3	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS-EAST 5TH STREET	MI	12/4/2013	FG-CTGHRSG: 2 Combined cycle CTGs with HRSGs with duct burners	670 MMBtu/hr EA	CO	4	PPM	24-H ROLL. AVG	BACT-PSD	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*TX-0641	PINECREST ENERGY CENTER	TX	11/12/2013	Combined cycle turbine General Electric 7FA.05, the Siemens SGT6-5000F(4), or the Siemens SGT6-5000F(5).	637 and 735 MW	CO	2	PPMVD	3-HR ROLL AVG, 15% OXYGEN, 80-100% LOAD	BACT-PSD	OXIDATION CATALYST
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	RENAISSANCE POWER LLC	MI	11/1/2013	4 COMBINED CYCLE UNITS	2147 MMBtu/hr EA.	CO	2	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	CO	2	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST

Facility Information			Process Information			Emission Limits					
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	CO	2	PPMVD	@ 15% OXYGEN WITH OR WITHOUT DUCT BURNER	OTHER CASE-BY-CASE	OXIDATION CATALYST
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2538 MMBtu/hr EA	CO	2	PPM	15% OXYGEN	OTHER CASE-BY-CASE	OXIDATION CATALYST
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBtu/hr EA.	CO	1.5	PPMVD	3 H AVG/WITHOUT DUCT BURNING	BACT-PSD	OXIDATION CATALYST
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	CO	2	PPMVD	3 H AVG/WITHOUT DUCT BURNING	BACT-PSD	OXIDATION CATALYST
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	CO	2	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBTUY/HR EA.	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	CO	2	PPM	@ 15% O2, 1-HR AVG (NAT. GAS)	BACT-PSD	OXIDATION CATALYST
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	570 MW COMBINED-CYCLE (2 GE 7FA) + 50 MW SOLAR THERMAL HYBRID	1,736 MMBtu/hr EA.	CO	1.5	PPM	@ 15% O2 CT, 2.0 PPM W/DB, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6-PAC-5000F	2,227 MMBtu/hr	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
CA-1192	AVENAL ENERGY PROJECT	CA	5/27/2011	600 MW COMBINED-CYCLE (2 ge 7FA)	1856.3 EA.	CO	1.5	PPM	@ 15% O2 CT, 2.0 PPM W/DB, 1-HR AVG	LAER	SCR + DLN
VA-0308	DOMINION ENERGY WARREN	VA	12/10/2010	3 MHI M501GAC COMBINED CYCLE	1280 MW	CO	1.5	PPM	15% O2 CT, 2.4 PPM W/DB, 1-HR AVG	BACT-PSD	OXIDATION CATALYST

Facility Information			Process Information			Emission Limits					
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
TX-0590	PONDERA CAPITAL MANAGEMENT KING POWER	TX	8/5/2010	4 SIEMENS SGT6-5000F OR GE 7FA W/ HRSG	1350 MW TOTAL	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
ID-0018	IDAHO POWER CO. LANGLEY GULCH POWER PLANT	ID	6/25/2010	1X1 COMBINED CYCLE POWER PLANT, SIEMENS SGT6-5000F CT	2375.28 MMBtu/hr	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
GA-0138	LIVE OAKS POWER PLANT	GA	4/8/2010	3 MHI M501G COMBINED CYCLE	600 MW	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	SCR + DLN
	RUSSELL CITY ENERGY CENTER	CA	2/4/2010	2 SIEMENS/WESTINGHOUS E 501F W/ HRSG AND DUCT BURNERS	2,039 MMBtu/hr EA.	CO	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
TX-0548	MADISON BELL ENERGY CENTER	TX	8/18/2009	2 GEF7EA CTs w/ DBs	275 MW ea.	CO	17.5	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	GOOD COMBUSTION
FL-9002	FP&L CAPE CANAVERAL ENERGY CENTER	FL	7/29/2009	3 Siemens SGT6-8000H (also permitted for MHI 501G)	1250 MW TOTAL	CO	5	PPM	@ 15% O2 CT, 7.6 PPM W/DB, 30 UNIT OPERATING DAYS	BACT-PSD	GOOD COMBUSTION
TX-0547	NATURAL GAS- FIRED POWER GENERATION FACILITY	TX	6/22/2009	2 GE7FAS w/ HRSGs and DBs OR 2 MHI 501GS w/ HRSGs and DBs	620 MW OR 910 MW	CO	15	PPM	@ 15% O2, 24-HR Rolling AVG	BACT-PSD	GOOD COMBUSTION
TX-0546	PATTILLO BRANCH POWER PLANT	TX	6/17/2009	4 GE7121 COMBINED CYCLE CT W/ DB OR Siemens 5GT6-5000F	350 MW ea.	CO	2	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	2 SIEMESN V84.3A COMBINED CYCLE	1882 MMBtu/hr ea	CO	8	PPMVD	@ 15% O2, 1-HR AVG	BACT-PSD	GOOD COMBUSTION
FL-0304	CANE ISLAND POWER PARK	FL	9/8/2008	300 MW COMBINED CYCLE COMBUSTION TURBINE	1860 MMBtu/hr	CO	6	PPMVD	12-MONTH	BACT-PSD	GOOD COMBUSTION
FL-0303	FPL WEST COUNTY ENERGY CENTER UNIT 3	FL	7/30/2008	THREE NOMINAL 250 MW CTG (EACH) WITH SUPPLEMENTARY-FIRED HRSG, MHI 501G	2333 MMBtu/hr	CO	4.1	PPMVD	24- HR AVG	BACT-PSD	GOOD COMBUSTION
LA-0224	ARSENAL HILL POWER PLANT	LA	3/20/2008	TWO COMBINED CYCLE GAS TURBINES	2110 MMBtu/hr	CO	10	PPMVD	@15%O2 ANNUAL AVERAGE	BACT-PSD	GOOD COMBUSTION
CT-0151	KLEEN ENERGY SYSTEMS, LLC	CT	2/25/2008	SIEMENS SGT6-5000F COMBUSTION TURBINE #1 AND #2 (NATURAL GAS FIRED) WITH 445 MMBtu/hr NATURAL GAS DUCT BURNER	2.1 MMcf/hr	CO	0.9	PPMVD	'@15 % O2 (60-100% LOAD) CT, 1.7 PPM w/DB, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
GA-0127	SOUTHERN CO./GEORGIA POWER PLANT MCDONOUGH	GA	1/7/2008	3 MHI M501G COMBINED CYCLE	2,520 MW TOTAL	CO	1.8	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST

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CA-1144	BLYTHE ENERGY PROJECT II	CA	4/25/2007	2 COMBUSTION TURBINES	170 MW	CO	4	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	COMBINED CYCLE COMBUSTION TURBINE SYSTEM (4-ON-1)	1972 MMBtu/hr	CO	8	PPMVD	24-HR BLOCK AVERAGE	BACT-PSD	GOOD COMBUSTION
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	COMBINED CYCLE COMBUSTION GAS TURBINES -6 UNITS	2333 MMBtu/hr	CO	4.1	PPMVD	24- HR AVG	BACT-PSD	GOOD COMBUSTION
MN-0066	NORTHERN STATES POWER CO. DBA XCEL ENERGY -RIVERSIDE PLANT	MN	5/16/2006	TURBINE, COMBINED CYCLE (2)	1885 MMBtu/hr	CO	10	PPM	@ 15% O2	BACT-PSD	GOOD COMBUSTION
NY-0095	CAITHNESS BELLPORT ENERGY CENTER	NY	5/10/2006	SWPC 501F	2221 MMBtu/hr	CO	2	PPMVD	@15%02 (90-100% LOAD), 4 PPM (75-90% LOAD), 1-HOUR AVG	BACT-PSD	OXIDATION CATALYST
CO-0056	ROCKY MOUNTAIN ENERGY CENTER, LLC	CO	5/2/2006	NATURAL-GAS FIRED, COMBINED-CYCLE TURBINE	300 MW	CO	3	PPM	@ 15% O2	BACT-PSD	OXIDATION CATALYST
NC-0101	FORSYTH ENERGY PLANT	NC	9/29/2005	TURBINE, COMBINED CYCLE, NATURAL GAS, (3)	1844.3 MMBtu/hr	CO	11.6	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	GOOD COMBUSTION
NV-0035	TRACY SUBSTATION EXPANSION PROJECT	NV	8/16/2005	TURBINE, COMBINED CYCLE COMBUSTION #2 WITH HRSG AND DUCT BURNER.	306 MW	CO	3.5	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
OR-0041	WANAPA ENERGY CENTER	OR	8/8/2005	COMBUSTION TURBINE (GE 7241FA) + HEAT RECOVERY STEAM GENERATOR	2384.1 MMBtu/hr	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
FL-0265	HINES POWER BLOCK 4	FL	6/8/2005	COMBINED CYCLE TURBINE	530 MW	CO	8	PPM	@ 15% O2	BACT-PSD	GOOD COMBUSTION
LA-0192	CRESCENT CITY POWER	LA	6/6/2005	GAS TURBINES -187 MW (2)	2006 MMBtu/hr	CO	4	PPM	@ 15%O2 ANNUAL AVERAGE	BACT-PSD	OXIDATION CATALYST
MI-0366	BERRIEN ENERGY, LLC	MI	4/13/2005	3 COMBUSTION TURBINES AND DUCT BURNERS	1584 MMBtu/hr	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
FL-0263	FPL TURKEY POINT POWER PLANT	FL	2/8/2005	170 MW COMBUSTION TURBINE, 4 UNITS	170 MW	CO	7.6	PPM	@ 15 % O2 STACK TEST (CT & DUCT BURNER), 24-HR AVG	BACT-PSD	GOOD COMBUSTION
WA-0328	BP CHERRY POINT COGENERATION PROJECT	WA	1/11/2005	GE 7FA COMBUSTION TURBINE & HEAT RECOVERY STEAM GENERATOR	174 MW	CO	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST

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RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	H2SO4	15.56	lb/hr		BACT-PSD	Low S Fuel/ Good Combustion Practice
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	H2SO4	15.56	lb/hr		BACT-PSD	Natural Gas
*TX-0714	NRG Texas Power LLC, S R Bertron	TX	12/19/2014	2 Combined Cycle	240 MW	H2SO4	0.5	GR S/100 DSCF		BACT-PSD	Natural Gas
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	H2SO4	0.98	lb/hrR		OTHER CASE-BY-CASE	NAT GAS
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 COMBINED CYCLE	2258 MMBtu/hr	H2SO4	0.0032	lb/MMBtu		BACT- PSD	Fuel Specification
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/08/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	1000 MW	H2SO4	12.5 W/ DB 9.7 W/O DB	lb/hr	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND EFFICIENT TURBINE DESIGN
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/07/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	H2SO4	2.93 GE W/ DB AND 2.74 GE W/O DB	lb/hr		BACT-PSD	NAT GAS + LOW SULFER FUEL
*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	H2SO4	0.0015	lb/MMBtu		BACT	Fuel Specification
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	H2SO4	0.001	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	H2SO4	0.0012 CT ONLY 0.0016 CT+DB	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	H2SO4	0.0004 (MHI) - 0.0007 (SIEMENS)	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	H2SO4	0.00014	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification

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RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	H2SO4	1.0800 lb/hr W/ DB AND 0.92 lb/hr W/O DB	lb/hr		BACT-PSD	OTHER CASE-BY-CASE
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	Three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2538 MMBtu/hr EA	H2SO4	0.0018	lb/MMBtu		BACT-PSD	NONE
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBtu/hr EA.	H2SO4	0.0006 W/O DB	lb/MMBtu		BACT-PSD	Fuel Specification
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	H2SO4	0.0005	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	H2SO4	0.75	GRS/100SCF FUEL		BACT-PSD	
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	H2SO4	0.0006	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	H2SO4	0.0005	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBTUY/HR EA.	H2SO4	0.5	GR S/100 SCF	Stack Test	BACT- PSD	Fuel Specification
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	H2SO4	0.0019 (GAS) 0.0018 (ULSD)	lb/MMBtu	Stack Test	BACT- PSD	Fuel Specification
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6-PAC-5000F	2,227 MMBtu/hr	H2SO4	0.2	GR S/100 SCF			Fuel Specification
CA-1192	AVENAL ENERGY PROJECT	CA	5/27/2011	600 MW COMBINED-CYCLE (2 ge 7FA)	1856.3 EA.	H2SO4				BACT- PSD	Fuel Specification
VA-0308	DOMINION ENERGY - WARREN	VA	12/10/2010	MHI M501GAC	1280 MW	H2SO4	0.00013 CT, 0.00025 W/DB	lb/MMBtu		BACT- PSD	Fuel Specification
FL-9002	FP&L Company - Cape Canaveral Energy Center	FL	7/23/2009	Siemens "H" or Mitsubishi "G" Class	2,586 CT (LHV), 460 DB (LHV)	H2SO4	2	gr S/100scf	Monthly	BACT- PSD	Fuel Specification
TX-0546	PATTILLO BRANCH POWER PLANT	TX	6/17/2009	4 GE7121 COMBINED CYCLE CT W/ DB OR Siemens 5GT6-5000F	350 MW ea.	H2SO4	2	gr S/100 scf gas	Unknown	BACT- PSD	Specification
FL-0304	CANE ISLAND POWER PARK	FL	9/8/2008	300 MW COMBINED CYCLE COMBUSTION TURBINE	1860 MMBtu/hr	H2SO4	2	gr/100 scf gas	Continuous	BACT- PSD	Fuel Specification

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
LA-0224	SWEPCO - Arsenal Hill Power Plant	LA	3/20/2008	Unknown	2,110 CCCT 250 DB	H2SO4	1.85	lb/hr		BACT- PSD	USE OF LOW-SULFUR PIPELINE QUALITY NATURAL GAS AS FUEL AND PROPER SCR DESIGN
NY-0095	CAITHNESS BELLPORT ENERGY CENTER	NY	5/10/2006	SWPC 501F	2221 MMBtu/hr	H2SO4	0.0004	lb/MMBtu		BACT- PSD	Fuel Specification
NV-0035	SIERRA PACIFIC POWER COMPANY TRACY SUBSTATION EXPANSION PROJECT	NV	8/16/2005	TURBINE, COMBINED CYCLE COMBUSTION #1 WITH HRSG AND DUCT BURNER.	306 MW	H2SO4	1	lb/hr		BACT- PSD	Good combustion practices and Fuel specifications
FL-0263	FPL TURKEY POINT POWER PLANT	FL	2/8/2005	170 MW COMBUSTION TURBINE, 4 UNITS	170 MW	H2SO4	2	gr S/100 scf gas	Continuous	BACT- PSD	Fuel Specification

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RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	NH3 SLIP	METHOD
*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	NOx	SCR	2	2 PPM	24-hr AVG		LAER
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	NOx	SCR + Oxidation Catalyst	2	2 PPMVD	@ 15% O2 24-HR Average		BACT-PSD
*TX-0714	NRG Texas Power LLC, S R Bertron	TX	12/19/2014	2 Combined Cycle	240 MW	NOx	SCR	2	2 PPMVD	@ 15% O2 24-HR Average	7 ppm	BACT-PSD
*CO-0076	Black Hills Electric Generation, LLC	CO	12/11/2014	4 GE LM6000 PF with HRSG	373 MMBtu/hr each	NOx	SCR + DLN	8	8 lb/hr	4-HR AVG		BACT-PSD
*TX-0710	Victoria, WLE L.P.	TX	12/1/2014	GE 7FA.04	197 MW	NOx	SCR	2	PPM	@ 15% O2, 24-HR AVG		BACT-PSD
*WV-0025	Moundsville Power, LLC	WV	11/21/2014	2 GE 7FA.04 Turbines w/ Duct Burners	2159 MMBtu/hr	NOx	SCR + DLN	15.2	lb/hr			BACT-PSD
*TX-0712	Southern Power Company Trinidad Generating Facility	TX	11/20/2014	Mitsubishi Heavy Industries J model with HRSG and DB	497 MW	NOx	SCR	2	PPM	@ 15% O2, 24-HR AVG	7 ppm	BACT-PSD
*TX-0689	NRG TEXAS POWER CEDAR BAYOU ELECTRIC GENERATION STATION	TX	8/29/2014	225.00 MW Siemens Model F5, GE7Fa, or Mitsubishi Heavy Industry G Frame.NG Fired Combined Cycle Turbine	225 MW	NOx	SCR + DLN	2	PPM	24-hr AVG		BACT-PSD
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	NOx	SCR	2	PPMVD	@ 15% O2 3-HR ROLLING AVE BASED ON 1-HR BLOCK		LAER
*TX-0713	TENASKA BROWNSVILLE PARTNERS, LLC TENASKA BROWNSVILLE GENERATING STATION	TX	4/29/2014	two CTs (2x1 CCGT), although the final design selected by Tenaska may only consist of one CT (1x1 CCGT).	884 MW gross	NOx	SCR	2	PPMVD	@ 15% O2 24-HR Average		BACT-PSD
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 SIEMENS SGT6-5000F COMBINED CYCLE TURBINES WITHOUT DUCT FIRING	2258 MMBtu/hr	NOx	SCR	2	PPM	15% O2, 1-HR AVG		BACT-PSD
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/8/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	1000 MW	NOx	SCR + DLN	2	PPMVD	@ 15% O2 3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD; 870 LB/STARTUP		LAER
*TX-0660	FGE POWER LLC FGE TEXAS POWER I AND FGE TEXAS POWER II	TX	3/24/2014	Four (4) Alstom GT24 CTGs, each with a HRSG and DBs	409 MMBtu/hr Each	NOx	SCR	2	PPMVD	CORRECTED TO 15% O2, ROLLING 24 HR AVE		BACT-PSD
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/7/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	NOx	SCR + DLN	2	PPMVD	@15%O2 3-HR BLOCK AVERAGE BASED ON 1-HR BLOCK		LAER

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*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	NOx	SCR	2	PPM	15% O2, 1-HR AVG		LAER
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	2 PPM	LAER
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS-EAST 5TH STREET	MI	12/4/2013	FG-CTGHRSG: 2 Combined cycle CTGs with HRSGs with duct burners	670 MMBtu/hr EA	NOx	SCR + DLN	3	PPM	24-H R NOT SU/SD		BACT-PSD
*TX-0641	PINECREST ENERGY CENTER	TX	11/12/2013	Combined cycle turbine General Electric 7FA.05, the Siemens SGT6-5000F(4), or the Siemens SGT6-5000F(5).	637 and 735 MW	NOx	SCR	2	PPMVD	24-HR ROLLING AVG, 15% OXYGEN		BACT-PSD
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG		BACT-PSD
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG		BACT-PSD
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	5 PPM	LAER
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	NOx	SCR	2	PPM	@ 15% O2	5 PPM	OTHER CASE-BY-CASE
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2,538 MMBtu/hr EA	NOx	SCR	2	PPM	@ 15% O2	5 PPM	OTHER CASE-BY-CASE
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER STATION	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBtu/hr EA.	NOx	SCR + DLN	2	PPMVD	15% O2, 1-HR AVG		BACT-PSD
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	5 PPM	LAER
	RENAISSANCE POWER LLC	MI	11/1/2013	4 COMBINED CYCLE UNITS	2147 MMBtu/hr EA.	NOx	SCR + DLN	2	PPM	@ 15% O2, 3-HR AVG		
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	NOx	SCR + DLN	2	PPMVD	@ 15% O2, 3-HR AVG w/DB		BACT-PSD
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	5 PPM	LAER
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBTUY/HR EA.	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	5 PPM	LAER

Facility Information			Process Information			Emission Limits						
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	NH3 SLIP	METHOD
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	2 PPM	LAER
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	5 PPM	LAER
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	570 MW COMBINED-CYCLE (2 GE 7FA) + 50 MW SOLAR THERMAL HYBRID	1,736 MMBtu/hr EA.	NOx	SCR+DLN	2	PPM	15% O2, 1-HR AVG		LAER
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6- PAC-5000F	2,227 MMBtu/hr	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	2 PPM	LAER
CA-1192	AVENAL ENERGY PROJECT	CA	5/27/2011	600 MW COMBINED-CYCLE (2 ge 7FA)	1856.3 EA.	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG		LAER
OR-0048	PORTLAND GENERAL ELECTRIC - CARTY PLANT	OR	12/29/2010	COMBINED CYCLE POWER PLANT	2866 MMBtu/hr	NOx	SCR	2	PPM	@ 15% O2, 3-HR AVG		BACT-PSD
VA-0308	DOMINION ENERGY WARREN	VA	12/10/2010	3 MHI M501GAC COMBINED CYCLE	1280 MW	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG	2 PPM STEADY STATE, 5 PPM TRANSIENT OPS.	BACT-PSD
GA-0138	LIVE OAKS POWER PLANT	GA	4/8/2010	COMBINED CYCLE POWER PLANT	600 MW	NOx	SCR + DLN	2.5	PPM	@ 15% O2, 3-HR AVG		BACT-PSD
ID-0018	IDAHO POWER CO. LANGLEY GULCH POWER PLANT	ID	6/25/2010	1X1 COMBINED CYCLE POWER PLANT, SIEMENS SGT6-5000F CT	2375.28 MMBtu/hr	NOx	SCR	2	PPM	@ 15% O2, 3-HR AVG		BACT-PSD
TX-0590	PONDERA CAPITAL MANAGEMENT KING POWER STATION	TX	8/5/2010	4 SIEMENS SGT6-5000F OR GE 7FA W/ HRSG	1350 MW TOTAL	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG		LAER
	RUSSELL CITY ENERGY CENTER	CA	2/4/2010	2 SIEMENS/WESTINGHOUSE 501F W/ HRSG AND DUCT BURNERS	2,039 MMBtu/hr EA.	NOx	SCR + DLN	2	PPM	15% O2, 1-HR AVG		BACT-PSD
TX-0548	MADISON BELL ENERGY CENTER	TX	8/18/2009	2 GEF7EA CTs w/ DBs	275 MW ea.	NOx	SCR	2	PPMVD	15% O2 24-HR ROLLING AVG		BACT-PSD
FL-9002	FP&L CAPE CANAVERAL ENERGY CENTER	FL	7/29/2009	3 Siemens SGT6-8000H (also permitted for MHI 501G)	1250 MW TOTAL	NOx	SCR	2	PPMVD	@ 15% O2, 30 UNIT OPERATING DAYS		BACT-PSD
TX-0547	NATURAL GAS-FIRED POWER GENERATION FACILITY	TX	6/22/2009	2 GE7FAS w/ HRSGs and DBs OR 2 MHI 501GS w/ HRSGs and DBs	620 MW OR 910 MW	NOx	SCR	2	PPMVD	15% O2 24-HR ROLLING AVG	5 PPM	BACT-PSD
TX-0546	PATTILLO BRANCH POWER PLANT	TX	6/17/2009	4 GE7121 COMBINED CYCLE CT W/ DB OR Siemens 5GT6-5000F	350 MW ea.	NOx	SCR	2	PPMVD	15% O2 24-HR ROLLING AVG		BACT-PSD

Facility Information			Process Information			Emission Limits						
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	CONTROL DESCRIPTION	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	NH3 SLIP	METHOD
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	2 SIEMENS V84.3A COMBINED CYCLE	1882 MMBtu/hr ea	NOx	SCR + DLN	2	PPMVD	15% O2 24-HR ROLLING AVG		BACT-PSD
FL-0304	CANE ISLAND POWER PARK	FL	9/8/2008	300 MW COMBINED CYCLE COMBUSTION TURBINE	1860 MMBtu/hr	NOx	SCR	2	PPM	15% O2 24-HR ROLLING AVG		BACT-PSD
FL-0303	FPL WEST COUNTY ENERGY CENTER UNIT 3	FL	7/30/2008	THREE NOMINAL 250 MW CTG (EACH) WITH SUPPLEMENTARY-FIRED HRSG, MHI 501G	2333 MMBtu/hr	NOx	SCR	2	PPMVD	15% O2 24-HR ROLLING AVG	5 PPM	BACT-PSD
GA-0127	SOUTHERN CO./GEORGIA POWER PLANT MCDONOUGH	GA	1/7/2008	3 MHI M501G COMBINED CYCLE	2,520 MW TOTAL	NOx	SCR + DLN	2	PPM	@ 15% O2		BACT-PSD
CT-0151	KLEEN ENERGY SYSTEMS, LLC	CT	2/25/2008	SIEMENS SGT6-5000F COMBUSTION TURBINE #1 AND #2 (NATURAL GAS FIRED) WITH 445 MMBtu/hr NATURAL GAS DUCT BURNER	2.1 MMcf/hr	NOx	SCR	2	PPM	@ 15% O2 1-HR BLOCK (60-100% LOAD),	2 PPM STEADY STATE, 5 PPM TRANSIENT OPS.	LAER
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	COMBINED CYCLE COMBUSTION GAS TURBINES -6 UNITS	2333 MMBtu/hr	NOx	SCR	2	PPMVD	@ 15% O2 24-HR ROLLING AVG		BACT-PSD
CA-1144	BLYTHE ENERGY PROJECT II	CA	4/25/2007	2 COMBUSTION TURBINES	170 MW	NOx	SCR	2	PPMVD	15% O2, 3-HR AVG		BACT-PSD
NY-0098	ATHENS GENERATING PLANT	NY	1/19/2007	FUEL COMBUSTION (GAS)	3100 MMBtu/hr	NOx	SCR	2	PPMVD	@ 15% O2 3 HOUR BLOCK AVAEAGE/STEADY STATE		LAER
NY-0095	CAITHNESS BELLPORT ENERGY CENTER	NY	5/10/2006	SWPC 501F	2221 MMtu/hr	NOx	SCR	2	PPMVD	@15%02, 3-HR ROLLING AVG		BACT-PSD
CO-0056	ROCKY MOUNTAIN ENERGY CENTER, LLC	CO	5/2/2006	NATURAL-GAS FIRED, COMBINED-CYCLE TURBINE	300 MW	NOx	SCR + DLN	3	PPM	15% O2, 1-HR AVG		BACT-PSD
WA-0328	BP CHERRY POINT COGENERATION PROJECT	WA	1/11/2005	GE 7FA COMBUSTION TURBINE & HEAT RECOVERY STEAM GENERATOR	174 MW	NOx	SCR + DLN	2.5	PPM	@15%02, 3-HR ROLLING AVG	5 PPM	BACT-PSD
NC-0101	FORSYTH ENERGY PLANT	NC	9/29/2005	TURBINE, COMBINED CYCLE, NATURAL GAS, (3)	1844.3 MMBtu/hr	NOx	SCR	2.5	PPM	@ 15% O2, 24-HR ROLLING AVG		BACT-PSD
NV-0035	TRACY SUBSTATION EXPANSION PROJECT	NV	8/16/2005	TURBINE, COMBINED CYCLE COMBUSTION #1 WITH HRSG AND DUCT BURNER.	306 MW	NOx	SCR	2	PPM	@15%02, 3-HR ROLLING AVG		BACT-PSD

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OR-0041	WANAPA ENERGY CENTER	OR	8/8/2005	COMBUSTION TURBINE (GE 7241FA) + HEAT RECOVERY STEAM GENERATOR	2384.1 MMBtu/hr	NOx	SCR	2	PPMVD	@15%02, 3-HR ROLLING AVG	5 PPM	BACT-PSD
FL-0265	HINES POWER BLOCK 4	FL	6/8/2005	COMBINED CYCLE TURBINE	530 MW	NOx	SCR	2.5	PPM	@ 15% O2		BACT-PSD
FL-0263	FPL TURKEY POINT POWER PLANT	FL	2/8/2005	170 MW COMBUSTION TURBINE, 4 UNITS	170 MW	NOx	SCR	2	PPM	@ 15 % O2 STACK TEST (CT & DUCT BURNER)	5 PPM	BACT-PSD
NY-0100	EMPIRE POWER PLANT	NY	6/23/2005	FUEL COMBUSTION (NATURAL GAS)	2099 MMBtu/hr	NOx	SCR	2	PPMVD	AT 15% O2 3-HOUR BLOCK AVE./ STEADY STATE		LAER
NY-0100	EMPIRE POWER PLANT	NY	6/23/2005	FUEL COMBUSTION (NATURAL GAS) DUCT BURNING	646 MMBtu/hr	NOx	SCR + DLN	3	PPMVD	AT 15% O2 3-HOUR BLOCK AVE./ STEADY STATE		LAER
LA-0192	CRESCENT CITY POWER	LA	6/6/2005	GAS TURBINES -187 MW (2)	2006 MMBtu/hr	NOx	SCR	3	PPM	ANNUAL		BACT-PSD
MI-0366	BERRIEN ENERGY, LLC	MI	4/13/2005	3 COMBUSTION TURBINES AND DUCT BURNERS	1584 MMBtu/hr	NOx	SCR	2.5	PPM	@ 15% O2 24-HOUR ROLLING AVG EACH HOUR	10 PPM	BACT-PSD

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*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	PM	35.47	lb/hr		BACT-PSD	Good Combustion Practices / Low S Fuel
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	PM	43	lb/hr		BACT-PSD	Efficient Combustion / Nat Gas
*WV-0025	Moundsville Power, LLC	WV	11/21/2014	2 GE 7FA.04 Turbines w/ Duct Burners	2159 MMBtu/hr	PM	7.6	lb/hr		BACT-PSD	Nat Gas / Good Combustion Practices / Inlet Air Filtration
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	TSP	0.0048	lb/MMBtu	AVERAGE OF THREE STACK TEST RUNS	BACT-PSD	NAT GAS
IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 COMBINED CYCLE	2258 MMBtu/hr	PM	0.01	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/8/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	1000 MW	TSP	38	lb/hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND EFFICIENT TURBINE DESIGN
*TX-0660	FGE POWER LLC FGE TEXAS POWER I AND FGE TEXAS POWER II	TX	3/24/2014	Four (4) Alstom GT24 CTGs, each with a HRSG and DBs	409 MMBtu/hr Each	PM 2.5	2	PPMVD		BACT-PSD	Low sulfur fuel, good combustion practices
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/7/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	TSP	14.6	lb/hr	AVERAGE OF THREE ONE HOUR TESTS w/ DB	BACT-PSD	NAT GAS
*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	PM	15.6	lb/MMBtu	w/DB	BACT-PSD	NAT GAS / LOW S FUEL
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	PM	0.0071	lb/MMBtu	w/DB	BACT-PSD	NAT GAS / LOW S FUEL
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS-EAST 5TH STREET	MI	12/4/2013	FG-CTGHRSG: 2 Combined cycle CTGs with HRSGs with duct burners	670 MMBtu/hr EA	PM	0.007	lb/MMBtu		BACT-PSD	Good combustion practices and the use of pipeline quality natural gas.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS-EAST 5TH STREET	MI	12/4/2013	FG-CTGHRSG: 2 Combined cycle CTGs with HRSGs with duct burners	670 MMBtu/hr EA	PM 2.5, PM 10	0.0014	lb/MMBtu		BACT-PSD	Good combustion practices and the use of pipeline quality natural gas.
*TX-0641	PINECREST ENERGY CENTER	TX	11/12/2013	Combined cycle turbine General Electric 7FA.05, the Siemens SGT6-5000F(4), or the Siemens SGT6-5000F(5).	637 and 735 MW	PM	26.2			BACT-PSD	pipeline quality natural gas and good combustion practices
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	PM	0.0078	lb/MMBtu		BACT-PSD	SCR + DLN
	RENAISSANCE POWER LLC	MI	11/1/2013	4 COMBINED CYCLE UNITS	2147 MMBtu/hr EA.	PM	0.0042	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION RATE UNITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	PM	0.0038	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	PM	0.00334	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	PM	18.5	lb/hr		BACT-PSD	NONE
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	Three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2538 MMBtu/hr EA	PM	0.0088	lb/MMBtu		OTHER CASE-BY-CASE	NONE
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER STATION	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBtu/hr EA.	PM	0.0033	lb/MMBtu	3-H AVG WITHOUT DUCT BURNING	BACT-PSD	Low sulfur/carbon fuel and good combustion practices.
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	PM	0.0057	lb/MMBtu	3-H AVG	BACT-PSD	NAT GAS / LOW S FUEL
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	PM	0.0078	lb/MMBtu	3-H AVG	BACT-PSD	GOOD CUMBUSTION PRACTICE AND FUEL SPECIFICATION
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	PM	0.0031	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	PM	0.0057	lb/MMBtu	3-H AVG	BACT-PSD	NAT GAS / LOW S FUEL
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBTUY/HR EA.	PM	0.06	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	PM	0.004	lb/MMBtu		BACT-PSD	NAT GAS / ULSD
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	570 MW COMBINED-CYCLE (2 GE 7FA) + 50 MW SOLAR THERMAL HYBRID	1,736 MMBtu/hr EA.	PM	0.0048	lb/MMBtu		BACT-PSD	NAT GAS / ULSD
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6-PAC-5000F	2,227 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
CA-1192	AVENAL ENERGY PROJECT	CA	5/27/2011	600 MW COMBINED-CYCLE (2 ge 7FA)	1856.3 EA.	PM	8.91	lb/hr		BACT-PSD	SCR + DLN
OR-0048	PORTLAND GENERAL ELECTRIC - CARTY PLANT	OR	12/29/2010	COMBINED CYCLE POWER PLANT	2866 MMBtu/hr	PM	0.0025	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
VA-0308	DOMINION ENERGY WARREN	VA	12/10/2010	3 MHI M501GAC COMBINED CYCLE	1280 MW	PM	0.0027	lb/MMBtu	3-H AVG, W/DB	BACT-PSD	NAT GAS / LOW S FUEL
TX-0590	PONDERA CAPITAL MANAGEMENT KING POWER STATION	TX	8/5/2010	4 SIEMENS SGT6-5000F OR GE 7FA W/ HRSG	1350 MW TOTAL	PM	11.1	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL
	RUSSELL CITY ENERGY CENTER	CA	2/4/2010	2 SIEMENS/WESTINGHOUSE 501F W/ HRSG AND DUCT BURNERS	2,039 MMBtu/hr EA.	PM	0.0036	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	**FACILITY NAME**	**STATE**	**PERMIT DATE**	**PROCESS NAME**	**THROUGHPUT**	**POLLUTANT**	**EMISSION RATE UNITS**	**EMISSION RATE UNITS**	**TIME AVG CONDITION**	**METHOD**	**CONTROL DESCIPTION**
FL-9002	FP&L CAPE CANAVERAL ENERGY CENTER	FL	7/29/2009	3 Siemens SGT6-8000H (also permitted for MHI 501G)	1250 MW TOTAL	PM	2			BACT-PSD	NAT GAS / LOW S FUEL
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	2 SIEMESN V84.3A COMBINED CYCLE	1882 MMBtu/hr ea	PM	6.59	lb/MMBtu	3-H AVG	N/A	NAT GAS / LOW S FUEL
FL-0304	CANE ISLAND POWER PARK	FL	9/8/2008	300 MW COMBINED CYCLE COMBUSTION TURBINE	1860 MMBtu/hr	PM	2	GR/100 scf			NAT GAS / LOW S FUEL
FL-0303	FPL WEST COUNTY ENERGY CENTER UNIT 3	FL	7/30/2008	THREE NOMINAL 250 MW CTG (EACH) WITH SUPPLEMENTARY-FIRED HRSG, MHI 501G	2333 MMBtu/hr	PM	2	GR/100 scf		BACT-PSD	NAT GAS / LOW S FUEL
LA-0136	PLAQUEMINE COGENERATION FACILITY	LA	7/23/2008	(4) GAS TURBINES/DUCT BURNERS	2876 MMBtu/hr	PM	33.5	GR/100 scf	HOURLY MAXIMUM	BACT-PSD	NAT GAS / LOW S FUEL
LA-0224	ARSENAL HILL POWER PLANT	LA	3/20/2008	TWO COMBINED CYCLE GAS TURBINES	2110 MMBtu/hr	PM	24.23	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL
CT-0151	KLEEN ENERGY SYSTEMS, LLC	CT	2/25/2008	SIEMENS SGT6-5000F COMBUSTION TURBINE #1 AND #2 (NATURAL GAS FIRED) WITH 445 MMBtu/hr NATURAL GAS DUCT BURNER	2.1 MMcf/hr	PM	0.0051	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
GA-0127	SOUTHERN CO./GEORGIA POWER PLANT MCDONOUGH	GA	1/7/2008	3 MHI M501G COMBINED CYCLE	2,520 MW TOTAL	PM	0.1	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	COMBINED CYCLE COMBUSTION TURBINE W/DUCT BURNER	1758 MMBtu/hr	PM	0.01	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
CA-1144	BLYTHE ENERGY PROJECT II	CA	4/25/2007	2 COMBUSTION TURBINES	170 MW	PM	6.0	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL
OK-0117	PSO SOUTHWESTERN POWER PLT	OK	2/9/2007	GAS-FIRED TURBINES		PM	0.0093	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
OK-0115	LAWTON ENERGY COGEN FACILITY	OK	12/12/2006	COMBUSTION TURBINE AND DUCT BURNER		PM	0.0067	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
TX-0502	NACOGDOCHES POWER STERNE GENERATING FACILITY	TX	6/5/2006	WESTINGHOUSE/SIEMENS MODEL SW501F GAS TURBINE W/ 416.5 MMBTU DUCT BURNERS	190 MW	PM	26.9	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	COMBUSTION TURBINE	2221 MMBtu/hr	PM	0.0055	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
CO-0056	ROCKY MOUNTAIN ENERGY CENTER, LLC	CO	5/2/2006	NATURAL-GAS FIRED, COMBINED-CYCLE TURBINE	300 MW	PM	0.0074	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
TX-0516	CITY PUBLIC SERVICE JK SPRUCE ELECTRICE GENERATING UNIT 2	TX	12/28/2005	SPRUCE POWER GENERATOR UNIT NO 2		PM	264	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL
NC-0101	FORSYTH ENERGY PLANT	NC	9/29/2005	TURBINE, COMBINED CYCLE, NATURAL GAS, (3)	1844.3 MMBtu/hr	PM	0.019	lb/MMBtu	3-H AVG	BACT-PSD	NAT GAS / LOW S FUEL
NV-0035	TRACY SUBSTATION EXPANSION PROJECT	NV	8/16/2005	TURBINE, COMBINED CYCLE COMBUSTION #1 WITH HRSG AND DUCT BURNER.	306 MW	PM	0.011	lb/MMBtu	3-H Rolling Avg	BACT-PSD	NAT GAS / LOW S FUEL
LA-0192	CRESCENT CITY POWER	LA	6/6/2005	GAS TURBINES -187 MW (2)	2006 MMBtu/hr	PM	59.4	lb/hr	HOURLY MAXIMUM	BACT-PSD	NAT GAS / LOW S FUEL

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION RATE UNITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL DESCIPTION
MI-0366	BERRIEN ENERGY, LLC	MI	4/13/2005	3 COMBUSTION TURBINES AND DUCT BURNERS	1584 MMBtu/hr	PM	0.012	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL

Combustion Turbines
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Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	SO2	40.66	lb/hr		BACT-PSD	Good Combustion Practices, Low S Fuel
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	SO2	2	GR/100SCF	1-HR AVG	BACT-PSD	NAT GAS/ Efficient Combustion
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	SO2	6.56	lb/hr	AVERAGE OF THREE ONE HOUR TESTS	BACT-PSD	NAT GAS
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/08/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	1000 MW	SO2	8.2 W/ DB 6.3 W/O DB	lb/hr	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND EFFICIENT TURBINE DESIGN
*TX-0660	FGE POWER LLC FGE TEXAS POWER I AND FGE TEXAS POWER II	TX	3/24/2014	Four (4) Alstom GT24 CTGs, each with a HRSG and DBs	409 MMBtu/hr Each	SO2	1 AND 0.25	GRS/ 100 DSCF	HOURLY AND ANNUAL	BACT-PSD	Low sulfur fuel, good combustion practices
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/07/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	SO2	5.2000 GE W/ DB AND 4.9000 GE W/O DB	lb/hr	AVERAGE OF THREE ONE HOUR TESTS	BACT-PSD	NAT GAS
*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	SO2	0.0023	lb/MMBtu ~0.8 GR S/100 SCF		BACT	NAT GAS / LOW S FUEL
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	SO2	0.0015	lb/MMBtu ~0.5 GR S/100 SCF	1-HR AVG	BACT-PSD	NAT GAS / LOW S FUEL
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	SO2	1	GR S/100 SCF OF GAS		BACT-PSD	NAT GAS / LOW S FUEL
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	SO2	0.0014	lb/MMBtu 0.5 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	SO2	0.000261	lb/MMBtu 0.1 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	SO2	7.1900 W/ DB; AND 6.15 lb/hr W/O DB	lb/hr		BACT-PSD	NAT GAS / LOW S FUEL

Combustion Turbines
RBLC and Other Permit Searches
2005 - September 2015

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2538 MMBtu/hr EA	SO2	0.0024	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBtu/hr EA.	SO2	0.0011	lb/MMBtu 0.4 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	SO2	0.0011	lb/MMBtu 0.4 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	SO2	0.75	GRS/100SCF FUEL		BACT-PSD	FUEL SPECIFICATION
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	SO2	0.0011	lb/MMBtu 0.4 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	SO2	0.0011	lb/MMBtu 0.4 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	SO2	0.0019 (GAS) 0.0017 (ULSD)	lb/MMBtu		BACT-PSD	NAT GAS / ULSD
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6-PAC-5000F	2,227 MMBtu/hr	SO2	0.0006	lb/MMBtu 0.2 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
CA-1192	AVENAL ENERGY PROJECT	CA	5/27/2011	600 MW COMBINED-CYCLE (2 ge 7FA)	1856.3 EA.	SO2	0.0006	0.36 GR S/100 SCF		BACT-PSD	SCR + DLN
VA-0308	DOMINION ENERGY WARREN	VA	12/10/2010	3 MHI M501GAC COMBINED CYCLE	1280 MW	SO2	0.00028	lb/MMBtu 0.1 GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
	FP&L CAPE CANAVERAL ENERGY CENTER	FL	7/29/2009	3 Siemens SGT6-8000H (also permitted for MHI 501G)	1250 MW TOTAL	SO2	2	GR S/100 SCF OF GAS		BACT•-PSD	NAT GAS / LOW S FUEL
OK•-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	2 SIEMESN V84.3A COMBINED CYCLE	1882 MMBtu/hr	SO2	0.00056	lb/MMBtu	3-HR AVG	N/A	NAT GAS / LOW S FUEL
FL-0304	CANE ISLAND POWER PARK	FL	9/8/2008	300 MW COMBINED CYCLE COMBUSTION TURBINE	1860 MMBtu/hr	SO2	2	GR S/100 SCF OF GAS		BACT-PSD	NAT GAS / LOW S FUEL
FL•-0303	FPL WEST COUNTY ENERGY CENTER UNIT 3	FL	7/30/2008	THREE NOMINAL 250 MW CTG (EACH) WITH SUPPLEMENTARY•-FIRED HRSG, MHI 501G	2333 MMBtu/hr	SO2	2	GR S/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
LA-0136	PLAQUEMINE COGENERATION FACILITY	LA	7/23/2008	(4) GAS TURBINES/DUCT BURNERS	2876 MMBtu/hr	SO2	0.01415	lb/MMBtu	HOURLY MAXIMUM	BACT-PSD	NAT GAS / LOW S FUEL
LA-0224	ARSENAL HILL POWER PLANT	LA	3/20/2008	TWO COMBINED CYCLE GAS TURBINES	2110 MMBtu/hr	SO2	0.0057	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL

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CT-0151	KLEEN ENERGY SYSTEMS, LLC	CT	2/25/2008	SIEMENS SGT6-5000F COMBUSTION TURBINE #1 AND #2 (NATURAL GAS FIRED) WITH 445 MMBtu/hr NATURAL GAS DUCT BURNER	2.1 MMcf/hr	SO2	0.0023	lb/MMBtu 0.8 GR/100 SCF		BACT-PSD	NAT GAS / LOW S FUEL
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	SIMPLE CYCLE COMBUSTION TURBINE (ONE UNIT)	1972 MMBtu/hr	SO2	2	GR/100SCF		BACT-PSD	NAT GAS / LOW S FUEL
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	COMBINED CYCLE COMBUSTION TURBINE SYSTEM (4-ON-1)	1972 MMBtu/hr	SO2	2	GR/100SCF		BACT-PSD	NAT GAS / LOW S FUEL
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	COMBINED CYCLE COMBUSTION GAS TURBINES -6 UNITS	2333 MMBtu/hr	SO2	2	G S/100 SCF OF GAS		BACT-PSD	NAT GAS / LOW S FUEL
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	COMBUSTION TURBINE	2221 MMBtu/hr	SO2	0.0011	lb/MMBtu		BACT-PSD	NAT GAS / LOW S FUEL
NC-0101	FORSYTH ENERGY PLANT	NC	9/29/2005	TURBINE, COMBINED CYCLE, NATURAL GAS, (3)	1844.3 MMBtu/hr	SO2	0.0006	lb/MMBtu	based on 3-hour average	BACT-PSD	NAT GAS / LOW S FUEL
NC-0101	FORSYTH ENERGY PLANT	NC	9/29/2005	TURBINE & DUCT BURNER, COMBINED CYCLE, NAT GAS, 3	1844.3 MMBtu/hr	SO2	0.0006	lb/MMBtu	3-hr avg	BACT-PSD	NAT GAS / LOW S FUEL
FL-0265	HINES POWER BLOCK 4	FL	6/8/2005	COMBINED CYCLE TURBINE	530 MW	SO2	2	GR/100SCF	CONTINUOUS	BACT-PSD	NAT GAS / LOW S FUEL
LA-0192	CRESCENT CITY POWER	LA	6/6/2005	GAS TURBINES -187 MW (2)	2006 MMBtu/hr	SO2	0.00503	lb/MMBtu	HOURLY MAXIMUM	BACT-PSD	NAT GAS / LOW S FUEL
FL-0263	FPL TURKEY POINT POWER PLANT	FL	2/8/2005	170 MW COMBUSTION TURBINE, 4 UNITS	170 MW	SO2	2	GR S/100 SCF GAS		BACT-PSD	NAT GAS / LOW S FUEL

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*TX-0751	Eagle Mountain Power Company LLC	TX	6/18/2015	Siemens 231 MW/500 MMBtu/hr duct burner, GE-210MW/349.2 MMBtu/hr duct burner	210 MW	VOC	2	PPM		LAER	OXIDATION CATALYST
*TX-0730	Colorado Bend II Power, LLC	TX	4/1/2015	2 GE Model 7HA.02 Combustion Turbines	1100 MW	VOC	4	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	SCR + OXIDATION CATALYST
*TX-0714	NRG Texas Power LLC, S R Bertron	TX	12/19/2014	2 Combined Cycle	240 MW	VOC	1	PPM	@15% O2	BACT-PSD	OXIDATION CATALYST
*TX-0710	Victoria, WLE L.P.	TX	12/1/2014	GE 7FA.04	197 MW	VOC	4	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
*WV-0025	Moundsville Power, LLC	WV	11/21/2014	2 GE 7FA.04 Turbines w/ Duct Burners	2159 MMBtu/hr	VOC	5.3	lb/hr	@15% O2	BACT-PSD	OXIDATION CATALYST - GOOD COMBUSTION PRACTICES
*TX-0712	Southern Power Company Trinidad Generating Facility	TX	11/20/2014	Mitsubishi Heavy Industries J model with HRSG and Duct Burner	497 MW	VOC	4	PPM	@ 15% O2, 1 HR	BACT-PSD	OXIDATION CATALYST
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMBtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMBtu/hr(HHV)	427 MW	VOC	1	PPMVD	@15%O2 AVERAGE OF THREE STACK TEST RUNS	LAER	OXIDATION CATALYST
*TX-0713	TENASKA BROWNSVILLE PARTNERS, LLC TENASKA BROWNSVILLE GENERATING STATION	TX	4/29/2014	two CTs (2x1 CCGT), although the final design selected by Tenaska may only consist of one CT (1x1 CCGT).	884 MW gross	VOC	2	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
*MD-0041	CPV MARYLAND, LLC CPV ST. CHARLES	MD	4/23/2014	2 COMBINED CYCLE COMBUSTION TURBINES, WITH DUCT FIRING	725 MW	VOC	2	PPMVD	@ 15% O2 3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD	LAER	OXIDATION CATALYST
IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 COMBINED CYCLE	2258 MMBtu/hr	VOC	1	PPM	@15% O2	BACT-PSD	OXIDATION CATALYST
*TX-0660	FGE POWER LLC FGE TEXAS POWER I AND FGE TEXAS POWER II	TX	3/24/2014	Four (4) Alstom GT24 CTGs, each with a HRSG and DBs	409 MMBtu/hrr Each	VOC	2	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/7/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	VOC	2	PPMVD	@15%O2 AVERAGE OF THREE ONE HOUR TESTS	LAER	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*PA-0298	FUTURE POWER PA INC	PA	3/4/2014	COMBINED CYCLE - SIEMENS 5000	346 MW 2267 MMBtu/hr	VOC	2	PPM	@15% O2	LAER	OXIDATION CATALYST
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	630 MW	VOC	1	PPM	@ 15% O2, 1-HR AVG	LAER	OXIDATION CATALYST

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*MI-0412	HOLLAND BOARD OF PUBLIC WORKS-EAST 5TH STREET	MI	12/4/2013	FG-CTGHRSG: 2 Combined cycle CTGs with HRSGs with duct burners	670 MMBtu/hr EA	VOC	4	PPM	@ 15% O2, AVE BASED ON TEST PROTOCOL	BACT-PSD	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*TX-0641	PINECREST ENERGY CENTER	TX	11/12/2013	Combined cycle turbine General Electric 7FA.05, the Siemens SGT6-5000F(4), or the Siemens SGT6-5000F(5).	637 and 735 MW	VOC	2	PPMVD	@15% O2	BACT-PSD	OXIDATION CATALYST
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBtu/hr EA.	VOC	0.0013	lb/MMBtu		BACT-PSD	OXIDATION CATALYST
	RENAISSANCE POWER LLC	MI	11/1/2013	4 COMBINED CYCLE UNITS	2147 MMBtu/hr EA.	VOC	2	PPM	@15% O2	BACT-PSD	OXIDATION CATALYST
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	VOC	2	PPM	@ 15% O2, 1-HR AVG SIEMENS	BACT-PSD	OXIDATION CATALYST
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBtu/hr EA. (GE) OR 2,260 MMBtu/hr EA. (SIEMENS)	VOC	1	PPM		LAER	OXIDATION CATALYST
*PA-0291	HICKORY RUN ENERGY LLC	PA	4/23/2013	2 COMBINED CYCLE UNITS - GE 7FA, SIEMENS SGT6-5000F, MITSUBISHI M501G OR SIEMENS SFT6-8000H	900 MW	VOC	1.5	PPMVD	@ 15% OXYGEN WITH OR WITHOUT DUCT BURNER	OTHER CASE-BY-CASE	OXIDATION CATALYST
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	Three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2538 MMBtu/hr EA	VOC	1	PPM	@15% O2	OTHER CASE-BY-CASE	OXIDATION CATALYST
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 AC	3,442 MMBtu/hr EA.	VOC	0.7	PPMVD	3 H AVG/WITHOUT DUCT BURNING	BACT-PSD	OXIDATION CATALYST AND GOOD COMBUSTION PRACTICES
*PA-0286	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	944 MW	VOC	1	PPM	@15% O2	BACT-PSD	OXIDATION CATALYST

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*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	12/3/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	VOC	1	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 COMBINED CYCLE UNITS - GE 7FA.05	2,320 MMBtu/hr EA.	VOC	1	PPM	@15% O2	LAER	OXIDATION CATALYST
PA-0278	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6-8000H OR MITSUBISHI M501GAC	936 MW	VOC	1	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBtu/hr EA.	VOC	1	PPM	@15% O2	LAER	OXIDATION CATALYST
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	1 COMBINED CYCLE UNIT - MITSUBISHI M501 GAC	2,542 MMBtu/hr, NO DB	VOC	2	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
	BROCKTON POWER	MA	7/20/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6-PAC-5000F	2,227 MMBtu/hr	VOC	1	PPM	@ 15% O2, 1-HR AVG	BACT-PSD	OXIDATION CATALYST
TX-0590	PONDERA CAPITAL MANAGEMENT KING POWER STATION	TX	8/5/2010	4 SIEMENS SGT6-5000F OR GE 7FA W/ HRSG	1350 MW TOTAL	VOC	1.8	PPM	@ 15% O2, 3-HR AVG	LAER	OXIDATION CATALYST
ID-0018	IDAHO POWER CO. LANGLEY GULCH POWER PLANT	ID	6/25/2010	1X1 COMBINED CYCLE POWER PLANT, SIEMENS SGT6-5000F CT	2375.28 MMBtu/hr	VOC	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
GA-0138	LIVE OAKS POWER PLANT	GA	4/8/2010	3 MHI M501G COMBINED CYCLE	600 MW	VOC	2.5	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	SCR + DLN
FL-9002	FP&L CAPE CANAVERAL ENERGY CENTER	FL	7/29/2009	3 Siemens SGT6-8000H (also permitted for MHI 501G)	1250 MW TOTAL	VOC	1.5	PPM	@15% O2	BACT-PSD	GOOD COMBUSTION
TX-0547	NATURAL GAS-FIRED POWER GENERATION FACILITY	TX	6/22/2009	2 GE7FAS w/ HRSGs and DBs OR 2 MHI 501GS w/ HRSGs and DBs	620 MW OR 910 MW	VOC	4	PPMVD	@ 15% O2, 24-HR ROLLING AVG	BACT-PSD	GOOD COMBUSTION
TX-0546	PATTILLO BRANCH POWER PLANT	TX	6/17/2009	4 GE7121 COMBINED CYCLE CT W/ DB OR Siemens 5GT6-5000F	350 MW ea.	VOC	2	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	2 SIEMESN V84.3A COMBINED CYCLE	1882 MMBtu/hr ea	VOC	0.3	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	
FL-0303	FPL WEST COUNTY ENERGY CENTER UNIT 3	FL	7/30/2008	THREE NOMINAL 250 MW CTG (EACH) WITH SUPPLEMENTARY-FIRED HRSG, MHI 501G	2333 MMBtu/hr	VOC	1.2	PPMVD		BACT-PSD	GOOD COMBUSTION

Facility Information			Process Information			Emission Limits				Notes	
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
LA-0224	ARSENAL HILL POWER PLANT	LA	3/20/2008	TWO COMBINED CYCLE GAS TURBINES	2110 MMBtu/hr	VOC	4.9	PPMVD	@15%O2 ANNUAL AVERAGE	BACT-PSD	
CT-0151	KLEEN ENERGY SYSTEMS, LLC	CT	2/25/2008	SIEMENS SGT6-5000F COMBUSTION TURBINE #1 AND #2 (NATURAL GAS FIRED) WITH 445 MMBtu/hr NATURAL GAS DUCT BURNER	2.1 MMcf/hr	VOC	5	PPMVD	@ 15% O2 (60-100% LOAD) CT OR CT W/DB, 1-HR BLOCK	BACT-PSD	OXIDATION CATALYST
GA-0127	SOUTHERN CO./GEORGIA POWER PLANT MCDONOUGH	GA	1/7/2008	3 MHI M501G COMBINED CYCLE	2,520 MW TOTAL	VOC	1	PPM	@ 15% O2, 3-HR AVG	BACT-PSD	OXIDATION CATALYST
GA-0127	PLANT MCDONOUGH COMBINED CYCLE	GA	1/7/2008	COMBINED CYCLE COMBUSTION TURBINE	254 MW	VOC	1	PPM	@ 15% O2, 3-HR AVG	LAER	OXIDATION CATALYST
GA-0127	PLANT MCDONOUGH COMBINED CYCLE	GA	1/7/2008	COMBINED CYCLE COMBUSTION TURBINE	254 MW	VOC	1.8	PPM	@ 15% O2, 3-HR AVG	LAER	OXIDATION CATALYST
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	COMBINED CYCLE COMBUSTION TURBINE W/DUCT BURNER	1758 MMBtu/hr	VOC	1.5	PPMVD	No DB	BACT-PSD	
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	COMBINED CYCLE COMBUSTION TURBINE SYSTEM (4-ON-1)	1972 MMBtu/hr	VOC	1.5	PPMVD	@ 15% O2 FOR CT AND	BACT-PSD	
NY-0098	ATHENS GENERATING PLANT	NY	1/19/2007	FUEL COMBUSTION (GAS)	3100 MMBtu/hr	VOC	4	PPMVD	DB -GAS	LAER	
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	COMBINED CYCLE COMBUSTION GAS TURBINES -6 UNITS	2333 MMBtu/hr	VOC	1.5	PPMVD	@15% O2	BACT-PSD	
CO-0056	ROCKY MOUNTAIN ENERGY CENTER, LLC	CO	5/2/2006	NATURAL-GAS FIRED, COMBINED-CYCLE TURBINE	300 MW	VOC	0.0029	lb/MMBtu		BACT-PSD	OXIDATION CATALYST
NV-0035	TRACY SUBSTATION EXPANSION PROJECT	NV	8/16/2005	TURBINE, COMBINED CYCLE COMBUSTION #1 WITH HRSG AND DUCT BURNER.	306 MW	VOC	4	PPMVD	@ 15% O2, 3-HR AVG	BACT-PSD	
MN-0060	HIGH BRIDGE GENERATING PLANT	MN	8/12/2005	2 COMBINED-CYCLE COMBUSTION TURBINES	330 MW	VOC	2	PPM	@15% O2	BACT-PSD	
NY-0100	EMPIRE POWER PLANT	NY	6/23/2005	FUEL COMBUSTION (NATURAL GAS)	2099 MMBtu/hr	VOC	1	PPMVD	AT 15% O2 AS PER EPA METHOD 25A	LAER	
LA-0192	CRESCENT CITY POWER	LA	6/6/2005	GAS TURBINES -187 MW (2)	2006 MMBtu/hr	VOC	1.1	PPM	@15% O2, ANNUAL AVERAGE	BACT-PSD	
FL-0263	FPL TURKEY POINT POWER PLANT	FL	2/8/2005	170 MW COMBUSTION TURBINE, 4 UNITS	170 MW	VOC	1.3	PPMVD	@15% O2 STACK TEST		GOOD COMBUSTION

Combustion Turbines
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Facility Information			Process Information			Emission Limits				Notes	
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	AVERAGING PERIOD	METHOD	CONTROL METHOD
*TX-0743	AUSTIN ENERGY, SAND HILL ENERGY CENTER	TX	9/29/2014	GE 7FA.04 Gross Heat Rate is with and without duct burner firing and includes MSS	7943.00 Btu/kWh (HHV, gross)	GHG	930	lb of CO2/MW-hr	365-Day Rolling Average and Initial Stack Test	BACT-PSD	None
*NJ-0082	WEST DEPTFORD ENERGY STATION	NJ	7/18/2014	427 MW Siemens Combined Cycle Turbine with duct burner Heat Input rate of the turbine = 2276 MMbtu/hr (HHV) Heat Input rate of the Duct burner= 777 MMbtu/hr(HHV)	427 MW	GHG	947	lb of CO2e/MW-hr	CONSECUTIVE 12 MONTH (ROLLING 1 MONTH)	BACT-PSD	Turbine efficiency and Use of Natural gas
*TX-0748	FGE POWER, FGE TEXAS PROJECT	TX	4/28/2014	Each of four (4) Alstom GT24 CTGs have an approximate maximum base-load electric power output of 230.7 MW. The maximum electric power output from each steam turbine is approximately 336 MW.	7625.00 Btu/kWh / 409 MMBtu/h4	GHG	889 Includes w/ and w/o DB and MSS	lb of CO2/MW-hr GROSS		BACT PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	2 SIEMENS SGT6-5000F COMBINED CYCLE TURBINES WITHOUT DUCT FIRING	2258 MMBTU/HR	GHG	951	lb of CO2/MW-hr GROSS	12-MONTH ROLLING AVG.	BACT-PSD	
*MD-0042	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATING FACILITY	MD	4/8/2014	TWO MITSUBISHI "G" MODEL COMBUSTION TURBINE GENERATORS (CTS) COUPLED WITH A HEAT RECOVERY STEAM GENERATOR (HRSG) EQUIPPED WITH DUCT BURNERS	7500.0000 BTU/KWH (HEAT RATE) AT ALL TIMES, EXCLUDING SU/SD 1000 MW	GHG	946 W/ DB	lb/MW-hr (AS CO2)	12-MONTH ROLLING	BACT-PSD	EXCLUSIVE USE OF PIPELINE-QUALITY NATURAL GAS, AND INSTALLATION OF HIGH-EFFICIENCY CT MODEL (MITSUBISHI "G" MODEL)
*NJ-0082	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	3/7/2014	GE7FA.05 OR Siemens SGT6 5000F, with two duct burners, two Heat Recovery Steam Generators (HRSG), one steam turbine	625 MW	GHG	925 W/ DB	lb/MW-hr (AS CO2)	CONSECUTIVE 12 MONTHS (ROLLING 1 MONTH)	BACT-PSD	
	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	MA	1/30/2014	2 COMBINED CYCLE - GE 107F SERIES 5	7,247 Btu/kW-hr, net) 630 MW	GHG	895	lb of CO2e/ net MW-hr	365- Day Rolling	BACT- PSD	
	LA PALOMA ENERGY CENTER	TX	11/6/2013	2 GE 7FA or Siemens SGT6-5000F combined- cycle units		GHG	934.5 W/DB (GE 7FA option)	lb CO2/MW-hr (gross)		BACT-PSD	
	CARROLL COUNTY ENERGY	OH	11/5/2013	2 COMBINED CYCLE UNITS - GE 7FA	2,045 MMBTU/HR EA.	GHG	859	lb CO2/MW-hr (gross) at ISO Conditions		BACT-PSD	
	RENAISSANCE POWER LLC	MI	11/1/2013	4 COMBINED CYCLE UNITS	2147 MMBTU/HR EA.	GHG	1000 lb/MW-hr gross 12-month rolling average	lb CO2/MW-hr (gross)	12-Month Rolling	BACT PSD	
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	2 COMBINED CYCLE UNITS - MITSUBISHI M501GAC OR SIEMENS SCC6-8000H	800 MW	GHG	Mitsubishi: 840 Siemens: 833	lb/MW-hr gross		BACT PSD	State-of-the-art high efficiency combustion technology
	GREEN ENERGY PARTNERS / STONEWALL	VA	4/30/2013	2 COMBINED CYCLE - GE 7FA.05 OR SIEMENS SGT6-5000F5	2,230 MMBTU/HR EA. (GE) OR 2,260 MMBTU/HR EA. (SIEMENS)	GHG	7,780 w/ DB AND 7,340 w/o DB	HHV Btu/kW-hr gross		BACT PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLC ID	FACILITY NAME	STATE	PERMIT DATE	PROCESS NAME	THROUPGHPUT	POLLUTANT	EMISSION LIMIT	EMISSION RATE UNITS	AVERAGING PERIOD	METHOD	CONTROL METHOD
*PA-0288	SUNBURY GENERATION LP	PA	4/1/2013	Three (3) natural gas fired F class combustion turbines coupled with three (3) heat recovery steam generators (HSRGs) equipped with natural gas fired duct burners.	2,538 MMBTU/HR EA	GHG	298,106 w/ DB AND 281,727 w/o DB	lb CO2e/hr		OTHER CASE-BY-CASE	
*VA-0321	VIRGINIA ELECTRIC COMPANY BRUNSWICK COUNTY POWER STATION	VA	3/12/2013	3 COMBINED CYCLE - MITSUBISHI M501 GAC	3,442 MMBTU/HR EA.	GHG	7500	Btu/kW-hr		BACT PSD	Energy efficient combustion practices and low GHG fuels
	MOXIE PATRIOT LLC	PA	1/31/2013	2 COMBINED CYCLE UNITS - SIEMENS SGT6- 8000H OR MITSUBISHI M501GAC	944 MW	GHG	7,459 w/o DB	HHV Btu/kW-hr ISO		BACT PSD	
*IN-0158	ST. JOSEPH ENERGY CENTER, LLC	IN	03/12/2012	FOUR (4) NATURAL GAS COMBINED CYCLE COMBUSTION TURBINES	240 MW	GHG	7,646	Btu/kW-hr		BACT PSD	HIGH THERMAL EFFICIENCY DESIGN
	NEWARK ENERGY CENTER	NJ	11/1/2012	2 - GE 7FA.05 2320 MMBtu/hr/unit plus 211 MMBtu/hr DF	7,522 BTU/KW-hr, net 2,320 MMBTU/HR EA.	GHG	887	lb/MW-hr gross	12-Month Rolling	BACT PSD	
TX-0632	CALPIINE CO - DEER PARK ENERGY CENTER LLC	TX	11/29/2012	1 - Siemens FD3 Series	180 MW	GHG	0.46	T CO2/MW-hr	30-Day Rolling	BACT PSD	
TX-0633	CHANNEL ENERGY CENTER, LLC	TX	10/15/2012	2 - Siemens FD3 Series and 1 - Siemens FD2 Series	180 MW EA	GHG	0.46	T CO2/MW-hr	30-Day Rolling	BACT PSD	
	MOXIE LIBERTY LLC	PA	10/10/2012	2 COMBINED CYCLE UNITS - SIEMENS SGT6- 8000H OR MITSUBISHI M501GAC	936 MW	GHG	7,459	Btu HHV/kW-hr ISO		BACT PSD	
	CRICKET VALLEY ENERGY CENTER	NY	9/27/2012	3 COMBINED CYCLE UNITS - GE 7FA.05	2,061 MMBTU/HR EA.	GHG	7,605	Btu HHV/kW-hr ISO		BACT PSD	
	PIONEER VALLEY ENERGY CENTER (PVEC)	MA	4/5/2012	1 Mitsubishi M501GAC 2542 MMBtu/hr/unit; no DF	431 MW	GHG	825 AND 895	lb/MW-hr net corrected to ISO Conditions	Initial Stack Test AND 365-Day Rolling Average	BACT PSD	
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	570 MW COMBINED-CYCLE (2 GE 7FA) + 50 MW SOLAR THERMAL HYBRID	1,736 MMBTU/HR EA.	GHG	774 AND 7,319	lb CO2e/MW-hr facility-wide AND Btu/kW-hr facility-wide	365-Day Rolling Average		
TX-0612	LOWER COLORADO RIVER AUTHORITY THOMAS C. FERGUSON POWER PLANT	TX	9/1/2011	2 - GE 7FA unit No DF	195 MW per Unit	GHG	908,957.60	lb CO2e/hr	30-Day Rolling		GOOD COMBUSTION PRACTICES
	BROCKTON POWER	MA	20/7/2011	1 COMBINED CYCLE UNIT - SIEMENS SGT6- PAC-5000F	2,227 MMBTU/HR	GHG	870 AND 842	lb CO2e/MW-hr	Monthly AND 12-Month Rolling		
	RUSSELL CITY ENERGY CENTER	CA	2/4/2010	2 SIEMENS/WESTINGHOUSE 501F W/ HRSG AND DUCT BURNERS	7,730 Btu HHV/kW-hr AND 2,039 MMBTU/HR EA.	GHG	242 AND 119	metric tons of CO2e/hr AND lb CO2e/MMBtu			

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*TX-0751	EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (100 MMBtu) natural gas	73.3 MMBtu/hr	CO	50	PPM	ROLLING 3-HR AVERAGE	BACT-PSD	
*AK-0083	KENAI NITROGEN OPERATIONS	AK	1/6/2015	Five (5) Waste Heat Boilers	50 MMBtu/hr	CO	50	PPMV	3-HR AVG @ 15 % O2	BACT-PSD	
*WV-0025	MOUNDSVILLE	WV	11/21/2014	AUXILIARY BOILER	100 MMBtu/hr	CO	0.04	lb/MMBtu		BACT-PSD	GOOD COMBUSTION PRACTICES
PERMIT NO. 73826	GREEN ENERGY PARTNERS/STONEWALL	VA	7/15/2014	AUXILIARY BOILER	75 MMBtu/hr	CO	2.78	lb/hr			PIPELINE QUALITY NATURAL GAS, GOOD COMBUSTION PRACTICES
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP01	35.4 MMBtu/hr	CO	0.0073	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
*MS-0092	EMBERCLEAR GTL MS	MS	5/8/2014	261 MMBtu/h natrual gas-fired boiler, equipped with low-NOx burners, SCR, and CO catalytic oxidation	261 MMBtu/hr	CO	5	PPMV @ 3% O2	3-HR ROLLING AVG	BACT-PSD	CO Catalytic Oxidation
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP03	33.48 MMBtu/hr	CO	0.0075	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	44 MMBtu/hr	CO	0.0148	lb/MMBtu		LAER	GOOD COMBUSTION PRACTICES INCLUDING THE USE OF PROPER AIR TO FUEL RATIO
*OR-0050	TROUTDALE ENERGY CENTER, LLC	OR	3/5/2014	AUXILIARY BOILER	39.8 MMBtu/hr	CO	0.04	lb/MMBtu	3-HR BLOCK AVERAGE	BACT-PSD	Utilize Low-NOx burners and FGR.
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILIARY BOILER	60.1 mmBtu/hr	CO	0.0164	lb/MMBtu	AVERAGE OF 3 ONE-HOUR TEST RUNS	BACT-PSD	CO catalytic oxidizer
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILIARY BOILER	40 MMBtu/hr	CO	3.31	TPY	12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hr	CO	0.077	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	CO	0.077	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*TX-0641	PINECREST ENERGY CENTER	TX	11/21/2013	AUXILIARY BOILER	150 MMBtu/hr	CO	75	PPMVD	INITIAL STACK TEST @3% OXYGEN	BACT-PSD	GOOD COMBUSITON PRACTICES AND PIPELINE QUALITY NATURAL GAS
	CARROLL COUNTY ENERGY	OH	11/5/2013	AUXILIARY BOILER	99 MMBtu/hr	CO	0.055	lb/MMBtu			
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA03	31.38 MMBtu/hr	CO	0.0172	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	CO	0.075	lb/MMBtu	HEAT INPUT. TEST PROTOCOL WILL SPECIFY	BACT-PSD	Efficient combustion.
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	AUXILIARY BOILER	99 MMBtu/hr	CO	0.055	lb/MMBtu		BACT-PSD	Good combustion practices and using combustion optimization technology
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	41.64 MMBtu/hr	CO	0.0184	lb/MMBtu		LAER	GOOD COMBUSTION PROACTICES AND LIMITING THE FUEL TO NATURAL GAS ONLY
	SUNBURY GENERATION	PA	4/1/2013	AUXILIARY BOILER	106 MMBtu/hr	CO	0.074	lb/MMBtu			
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	COMMISSIONING BOILERS 1; 2 (CB-1 & CB-2)	217.5 MMBtu/hr	CO	10.87	lb/hr	HOURLY MAXIMUM	BACT-PSD	GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU003	46 MMBtu/hr	CO	0.039	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	

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SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU004	46 MMBtu/hr	CO	0.039	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU005	46 MMBtu/hr	CO	0.039	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU006	46 MMBtu/hr	CO	0.039	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	CO	0.083	lb/MMBtu	3 HOURS	BACT-PSD	GOOD COMBUTSTION PRACTICES
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 mmcubic ft/year	CO	2.45	lb/hr	AVERAGE OF THREE TESTS	BACT-PSD	Use of natural gas a clean fuel
*MD-0041	CPV ST. CHARLES	MD	4/23/2014	AUXILLARY BOILER	93 MMBtu/hr	CO	0.02	lb/MMBtu	3-HOUR AVERAGE BLOCK	BACT-PSD	GOOD COMBUSTION PRACTICES
FL-0335	SUWANNEE MILL	FL	9/5/2012	Four(4) Natural Gas Boilers - 46 MMBtu/hour	46 MMBtu/hr	CO	0.039	lb/MMBtu		BACT-PSD	Good Combustion Practice
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	2000 hours/year	CO	3.44	lb/hr	AVERAGE OF THREE TESTS	BACT-PSD	Use of natural gas and good combustion practices
*OH-0350	REPUBLIC STEEL	OH	7/18/2012	Steam Boiler	65 MMBtu/hr	CO	0.04	lb/MMBtu		BACT-PSD	Proper burner design and good combustion practices
	FOOTPRINT POWER SALEM HARBOR	MA	1/30/2014	AUXILIARY BOILER	80 MMBtu/hr	CO	0.035	lb/MMBtu			OXIDATION CATALYST
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	BOILERS	5 MMBtu/hr	CO	0			BACT-PSD	GOOD COMBUSTION PRACTICES. CONSUMPTION OF NATURAL GAS AND PROPANE.
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	AUXILIARY BOILER	110 MMBtu/hr	CO	500	PPMVD	3-HR AVG @3% O2	BACT-PSD	
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	AUXILIARY BOILER	338 MMBtu/hrR	CO	84	lb/MMscf	ANNUAL	BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
	BROCTON POWER	MA	7/20/2011	AUXILIARY BOILER	60 MMBtu/hr	CO	0.08	lb/MMBtu			
CA-1192	AVENAL ENERGY PROJECT	CA	6/21/2011	AUXILIARY BOILER	37.4 MMBtu/hr	CO	50	PPMVD	3-HR AVG, @3% O2	BACT-PSD	ULTRA LOW NOX BURNER, USE PUC QUALITY NATURAL GAS, OPERATIONAL RESTRICTION OF 46, 675 MMBtu/yr
CA-1185	SANTA BARBARA AIRPORT	CA	6/7/2011	Boiler, Forced Dratf	3 MMBtu/hr	CO	100	PPMVD	40 MINUTES @ 3% O2	OTHER CASE-BY-CASE	Forced draft, full modulation, flue gas recirculation
LA-0240	FLOPAM INC.	LA	6/14/2010	Boilers	25.1 MMBtu/hr	CO	0.93	LB/H	HOURLY MAXIMUM	BACT-PSD	Good equipment design and proper combustion practices
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	CO	50	PPMVD	1-HR AVG, @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY BOILER	35 MMBtu/hr	CO	50	PPMVD	1-HR AVG, @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 500 HR/YR
*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	CO	0.036	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
	RENAISSANCE POWER	MI	11/1/2013	AUXILIARY BOILER	40 MMBtu/hr	CO	0.036	lb/MMBtu			
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	CO	0.036	lb/MMBtu		OTHER CASE-BY-CASE	
NV-0044	HARRAH'S OPERATING COMPANY, INC.	NV	1/4/2007	COMMERCIAL/INSTITUTIONAL-SIZE BOILERS	35.4 MMBtu/hr	CO	0.036	lb/MMBtu		BACT-PSD	GOOD COMBUSTION DESIGN
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	AUXILIARY BOILER	29.4 MMBtu/hr	CO	0.036	lb/MMBtu		BACT-PSD	GOOD COMBUSTION PRACTICES
OH-0310	AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/8/2009	AUXILIARY BOILER	150 MMBtu/hr	CO	12.6	lb/hr		BACT-PSD	

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*TX-0714	S R BERTRON ELECTRIC GENERATING STATION	TX	12/19/2014	BOILER	80 MMBtu/hr	CO	0.037	lb/MMBtu	3-HR ROLLING AVERAGE	BACT-PSD	Low-NOx burners
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT FL01	14.34 MMBtu/hr	CO	0.0705	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
PERMIT NO. 81391	DOMINION WARREN COUNTY	VA	6/17/2014	AUXILIARY BOILER	88.1 MMBtu/hr	CO	0.037	lb/MMBtu		PSD	GOOD COMBUSTION PRACTICES
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	AUXILIARY BOILER	21 MMBtu/hr	CO	0.037	lb/MMBtu			
	PONDERA/ KING POWER STATION	TX	8/5/2010	AUXILIARY BOILER	45 MMBtu/hr	CO	0.037	lb/MMBtu			
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT PA15	21 MMBtu/hr	CO	0.848	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP26	24 MMBtu/hr	CO	0.037	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	AUXILIARY BOILER	938.3 MMBtu/hr	CO	33.78	lb/hr	MAXIMUM	BACT-PSD	GOOD DESIGN AND PROPER OPERATION
WY-0066	MEDICINE BOW FUEL & POWER	WY	3/4/2009	AUXILIARY BOILER	134 MMBtu/hr	CO	0.08	lb/MMBtu	ANNUAL	OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICES-LIMITED TO 2000 HOURS OF ANNUAL OPERATION.
OK-0135	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	CO	6.6	lb/hr	1-HOUR/8-HOUR	BACT-PSD	GOOD COMBUSTION PRACTICES
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	AUXILIARY BOILER	33.5 MMBtu/hr	CO	5.02	lb/hr		N/A	GOOD COMBUSTION
NV-0047	NELLIS AIR FORCE BASE	NV	2/26/2008	BOILERS/HEATERS - NATURAL GAS-FIRED		CO	0.037	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
OH-0323	TITAN TIRE CORPORATION OF BRYAN	OH	6/5/2008	BOILER	50.4 MMBtu/hr	CO	4.15	lb/hr		BACT-PSD	
*WY-0075	CHEYENNE PRAIRIE GENERATING STATION	WY	7/16/2014	AUXILIARY BOILER	25.06 MMBtu/hr	CO	0.0375	lb/MMBtu	3 HOUR AVERAGE	BACT-PSD	Good combustion
WY-0064	DRY FORK STATION	WY	10/15/2007	AUXILIARY BOILER	134 MMBtu/hr	CO	0.08	lb/MMBtu	ANNUAL	OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICES-LIMITED TO 2000 HOURS OF ANNUAL OPERATION.
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC	MN	9/7/2007	SMALL BOILERS; HEATERS(100 MMBtu/hr)	99 MMBtu/hr	CO	0.08	lb/MMBtu	1 HOUR AVERAGE	BACT-PSD	
AL-0230	THYSSENKRUPP STEEL AND STAINLESS USA, LLC	AL	8/17/2007	3 NATURAL GAS-FIRED BOILERS WITH ULNB & EGR (537-539)	64.9 MMBtu each	CO	0.04	lb/MMBtu		BACT-PSD	
IA-0088	ADM CORN PROCESSING - CEDAR RAPIDS	IA	6/29/2007	NATURAL GAS BOILER (292.5 MMBtu/hr)	292.5 MMBtu/hr	CO	0.072	lb/MMBtu	30-DAY ROLLING AVERAGE/ EXCEPT SSM	BACT-PSD	ADVANCES ULTRA LOW NOX BURNERS WITH FLUE GAS RECIRCULATION AND GOOD COMBUSTION PRACTICES
OH-0309	TOLEDO SUPPLIER PARK- PAINT SHOP	OH	5/3/2007	BOILER (2), NATURAL GAS	20.4 MMBtu/hr	CO	1.7	lb/hr		BACT-PSD	
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	ONE GASEOUS-FUELED 99 MMTU/HR AUXILIARY BOILER	99 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	TWO 99.8 MMBtu/hr GAS-FUELED AUXILIARY BOILERS	99.8 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	
	CRICKET VALLEY	NY	9/27/2012	AUXILIARY BOILER	60 MMBtu/hr	CO	0.0375	lb/MMBtu			
NV-0048	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL-SIZE BOILER (100 MMBtu/hr)	3.85 MMBtu/hr	CO	0.083	lb/MMBtu		OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICE

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NV-0046	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL BOILER	3.85 MMBtu/hr	CO	0.083	lb/MMBtu		BACT-PSD	GOOD COMBUSTION PRACTICE
CA-1128	COTTAGE HEALTH CARE - PUEBLO STREET	CA	5/16/2006	BOILER: 5 TO 33.5 MMBtu/hr	25 MMBtu/hr (75 MMBtu/hr	CO	50	PPMV	6-MIN AV @ 3% O2	BACT-PSD	ULTRA-LOW NOX BURNER
CA-1127	GENENTECH, INC.	CA	9/27/2005	BOILER: 50 MMBtu/hr	97 MMBtu/hr	CO	50	PPMVD	THREE 30-MIN SAMP PERIODS AVG @ 3% O2	BACT-PSD	ULTRA LOW NOX BURNERS: NATCOM P-97-LOG-35-2127
WA-0301	BP CHERRY POINT REFINERY	WA	4/20/2005	BOILER, NATURAL GAS	363 MMBtu/hr	CO	18.1	lb/hr	24 HR AVE	BACT-PSD	GOOD COMBUSTION PRACTICES

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*AK-0083	KENAI NITROGEN OPERATIONS	AK	1/6/2015	Five (5) Waste Heat Boilers	50 MMBtu/hrr	CO2e	59.6	TONS/MMCF	3-HR AVG	BACT-PSD	
*WV-0025	MOUNDSVILLE	WV	11/21/2014	AUXILIARY BOILER	100	CO2e	12,081	lb/hr		BACT-PSD	
*WY-0075	CHEYENNE PRAIRIE GENERATING STATION	WY	7/16/2014	AUXILIARY BOILER	25.06 MMBtu/hr	CO2e	12,855	TONS	12 MONTH ROLLING	BACT-PSD	Good combustion practices and energy efficiency
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILIARY BOILER	60.1 MMBtu/hrr	CO2e	17,313	TPY	12-MONTH ROLLING TOTAL	BACT-PSD	
*OR-0050	TROUTDALE ENERGY CENTER, LLC	OR	3/5/2014	AUXILIARY BOILER	39.8 MMBtu/hrr	CO2e	117	lb CO2/MMBtu	3-HR BLOCK AVERAGE	BACT-PSD	Clean fuels
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILIARY BOILER	40 MMBtu/hrr	CO2e	12,346	TPY		OTHER CASE-BY-CASE	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hrr	CO2e	49,251	TPY	12-MO ROLLING TIME PERIOD	BACT-PSD	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	CO2e	28,514	TPY	12-MO ROLLING TIME PERIOD	BACT-PSD	
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	CO2e	24,304	TPY	12-MO ROLL TIME PERIOD EACH MONTH	BACT-PSD	Efficient combustion; energy efficiency.
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	AUXILIARY BOILER	99 MMBtu/hr	CO2e	11,671	TPY	PER ROLLING 12-MONTHS	BACT-PSD	
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	COMMISSIONING BOILERS 1; 2 (CB-1; CB-2)	217.5 MMBtu/hr	CO2e	55,986	TPY	ANNUAL MAXIMUM	BACT-PSD	Energy efficiency measures: use of economizers and boiler insulation; improved combustion measures (i.e., tuning, optimization, and instrumentation); and minimization of air infiltration.
*VA-0321	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILIARY BOILER	66.7 MMBtu/hr	CO2e	117	lb/MMBtu		BACT-PSD	
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	CO2e	81,996	TONS	12 CONSECUTIVE MONTH PERIOD	BACT-PSD	OPERATION AND MAINTENANCE PRACTICES; COMBUSTION TURNING; OXYGEN TRIM CONTROLS & ANALYZERS; ECONOMIZER; ENERGY EFFICIENT REFRACTORY; CONDENSATE RETURN SYSTEM, INSULATE STEAM AND HOT LINES.
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	AUXILIARY BOILER	472.4 MMBtu/hr	CO2e	51,748	TPY	ROLLING 12 MONTH TOTAL	BACT-PSD	Good combustion practices

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*MD-0041	CPV ST. CHARLES	MD	4/23/2014	AUXILLARY BOILER	93 MMBtu/hr	H2SO4	0.0001	lb/MMBtu	3-HR AVERAGE	BACT-PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILLARY BOILER	60.1 MMBtu/hr	H2SO4	0.0055	lb/hr	AVERAGE OF 3 ONE-HOUR TEST RUNS	BACT-PSD	
*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	H2SO4	0.004	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILLARY BOILER	40 MMBtu/hr	H2SO4	0.04	TPY	BASED ON 12-MONTH ROLLING TOTAL		
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	AUXILLARY BOILER	99 MMBtu/H	H2SO4	0.011	lb/hr		BACT-PSD	only burning natural gas 0.5 GR/100 SCF
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	H2SO4	0.0005	lb/MMBtu		OTHER CASE-BY-CASE	
*VA-0321	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILLARY BOILER	66.7 MMBtu/hr	H2SO4	0.0086	lb/MMBtu		BACT-PSD	

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*TX-0751	EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (100 MMBtu) natural gas	73.3 MMBtu/hr	NOx	0.01	MMBtu/hr	ROLLING 3-HR AVERAGE	LAER	Good combustion practices
*AK-0083	KENAI NITROGEN OPERATIONS	AK	1/6/2015	Five (5) Waste Heat Boilers	50 MMBtu/hr	NOx	7	PPMV	3-HR AVG @ 15 % O2	BACT-PSD	
*TX-0714	S R BERTRON ELECTRIC GENERATING STATION	TX	12/19/2014	Boiler	80 MMBtu/hr	NOx	0.036	lb/MMBtu	3-HR ROLLING AVERAGE	BACT-PSD	Utilize Low-NOx burners and FGR.
*WV-0025	MOUNDSVILLE	WV	11/21/2014	AUXILIARY BOILER	100	NOx	2	lb/hr		BACT-PSD	Ultra Low-NOx Burners, Flue-Gas Recirculation, & Good Combustion Practices
*WY-0075	CHEYENNE PRAIRIE GENERATING STATION	WY	7/16/2014	Auxiliary Boiler	25.06 MMBtu/h	NOx	0.0175	lb/MMBtu	3 HOUR AVERAGE	BACT-PSD	Ultra low NOx burners and flue gas recirculation
PERMIT NO. 73826	GREEN ENERGY PARTNERS/STONEWALL	VA	7/15/2014	AUXILIARY BOILER	75 MMBtu/hr	NOx	0.011	lb/MMBtu			
PERMIT NO. 81391	DOMINION WARREN COUNTY	VA	6/17/2014	AUXILIARY BOILER	88.1 MMBtu/hr	NOx	0.011	lb/MMBtu			
*TX-0713	TENASKA BROWNSVILLE GENERATING STATION	TX	4/29/2014	BOILER	90 MMBtu/hr	NOx	9	PPMVD	@15% O2	BACT-PSD	ultra low-NOx burners, limited use
*MD-0041	CPV ST. CHARLES	MD	4/23/2014	AUXILLARY BOILER	93 MMBtu/hr	NOx	0.11	lb/MMBtu	3-HOUR AVERAGE BLOCK	LAER	EXCLUSIVE USE OF NATURAL GAS, ULTRA LOW-NOX BURNERS, AND FLUE GAS RECIRCULATION (FGR)
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILLARY BOILER	60.1 mmBtu/hr	NOx	0.013	lb/MMBtu	AVERAGE OF 3 ONE-HOUR TEST RUNS	BACT-PSD	
*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	NOx	0.01	lb/MMBtu	3-HOUR BLOCK AVERAGE	LAER	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*OR-0050	TROUTDALE ENERGY CENTER, LLC	OR	3/5/2014	AUXILLARY BOILER	39.8 MMBtu/hr	NOx	0.035	lb/MMBtu	3-HR BLOCK AVERAGE	BACT-PSD	Utilize Low-NOx burners and FGR.
	FOOTPRINT POWER SALEM HARBOR	MA	1/30/2014	AUXILIARY BOILER	80 MMBtu/hr	NOx	0.011	lb/MMBtu			
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILLARY BOILER	40 MMBtu/hr	NOx	1.01	T/YR	12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hr	NOx	0.05	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Dry low NOx burners, flue gas recirculation and good combustion practices.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	NOx	0.05	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Low NOx burners and good combustion practices
*TX-0641	PINECREST ENERGY CENTER	TX	11/21/2013	AUXILIARY BOILER	150 MMBtu/hr	NOx	16	PPMVD	INITIAL STACK TEST, 3% OXYGEN	BACT-PSD	Low NOx burners
	CARROLL COUNTY ENERGY	OH	11/5/2013	AUXILIARY BOILER	99 MMBtu/hr	NOx	0.02	lb/MMBtu			
	RENAISSANCE POWER	MI	11/1/2013	AUXILIARY BOILER	40 MMBtu/jhr	NOx	0.035	lb/MMBtu			
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	NOx	0.05	lb/MMBtu	HEAT INPUT. TEST PROTOCOL WILL SPECIFY	BACT-PSD	Low NOx burners and flue gas recirculation.
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	AUXILIARY BOILER	99 MMBtu/hr	NOx	1.98	lb/hr		BACT-PSD	Low NOx burners and flue gas recirculation
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	NOx	0.011	lb/MMBtu		OTHER CASE-BY-CASE	
	SUNBURY GENERATION	PA	4/1/2013	AUXILIARY BOILER	106 MMBtu/hr	NOx	0.036	lb/MMBtu			
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	COMMISSIONING BOILERS 1; 2 (CB-1; CB-2)	217.5 MMBtu/hr	NOx	11.92	lb/hr	HOURLY MAXIMUM	BACT-PSD	FLUE GAS RECIRCULATION, LOW NOX BURNERS, AND GOOD COMBUSTION PRACTICES (I.E., PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE).

Facility Information			Process Information			Emission Limits				Notes	
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	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILIARY BOILER	66.7 MMBtu/hr	NOx	0.011	lb/MMBtu			
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU004	46 MMBtu/hr	NOx	0.036	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	NOx	0.032	lb/MMBtu	3 HOURS	BACT-PSD	LOW NOX BURNER WITH FLUE GAS RECIRCULATION
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 MMscf/year	NOx	0.05	lb/MMBtu	AVERAGE OF THREE TESTS	LAER	Low NOx burners and flue gas recirculation
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	AUXILIARY BOILER	472.4 MMBtu/hr	NOx	0.0125	lb/MMBtu	30 DAY ROLLING AVERAGE	BACT-PSD	Low NOx Burners (LNB) and Flue Gas Recirculation (FGR)
	CHANNEL ENERGY CENTER, LLC	TX	10/15/2012	AUXILIARY BOILER	430 MMBtu/hr	NOx	0.05	lb/MMBtu			
	CRICKET VALLEY	NY	9/27/2012	AUXILIARY BOILER	60 MMBTU	NOx	0.011	lb/MMBtu			
FL-0335	SUWANNEE MILL	FL	9/5/2012	Four(4) Natural Gas Boilers - 46 MMBtu/hour	46 MMBtu/hr	NOx	0.036	lb/MMBtu		BACT-PSD	Low NOx Burner and Flue Gas Recirculation
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	91.6 MMBtu	NOx	0.01	lb/MMBtu	AVERAGE OF THREE TESTS	LAER	Low NOx burners
*OH-0350	REPUBLIC STEEL	OH	7/18/2012	Steam Boiler	65 MMBtu/H	NOx	0.07	lb/MMBtu		BACT-PSD	
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	AUXILIARY BOILER	21 MMBtu/hr	NOx	0.029	lb/MMBtu			
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	BOILERS	5 MMBtu/hr	NOx	0			BACT-PSD	GOOD DESIGN AND COMBUSTION PRACTICES, LOW NOX BURNERS, COMBUSTION OF NATURAL GAS/PROPANE.
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	AUXILIARY BOILER	110 MMBtu/hr	NOx	9	PPMVD	3-HR AVG @3% O2	BACT-PSD	
	BROCTON POWER	MA	7/20/2011	AUXILIARY BOILER	60 MMBtu/hr	NOx	0.011	lb/MMBtu			
CA-1192	AVENAL ENERGY PROJECT	CA	6/21/2011	AUXILIARY BOILER	37.4 MMBtu/hr	NOx	9	PPMVD	3-HR AVG @3% O2	BACT-PSD	ULTRA LOW NOX BURNER, USE PUC QUALITY NATURAL GAS, OPERATIONAL RESTRICTION OF 46, 675 MMBTU/YR
CA-1185	SANTA BARBARA AIRPORT	CA	6/7/2011	Boiler, Forced Dratf	3 MMBtu/hr	NOx	12	PPMVD	@3% O2, 40 MINUTES	OTHER CASE-BY-CASE	Forced draft, full modulation, flue gas recirculation
	PONDERA/ KING POWER STATION	TX	8/5/2010	AUXILIARY BOILER	45 MMBtu/hr	NOx	0.01	lb/MMBtu			
LA-0240	FLOPAM INC.	LA	6/14/2010	Boilers	25.1 MMBtu/hr	NOx	0.38	lb/hr	HOURLY MAXIMUM	LAER	Ultra Low NOx Burners
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	NOx	9	PPMVD	1-HR AVG @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY BOILER	35 MMBtu/hr	NOx	9	PPMVD	1-HR AVG @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 500 HR/YR
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	41.64 MMBtu/hr	NOx	0.011	lb/MMBtu		OTHER CASE-BY-CASE	LOW NOX BURNER AND FLUE GAS RECIRCULATION
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	4.2 MMBtu/hr	NOx	0.0143	lb/MMBtu		OTHER CASE-BY-CASE	LOW-NOX BURNER AND FLUE GAS RECIRCULATION
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT MB090 AT MANDALAY BAY	4.3 MMBtu/hr	NOx	0.014	lb/MMBtu		OTHER CASE-BY-CASE	ULTRA-LOW NOX BURNER AND FLUE GAS RECIRCULATION
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	2 MMBtu/hr	NOx	0.0123	lb/MMBtu		OTHER CASE-BY-CASE	LOW-NOX BURNER AND GOOD COMBUSTION PRACTICES

Facility Information			Process Information			Emission Limits				Notes	
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NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT BE111 AT BELLAGIO	2.1 MMBtu/hr	NOx	0.024	lb/MMBtu		OTHER CASE-BY-CASE	LOW NOX BURNER
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	44 MMBtu/hr	NOx	0.0109	lb/MMBtu		OTHER CASE-BY-CASE	LOW NOX BURNER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	2 MMBtu/hr	NOx	0.025	lb/MMBtu		OTHER CASE-BY-CASE	LOW NOX BURNER AND GOOD COMBUSTION PRACTICES
OH-0310	AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/8/2009	AUXILIARY BOILER	150 MMBtu/hr	NOx	21	lb/hr		BACT-PSD	
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT HA08	8.37 MMBtu/hr	NOx	0.0146	lb/MMBtu		BACT-PSD	EQUIPPED WITH A LOW-NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT FL01	14.34 MMBtu/hr	NOx	0.0353	lb/MMBtu		BACT-PSD	LOW NOX BURNER AND FLUE GAS RECIRCULATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA01	16.8 MMBtu/hr	NOx	0.03	lb/MMBtu		BACT-PSD	LOW-NOX BURNER AND BLUE GAS RECIRCULATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA03	31.38 MMBtu/hr	NOx	0.0306	lb/MMBtu		BACT-PSD	LOW-NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP01	35.4 MMBtu/hr	NOx	0.035	lb/MMBtu		BACT-PSD	LOW NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP03	33.48 MMBtu/hr	NOx	0.0367	lb/MMBtu		BACT-PSD	LOW NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP26	24 MMBtu/hr	NOx	0.0108	lb/MMBtu		BACT-PSD	LOW NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT PA15	21 MMBtu/hr	NOx	0.0366	lb/MMBtu		BACT-PSD	LOW NOX BURNER
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT IP04	16.7 MMBtu/hr	NOx	0.049	lb/MMBtu		BACT-PSD	LOW NOX BURNER
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	AUXILIARY BOILER	938.3 MMBtu/hr	NOx	32.84	MMBtu/hr	MAXIMUM	BACT-PSD	ULTRA LOW NOX BURNERS
OK-0135	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	NOx	4	lb/hr	3-H/168-H ROLLING CUMMULATIVE	BACT-PSD	LOW-NOX BURNERS AND GOOD COMBUSTION PRACTICES
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	AUXILIARY BOILER	33.5 MMBtu/hr	NOx	0.07	lb/MMBtu		BACT-PSD	LOW-NOX BURNERS
AR-0094	JOHN W. TURK JR. POWER PLANT	AR	11/5/2008	AUXILIARY BOILER	555 MMBtu/hrR	NOx	0.11	lb/MMBtu	30 DAY ROLLING AVERAGE	BACT-PSD	LOW NOX BURNERS
OH-0323	TITAN TIRE CORPORATION OF BRYAN	OH	6/5/2008	BOILER	50.4 MMBtu/hr	NOx	2.47	lb/hr		BACT-PSD	
NV-0047	NELLIS AIR FORCE BASE	NV	2/26/2008	BOILERS/HEATERS - NATURAL GAS-FIRED		NOx	0.03	lb/MMBtu		OTHER CASE-BY-CASE	LOW-NOX BURNER AND FLUE GAS RECIRCULATION
WY-0064	DRY FORK STATION	WY	10/15/2007	AUXILIARY BOILER	134 MMBtu/hr	NOx	0.04	lb/MMBtu	ANNUAL	OTHER CASE-BY-CASE	LOW NOX BURNERS WITH FLUE GAS RECIRCULATION-LIMITED TO 2000 HOURS OF ANNUAL OPERATION
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC	MN	9/7/2007	SMALL BOILERS; HEATERS(100 MMBtu/hr)	99 MMBtu/hr	NOx	0.035	lb/MMBtu	3-HR AVERAGE	BACT-PSD	
AL-0230	THYSSENKRUPP STEEL AND STAINLESS USA, LLC	AL	8/17/2007	3 NATURAL GAS-FIRED BOILERS WITH ULNB & EGR (537-539)	64.9 MMBTU each	NOx	0.035	lb/MMBtu		BACT-PSD	ULNB & EGR (ULTRA-LOW NOX BURNERS (ULNB)(EXHAUST GAS RECIRCULATION (EGR) SAME FLUE GAS RECIRCULATION (FGR)
IA-0088	ADM CORN PROCESSING - CEDAR RAPIDS	IA	6/29/2007	NATURAL GAS BOILER (292.5 MMBtu/hr)	292.5 MMBtu/hr	NOx	0.02	lb/MMBtu	30-DAY ROLLING AVERAGE/ EXCEPT SSM	BACT-PSD	ADVANCED ULTRA LOW NOX BURNERS WITH FLUE GAS RECIRCULATIONS AND GOOD COMBUSTION PRACTICES.
OH-0309	TOLEDO SUPPLIER PARK- PAINT SHOP	OH	5/3/2007	BOILER (2), NATURAL GAS	20.4 MMBtu/hr	NOx	0.72	lb/hr		LAER	LOW NOX BURNERS AND FLUE GAS RECIRCULATION

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FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	ONE GASEOUS-FUELED 99 MMBtu/hr AUXILIARY BOILER	99 MMBtu/hr	NOx					
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	TWO 99.8 MMBtu/hr GAS-FUELED AUXILIARY BOILERS	99.8 MMBtu/hr	NOx	0.05	lb/MMBtu		BACT-PSD	
NV-0044	HARRAH'S OPERATING COMPANY, INC.	NV	1/4/2007	COMMERCIAL/INSTITUTIONAL-SIZE BOILERS	35.4 MMBtu/hr	NOx	0.035	lb/MMBtu		BACT-PSD	LOW-NOX BURNER AND FLUE GAS RECIRCULATION
NV-0048	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL-SIZE BOILER (100 MMBtu/hr)	3.85 MMBtu/hr	NOx	0.1	lb/MMBtu		OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICE
NV-0046	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL BOILER	3.85 MMBtu/hr	NOx	0.101	lb/MMBtu		BACT-PSD	GOOD COMBUSTION PRACTICE
CA-1128	COTTAGE HEALTH CARE - PUEBLO STREET	CA	5/16/2006	BOILER: 5 TO 33.5 MMBtu/hr	25 MMBtu/hr (75 MMBtu/hr	NOx	9	PPMVD	@3% O2, 6 MIN AVERAGE	BACT-PSD	ULTRA-LOW NOX BURNER
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	AUXILIARY BOILER	29.4 MMBtu/hr	NOx	0.011	lb/MMBtu		BACT-PSD	LOW NOX BURNERS & FLUE GAS RECIRCULATION
CA-1127	GENENTECH, INC.	CA	9/27/2005	BOILER: 50 MMBtu/hr	97 MMBtu/hr	NOx	9	PPMVD	@ 3% O2, THREE 30-MIN SAMP PERIODS AV	BACT-PSD	ULTRA LOW NOX BURNERS: NATCOM P-97-LOG-35-2127
WA-0301	BP CHERRY POINT REFINERY	WA	4/20/2005	BOILER, NATURAL GAS	363 MMBtu/hr	NOx	10.1	lb/hr	CALENDAR DAY	BACT-PSD	ULNB + FGR

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*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hr	PM, FILTERABLE	0.0018	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*WV-0025	MOUNDSVILLE	WV	11/21/2014	AUXILIARY BOILER	100	PM	0.5	lb/hr		BACT-PSD	Use of Natural Gas & Good Combustion Practices
*WY-0075	CHEYENNE PRAIRIE GENERATING STATION	WY	7/16/2014	Auxiliary Boiler	25.06 MMBtu/hr	PM	0.0175	lb/MMBtu	3 HOUR AVERAGE	BACT-PSD	good combustion practices
PERMIT NO. 81391	DOMINION WARREN COUNTY	VA	6/17/2014	AUXILIARY BOILER	88.1 MMBtu/hr	PM	0.24	lb/hrr			
*MS-0092	EMBERCLEAR GTL MS	MS	5/8/2014	261 MMBtu/hr natrual gas-fired boiler, equipped with low-NOx burners, SCR, and CO catalytic oxidation	261 MMBtu/hr	PM	1.31	lb/hr	3-HR AVERAGE	BACT-PSD	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	PM, FILTERABLE	0.0018	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	PM, FILTERABLE	0.0018	lb/MMBtu	HEAT INPUT; TEST PROTOCOL WILL SPECIFY	BACT-PSD	Efficient combustion; natural gas fuel.
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU004	46 MMBtu/hr	PM, FILTERABLE	0.002	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	Auxiliary Boiler	40 MMBtu/hr	PM	0.46	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC	MN	9/7/2007	SMALL BOILERS; HEATERS(100 MMBtu/hr)	99 MMBtu/hr	PM	0.0025	GR/DSCF	3 HOUR AVERAGE	BACT-PSD	
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	AUXILIARY BOILER	29.4 MMBtu/hr	PM	0.0033	lb/MMBtu		BACT-PSD	LOW SULFUR FUEL
*TX-0641	PINECREST ENERGY CENTER	TX	11/21/2013	AUXILIARY BOILER	150 MMBtu/hr	PM	1.14	lb/hr		BACT-PSD	
	CARROLL COUNTY ENERGY	OH	11/5/2013	AUXILIARY BOILER	99 MMBtu/hr	PM	0.008	lb/MMBtu			
	RENAISSANCE POWER	MI	11/1/2013	AUXILIARY BOILER	40 MMBtu/hr	PM	0.005	lb/MMBtu			
CA-1192	AVENAL ENERGY PROJECT	CA	6/21/2011	AUXILIARY BOILER	37.4 MMBtu/hr	PM	0.0034	GR/DSCF		BACT-PSD	USE PUC QUALITY NATURAL GAS, OPERATIONAL LIMIT OF 46,675 MMBTU/YR
*MD-0041	CPV ST. CHARLES	MD	4/23/2014	AUXILLARY BOILER	93 MMBtu/hr	PM	0.005	lb/MMBtu	3-HOUR AVERAGE	BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	PM	0.005	lb/MMBtu		OTHER CASE-BY-CASE	
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU004	46 MMBtu/hr	PM	0.005	lb/MMBtu	3-HOUR	OTHER CASE-BY-CASE	
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	COMMISSIONING BOILERS 1; 2 (CB-1; CB-2)	217.5 MMBtu/hr	PM	1.94	lb/hr	HOURLY MAXIMUM	BACT-PSD	GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO,
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hr	PM	0.007	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	PM	0.007	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 MMscf/year	PM, FILTERABLE	0.22	lb/hr	AVERAGE OF THREE TESTS	N/A	use of natural gas a clean fuel
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 MMscf/year	PM	0.33	lb/hr	AVERAGE OF THREE TESTS	BACT-PSD	use of natural gas a clean fuel
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	PM	0.007	lb/MMBtu	HEAT INPUT; TEST PROTOCOL SPECIFY AVG	BACT-PSD	Efficient combustion; natural gas fuel.
	CHANNEL ENERGY CENTER, LLC	TX	10/15/2012	AUXILIARY BOILER	430 MMBtu/hr	PM	7.8	lb/hr per unit			

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	CRICKET VALLEY	NY	9/27/2012	AUXILIARY BOILER	60 MMBtu	PM	0.005	lb/MMBtu			
FL-0335	SUWANNEE MILL	FL	9/5/2012	Four(4) Natural Gas Boilers - 46 MMBtu/hrour	46 MMBtu/hr	PM	2	GR OF S/100 SCF		BACT-PSD	Good Combustion Practice
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	2000 hours/year	PM, FILTERABLE	0.17	lb/hr	AVERAGE OF THREE TESTS	OTHER CASE-BY-CASE	Use of Natural gas
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	2000 hours/year	PM	0.46	lb/hr	AVERAGE OF THREE TESTS	OTHER CASE-BY-CASE	Use of Natural gas
	PIONEER VALLEY ENERGY CENTER	MA	4/5/2012	AUXILIARY BOILER	21 MMBtu/hr	PM	0.0048	lb/MMBtu			
CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	AUXILIARY BOILER	110 MMBtu/hr	PM	0.8	lb/hr		BACT-PSD	USE PUC QUALITY NATURAL GAS
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	AUXULIARY BOILER	338 MMBtu/hr	PM	7.6	lb/MMscf	ANNUAL AVERAGE	BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*VA-0321	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILIARY BOILER	66.7 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	Low sulfur/carbon fuel and good combustion practices
	PONDERA/ KING POWER STATION	TX	8/5/2010	AUXILIARY BOILER	45 MMBtu/hr	PM	0.32	lb/hr per unit			
LA-0240	FLOPAM INC.	LA	6/14/2010	Boilers	25.1 MMBtu/hr	PM-10	0.1	lb/hr	HOURLY MAXIMUM	BACT-PSD	Good equipment design and proper combustion practices,
LA-0240	FLOPAM INC.	LA	6/14/2010	Boilers	25.1 MMBtu/hr	PM	0.13	lb/hr	HOURLY MAXIMUM	BACT-PSD	Good equipment design and proper combustion practices,
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	PM	0.2	GRAINS PER 100 DSCF		BACT-PSD	OPERATIONAL RESTRICTION OF 500 HR/YR, USE PUC QUALITY NATURAL GAS
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	AUXILIARY BOILER	35 MMBtu/hr	PM	0.2	GRAINS PER 100 DSCF		BACT-PSD	OPERATIONAL RESTRICTION OF 500 HR/YR, USE PUC QUALITY NATURAL GAS
*AK-0083	KENAI NITROGEN OPERATIONS	AK	1/6/2015	Five (5) Waste Heat Boilers	50 MMBtu/hrr	PM	0.0074	lb/MMBtu	3-HR AVG	BACT-PSD	
*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	PM	0.0075	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	PM	0.0075	lb/MMBtu	3 HOURS	BACT-PSD	GOOD COMBUSTION PRACTICES AND FUEL SPECIFICATIONS
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	44 MMBtu/hr	PM	0.0075	lb/MMBtu		LAER	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
OH-0310	AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/8/2009	AUXILIARY BOILER	150 MMBtu/hr	PM	1.14	lb/hr		BACT-PSD	
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP03	33.48 MMBtu/hr	PM	0.0075	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP26	24 MMBtu/hr	PM	0.0075	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0044	HARRAH'S OPERATING COMPANY, INC.	NV	1/4/2007	COMMERCIAL/INSTITUTIONAL-SIZE BOILERS	35.4 MMBtu/hr	PM	0.0075	lb/MMBtu		BACT-PSD	USE OF NATURAL GAS AS THE ONLY FUEL
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA03	31.38 MMBtu/hr	PM	0.0076	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP01	35.4 MMBtu/hr	PM	0.0076	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT PA15	21 MMBtu/hr	PM	0.0076	lb/MMBtu		BACT-PSD	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
AL-0230	THYSSENKRUPP STEEL AND STAINLESS USA, LLC	AL	8/17/2007	3 NATURAL GAS-FIRED BOILERS WITH ULNB; EGR (537-539)	64.9 MMBtu each	PM	0.0076	lb/MMBtu		BACT-PSD	

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LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	AUXILIARY BOILER	938.3 MMBtu/hr	PM	6.99	lb/hr	MAXIMUM	BACT-PSD	GOOD DESIGN AND PROPER OPERATION
PM, TOT	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	PM, TOTAL	0.6	lb/hr		BACT-PSD	
OK-0135	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	PM-10	0.5	lb/hr	24-HOUR	BACT-PSD	
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	41.64 MMBtu/hr	PM\	0.0077	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
OH-0323	TITAN TIRE CORPORATION OF BRYAN	OH	6/5/2008	BOILER	50.4 MMBtu/hr	PM	0.094	lb/hr		N/A	
NV-0047	NELLIS AIR FORCE BASE	NV	2/26/2008	BOILERS/HEATERS - NATURAL GAS-FIRED		PM	0.0077	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
OH-0309	TOLEDO SUPPLIER PARK- PAINT SHOP	OH	5/3/2007	BOILER (2), NATURAL GAS	20.4 MMBtu/hr	PM	0.15	lb/hr		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	TWO 99.8 MMBtu/hr GAS-FUELED AUXILIARY BOILERS	99.8 MMBtu/hr	PM	2	GS/100 SCF GAS		BACT-PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILIARY BOILER	60.1 MMBtu/hrr	PM	0.008	lb/MMBtu	AVERAGE OF 3 ONE-HOUR TEST RUNS	BACT-PSD	
*PA-0288	SUNBURY GENERATION	PA	4/1/2013	AUXILIARY BOILER	106 MMBtu/hr	PM	0.008	lb/MMBtu		OTHER CASE-BY-CASE	

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*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	SO2	0.0006	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILIARY BOILER	40 MMBtu/hr	SOx	0.19	TPY	BASED ON 12-MONTH ROLLING TOTAL		
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	SOx	0.0021	lb/MMBtu		OTHER CASE-BY-CASE	
*PA-0288	SUNBURY GENERATION	PA	4/1/2013	AUXILIARY BOILER	106 MMBtu/hr	SO2	0.003	lb/MMBtu		OTHER CASE-BY-CASE	
*VA-0321	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILIARY BOILER	66.7 MMBtu/hr	SO2	0.0011	lb/MMBtu		BACT-PSD	
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	SO2	0.0022	lb/MMBtu	3 HOURS	BACT-PSD	FUEL SPECIFICATIONS
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 MMscf/yr	SO2	0.08	lb/hr		N/A	Use of natural gas a clean fuel and a low sulfur fuel
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	AUXILIARY BOILER	472.4 MMBtu/hr		0.162	lb/hr	AVERAGE OF THREE TESTS	OTHER CASE-BY-CASE	
FL-0335	SUWANNEE MILL	FL	9/5/2012	Four(4) Natural Gas Boilers - 46 MMBtu/hour	46 MMBtu/hr	SO2	2	GR OF S/100 SCF		OTHER CASE-BY-CASE	
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	2000 hours/year	SO2	0.162	lb/hr	AVERAGE OF THREE TESTS	OTHER CASE-BY-CASE	Use of natural gas
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	41.64 MMBtu/hr	SO2	0.0007	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY.
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	4.2 MMBtu/hr	SOx	0.0024	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS ONLY.
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT MB090 AT MANDALAY BAY	4.3 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	2 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT BE111 AT BELLAGIO	2.1 MMBtu/hr	SOx	0.0048	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	44 MMBtu/hr	SOx	0.0007	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	2 MMBtu/hr	SOx	0.005	lb/MMBtu		BACT-PSD	LIMITING THE FUEL TO NATURAL GAS ONLY
OH-0310	AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/8/2009	AUXILIARY BOILER	150 MMBtu/hr	SO2	0.037	lb/hr		N/A	OPERATING PERMIT
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT HA08	8.37 MMBtu/hr	SO2	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT FL01	14.34 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA01	16.8 MMBtu/hr	SOx	0.0042	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.

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NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA03	31.38 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP01	35.4 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP03	33.48 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP26	24 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT PA15	21 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT IP04	16.7 MMBtu/hr	SOx	0.0006	lb/MMBtu		BACT-PSD	FUEL IS LIMITED TO NATURAL GAS.
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	AUXILIARY BOILER	938.3 MMBtu/hr	SO2	0.28	lb/hr	MAXIMUM	BACT-PSD	FUELED BY NATURAL GAS OR SUBSTITUTE NATURAL GAS (SNG)
OK-0135	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	SO2	0.2	lb/hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	AUXILIARY BOILER	33.5 MMBtu/hr	SO2	0.03	lb/hr		N/A	LOW SULFUR FUEL
AR-0094	JOHN W. TURK JR. POWER PLANT	AR	11/5/2008	AUXILIARY BOILER	555 MMBtu/hr	SO2	0.0006	lb/MMBtu	3 HOUR AVERAGE	BACT-PSD	
NV-0047	NELLIS AIR FORCE BASE	NV	2/26/2008	BOILERS/HEATERS - NATURAL GAS-FIRED		SO2	0.0015	lb/MMBtu		BACT-PSD	USE OF PIPELINE-QUALITY NATURAL GAS
AL-0230	THYSSENKRUPP STEEL AND STAINLESS USA, LLC	AL	8/17/2007	3 NATURAL GAS-FIRED BOILERS WITH ULNB; EGR (537-539)	64.9 MMBtu each	SO2	0.0006	lb/MMBtu		BACT-PSD	
IA-0088	ADM CORN PROCESSING - CEDAR RAPIDS	IA	6/29/2007	NATURAL GAS BOILER (292.5 MMBtu/hr)	292.5 MMBtu/hr	SO2	0.0006	lb/MMBtu	30-DAY ROLLING AVERAGE	BACT-PSD	
OH-0309	TOLEDO SUPPLIER PARK- PAINT SHOP	OH	5/3/2007	BOILER (2), NATURAL GAS	20.4 MMBtu/hr	SO2	0.01	lb/hr		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	TWO 99.8 MMBtu/hr GAS-FUELED AUXILIARY BOILERS	99.8 MMBtu/hr	SO2	2	GS/100 SCF GAS		BACT-PSD	
NV-0044	HARRAH'S OPERATING COMPANY, INC.	NV	1/4/2007	COMMERCIAL/INSTITUTIONAL-SIZE BOILERS	35.4 MMBtu/hr	SO2	0.001	lb/MMBtu		BACT-PSD	USE OF NATURAL GAS AS THE ONLY FUEL
NV-0048	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL-SIZE BOILER (100 MMBtu/hr)	3.85 MMBtu/hr	SO2	0.0015	lb/MMBtu		BACT-PSD	LOW-SULFUR NATURAL GAS IS THE ONLY FUEL USED BY THE UNIT.
NV-0046	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL BOILER	3.85 MMBtu/hr	SO2	0.0026	lb/MMBtu		BACT-PSD	LOW-SULFUR NATURAL GAS IS THE ONLY FUEL FOR THE PROCESS.
NY-0095	CAITHNES BELLPORT ENERGY CENTER	NY	5/10/2006	AUXILIARY BOILER	29.4 MMBtu/hr	SO2	0.0005	lb/MMBtu		BACT-PSD	LOW SULFUR FUEL
OH-0307	SOUTH POINT BIOMASS GENERATION	OH	4/4/2006	AUXILIARY BOILER	247 MMBtu/hrR	S02	0.15	lb/hr		BACT-PSD	

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*TX-0751	EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (100 MMBtu) natural gas	73.3 MMBtu/hr	VOC	4	PPM	1-HR AVG	LAER	
*AK-0083	KENAI NITROGEN OPERATIONS	AK	1/6/2015	Five (5) Waste Heat Boilers	50 MMBtu/hr	VOC	0.0054	lb/MMBtu	3-HR AVG	BACT-PSD	
*WV-0025	MOUNDSVILLE	WV	11/21/2014	AUXILIARY BOILER	100	VOC	0.6	lb/hr		BACT-PSD	Use of Natural Gas & Good Combustion Practices
*WY-0075	CHEYENNE PRAIRIE GENERATING STATION	WY	7/16/2014	AUXILIARY BOILER	25.06 MMBtu/h	VOC	0.0017	lb/MMBtu	3 HOUR AVERAGE	BACT-PSD	good combustion practices
*MD-0041	CPV ST. CHARLES	MD	4/23/2014	AUXILLARY BOILER	93 MMBtu/hr	VOC	0.002	lb/MMBtu	3-HOUR AVERAGE BLOCK	LAER	EXCLUSIVE USE OF NATURAL GAS, AND GOOD COMBUSTION PRACTICES
*IA-0107	MARSHALLTOWN GENERATING STATION	IA	4/14/2014	AUXILIARY BOILER	60.1 MMBtu/hr	VOC	0.005	lb/MMBtu	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	THE EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS, LIMITED HOURS OF OPERATION, AND GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY	MD	4/8/2014	AUXILLARY BOILER	45 MMBtu/hr	VOC	0.0033	lb/MMBtu	3-HOUR BLOCK AVERAGE	LAER	THE EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS, LIMITED HOURS OF OPERATION, AND GOOD COMBUSTION PRACTICES
*OR-0050	TROUTDALE ENERGY CENTER, LLC	OR	3/5/2014	AUXILIARY BOILER	39.8 MMBtu/hr	VOC	0.005	lb/MMBtu	3-HR BLOCK AVERAGE	BACT-PSD	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ ONTELAUNEE	PA	12/17/2013	AUXILIARY BOILER	40 MMBtu/hr	VOC	0.14	TPY	BASED ON A 12-MO AVERAGE	NSPS	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler B (EUAUXBOILERB)	95 MMBtu/hr	VOC	0.008	lb/MMBtu	TEST METHOD	BACT-PSD	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	12/4/2013	Auxiliary Boiler A (EUAUXBOILERA)	55 MMBtu/hr	VOC	0.008	lb/MMBtu	HEAT INPUT; TEST PROTOCOL WILL SPECIFY	BACT-PSD	Efficient combustion; natural gas fuel.
*TX-0641	PINECREST ENERGY CENTER	TX	11/21/2013	AUXILIARY BOILER	150 MMBtu/hr	VOC	0.9	lb/hr		BACT-PSD	
	CARROLL COUNTY ENERGY	OH	11/5/2013	AUXILIARY BOILER	99 MMBtu/hr	VOC	0.006	lb/MMBtu			
	RENAISSANCE POWER	MI	11/1/2013	AUXILIARY BOILER	40 MMBtu	VOC	0.005	lb/MMBtu			
*MI-0410	THETFORD GENERATING STATION	MI	7/25/2013	FGAUXBOILERS: Two auxiliary boilers; 100 MMBtu/hr heat input each	100 MMBtu/hr heat input each	VOC	0.008	lb/MMBtu	HEAT INPUT; TEST PROTOCOL WILL SPECIFY	BACT-PSD	Efficient combustion; natural gas fuel.
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	AUXILIARY BOILER	99 MMBtu/H	VOC	0.59	lb/hr		BACT-PSD	Good combustion practices and using combustion optimization technologies
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	AUXILIARY BOILER	40 MMBtu/hr	VOC	0.0015	lb/MMBtu	OTHER CASE-BY-CASE	OTHER	
*PA-0296	SUNBURY GENERATION	PA	4/1/2013	AUXILIARY BOILER	40 MMBtu/hrR	VOC	0.005	lb/MMBtu	OTHER CASE-BY-CASE	OTHER	
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	COMMISSIONING BOILERS 1; 2 (CB-1 & CB-2)	217.5 MMBtu/hr	VOC	1.41	lb/hr	HOURLY MAXIMUM	BACT-PSD	FLUE GAS RECIRCULATION AND GOOD COMBUSTION PRACTICES (I.E., PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL
*VA-0321	BRUNSWICK COUNTY POWER	VA	3/12/2013	AUXILIARY BOILER	66.7 MMBtu/hr	VOC	0.005	lb/MMBtu		BACT-PSD	
SC-0149	KLAUSNER HOLDING USA, INC	SC	1/3/2013	NATURAL GAS BOILER EU004	46 MMBtu/hr	VOC	0.003	lb/MMBtu	3-HOUR AVERAGE	OTHER CASE-BY-CASE	
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	TWO (2) NATURAL GAS AUXILIARY BOILERS	80 MMBtu/hr	VOC	0.005	lb/MMBtu	3-HR	BACT-PSD	GOOD COMBUSTION PRACTICES
NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Boiler less than 100 MMBtu/hr	51.9 MMscf/year	VOC	0.27	lb/hr	AVERAGE OF THREE TESTS	LAER	use of natural gas a clean fuel
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	AUXILIARY BOILER	472.4 MMBtu/hr	VOC	0.0014	lb/MMBtu	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
FL-0335	SUWANNEE MILL	FL	9/5/2012	Four(4) Natural Gas Boilers - 46 MMBtu/hour	46 MMBtu/hr	VOC	0.003	lb/MMBtu	Good Combustion Practice	BACT-PSD	
NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Commercial/Institutional size boilers less than 100 MMBtu/hr	2000 hours/year	VOC	0.14	lb/hr	AVERAGE OF THREE TESTS	LAER	Use of Natural Gas

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*OH-0350	REPUBLIC STEEL	OH	7/18/2012	Steam Boiler	65 MMBtu/hr	VOC	0.35	lb/hr		BACT-PSD	Proper burner design and good combustion practices
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	AUXILIARY BOILER	338 MMBtu/hrR	VOC	5.5	lb/MMscf	ANNUAL AVERAGE	BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MI-0393	RAY COMPRESSOR STATION	MI	10/14/2010	AUXILIARY BOILER	12.25 MMBtu/hr	VOC	0.05	lb/hr	TEST METHOD	BACT-PSD	
	PONDERA/ KING POWER STATION	TX	8/5/2010	AUXILIARY BOILER	45 MMBtu/hr	VOC	0.0055	lb/MMBtu			
LA-0240	FLOPAM INC.	LA	6/14/2010	Boilers	25.1 MMBtu/hr	VOC	0.003	lb/MMBtu	NATURAL GAS FIRED	BACT-PSD	Good equipment design and proper combustion techniques
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	41.64 MMBtu/hr	VOC	0.0024	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	4.2 MMBtu/hr	VOC	0.0048	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT MB090 AT MANDALAY BAY	4.3 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	2 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILER - UNIT BE111 AT BELLAGIO	2.1 MMBtu/hr	VOC	0.0048	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	44 MMBtu/hr	VOC	0.0055	lb/MMBtu		OTHER CASE-BY-CASE	LIMITING THE FUEL TO NATURAL GAS ONLY AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	2 MMBtu/hr	VOC	0.005	lb/MMBtu		OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICES
OH-0310	AMERICAN MUNICIPAL POWER GENERATING STATION	OH	10/8/2009	AUXILIARY BOILER	150 MMBtu/hr	VOC	0.83	lb/hr		OTHER CASE-BY-CASE	
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT HA08	8.37 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT FL01	14.34 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA01	16.8 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT BA03	31.38 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP01	35.4 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION AND OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP03	33.48 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT CP26	24 MMBtu/hr	VOC	0.0054	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT PA15	21 MMBtu/hr	VOC	0.0053	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION

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RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION RATE	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
NV-0049	HARRAH'S OPERATING COMPANY, INC.	NV	8/20/2009	BOILER - UNIT IP04	16.7 MMBtu/hr	VOC	0.0053	lb/MMBtu		OTHER CASE-BY-CASE	OPERATING IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION
OK-0135	PRYOR PLANT CHEMICAL	OK	2/23/2009	BOILERS #1 AND #2	80 MMBtu/hr	VOC	0.5	lb/hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	AUXILIARY BOILER	33.5 MMBtu/hr	VOC	0.54	lb/hr		BACT-PSD	GOOD COMBUSTION
AR-0094	JOHN W. TURK JR. POWER PLANT	AR	11/5/2008	AUXILIARY BOILER	555 MMBtu/hr	VOC	0.0055	lb/MMBtu	3-HR AVERAGE	BACT-PSD	
OH-0323	TITAN TIRE CORPORATION OF BRYAN	OH	6/5/2008	BOILER	50.4 MMBtu/hr	VOC	0.27	lb/hr		BACT-PSD	
NV-0047	NELLIS AIR FORCE BASE	NV	2/26/2008	BOILERS/HEATERS - NATURAL GAS-FIRED		VOC	0.0062	lb/MMBtu		OTHER CASE-BY-CASE	FLUE GAS RECIRCULATION
IA-0088	ADM CORN PROCESSING - CEDAR RAPIDS	IA	6/29/2007	NATURAL GAS BOILER (292.5 MMBtu/hr)	292.5 MMBtu/hr	VOC	0.0054	lb/MMBtu	AVERAGE OF 3 TEST RUNS	BACT-PSD	GOOD COMBUSTION PRACTICES
OH-0309	TOLEDO SUPPLIER PARK- PAINT SHOP	OH	5/3/2007	BOILER (2), NATURAL GAS	20.4 MMBtu/hr	VOC	0.11	lb/hr		LAER	
FL-0285	PROGRESS BARTOW POWER PLANT	FL	1/26/2007	ONE GASEOUS-FUELED 99 MMBtu/hr AUXILIARY BOILER	99 MMBtu/hr	VOC	2	GRS/100 SCF		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER	FL	1/10/2007	TWO 99.8 MMBtu/hr GAS-FUELED AUXILIARY BOILERS	99.8 MMBtu/hr	VOC	2	GRS/100 SCF		BACT-PSD	
NV-0044	HARRAH'S OPERATING COMPANY, INC.	NV	1/4/2007	COMMERCIAL/INSTITUTIONAL-SIZE BOILERS	35.4 MMBtu/hr	VOC	0.005	lb/MMBtu		BACT-PSD	GOOD COMBUSTION DESIGN
NV-0048	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL-SIZE BOILER (100 MMBtu/hr)	3.85 MMBtu/hr	VOC	0.005	lb/MMBtu		OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICE
NV-0046	GOODSPRINGS COMPRESSOR STATION	NV	5/16/2006	COMMERCIAL/INSTITUTIONAL BOILER	3.85 MMBtu/hr	VOC	0.005	lb/MMBtu		OTHER CASE-BY-CASE	GOOD COMBUSTION PRACTICE
OH-0307	SOUTH POINT BIOMASS GENERATION	OH	4/4/2006	AUXILIARY BOILER	247 MMBtu/hrR	VOC	0.99	lb/hr		BACT-PSD	
OR-0046	TURNER ENERGY CENTER, LLC CALPINE	OR	1/6/2005	AUXILIARY BOILER	417904 MMBtu/yr	VOC	0.0044	lb/MMBtu	3-HR BLOCK AVERAGE	BACT-PSD	

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*TX-0755	RAMSEY GAS PLANT, DELAWARE BASIN MIDSTREAM LLC	TX	5/21/2015	Hot Oil Heaters and Regeneration Heaters	60 MMBtu/hr	NOx	0.045	lb/MMBtu		BACT-PSD	Low NOx burners
*TX-0755	RAMSEY GAS PLANT, DELAWARE BASIN MIDSTREAM LLC	TX	5/21/2015	Hot Oil Heaters and Regeneration Heaters	60 MMBtu/hr	CO	50	PPMVD	@ 3% O2	BACT-PSD	Good combustion practices and firing of residue gas with low carbon content
*TX-0694	INDECK WHARTON ENERGY CENTER, INDECK WHARTON, L.L.C.	TX	2/2/2015	Heater	3 MMBtu/hr	NOx	0.1	lb/MMBtu	1 HOUR	BACT-PSD	
*TX-0694	INDECK WHARTON ENERGY CENTER, INDECK WHARTON, L.L.C.	TX	2/2/2015	Heater	3 MMBtu/hr	CO	0.04	lb/MMBtu	1 HOUR	BACT-PSD	
*TX-0758	ECTOR COUNTY ENERGY CENTER, INVENERGY THERMAL DEVELOPMENT LLC	TX	8/1/2014	Dew-Point Heater	9 MMBtu/hr	CO2e	2631	TPY CO2E	12-MONTH ROLLING TOTAL	BACT-PSD	
*TX-0691	PH ROBINSON ELECTRIC GENERATING STATION, NRG TEXAS POWER LLC	TX	5/20/2014	FUEL GAS HEATER	18 MMBtu/hr	CO	0.054	lb/MMBtu		BACT-PSD	
*TX-0691	PH ROBINSON ELECTRIC GENERATING STATION, NRG TEXAS POWER LLC	TX	5/20/2014	FUEL GAS HEATER	18 MMBtu/hr	NOx	0.1	lb/MMBtu		BACT-PSD	
*TX-0757	INDECK WHARTON ENERGY CENTER, INDECK WHARTON, LLC	TX	5/12/2014	Pipeline Heater	3 MMBtu/hr (HHV)	CO2e	624.78	TPY CO2E	12-MONTH ROLLING TOTAL	BACT-PSD	
*MS-0092	EMBERCLEAR GTL MS, EMBERCLEAR GTL MS LLC	MS	5/8/2014	Five 12 MMBtu/hr reactor heaters, equipped with low-NOx burners	12 MMBtu/hr	CO	0.08	lb/MMBtu	3-HR AVERAGE	BACT-PSD	
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	FUEL GAS HEATER	9.5 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	FUEL GAS HEATER	9.5 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	FUEL GAS HEATER	9.5 MMBtu/hr	NOx	0.035	lb/MMBtu		LAER	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	FUEL GAS HEATER	9.5 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	FUEL GAS HEATER	9.5 MMBtu/hr	VOC	0.005	lb/MMBtu		LAER	EXCLUSIVE USE OF NATURAL GAS AND GOOD COMBUSTION PRACTICES
*IA-0107	MARSHALLTOWN GENERATING STATION, INTERSTATE POWER AND LIGHT	IA	4/14/2014	DEW POINT HEATER	13.32 MMBtu/hr	NOx	0.013	lb/MMBtu	3-HOUR AVERAGE	BACT-PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION, INTERSTATE POWER AND LIGHT	IA	4/14/2014	DEW POINT HEATER	13.32 MMBtu/hr	CO	0.041	lb/MMBtu	3-HOUR AVERAGE	BACT-PSD	

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*IA-0107	MARSHALLTOWN GENERATING STATION, INTERSTATE POWER AND LIGHT	IA	4/14/2014	DEW POINT HEATER	13.32 MMBtu/hr	PM	0.008	lb/MMBtu	3-HOUR AVERAGE	BACT-PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION, INTERSTATE POWER AND LIGHT	IA	4/14/2014	DEW POINT HEATER	13.32 MMBtu/hr	CO2e	6860	TONS	12-MONTH ROLLING TOTAL	BACT-PSD	
*IA-0107	MARSHALLTOWN GENERATING STATION, INTERSTATE POWER AND LIGHT	IA	4/14/2014	DEW POINT HEATER	13.32 MMBtu/hr	CO2e	6860	TONS	12-MONTH ROLLING TOTAL	BACT-PSD	
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	PM	0.0075	lb/MMBtu	3-HOUR AVERAGE BASIS	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	PM	0.0075	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	PM	0.0075	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	SO2	0.0006	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	NOx	0.049	lb/MMBtu	3-HOUR BLOCK AVERAGE	LAER	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	CO	0.083	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	VOC	0.005	lb/MMBtu	3-HOUR BLOCK AVERAGE	LAER	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	DEW POINT HEATER	5 MMBtu/hr	H2SO4	0.0005	lb/MMBtu	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	NOx	0.035	lb/MMBtu		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	CO2	4996.3	TPY			
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	CO	0.05	lb/MMBtu			
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	PM	0.007	lb/MMBtu		OTHER CASE-BY-CASE	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	**FACILITY**	**STATE**	**PERMIT DATE**	**PROCESS NAME**	**THROUGHPUT**	**POLLUTANT**	**EMISSION LIMITS**	**EMISSION RATE UNITS**	**TIME AVG CONDITION**	**METHOD**	**CONTROL METHOD**
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	SO2	0.002	lb/MMBtu		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	H2SO4	0.001	lb/MMBtu		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Fuel Preheater	8.5 MMBtu/hr	VOC	0.05	lb/MMBtu		OTHER CASE-BY-CASE	
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	CO	0.41	lb/hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	NOx	0.55	lb/hr	TEST PROTOCOL	BACT-PSD	Good combustion practices.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	PM	0.007	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	PM	0.0075	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	PM	0.0075	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion pracitces.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	VOC	0.03	lb/hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Fuel pre-heater (EUFUELHTR)	3.7 MMBtu/hr	CO2e	1934	TPY	12-MO ROLLING TIME PERIOD	BACT-PSD	Good combustion practices
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	PM	0.007	lb/MMBtu	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	Efficient combustion; natural gas fuel.
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	PM	0.007	lb/MMBtu	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	Efficient combustion; natural gas fuel.
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	VOC	0.008	lb/MMBtu	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	Efficient combustion; natural gas fuel.
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	CO2e	6156	TPY	12-MO ROLL TIME PERIOD	BACT-PSD	Efficient combustion; energy efficiency.
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	NOx	0.06	lb/MMBtu	30-D ROLL AVG EACH DAY IN OPERATION	BACT-PSD	Low NOx burners
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	CO	0.11	lb/MMBtu	TEST PROTOCOL WILL SPECIFY AVG. TIME.	BACT-PSD	Efficient combustion

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*MI-0410	THETFORD GENERATING STATION, CONSUMERS ENERGY COMPANY	MI	7/25/2013	FG-FUELHTRS: 2 natural gas fuel heaters, 12 MMBtu/hr each	12 MMBtu/hr heat input each fuel heater	PM	0.0018	lb/MMBtu	TEST PROTOCOL WILL SPECIFY AVG. TIME.	BACT-PSD	Efficient combustion; natural gas fuel.
*TX-0680	SONORA GAS PLANT, WTG SONORA GAS PLANT LLC	TX	6/14/2013	Process Heater	10 MMBtu/hr	NOx	0.01	lb/MMBtu		BACT-PSD	Low NOx burners
*TX-0680	SONORA GAS PLANT, WTG SONORA GAS PLANT LLC	TX	6/14/2013	Heater	10 MMBtu/hr	CO	100	PPMVD	@3% O2	BACT-PSD	
TX-0634	LONE STAR NGL, MONT BELVIEU GAS PLANT, ENERGY TRANSFER PARTNERS, LP	TX	10/12/2012	FRAC I and II Hot Oil Heaters	270 MMBtu/hr	CO2	137943	TPY	365-DAY TOTAL, ROLLED DAILY	BACT-PSD	
TX-0634	LONE STAR NGL, MONT BELVIEU GAS PLANT, ENERGY TRANSFER PARTNERS, LP	TX	10/12/2012	FRAC I and II Hot Oil Heaters	270 MMBtu/hr	CO2e	138078	TPY	12-MONTH ROLLING BASIS	BACT-PSD	
*TX-0663	JACKSON COUNTY GAS PLANT, ETC TEXAS PIPELINE, LTD.	TX	5/25/2012	Heaters	48 MMBtu/hr	NOx	7.62	TON	YEAR	BACT-PSD	Flue Gas Recirculation
*TX-0663	JACKSON COUNTY GAS PLANT, ETC TEXAS PIPELINE, LTD.	TX	5/25/2012	Heaters	48 MMBtu/hr	CO	17.39	TON	YEAR	BACT-PSD	Best combustion practices
CA-1190	PETROROCK- TUNNELL LEASE, PETROROCK-TUNNELL LEASE	CA	1/24/2012	Heater	3 MMBtu/hr	NOx	12	PPMVD	40 MINUTES @ 3% O2	OTHER CASE-BY-CASE	Low NOx burner
AK-0071	INTERNATIONAL STATION POWER PLANT, CHUGACH ELECTRIC ASSOCIATION, INC.	AK	12/20/2010	Sigma Thermal Auxiliary Heater (1)	12.5 MMBtu/hr	NOx	32	lb/MMscf	3-HOUR AVERAGE	BACT-PSD	Low NOx Burners and Flue Gas Recirculation
AK-0071	INTERNATIONAL STATION POWER PLANT, CHUGACH ELECTRIC ASSOCIATION, INC.	AK	12/20/2010	Sigma Thermal Auxiliary Heater (1)	12.5 MMBtu/hr	PM	7.6	lb/MMscf	3-HOUR AVERAGE	BACT-PSD	Good Combustion Practices
AK-0071	INTERNATIONAL STATION POWER PLANT, CHUGACH ELECTRIC ASSOCIATION, INC.	AK	12/20/2010	Sigma Thermal Auxiliary Heater (1)	12.5 MMBtu/hr	PM	7.6	lb/MMscf	3-HOUR AVERAGE	BACT-PSD	Good Combustion Practices
AK-0071	INTERNATIONAL STATION POWER PLANT, CHUGACH ELECTRIC ASSOCIATION, INC.	AK	12/20/2010	Sigma Thermal Auxiliary Heater (1)	12.5 MMBtu/hr	PM	7.6	lb/MMscf	3-HOUR AVERAGE	BACT-PSD	Good Combustion Practices
LA-0244	LAKE CHARLES CHEMICAL COMPLEX - LAB UNIT, SASOL NORTH AMERICA, INC.	LA	11/29/2010	EQT0029 - Hot Oil Heater H-601	170 MMBtu/hr	PM	1.71	lb/hr	HOURLY MAXIMUM	BACT-PSD	No additional control
LA-0244	LAKE CHARLES CHEMICAL COMPLEX - LAB UNIT, SASOL NORTH AMERICA, INC.	LA	11/29/2010	EQT0029 - Hot Oil Heater H-601	170 MMBtu/hr	NOx	19.69	lb/hr	HOURLY MAXIMUM	BACT-PSD	Low NOx burners
*MI-0393	RAY COMPRESSOR STATION, CONSUMERS ENERGY	MI	10/14/2010	Pipeline heaters	18 MMBtu/hr	NOx	0.9	lb/hr	TEST METHOD	BACT-PSD	Low NOx burners
*MI-0393	RAY COMPRESSOR STATION, CONSUMERS ENERGY	MI	10/14/2010	Pipeline heaters	18 MMBtu/hr	VOC	0.9	lb/hr	TEST METHOD	BACT-PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT, CITY OF VICTORVILLE	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	CO	50	PPMVD	1-HR AVG, @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT, CITY OF VICTORVILLE	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	NOx	9	PPMVD	1-HR AVG, @3% O2	BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT, CITY OF VICTORVILLE	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	PM	0.2	GRAINS PER 100 DSCF		BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR, USE PUC QUALITY NATURAL GAS
CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT, CITY OF VICTORVILLE	CA	3/11/2010	AUXILIARY HEATER	40 MMBtu/hr	PM	0.2	GRAINS PER 100 DSCF		BACT-PSD	OPERATIONAL RESTRICTION OF 1000 HR/YR
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	PM	0.54	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR PM EMISSIONS.
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	PM	0.54	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR PM10 EMISSIONS.
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	NOx	3.57	lb/hr		BACT-PSD	THE USE OF LOW NOX BURNERS WILL BE USED AS CONTROL FOR NOX EMISSIONS FROM THE THERMAL OIL HEATER
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	SO2	0.04	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR SO2 EMISSIONS.
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	CO	6	lb/hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP, GP CLARENDON LP	SC	2/10/2009	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	VOC	0.39	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR VOC EMISSIONS.
OK-0129	CHOUTEAU POWER PLANT, ASSOCIATED ELECTRIC COOPERATIVE INC	OK	1/23/2009	FUEL GAS HEATER (H2O BATH)	18.8 MMBtu/hr	NOx	2.7	lb/hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT, ASSOCIATED ELECTRIC COOPERATIVE INC	OK	1/23/2009	FUEL GAS HEATER (H2O BATH)	18.8 MMBtu/hr	CO	0.39	lb/hr		N/A	
OK-0129	CHOUTEAU POWER PLANT, ASSOCIATED ELECTRIC COOPERATIVE INC	OK	1/23/2009	FUEL GAS HEATER (H2O BATH)	18.8 MMBtu/hr	VOC	0.1	lb/hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT, ASSOCIATED ELECTRIC COOPERATIVE INC	OK	1/23/2009	FUEL GAS HEATER (H2O BATH)	18.8 MMBtu/hr	SO2	0.01	lb/hr		N/A	LOW SULFUR FUEL
OK-0129	CHOUTEAU POWER PLANT, ASSOCIATED ELECTRIC COOPERATIVE INC	OK	1/23/2009	FUEL GAS HEATER (H2O BATH)	18.8 MMBtu/hr	PM	0.1	lb/hr		N/A	
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	CO	6	lb/hr		BACT-PSD	POLLUTION PREVENTION OF CO EMISSIONS WILL OCCUR BY PERFORMING SCHEDULED TUNE-UPS AND INSPECTIONS AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	PM	0.54	lb/hr		BACT-PSD	
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	PM	0.54	lb/hr		BACT-PSD	
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	NOx	3.57	lb/hr		BACT-PSD	LOW NOX BURNERS WILL BE USED AS CONTROLS FOR NOX EMISSIONS.
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	SO2	0.04	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR SO2 EMISSIONS.
SC-0114	GP ALLENDALE LP, GP ALLENDALE LP	SC	11/25/2008	75 MILLION BTU/HR BACKUP THERMAL OIL HEATER	75 MMBtu/hr	VOC	0.39	lb/hr		BACT-PSD	GOOD COMBUSTION PRACTICES WILL BE USED AS CONTROL FOR VOC EMISSIONS
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	PM	0.007	lb/MMBtu		BACT-PSD	
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	NOx	0.1	lb/MMBtu		BACT-PSD	
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	VOC	0.005	lb/MMBtu		LAER	
MD-0040	CPV ST CHARLES, COMPETITIVE POWER VENTURES, INC./CPV MARYLAND, LLC	MD	11/12/2008	HEATER	1.7 MMBtu/hr	PM	0.007	lb/MMBtu		LAER	
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC,	MN	9/7/2007	PROCESS HEATERS	606 MMBtu/hr	PM	0.015	lb/MMBtu		BACT-PSD	
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC,	MN	9/7/2007	PROCESS HEATERS	606 MMBtu/hr	SO2	0.0029	lb/T	DRI PRODUCED	BACT-PSD	LIMITED TO NATURAL GAS
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC,	MN	9/7/2007	PROCESS HEATERS	606 MMBtu/hr	NOx	0.04	lb/MMBtu	24 HOUR ROLLING AVERAGE	BACT-PSD	
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC,	MN	9/7/2007	PROCESS HEATERS	606 MMBtu/hr	CO	0.08	lb/MMBtu	1 HOUR ROLLING AVERAGE	BACT-PSD	
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC,	MN	9/7/2007	PROCESS HEATERS	606 MMBtu/hr	PM	0.015	lb/MMBtu		BACT-PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
FL-0285	PROGRESS BARTOW POWER PLANT, PROGRESS ENERGY FLORIDA (PEF)	FL	1/26/2007	FIVE 3 MM BTU/HR GASEOUS-FUELED PROCESS HEATERS	3 MMBtu/hr	VOC	2	GR S/100 SCF GAS		BACT-PSD	
FL-0285	PROGRESS BARTOW POWER PLANT, PROGRESS ENERGY FLORIDA (PEF)	FL	1/26/2007	FIVE 3 MM BTU/HR GASEOUS-FUELED PROCESS HEATERS	3 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER, FLORIDA POWER AND LIGHT COMPANY	FL	1/10/2007	TWO GAS-FUELED 10 MMBtu/hr PROCESS HEATERS	10 MMBtu/hr	NOx	0.095	lb/MMBtu		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER, FLORIDA POWER AND LIGHT COMPANY	FL	1/10/2007	TWO GAS-FUELED 10 MMBtu/hr PROCESS HEATERS	10 MMBtu/hr	CO	0.08	lb/MMBtu		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER, FLORIDA POWER AND LIGHT COMPANY	FL	1/10/2007	TWO GAS-FUELED 10 MMBtu/hr PROCESS HEATERS	10 MMBtu/hr	SO2	2	GS/100 SCF GAS		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER, FLORIDA POWER AND LIGHT COMPANY	FL	1/10/2007	TWO GAS-FUELED 10 MMBtu/hr PROCESS HEATERS	10 MMBtu/hr	VOC	2	GR S/100 SCF GAS		BACT-PSD	
FL-0286	FPL WEST COUNTY ENERGY CENTER, FLORIDA POWER AND LIGHT COMPANY	FL	1/10/2007	TWO GAS-FUELED 10 MMBtu/hr PROCESS HEATERS	10 MMBtu/hr	PM	2	GR S/100 SCF GAS		BACT-PSD	
TX-0501	TEXSTAR GAS PROCESS FACILITY, TEXSTAR FS LP	TX	7/11/2006	BOTTOM HEATERS (2)	15 MMBtu/hr	NOx	1.61	lb/hr		BACT-PSD	
TX-0501	TEXSTAR GAS PROCESS FACILITY, TEXSTAR FS LP	TX	7/11/2006	BOTTOM HEATERS (2)	15 MMBtu/hr	CO	1.35	lb/hr		BACT-PSD	
TX-0501	TEXSTAR GAS PROCESS FACILITY, TEXSTAR FS LP	TX	7/11/2006	BOTTOM HEATERS (2)	15 MMBtu/hr	SO2	0.01	lb/hr		BACT-PSD	
TX-0501	TEXSTAR GAS PROCESS FACILITY, TEXSTAR FS LP	TX	7/11/2006	BOTTOM HEATERS (2)	15 MMBtu/hr	PM	0.12	lb/hr		BACT-PSD	
TX-0501	TEXSTAR GAS PROCESS FACILITY, TEXSTAR FS LP	TX	7/11/2006	BOTTOM HEATERS (2)	15 MMBtu/hr	VOC	0.09	lb/hr		BACT-PSD	
MD-0036	DOMINION, DOMINION COVE POINT LNG, L.P.	MD	3/10/2006	FUEL GAS PROCESS HEATER		PM	0.0074	lb/MMBtu	3-HOUR AVERAGE	BACT-PSD	USE OF LNG QUALITY, LOW SULFUR NATURAL GAS
MD-0036	DOMINION, DOMINION COVE POINT LNG, L.P.	MD	3/10/2006	FUEL GAS PROCESS HEATER		NOx	17	PPMVD	3-HOUR AVERAGE	LAER	GOOD COMBUSTION PRACTICES AND DRY LNB
MD-0036	DOMINION, DOMINION COVE POINT LNG, L.P.	MD	3/10/2006	FUEL GAS PROCESS HEATER		VOC	143	PPMVD	3-HOUR AVERAGE	LAER	GOOD COMBUSTION PRACTICES
MD-0036	DOMINION, DOMINION COVE POINT LNG, L.P.	MD	3/10/2006	FUEL GAS PROCESS HEATER		CO	143	PPMVD		BACT-PSD	GOOD COMBUSTION PRACTICES

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
LA-0203	OAKDALE OSB PLANT, MARTCO LIMITED PARTNERSHIP	LA	6/13/2005	AUXILIARY THERMAL OIL HEATER	66.5 MMBtu/hr	NOx	7.82	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF NATURAL GAS AS FUEL AND GOOD COMBUSTION PRACTICES
LA-0203	OAKDALE OSB PLANT, MARTCO LIMITED PARTNERSHIP	LA	6/13/2005	AUXILIARY THERMAL OIL HEATER	66.5 MMBtu/hr	CO	6.57	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF NATURAL GAS AS FUEL AND GOOD COMBUSTION PRACTICES
LA-0203	OAKDALE OSB PLANT, MARTCO LIMITED PARTNERSHIP	LA	6/13/2005	AUXILIARY THERMAL OIL HEATER	66.5 MMBtu/hr	VOC	0.43	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF NATURAL GAS AS FUEL AND GOOD COMBUSTION PRACTICES
LA-0203	OAKDALE OSB PLANT, MARTCO LIMITED PARTNERSHIP	LA	6/13/2005	AUXILIARY THERMAL OIL HEATER	66.5 MMBtu/hr	PM	0.59	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF NATURAL GAS AS FUEL AND GOOD COMBUSTION PRACTICES
LA-0203	OAKDALE OSB PLANT, MARTCO LIMITED PARTNERSHIP	LA	6/13/2005	AUXILIARY THERMAL OIL HEATER	66.5 MMBtu/hr	SO2	0.05	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF NATURAL GAS AS FUEL AND GOOD COMBUSTION PRACTICES
LA-0192	CRESCENT CITY POWER, CRESENT CITY POWER, LLC	LA	6/6/2005	FUEL GAS HEATERS (3)	19 MMBtu/hr	PM	0.14	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF LOW SULFUR PIPELINE NATURAL GAS AND GOOD COMBUSTION PRACTICES
LA-0192	CRESCENT CITY POWER, CRESENT CITY POWER, LLC	LA	6/6/2005	FUEL GAS HEATERS (3)	19 MMBtu/hr	SO2	0.008	lb/hr	HOURLY MAXIMUM	BACT-PSD	USE OF LOW SULFUR PIPELINE NATURAL GAS AND GOOD COMBUSTION PRACTICES
LA-0192	CRESCENT CITY POWER, CRESENT CITY POWER, LLC	LA	6/6/2005	FUEL GAS HEATERS (3)	19 MMBtu/hr	CO	1.52	lb/hr	HOURLY AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
LA-0192	CRESCENT CITY POWER, CRESENT CITY POWER, LLC	LA	6/6/2005	FUEL GAS HEATERS (3)	19 MMBtu/hr	VOC	0.1	lb/hr	HOURLY MAXIMUM	BACT-PSD	GOOD COMBUSTION PRACTICES
LA-0192	CRESCENT CITY POWER, CRESENT CITY POWER, LLC	LA	6/6/2005	FUEL GAS HEATERS (3)	19 MMBtu/hr	NOx	1.81	lb/hr	HOURLY MAXIMUM	BACT-PSD	LOW NOX BURNERS AND GOOD COMBUSTION PRACTICES
WA-0301	BP CHERRY POINT REFINERY, BRITISH PETROLEUM	WA	4/20/2005	PROCESS HEATER, IHT	13 MMBtu/hr	NOx	0.1	lb/MMBtu	7% O2, 24 hr ave	BACT-PSD	ULTRA LOW NOX BURNERS
WA-0301	BP CHERRY POINT REFINERY, BRITISH PETROLEUM	WA	4/20/2005	PROCESS HEATER, IHT	13 MMBtu/hr	CO	70	PPM	7% O2, 24 hr ave	BACT-PSD	GOOD COMBUSTION PRACTICES

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	VOC	0.7	lb/hr		OTHER CASE-BY-CASE	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	CO	0.0126	g/hp-hr		OTHER CASE-BY-CASE	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	NOx	0.0218	g/hp-hr		LAER	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	PM	0.15	lb/hr		OTHER CASE-BY-CASE	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	PM	0.15	lb/hr		OTHER CASE-BY-CASE	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	PM	0.15	lb/hr		OTHER CASE-BY-CASE	Minimized hours of operations Tier II engine
*TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY, BASF	TX	4/1/2015	Emergency Diesel Generator	1500 hp	SO2	0.61	lb/hr		OTHER CASE-BY-CASE	Low sulfur fuel 15 ppmw
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	CO2e	2332	TPY	COMBINED	BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	VOC	0.0007	lb/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	CO2e	163	TPY		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	VOC	0.0025	lb/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	CO2e	356	TPY		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	VOC	0.0025	lb/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	NOx	5.6	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	PM	0.3	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	PM	0.3	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	CO2e	565	TPY	COMBINED	BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	VOC	0.0007	lb/hp-hr		BACT-PSD	

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RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	PM	0.15	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	CO	2.6	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	CO	2.6	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	NOx	3	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Fine Water Pumps	610 hp	CO	2.6	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Emergency Camp Generators	2695 hp	NOx	4.8	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Airstrip Generator Engine	490 hp	NOx	4.8	g/hp-hr		BACT-PSD	
*AK-0082	POINT THOMSON PRODUCTION FACILITY, EXXON MOBIL CORPORATION	AK	1/23/2015	Agitator Generator Engine	98 hp	CO	3.7	g/hp-hr		BACT-PSD	
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	PM	0.1	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	PM	0.1	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	PM	0.1	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	CO2e	27.2	TPY		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	VOC	3.03	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	CO	0.99	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*AK-0083	KENAI NITROGEN OPERATIONS, AGRIUM U.S. INC.	AK	1/6/2015	Gasoline Fired Fire Pump Engine	2.1 MMBtu/hr	NOx	1.63	lb/MMBtu		BACT-PSD	Limited Operation of 168 hr/yr.
*TX-0753	GUADALUPE GENERATING STATION, GUADALUPE POWER PARTNERS, L.P.	TX	12/2/2014	Fire Water Pump Engine	1.92 MMBtu/hr (HHV)	CO2e	15.71	TPY CO2E		BACT-PSD	
*TX-0671	PROJECT JUMBO, M&G RESINS USA, LLC	TX	12/1/2014	Engines	0	NOx	5.43	g/kW-hr		BACT-PSD	Each emergency generator's emission factor is based on EPA's Tier 2 standards at 40CFR89.112 for NOx
*TX-0671	PROJECT JUMBO, M&G RESINS USA, LLC	TX	12/1/2014	Engines	0	SO2	0.0649	g/kW-hr		BACT-PSD	Ultra low sulfur fuel engines burn will meet the sulfur requirement of 15 ppm in 40CFR80.510(b)
*WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT, MOUNDSVILLE POWER, LLC	WV	11/21/2014	Emergency Generator	2015.7 hp	CO2e	2416	lb/hr		BACT-PSD	
*WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT, MOUNDSVILLE POWER, LLC	WV	11/21/2014	Emergency Generator	2015.7 hp	VOC	1.24	lb/hr		BACT-PSD	
*WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT, MOUNDSVILLE POWER, LLC	WV	11/21/2014	Fire Pump Engine	251 hp	CO2e	309	lb/hr		BACT-PSD	
*WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT, MOUNDSVILLE POWER, LLC	WV	11/21/2014	Fire Pump Engine	251 hp	VOC	0.17	lb/hr		BACT-PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT, MOUNDSVILLE POWER, LLC	WV	11/21/2014	Fire Pump Engine	251 hp	CO	1.44	lb/hr		BACT-PSD	
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	CO2e	432	TPY		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	VOC	0.4	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	CO	3.5	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	NOx	0.67	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Emergency Generator	3755 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	CO2e	72	TPY		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	VOC	0.4	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	CO	3.5	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	NOx	3.5	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*IL-0114	CRONUS CHEMICALS, LLC, CRONUS CHEMICALS, LLC	IL	9/5/2014	Firewater Pump Engine	373 hp	PM	0.1	g/kW-hr		BACT-PSD	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.
*TX-0758	ECTOR COUNTY ENERGY CENTER, INVENERGY THERMAL DEVELOPMENT LLC	TX	8/1/2014	Firewater Pump Engine	0	CO2e	5	TPY CO2E	12-MONTH ROLLING TOTAL	BACT-PSD	
*AL-0301	NUCOR STEEL TUSCALOOSA, INC., NUCOR STEEL TUSCALOOSA, INC.	AL	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	800 hp	CO	0.0055	lb/hp-hr		BACT-PSD	
*AL-0301	NUCOR STEEL TUSCALOOSA, INC., NUCOR STEEL TUSCALOOSA, INC.	AL	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	800 hp	NOx	0.015	lb/hp-hr		BACT-PSD	
*AL-0301	NUCOR STEEL TUSCALOOSA, INC., NUCOR STEEL TUSCALOOSA, INC.	AL	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	800 hp	PM	0.0007	lb/hp-hr		BACT-PSD	
*MD-0043	PERRYMAN GENERATING STATION, CONSTELLATION POWER SOURCE GENERATION, INC.	MD	7/1/2014	EMERGENCY GENERATOR	1300 hp	PM	0.17	g/hp-hr	CONDENSIBLE + FILTERABLE	BACT-PSD	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD
*MD-0043	PERRYMAN GENERATING STATION, CONSTELLATION POWER SOURCE GENERATION, INC.	MD	7/1/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	350 hp	PM	0.17	g/hp-hr	FILTERABLE + CONDENSIBLE	BART	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD
*WY-0076	ROCK SPRINGS FERTILIZER COMPLEX, SIMPLOT PHOSPHATES, LLC	WY	7/1/2014	Fire Water Pump Engine	200 hp	CO2e	58	TONS	ANNUAL	BACT-PSD	limited to 500 hours of operation per year
*WY-0076	ROCK SPRINGS FERTILIZER COMPLEX, SIMPLOT PHOSPHATES, LLC	WY	7/1/2014	Fire Water Pump Engine	200 hp	CO2e	58	TONS	ANNUAL	BACT-PSD	limited to 500 hours of operation per year

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*MD-0043	PERRYMAN GENERATING STATION, CONSTELLATION POWER SOURCE GENERATION, INC.	MD	7/1/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	350 hp	NOx	3	g/hp-hr		LAER	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD
*MD-0043	PERRYMAN GENERATING STATION, CONSTELLATION POWER SOURCE GENERATION, INC.	MD	7/1/2014	EMERGENCY GENERATOR	1300 hp	NOx	4.8	g/hp-hr		LAER	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	PM	0.17	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	PM	0.17	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	VOC	4.8	g/hp-hr	COMBINED NOX + NMHC	LAER	USE ONLY ULSD, GOOD COMBUSTION PRACTICES, AND DESIGNED TO ACHIEVE EMISSION LIMIT
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	PM	0.17	g/bhp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	PM	0.17	g/bhp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	VOC	3	g/hp-hr	NOX + NMHC	LAER	USE ONLY ULSD, GOOD COMBUSTION PRACTICES, AND DESIGNED TO ACHIEVE EMISSION LIMIT
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	PM	0.15	g/bhp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	CO	2.6	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES AND DESIGNED TO MEET EMISSION LIMIT
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	NOx	3	g/hp-hr	NOX + NMHC	LAER	GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMIT
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	EMERGENCY GENERATOR	1550 hp	NOx	4.8	g/hp-hr	COMBINED NOX + NMHC	LAER	GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMIT
*MD-0044	COVE POINT LNG TERMINAL, DOMINION COVE POINT LNG, LP	MD	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	350 hp	CO	3	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES AND DESIGNED TO MEET EMISSION LIMIT
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	VOC	0.31	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	CO2	526.39	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	VOC	0.141	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	CO2	527.4	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	NOx	2.83	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	VOC	0.141	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	CO2	527.4	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	NOx	2.83	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	VOC	0.31	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	CO2	526.39	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	VOC	0.141	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	CO2	527.4	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	NOx	2.83	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	VOC	0.141	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	CO2	527.4	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	NOx	2.83	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	PM	0.15	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	NOx	4.46	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	NOx	4.46	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	CO	2.6	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	RAW WATER PUMP	500 hp	CO	2.6	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	CO	2.6	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	FIRE PUMP	500 hp	CO	2.6	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0173	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	CO	2.61	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*IN-0180	MIDWEST FERTILIZER CORPORATION, MIDWEST FERTILIZER CORPORATION	IN	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	3600 Bhp	CO	2.61	g/bhp-hr	3-HR AVERAGE	BACT-PSD	GOOD COMBUSTION PRACTICES
*TX-0757	INDECK WHARTON ENERGY CENTER, INDECK WHARTON, LLC	TX	5/12/2014	Firewater Pump Engine	175 hp	CO2e	5.34	TPY CO2E	12-MONTH ROLLING TOTAL	BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	EMERGENCY GENERATORS	620 hp	CO2e	500	hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	EMERGENCY GENERATORS	620 hp	PM	0.2	g/kW-hr		BACT-PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	EMERGENCY GENERATORS	620 hp	PM	0.2	g/kW-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	EMERGENCY GENERATORS	620 hp	PM	0.2	g/kW-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	EMERGENCY GENERATORS	620 hp	SO2	0.0015	g/kW-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	CO2e	31.11	CO2E		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	PM	0.15	g/hp-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	PM	0.15	g/hp-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	PM	0.15	g/hp-hr		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	SO2	0.29	lb/MMBtu		BACT-PSD	
*IN-0185	MAG PELLET LLC, MAG PELLET LLC	IN	4/24/2014	DIESEL FIRE PUMP	300 hp	NOx	3	g/hp-hr		BACT-PSD	
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY GENERATOR	1500 kW	PM	0.15	g/hp-hr	N/A	BACT-PSD	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY GENERATOR	1500 kW	VOC	4.8	lb/MMBtu	N/A	LAER	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, AND LIMITING THE HOURS OF OPERATION
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY GENERATOR	1500 kW	PM	0.15	g/hp-hr	N/A	BACT-PSD	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	300 hp	PM	0.15	g/hp-hr	N/A	BACT-PSD	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	300 hp	PM	0.15	g/hp-hr	N/A	BACT-PSD	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY GENERATOR	1500 kW	CO	2.6	g/hp-hr	N/A	BACT-PSD	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	300 hp	CO	2.6	g/hp-hr	N/A	BACT-PSD	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	300 hp	NOx	3	g/hp-hr	N/A	LAER	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, AND LIMITING THE HOURS OF OPERATION
*MD-0041	CPV ST. CHARLES, CPV MARYLAND, LLC	MD	4/23/2014	EMERGENCY GENERATOR	1500 kW	NOx	4.8	g/hp-hr	N/A	LAER	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, AND LIMITING THE HOURS OF OPERATION
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Four 3100 kW black start emergency generators	2.32 MMBtu/hr (HHV) per engine	PM	0.2	g/kW-hr		BACT-PSD	Good combustion practice
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Four 3100 kW black start emergency generators	2.32 MMBtu/hr (HHV) per engine	CO	3.5	g/kW-hr		BACT-PSD	Good combustion practice
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Four 3100 kW black start emergency generators	2.32 MMBtu/hr (HHV) per engine	SO2	15	PPM SULFUR IN FUEL		BACT-PSD	ULSD required
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Emergency fire pump engine (300 hp)	29 MMBtu/hr	PM	0.2	g/hp-hr		BACT-PSD	Good combustion practice
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Emergency fire pump engine (300 hp)	29 MMBtu/hr	CO	3.5	g/kW-hr		BACT-PSD	Good combustion practice.
*FL-0346	LAUDERDALE PLANT, FLORIDA POWER & LIGHT	FL	4/22/2014	Emergency fire pump engine (300 hp)	29 MMBtu/hr	SO2	15	PPM SULFUR IN FUEL		BACT-PSD	Good combustion practice and ULSD

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	H2SO4	0.006	g/hp-hr	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET SUBPART IIII LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	SO2	0.006	g/bhp-hr	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET NSPS SUBPART IIII LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	H2SO4	0.0049	g/bhp-hr	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET SUBPART IIII LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	PM	0.15	g/hp-hr		BACT-PSD	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	SO2	0.0049	g/bhp-hr	3-HOUR BLOCK AVERAGE	BACT-PSD	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET SUBPART IIII LIMITS
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	CO	2.6	g/hp-hr		BACT-PSD	USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	CO	2.6	g/hp-hr		BACT-PSD	USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	477 hp	NOx	3	g/hp-hr		LAER	LIMITED OPERATING HOURS, USE OF ULTRA- LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*MD-0042	WILDCAT POINT GENERATION FACILITY, OLD DOMINION ELECTRIC CORPORATION (ODEC)	MD	4/8/2014	EMERGENCY GENERATOR 1	2250 kW	NOx	4.8	g/hp-hr		LAER	LIMITED OPERATING HOURS, USE OF ULTRA- LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	PM	0.15	g/bhp-hr		BACT-PSD	Use of ultra low sulfur distillate oil
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	PM	0.15	g/bhp-hr		OTHER CASE-BY-CASE	Use of Ultra low sulfur distillate oil
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	VOC	0.119	lb/hr		LAER	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	CO	0.079	lb/hr		BACT-PSD	
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	NOx	1.75	lb/hr		LAER	
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	PM	0.15	g/bhp-hr		BACT-PSD	Use of Ultra low sulfur distillate oil
*NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION, PSEG FOSSIL LLC	NJ	3/7/2014	Emergency diesel fire pump	0	SO2	0.002	lb/MMBtu		BACT-PSD	Use of Ultra low sulfur fuel oil
*TX-0706	NATURAL GAS FRACTIONATION, OCCIDENTAL CHEMICAL CORPORATION	TX	1/23/2014	Emergency Engines	0	VOC	0.03	TPY		BACT-PSD	
*TX-0706	NATURAL GAS FRACTIONATION, OCCIDENTAL CHEMICAL CORPORATION	TX	1/23/2014	Emergency Engines	0	NOx	0.33	TPY		BACT-PSD	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	PM	0.017	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	CO2e	65	TPY		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	PM	0.017	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	VOC	0.03	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	H2SO4	0.0001	TPY		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	CO	0.29	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	NOx	0.53	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Generator	60 Gal/hr	PM	0.005	TPY	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	PM	0.005	TPY	BASED ON 12-MONTH ROLLING TOTAL		

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	CO2e	19	TPY		OTHER CASE-BY-CASE	
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	PM	0.005	TPY	BASED ON 12-MONTH ROLLING TOTAL		good combustion practices
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	VOC	0.013	TPY	BASED ON 12-MONTH ROLLING TOTAL		good combustion practices
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	H2SO4	0	TPY			good combustion practices
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	CO	0.09	TPY	BASED ON 12-MONTH ROLLING TOTAL		good combustion practices
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	NOx	0.09	TPY	BASED ON 12-MONTH ROLLING TOTAL		good combustion practices
*PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE, BERKS HOLLOW ENERGY ASSOC LLC	PA	12/17/2013	Emergency Firewater Pump	16 Gal/hr	PM	0.005	TPY	BASED ON 12-MONTH ROLLING TOTAL		Purchased certified to the standards in NSPS Subpart IIII
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	CO	0.8	g/hp-hr	TEST PROTOCOL	BACT-PSD	Oxidation catalyst and good combustion practices.
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	PM	0.01	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	PM	0.01	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	CO2e	116	TPY	12-MO ROLLING TIME PERIOD	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	VOC	0.5	g/hp-hr	TEST PROTOCOL	BACT-PSD	Oxidation catalyst and good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	NOx	2	g/hp-hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	1000 kW	PM	0.0001	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	PM	0.09	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	PM	0.09	lb/MMBtu	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	CO2e	0.29	TPY	12-MO ROLLING TIME PERIOD	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	VOC	0.001	lb/hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	PM	0.22	g/hp-hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	NOx	3	g/hp-hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET, HOLLAND BOARD OF PUBLIC WORKS	MI	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPENGINE)	165 hp	CO	3.7	g/hp-hr	TEST PROTOCOL	BACT-PSD	Good combustion practices
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency fire pump engine	300 hp	NOx	2.57	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency generator	2250 kW	NOx	4.18	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency fire pump engine	300 hp	PM10 (Total)	0.15	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency generator	2250 kW	PM10 (Total)	0.15	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency fire pump engine	300 hp	VOC	0.38	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency generator	2250 kW	VOC	0.59	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*OH-0352	OREGON CLEAN ENERGY CENTER	OH	6/18/2013	Emergency generator	2250 kW	CO	2.61	g/hp-hr		BACT-PSD	Purchased certified to the standards in NSPS Subpart IIII
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY GENERATOR	7.8 MMBtu/hr	NOx	1.46	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY FIREWATER PUMP	3.25 MMBtu/hr	NOx	0.66	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY GENERATOR	7.8 MMBtu/hr	CO	0.86	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY FIREWATER PUMP	3.25 MMBtu/hr	CO	0.92	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY FIREWATER PUMP	3.25 MMBtu/hr	PM (Total)	0.05	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY FIREWATER PUMP	3.25 MMBtu/hr	VOC	0.39	g/hp-hr		OTHER CASE-BY-CASE	
*PA-0291	HICKORY RUN ENERGY STATION	PA	4/23/2013	EMERGENCY GENERATOR	7.8 MMBtu/hr	VOC	0.1	g/hp-hr		OTHER CASE-BY-CASE	
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	1200 hp	VOC	4.77	g/hp-hr		BACT-PSD	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*LA-0272	AMMONIA PRODUCTION FACILITY	LA	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	1200 hp	NOx	4.77	g/hp-hr		BACT-PSD	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	PM (Filterable)	0.15	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	PM10 (Filterable)	0.15	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	PM2.5 (Filterable)	0.15	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	VOC	0.23	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	CO	2.6	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	IN	12/3/2012	EMERGENCY DIESEL GENERATOR	2012 hp	NOx	4.8	g/hp-hr	3 HOUR	BACT-PSD	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS
*NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Emergency Generator	200 HRS/YR	CO	11.56	lb/hr		BACT-PSD	
*NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Emergency Generator	200 HRS/YR	NOx	18.53	lb/hr		LAER	use of ultra low sulfur diesel (ULSD) a clean fuel
*NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Emergency Generator	200 HRS/YR	PM (Filterable)	0.59	lb/hr			use of ULSD, a low sulfur clean fuel
*NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Emergency Generator	200 HRS/YR	PM10 (Filterable)	0.66	lb/hr		BACT-PSD	
*NJ-0080	HESS NEWARK ENERGY CENTER	NJ	11/1/2012	Emergency Generator	200 HRS/YR	VOC	2.62	lb/hr		LAER	use of ULSD, a low sulfur clean fuel
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	NOx	2.8	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	NOx	4.47	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	PM (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	PM (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	PM10 (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	PM10 (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	PM2.5 (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	PM2.5 (Total)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	VOC	0.3	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	VOC	0.19	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Emergency Generator	142 GAL/HR	CO	2.61	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
IA-0105	IOWA FERTILIZER COMPANY	IA	10/26/2012	Fire Pump	14 GAL/HR	CO	2.61	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	good combustion practices
*NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Emergency Generator	100 HRS/YR	CO	1.99	lb/hr		BACT-PSD	Use of ULSD oil

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Emergency Generator	100 HRS/YR	NOx	21.16	lb/hr		LAER	Use of ULSD diesel oil
*NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Emergency Generator	100 HRS/YR	PM10 (Total)	0.13	lb/hr		OTHER CASE-BY-CASE	Use of ULSD oil
*NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Emergency Generator	100 HRS/YR	PM2.5 (Total)	0.13	lb/hr		OTHER CASE-BY-CASE	Use of ULSD oil
*NJ-0079	WOODBRIDGE ENERGY CENTER	NJ	7/25/2012	Emergency Generator	100 HRS/YR	VOC	0.49	lb/hr		LAER	Use of ULSD oil
*SC-0159	US10 FACILITY	SC	7/9/2012	EMERGENCY GENERATORS, GEN1, GEN2	1000 kW	VOC	4.77	g/hp-hr		BACT-PSD	BACT HAS BEEN DETERMINED TO BE COMPLIANCE WITH NSPS, SUBPART IIII, 40 CFR60.4202 AND 40 CFR60.4205.
*SC-0159	US10 FACILITY	SC	7/9/2012	FIRE PUMPS, FIRE1, FIRE2, FIRE3	211 kW	VOC	2.98	g/hp-hr		BACT-PSD	BACT HAS BEEN DETERMINED TO BE COMPLIANCE WITH NSPS, SUBPART IIII, 40 CFR60.4202 AND 40 CFR60.4205.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	757 hp	NOx	2.98	g/hp-hr		BACT-PSD	ENGINES MUST BE CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	FIRE PUMP	500 hp	NOx	2.98	g/hp-hr		BACT-PSD	PURCHASE OF CERTIFIED ENGINE BASED ON NSPS, SUBPART IIII.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	757 hp	VOC	2.98	g/hp-hr		BACT-PSD	PURCHASE ENGINES CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	FIRE PUMP	500 hp	VOC	2.98	g/hp-hr		BACT-PSD	CERTIFIED ENGINES THAT COMPLY WITH NSPS, SUBPART IIII. HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR FOR MAINTENANCE AND TESTING.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	757 hp	CO	2.61	g/hp-hr		BACT-PSD	ENGINES MUST BE CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.
SC-0113	PYRAMAX CERAMICS, LLC	SC	2/8/2012	FIRE PUMP	500 hp	CO	2.61	g/hp-hr		BACT-PSD	ENGINES CERTIFIED TO MEET NSPS, SUBPART IIII. HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR FOR MAINTENANCE AND TESTING.
*MI-0402	SUMPTER POWER PLANT	MI	11/17/2011	Diesel fuel-fired combustion engine (RICE)	732 hp	CO	0.31	g/hp-hr	TEST	BACT-PSD	Good combustion practices
*MI-0402	SUMPTER POWER PLANT	MI	11/17/2011	Diesel fuel-fired combustion engine (RICE)	732 hp	NOx	4.85	g/hp-hr	TEST	BACT-PSD	Good combustion practices
*MI-0402	SUMPTER POWER PLANT	MI	11/17/2011	Diesel fuel-fired combustion engine (RICE)	732 hp	PM (Filterable)	0.05	g/hp-hr	TEST	BACT-PSD	Good combustion practices
*MI-0402	SUMPTER POWER PLANT	MI	11/17/2011	Diesel fuel-fired combustion engine (RICE)	732 hp	PM10 (Total)	0.06	lb/MMBtu	TEST	BACT-PSD	Good combustion practices
*MI-0402	SUMPTER POWER PLANT	MI	11/17/2011	Diesel fuel-fired combustion engine (RICE)	732 hp	PM2.5 (Total)	0.06	lb/MMBtu	TEST	BACT-PSD	Good combustion practices
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	182 hp	NOx	2.98	g/hp-hr	3 HOUR	BACT-PSD	
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	2683 hp	NOx	4.77	g/hp-hr	3 HOUR	BACT-PSD	
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	2683 hp	PM (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	182 hp	PM (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	2683 hp	PM10 (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	182 hp	PM10 (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	2683 hp	PM2.5 (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	182 hp	PM2.5 (Total)	0.15	g/hp-hr		BACT-PSD	USE ULTRA LOW SULFUR FUEL
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	2683 hp	CO	2.61	g/hp-hr		BACT-PSD	
*CA-1212	PALMDALE HYBRID POWER PROJECT	CA	10/18/2011	EMERGENCY IC ENGINE	182 hp	CO	2.61	g/hp-hr		BACT-PSD	
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY DIESEL GENERATOR	1250 hp	CO	2.6	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY FIRE PUMP	350 hp	CO	2.6	g/hp-hr		BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY DIESEL GENERATOR	1250 hp	PM10 (Total)	0.15	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY FIRE PUMP	350 hp	PM10 (Total)	0.15	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY DIESEL GENERATOR	1250 hp	PM2.5 (Total)	0.15	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY FIRE PUMP	350 hp	PM2.5 (Total)	0.15	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY DIESEL GENERATOR	1250 hp	VOC	1	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	LA	8/16/2011	EMERGENCY FIRE PUMP	350 hp	VOC	1	g/hp-hr	ANNUAL	BACT-PSD	ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES
LA-0251	FLOPAM INC. FACILITY	LA	4/26/2011	Fire Pump Engines - 2 units	444 hp	CO	0.66	g/hp-hr		BACT-PSD	good equipment design and proper combustion practices
LA-0251	FLOPAM INC. FACILITY	LA	4/26/2011	Fire Pump Engines - 2 units	444 hp	PM10 (Filterable)	0.01	g/hp-hr		BACT-PSD	
LA-0251	FLOPAM INC. FACILITY	LA	4/26/2011	Fire Pump Engines - 2 units	444 hp	NOx	5.95	g/hp-hr		BACT-PSD	
AK-0071	INTERNATIONAL STATION POWER PLANT	AK	12/20/2010	Caterpillar 3215C Black Start Generator (1)	1500 kW	NOx	4.77	g/hp-hr	INSTANTANEOUS	BACT-PSD	Turbocharger and Aftercooler
AK-0071	INTERNATIONAL STATION POWER PLANT	AK	12/20/2010	Caterpillar 3215C Black Start Generator (1)	1500 kW	PM (Total)	0.03	g/hp-hr	INSTANTANEOUS	BACT-PSD	Good Combustion Practices
AK-0071	INTERNATIONAL STATION POWER PLANT	AK	12/20/2010	Caterpillar 3215C Black Start Generator (1)	1500 kW	PM10 (Total)	0.03	g/hp-hr	INSTANTANEOUS	BACT-PSD	Good Combustion Practices
AK-0071	INTERNATIONAL STATION POWER PLANT	AK	12/20/2010	Caterpillar 3215C Black Start Generator (1)	1500 kW	PM2.5 (Total)	0.03	g/hp-hr	INSTANTANEOUS	BACT-PSD	Good Combustion Practices
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	FIRE PUMP ENGINE	235 kW	NOx	2.98	g/hp-hr		BACT-PSD	TIER 3 ENGINE-BASED GOOD COMBUSTION PRACTICES (GCP)
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	EMERGENCY GENERATOR ENGINE	750 kW	NOx	4.77	g/hp-hr		BACT-PSD	TIER 2 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	EMERGENCY GENERATOR ENGINE	750 kW	PM	0.15	g/hp-hr		BACT-PSD	TIER 2 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	FIRE PUMP ENGINE	235 kW	PM	0.15	g/hp-hr		BACT-PSD	TIER 3 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	EMERGENCY GENERATOR ENGINE	750 kW	VOC	4.77	g/hp-hr		BACT-PSD	TIER 2 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)

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RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	FIRE PUMP ENGINE	235 kW	VOC	2.98	g/hp-hr		BACT-PSD	TIER 3 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)
ID-0018	LANGLEY GULCH POWER PLANT	ID	6/25/2010	EMERGENCY GENERATOR ENGINE	750 kW	CO	2.61	g/hp-hr		BACT-PSD	TIER 2 ENGINE-BASED, GOOD COMBUSTION PRACTICES (GCP)
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY FIREWATER PUMP ENGINE	135 kW	NOx	2.83	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR, OPERATE AS REQUIRED FOR FIRE SAFETY TESTING
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY ENGINE	2000 kW	NOx	4.47	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY ENGINE	2000 kW	PM (Total)	0.15	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR; USE OF ULTRA LOW SULFUR FUEL NOT TO EXCEED 15 PPMVD FUEL SULFUR
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY FIREWATER PUMP ENGINE	135 kW	PM (Total)	0.15	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR, OPERATE AS REQUIRED FOR FIRE SAFETY TESTING
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY ENGINE	2000 kW	PM2.5 (Total)	0.15	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR; USE OF ULTRA LOW SULFUR FUEL NOT TO EXCEED 15 PPMVD
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY FIREWATER PUMP ENGINE	135 kW	PM2.5 (Total)	0.15	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR, OPERATE AS REQUIRED FOR FIRE SAFETY TESTING
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY ENGINE	2000 kW	CO	2.61	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR
*CA-1191	VICTORVILLE 2 HYBRID POWER PROJECT	CA	3/11/2010	EMERGENCY FIREWATER PUMP ENGINE	135 kW	CO	2.61	g/hp-hr		BACT-PSD	OPERATIONAL RESTRICTION OF 50 HR/YR, OPERATE AS REQUIRED FOR FIRE SAFETY TESTING
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	FIRE PUMP	525 hp	CO	2.6	g/hp-hr	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	EMERGENCY GENERATOR	2000 kW	PM (Total)	0.15	g/hp-hr	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL.
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	FIRE PUMP	525 hp	PM (Total)	0.15	g/hp-hr	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL.
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	EMERGENCY GENERATOR	2000 kW	PM10 (Total)	0.06	lb/MMBtu	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL.
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	FIRE PUMP	525 hp	PM10 (Total)	0.31	lb/MMBtu	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL.
MI-0389	KARN WEADOCK GENERATING COMPLEX	MI	12/29/2009	EMERGENCY GENERATOR	2000 kW	CO	2.61	g/hp-hr	TEST	BACT-PSD	ENGINE DESIGN AND OPERATION. 15 PPM SULFUR FUEL.
NV-0050	MGM MIRAGE	NV	11/30/2009	DIESEL EMERGENCY GENERATORS - UNITS CC009 THRU CC015 AT CITY CENTER	3622 hp	CO	0.77	g/hp-hr		LAER	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	EMERGENCY GENERATORS - UNITS LX024 AND LX025 AT LUXOR	2206 hp	CO	0.82	g/hp-hr		LAER	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	DIESEL EMERGENCY GENERATORS - UNITS CC009 THRU CC015 AT CITY CENTER	3622 hp	NOx	4.54	g/hp-hr		Other Case-by-Case	TURBOCHARGER AAND AFTER-COOLER

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RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
NV-0050	MGM MIRAGE	NV	11/30/2009	EMERGENCY GENERATORS - UNITS LX024 AND LX025 AT LUXOR	2206 hp	NOx	5.94	g/hp-hr		Other Case-by-Case	TURBOCHARGING, AFTER-COOLING, AND LEAN-BURN TECHNOLOGY
NV-0050	MGM MIRAGE	NV	11/30/2009	DIESEL EMERGENCY GENERATORS - UNITS CC009 THRU CC015 AT CITY CENTER	3622 hp	PM10 (Filterable)	0.05	g/hp-hr		Other Case-by-Case	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	EMERGENCY GENERATORS - UNITS LX024 AND LX025 AT LUXOR	2206 hp	PM10 (Filterable)	0.05	g/hp-hr		Other Case-by-Case	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	DIESEL EMERGENCY GENERATORS - UNITS CC009 THRU CC015 AT CITY CENTER	3622 hp	VOC	0.14	g/hp-hr		Other Case-by-Case	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
NV-0050	MGM MIRAGE	NV	11/30/2009	EMERGENCY GENERATORS - UNITS LX024 AND LX025 AT LUXOR	2206 hp	VOC	0.14	g/hp-hr		Other Case-by-Case	TURBOCHARGER AND GOOD COMBUSTION PRACTICES
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	EMERGENCY DIESEL POWER GENERATOR ENGINES (2)	1341 hp EACH	CO	0.21	g/hp-hr	MAXIMUN (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	FIRE WATER DIESEL PUMPS (3)	575 hp EACH	CO	0.29	g/hp-hr	MAXIMUM (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	EMERGENCY DIESEL POWER GENERATOR ENGINES (2)	1341 hp EACH	NOx	5.78	g/hp-hr	MAXIMUM (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	FIRE WATER DIESEL PUMPS (3)	575 hp EACH	NOx	4.75	g/hp-hr	MAXIMUM (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	EMERGENCY DIESEL POWER GENERATOR ENGINES (2)	1341 hp EACH	PM10 (Total)	0.02	g/hp-hr	MAXIMUM (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
LA-0231	LAKE CHARLES GASIFICATION FACILITY	LA	6/22/2009	FIRE WATER DIESEL PUMPS (3)	575 hp EACH	PM10 (Total)	0.06	g/hp-hr	MAXIMUM (EACH)	BACT-PSD	COMPLY WITH 40 CFR 60 SUBPART IIII
NH-0015	CONCORD STEAM CORPORATION	NH	2/27/2009	EMERGENCY GENERATOR 2	11.6 MMBtu/hr	NOx	1.98	lb/MMBtu	AVERAGE OF 3 1-HOUR TEST RUNS	LAER	OPERATES LESS THAN 500 HOURS PER CONSECUTIVE 12 MONTH PERIOD.
NH-0015	CONCORD STEAM CORPORATION	NH	2/27/2009	EMRGENCY GENERATOR 1	5.6 MMBtu/hr	NOx	1.98	lb/MMBtu	AVERAGE OF 3 1-HOUR TEST RUNS	LAER	LESS THAN 500 HOURS OF OPERATION PER CONSECUTIVE 12 MONTH PERIOD
SC-0115	GP CLARENDON LP	SC	2/10/2009	DIESEL EMERGENCY GENERATOR	1400 hp	NOx	3.7	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	DIESEL EMERGENCY GENERATOR	1400 hp	CO	0.98	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	FIRE WATER DIESEL PUMP	525 hp	CO	1.1	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	FIRE WATER DIESEL PUMP	525 hp	NOx	5.1	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	DIESEL EMERGENCY GENERATOR	1400 hp	PM (Total)	0.08	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	FIRE WATER DIESEL PUMP	525 hp	PM (Total)	0.35	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	DIESEL EMERGENCY GENERATOR	1400 hp	PM10 (Filterable)	0.06	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.

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RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
SC-0115	GP CLARENDON LP	SC	2/10/2009	FIRE WATER DIESEL PUMP	525 hp	PM10 (Filterable)	0.35	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	DIESEL EMERGENCY GENERATOR	1400 hp	VOC	0.1	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0115	GP CLARENDON LP	SC	2/10/2009	FIRE WATER DIESEL PUMP	525 hp	VOC	0.41	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY DIESEL GENERATOR (2200 hp)	2200 hp	NOx	4.77	g/hp-hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY FIRE PUMP (267-hp DIESEL)	267 hp	CO	2.6	g/hp-hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY DIESEL GENERATOR (2200 hp)	2200 hp	PM10 (Total)	0.15	g/hp-hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY FIRE PUMP (267-hp DIESEL)	267 hp	PM10 (Total)	0.41	g/hp-hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY DIESEL GENERATOR (2200 hp)	2200 hp	VOC	0.32	g/hp-hr		BACT-PSD	GOOD COMBUSTION
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY FIRE PUMP (267-hp DIESEL)	267 hp	VOC	1.12	g/hp-hr		BACT-PSD	GOOD COMBUSTION
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY DIESEL GENERATOR (2200 hp)	2200 hp	CO	2.61	g/hp-hr		BACT-PSD	
OK-0129	CHOUTEAU POWER PLANT	OK	1/23/2009	EMERGENCY FIRE PUMP (267-hp DIESEL)	267 hp	NOx	7.8	g/hp-hr		BACT-PSD	
FL-0310	SHADY HILLS GENERATING STATION	FL	1/12/2009	2.5 MW EMERGENCY GENERATOR	2.5 MW	NOx	6.9	g/hp-hr	3 ONE HOUR TESTS	BACT-PSD	PURCHASE MODEL IS AT LEAST AS STRINGENT AS THE BACT VALUES, UNDER EPA CERTIFICATION.
FL-0310	SHADY HILLS GENERATING STATION	FL	1/12/2009	2.5 MW EMERGENCY GENERATOR	2.5 MW	PM10 (Total)	0.4	g/hp-hr	NA /RECORDKEEPING	BACT-PSD	FIRING ULSO WITH A MAXIMUM SULFUR CONTENT OF 0.0015% BY WEIGHT AND A MAXIMUM HOURS OF OPERATION OF 500 HOUR/YR.
FL-0310	SHADY HILLS GENERATING STATION	FL	1/12/2009	2.5 MW EMERGENCY GENERATOR	2.5 MW	PM10 (Total)	0.4	g/hp-hr	NA /RECORDKEEPING	BACT-PSD	FIRING ULSO WITH A MAXIMUM SULFUR CONTENT OF 0.0015% BY WEIGHT AND A MAXIMUM HOURS OF OPERATION OF 500 HOUR/YR.
FL-0310	SHADY HILLS GENERATING STATION	FL	1/12/2009	2.5 MW EMERGENCY GENERATOR	2.5 MW	CO	8.5	g/hp-hr	3 ONE HOUR TESTS	BACT-PSD	PURCHASED MODEL IS AT LEAST AS STRINGENT AS THE BACT VALUES UNDER EPA'S CERTIFICATION.
SC-0114	GP ALLENDALE LP	SC	11/25/2008	DIESEL EMERGENCY GENERATOR	1400 hp	NOx	3.7	g/hp-hr		BACT-PSD	
SC-0114	GP ALLENDALE LP	SC	11/25/2008	DIESEL EMERGENCY GENERATOR	1400 hp	CO	0.98	g/hp-hr		BACT-PSD	
SC-0114	GP ALLENDALE LP	SC	11/25/2008	FIRE WATER DIESEL PUMP	525 hp	CO	1.1	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0114	GP ALLENDALE LP	SC	11/25/2008	FIRE WATER DIESEL PUMP	525 hp	NOx	5.1	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0114	GP ALLENDALE LP	SC	11/25/2008	DIESEL EMERGENCY GENERATOR	1400 hp	PM (Total)	0.08	g/hp-hr		BACT-PSD	
SC-0114	GP ALLENDALE LP	SC	11/25/2008	FIRE WATER DIESEL PUMP	525 hp	PM (Total)	0.35	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
SC-0114	GP ALLENDALE LP	SC	11/25/2008	DIESEL EMERGENCY GENERATOR	1400 hp	PM10 (Filterable)	0.06	g/hp-hr		BACT-PSD	
SC-0114	GP ALLENDALE LP	SC	11/25/2008	FIRE WATER DIESEL PUMP	525 hp	PM10 (Filterable)	0.35	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
SC-0114	GP ALLENDALE LP	SC	11/25/2008	DIESEL EMERGENCY GENERATOR	1400 hp	VOC	0.1	g/hp-hr		BACT-PSD	
SC-0114	GP ALLENDALE LP	SC	11/25/2008	FIRE WATER DIESEL PUMP	525 hp	VOC	0.41	g/hp-hr		BACT-PSD	TUNE-UPS AND INSPECTIONS WILL BE PERFORMED AS OUTLINED IN THE GOOD MANAGEMENT PRACTICE PLAN.
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	EMERGENCY GENERATOR	2922 hp	NOx	4.11	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES, GOOD ENGINE DESIGN, IGNITION TIMING RETARD, TURBOCHARGER, AND LOW-TEMPERATURE AFTERCOOLER
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	EMERGENCY GENERATOR	2922 hp	CO	2.36	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	FIRE PUMP ENGINES (2)	300 hp	CO	2.6	g/hp-hr	FOR EACH ENGINE	BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	FIRE PUMP ENGINES (2)	300 hp	NOx	7.39	g/hp-hr	FOR EACH ENGINE	BACT-PSD	GOOD COMBUSTION PRACTICES, GOOD ENGINE DESIGN, IGNITION TIMING RETARD, TURBOCHARGER, AND LOW-TEMPERATURE AFTERCOOLER
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	EMERGENCY GENERATOR	2922 hp	PM10 (Filterable)	0.14	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	FIRE PUMP ENGINES (2)	300 hp	PM10 (Filterable)	0.41	g/hp-hr	FOR EACH ENGINE	BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	EMERGENCY GENERATOR	2922 hp	VOC	0.22	g/hp-hr		BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
OH-0317	OHIO RIVER CLEAN FUELS, LLC	OH	11/20/2008	FIRE PUMP ENGINES (2)	300 hp	VOC	0.39	g/hp-hr	FOR EACH ENGINE	BACT-PSD	GOOD COMBUSTION PRACTICES AND GOOD ENGINE DESIGN
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	FIRE PUMP ENGINE	575 hp	NOx	2.91	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	EMERGENCY GENERATOR	700 kW	NOx	4.62	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	FIRE PUMP ENGINE	575 hp	CO	2.61	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	EMERGENCY GENERATOR	700 kW	CO	2.61	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	EMERGENCY GENERATOR	700 kW	PM	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	FIRE PUMP ENGINE	575 hp	PM	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	EMERGENCY GENERATOR	700 kW	PM10 (Filterable)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	FIRE PUMP ENGINE	575 hp	PM10 (Filterable)	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	EMERGENCY GENERATOR	700 kW	VOC	0.15	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
IA-0095	TATE & LYLE INDGREDIENTS AMERICAS, INC.	IA	9/19/2008	FIRE PUMP ENGINE	575 hp	VOC	0.07	g/hp-hr	AVERAGE OF 3 STACK TEST RUNS	BACT-PSD	
OK-0128	MID AMERICAN STEEL ROLLING MILL	OK	9/8/2008	Emergency Generator	1200 hp	CO	2.49	g/hp-hr		BACT-PSD	
OK-0128	MID AMERICAN STEEL ROLLING MILL	OK	9/8/2008	Emergency Generator	1200 hp	NOx	5.9	g/hp-hr		BACT-PSD	500 hours per year operations
OK-0128	MID AMERICAN STEEL ROLLING MILL	OK	9/8/2008	Emergency Generator	1200 hp	PM10 (Total)	0.32	g/hp-hr		BACT-PSD	

Facility Information			Process Information			Emission Limits				Notes	
RBLCID	FACILITY	STATE	PERMIT DATE	PROCESS NAME	THROUGHPUT	POLLUTANT	EMISSION LIMITS	EMISSION RATE UNITS	TIME AVG CONDITION	METHOD	CONTROL METHOD
OK-0128	MID AMERICAN STEEL ROLLING MILL	OK	9/8/2008	Emergency Generator	1200 hp	VOC	0.29	g/hp-hr		BACT-PSD	
NY-0101	CORNELL COMBINED HEAT & POWER PROJECT	NY	3/12/2008	EMERGENCY DIESEL GENERATORS (2)	1000 kW	PM	0.06	g/hp-hr	1 HOUR	BACT-PSD	ULTRA LOW SULFUR DIESEL AT 15 PPM S.
NY-0101	CORNELL COMBINED HEAT & POWER PROJECT	NY	3/12/2008	EMERGENCY DIESEL GENERATORS (2)	1000 kW	PM10 (Filterable)	0.06	g/hp-hr	1 HOUR	BACT-PSD	ULTRA LOW SULFUR DIESEL AT 15 PPM S
NY-0101	CORNELL COMBINED HEAT & POWER PROJECT	NY	3/12/2008	EMERGENCY DIESEL GENERATORS (2)	1000 kW	PM2.5 (Filterable)	0.06	g/hp-hr	1 HOUR	BACT-PSD	ULTRA LOW SULFUR DIESEL AT 15 PPM S
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	EMERGENCY GENERATOR	1750 kW	CO	2.49	g/hp-hr	3 HOUR	BACT-PSD	
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	EMERGENCY GENERATOR	1750 kW	NOx	10.89	g/hp-hr	3 HOUR	BACT-PSD	
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	EMERGENCY GENERATOR	1750 kW	PM	0.32	g/hp-hr	3 HOUR	BACT-PSD	
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	EMERGENCY GENERATOR	1750 kW	PM10 (Filterable)	0.18	g/hp-hr	3 HOUR	BACT-PSD	
MN-0071	FAIRBAULT ENERGY PARK	MN	6/5/2007	EMERGENCY GENERATOR	1750 kW	VOC	0.32	g/hp-hr	3 HOUR	BACT-PSD	

Appendix C – GHG BACT Supplement

GHG BACT Supplement
Estimated Cost-Effectiveness of
Carbon Capture and Sequestration (CCS) on
Proposed Combined-Cycle Power Plant
ESC Brooke County Power I, LLC

ESC Brooke County Power I, LLC (ESC) has evaluated the economic feasibility of Carbon Capture and Sequestration (CCS) for combustion sources at the proposed facility. ESC maintains that there are significant technical and economic feasibility challenges with implementing CCS technology at the facility. Nevertheless, ESC is quantitatively evaluating cost-effectiveness of CCS as a hypothetical BACT option.

CCS involves three (3) categories of technologies used to achieve the physical capture and storage of carbon dioxide (CO_2) produced from stationary sources:

(1) Separation and capture of CO_2 from flue gas;
(2) Pressurization and transport to a storage site; and
(3) Injection and long-term storage or sequestration of the CO_2 captured.

Separation and Capture

Despite some of the challenges associated with CCS, CO_2 emissions from combustion sources theoretically can be separated and captured through post-combustion methods. However, because the air used for combustion contains over 75% nitrogen, the CO_2 concentration in the exhaust gases is only about 5%, depending on the amount of excess air and the carbon content of the fuel, making it costly and energy intensive to capture.

To implement CCS, ESC would need to install an amine-based scrubbing system and associated compressors. This is the most mature technology potentially available for CCS. As part of developing a cost estimate for CCS, ESC used cost information from a U.S. Department of Energy (US DOE)-National Energy Technology Laboratory (NETL) study from 2010 to determine the capital cost of such an amine scrubbing system and its associated compressors.

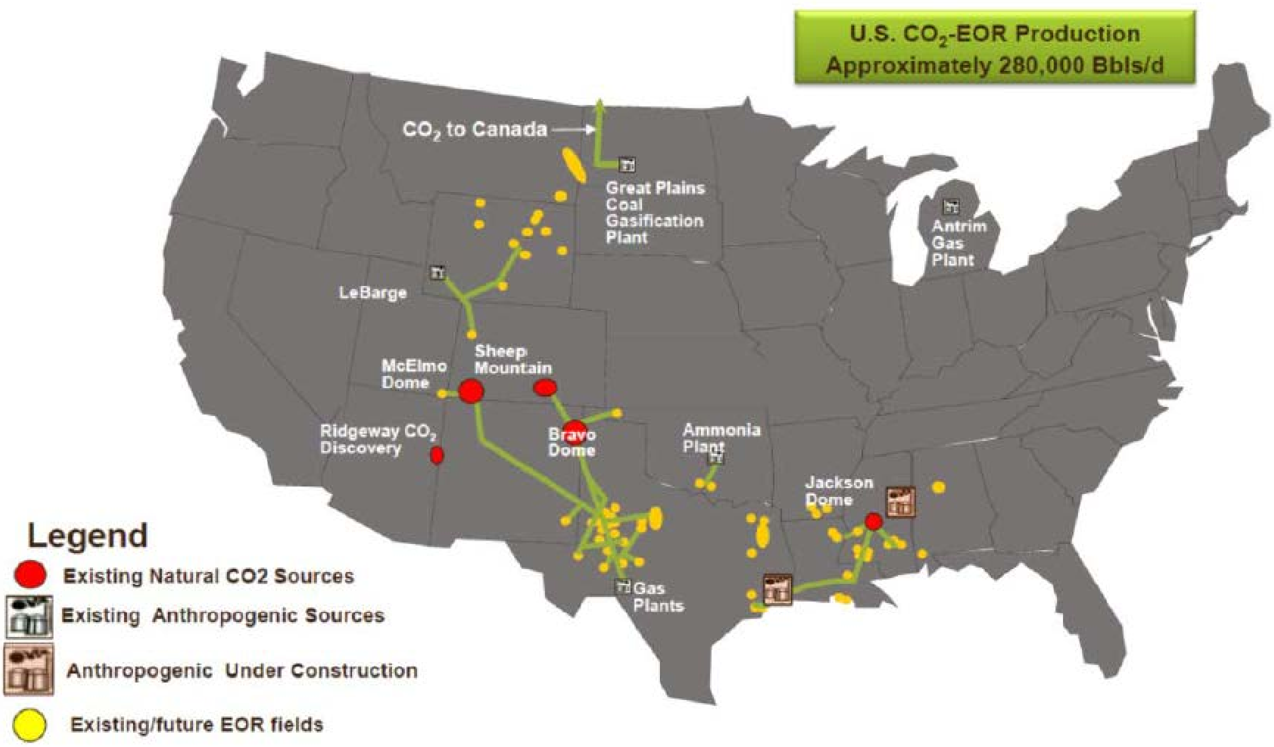
Pressurization and Transport

Currently, because there is no local customer or use for captured CO_2 near the project site, ESC requires off-site CO_2 sequestration, involving utilization of a CO_2 pipeline in order to transport CO_2 to distant geologic formations that are conducive to sequestration. Building such a pipeline for dedicated use by a single facility will almost certainly make any project economically infeasible.

However, such an option may be effective if adequate storage capacities exist, and if reasonable transportation prices can be arranged with a pipeline operator.

As shown in **Figure 1** below, obtained from a June 2013 Eastern Interconnection States' Planning Council (EISPC) report produced for the US DOE[1], no CO_2 pipelines exist in the eastern United States. The closest existing CO_2 transport pipeline to ESC is located in Mississippi, roughly 950 miles from the project site. Although building an approximately 1,000 mile pipeline is a technically feasible option for CO_2 transport, it would be cost prohibitive and would be expected to lead to increased CO_2 emissions because of the additional compression required to transport the captured CO_2 over such a large distance. Aside from the direct costs, such a pipeline project would likely face major permitting challenges. If permitting of such a line was even possible, it would take years to permit and construct.

Figure 1 Map of Existing CO_2 Transport Pipelines (June 2013)



[1] ICF Incorporated. Current State and Future Direction of Coal-fired Power in the Eastern Interconnection. Rep. N.p.: Eastern Interconnection States' Planning Council, n.d.

Geological Sequestration

Dedicated geological sequestration of CO_2 requires close proximity to a favorable geologic formation. ESC used the US DOE-NETL National Carbon Sequestration Database and Geographic Information System (NATCARB) to identify the nearest geologic carbon sequestration site that may be suitable for the project. **Table 2** below shows the DOE-NETL estimates of CO_2 storage resources from geological formations by State[2].

Table 2 CO_2 Storage Resource Estimates, Million Tons

State	Oil and Gas Reservoir Storage Resources	Unmineable Coal Storage Resource		Saline Formation Storage Resource		Total Storage Resource	
		Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
KY	66	143	243	1,488	10,329	1,698	1,0637
MD	- - -	- - -	- - -	794	3,263	794	3,263
OH	11,111	121	165	4,398	17,604	15,631	28,881
PA	3,384	254	364	7,628	30,501	11,266	34,249
VA	55	231	959	- - -	- - -	287	1,014
WV	2,028	342	496	- - -	- - -	7,319	22,300
United States	137,150	65,367	130,789	1,777,808	22,199,106	1,980,324	22,467,045

Table 2 shows that West Virginia and surrounding states have identified potentially viable CO_2 geologic storage resources in oil and gas fields, deep coal seams (> 2,400 feet), and saline aquifers. Development of these sites is in its infancy. Additional significant research and testing would be required to develop and regulate these sites for large-scale use by a CO_2 emitter such as ESC[3]. The nearest test site that is undergoing small-scale validation testing was identified as a coal seam in Russell County, Virginia. Costs to implement CCS include constructing a 12-inch diameter, 250-mile long pipeline to deliver the compressed CO_2 to this potential site.

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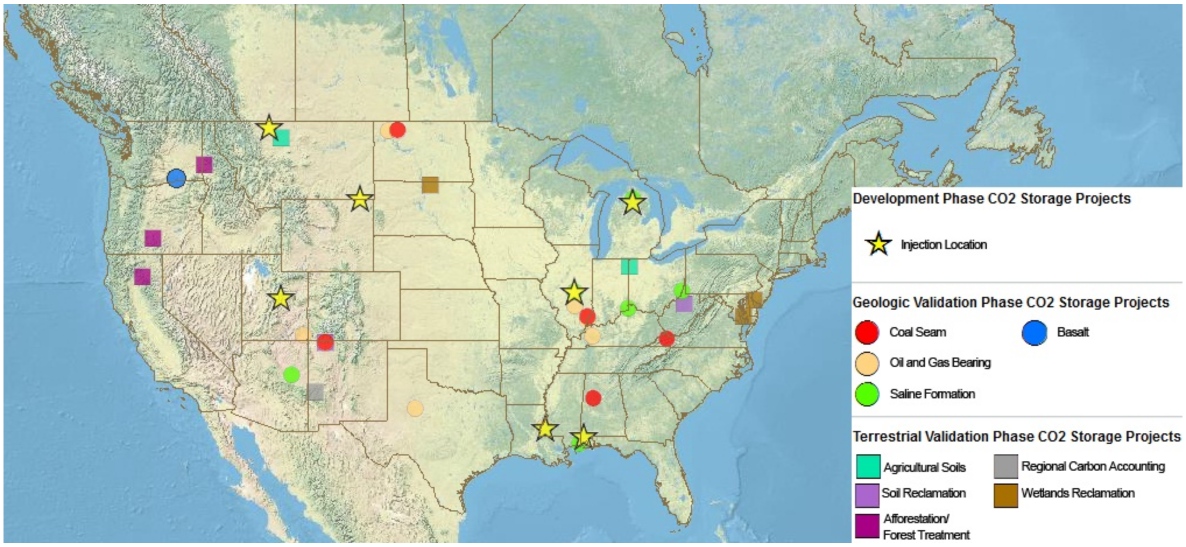
[2] The North American Carbon Storage Atlas, 1st Edition, NETL, 2012.

[3] West Virginia Carbon Capture and Storage Opportunities Associated with Potential Locations for Coal-to-Liquid Facilities. Carr et al., 2009.

A map of the DOE-NETL NATCARB[4] carbon sequestration test sites is provided in **Figure 2** below.

Figure 2 NATCARB CO_2 Storage Projects



A 12-inch pipe is conservatively small and likely underestimates the costs for constructing the pipeline. Further, the cost-effectiveness estimate is conservatively low as the estimate does not include compressor stations which would likely be needed to transport the gases over this distance. Additionally, for this cost-effectiveness estimate, no allowance was provided for mitigation of the likely substantial ecological and social impacts of building a new pipeline over such a large distance.

Based on the analysis above and due to the fact that there are no suitable CO_2 storage locations or existing transport pipelines close to the project site, the use of add-on controls for carbon sequestration is considered to be technically infeasible.

Cost-Effectiveness Analysis

For the cost-effectiveness analysis, the estimated costs for CCS were, again, divided into three (3) categories:

(1) Post-combustion capture and compression costs;
(2) Pipeline costs; and

[4] NATCARB, USDOE - NETL, http://www.netl.doe.gov/research/coal/carbon-storage/carbon-storage-natcarb. 04 Feb. 2014.

(3) Geological storage costs.

In a U.S. Environmental Protection Agency (EPA) Prevention of Significant Deterioration (PSD) permit proceeding for the City of Palmdale, (Palmdale)[5], the U.S. Environmental Appeals Board (EAB) noted that, particularly in the context of CCS, when evaluating the economic impacts of greenhouse gas (GHG) control strategies, "it may be appropriate in some cases to assess the cost effectiveness of a control option in a less detailed quantitative (or even qualitative) manner." Although the following analysis is quantitative in many respects, it does rely on certain assumptions. These assumptions are appropriate and conservative and certainly sufficient given the EAB guidance on these assessments.

Capital cost values for post-combustion capture and compression were taken from the US DOE Interagency Task Force report on CCS[6], which were conservatively estimated at approximately $103 per ton of CO_2 captured. Capital costs for post-combustion capture and compression ranged from $54 to $103 per ton of CO_2 captured, where the higher value was associated with new natural gas-fired combined-cycle units. Annual operation and maintenance (O&M) and fuel costs for the post-combustion capture and compression system were adapted from costs derived for similar systems on electric generating units found in a US DOE report for Fossil Energy Plants[7]. For the capital and O&M costs related to the required pipeline and geologic storage of CO_2, methodology developed by the NETL[8] was used based on the estimated pipeline length, pipeline diameter, and sequestration formation depth. Additional details for the cost-effectiveness calculations are shown in **Table 4**.

EPA typically uses a dollar per ton removed ($/ton removed) basis when evaluating the cost-effectiveness of pollution control devices. ESC believes that, in addition to a per ton removed basis, it is appropriate to compare the cost to install CCS against the total project cost. In the Palmdale[9] case, the Region argued that evaluating CCS using a "price comparison approach was consistent with" the GHG Permitting Guidance. The EAB upheld the Region's

[5] *In re City of Palmdale, PSD Appeal No. 11-07, slip op. at 56-60 (EAB Sept. 17, 2012), 15 E.A.D. ___ (Palmdale Hybrid Power Project)* 2) (citing EPA, EPA-457/B-11-001, *PSD and Title V Permitting Guidance for Greenhouse Gases* at 42 (Mar. 2011) (the "GHG Permitting Guidance").

[6] Report of the Interagency Task Force on Carbon Capture and Storage, US DOE, August 2010.

[7] Cost and Performance Baseline For Fossil Energy Plants, Volume 1: Bituminous and Natural Gas to Electricity, DOE/2010/1397, Revision 2, November 2010.

[8] Estimating Carbon Dioxide Transport and Storage Costs, DOE/NETL-2010/1447, March 2013.

[9] *In re: City of Palmdale (Palmdale Hybrid Power Project)*, PSD Appeal No. 11-07 (E.A.B. Sept. 17, 2012). Id. at 55.

determination that CCS was cost prohibitive because the "cost of CCS would be so high - twice the annual cost of the entire project."

Enhanced oil recovery (EOR) was considered in the economic analysis of CCS, but no value was included in the economic analysis for CCS for the sale of CO_2. Currently, there is not a significant market for CO_2 for EOR in the region in which the proposed project is located. As such, it is ESC's opinion that EOR in the region has no economic value. Further, it is beyond the scope of the business purpose for this project to become contractually obligated to provide CO_2 for commercial purposes, including EOR.

ESC's cost-effectiveness analysis does not account for tax credits associated with CCS. Since 2008, the IRS has provided a tax credit for two (2) types of CO_2 sequestration. A credit of $20 per ton may be taken for CO_2 sequestered in secure geological storage[10]. A $10 per ton credit is available for CO_2 used as a tertiary injectant in a qualified EOR or natural gas recovery project[11]. This tax credit is capped and ceases to be available once credits have been claimed for sequestering 75,000,000 tons of CO_2[12]. As of May 2013, credits have already been claimed for the sequestration of 20,858,926 tons of CO_2[13]. ESC expects that as new plants come on-line that will implement CCS, such as the planned integrated gasification combined cycle plants in the Southeast and Midwest, these tax credits will not be available, and thus are not considered in this cost analysis for CCS. It is extremely speculative to consider whether Congress will extend these tax credits in the future.

The results of the cost-effectiveness analysis for CCS are shown in **Table 3** below. Additional details for the cost-effectiveness calculations are shown in **Table 4**.

[10] 26 U.S.C. 45Q(a)(1).
[11] 26 U.S.C. 45Q(a)(2).
[12] 26 U.S.C. 45Q(e); see also IRS Notice 2009-83 ("… at such time as the Service certifies, in consultation with the EPA, that 75,000,000 metric tons of qualified CO_2 have been taken into account for purposes of 45Q credit, the Service will publicly announce that the 45Q credit will cease to be available for the calendar year following such announcement.").
[13] IRS Notice 2013-34.

Table 3 Carbon Capture and Sequestration Cost-Effectiveness

Parameter	Cost Estimate (2013 US Dollars)
Capital Cost	$595,380,199
Annual O&M Costs	$84,991,809
Capital Recovery[1]	$56,199,680
Total Annualized Cost	$141,191,489
Total CO_2 Controlled (TPY)[2]	3,019,572
CO_2 Cost-Effectiveness ($/ton removed)	$47

[1] Capital recovery based on economic life of 20 years for equipment and 7% interest rate.
[2] Assumes 90% of CO_2 emissions are captured and controlled from ESC's proposed combustion sources.

The above assessment would not be changed even in the unlikely event that CCS tax credits were available at the time of project implementation. Based on the conservatively estimated capital cost for CCS that exceeds 80% of the estimated capital cost for the project[14] as well as the calculated cost-effectiveness of $47/ton CO_2 reduced, the use of CCS as an add-on control for GHG emissions is not considered cost-effective and therefore is not BACT.

[14] The estimated capital cost of the project is $710 million, based on a nominal plant output of 750 MW, and an installed capital cost of $947/kW. The installed capital cost was obtained from a report called "Cost of New Entry Estimates for Combustion Turbine and Combined Cycle Plants in PJM" specifically, Table 1 "Cost of New Entry Estimates for Combustion Turbine and Combined Cycle Plants in PJM" lists $947/kW as the installed capital cost in the RTO region of PJM.

Table 4

Brooke County Power I, LLC

Estimated Cost-Effectiveness of Carbon Capture and Sequestration (CCS)

Post-Combustion CO_2 Capture and Compression		
Potential CO_2 Emissions (tons/yr)	Based on Brooke County Power air permit application, 2016	3,355,080
Expected Capture Efficiency	90%	90%
CO_2 Captured (tons)	90% CO_2 captured	3,019,572

Post-Combustion CO_2 Capture and Compression		
Base Capital [(1)]	$103.42/ton CO2 captured	$350,128,816
Annual O&M [(2)]	$7.54/ton CO2 captured	$25,522,292
Annual Fuel [(3), (4)]	14.7% incremental fuel use at $2.77/MMBtu	$19,610,037

Pipeline Cost Breakdown [(5)]		
L, Pipeline Length (miles) [(6)]		250
D, Pipeline Diameter (inches)		12
Pipeline Costs		
Materials	$64,632 + $1.85 x L x (330.5 x D^2 + 686.7 x D + 26,960)	$43,004,746
Labor	$341,627 + $1.85 x L x (343.2 x D^2 + 2074 x D + 170,013)	$127,076,932
Miscellaneous	$150,166 + $1.58 x L x (8,417 x D + 7,234)	$48,104,014
Right of Way	$48,037 + $1.20 x L x (577 x D + 29,788)	$12,402,269
Other Capital		
CO_2 Surge Tank	Fixed ($1,150,636)	$1,290,089
Pipeline Control System	Fixed ($110,632)	$124,040
O&M		
Fixed O&M ($/yr)	$8,632 x L	$2,419,542

Geologic Storage Costs [(5)]		
Number of Injection Wells		2
Well Depth (m)	Depth of formation[(7)]	1,825
Capital		
Site Screening and Evaluation	Fixed ($4,738,488)	$5,561,960
Injection Wells	$240,714 x $e^{0.0008 \text{ x Well Depth}}$	$1,162,126
Injection Equipment	$94029 x $(7,839/(280 \text{ x Number of Injection Wells}))^{0.5}$	$394,439
Liability Bond	Fixed ($5,000,000)	$5,000,000
Declining Capital Funds		
Pore Space Acquisition	$0.334/short ton CO2	$1,130,768
O&M		
Normal Annual Expenses	$11,566/day x Number Injection Wells x 365 day/yr	$9,466,464
Consumables	$2,995/yr/ton CO_2/day	$27,779,927
Surface Maintenance	$23,478 x $(7,839/(280 \text{ x Number of Injection Wells}))^{0.5}$	$98,487
Subsurface Maintenance	$7.08/ft-depth x Number of Injection Wells	$95,059

Annualized Cost Estimate	
Economic Life, years	20
Interest Rate (%)	7
Capital Costs	$595,380,199
Annual O&M Costs	$84,991,809
Capital Recovery	$56,199,680
Total Annualized Cost	$141,191,489
Total CO_2 Controlled (tons/yr)	3,019,572
CO_2 Cost-Effectiveness ($/ton removed)	$47
CO_2 Cost Effectiveness ($/kWh) [(8)]	0.023

[(1)] Adapted from the DOE "Report of the Interagency Task Force on Carbon Capture and Storage" August 2010. Capital costs adjusted using the ENR Construction Cost Index to 2015 dollars.

114.00	Cost of CO2 avoided, $/tonne CO2, based on DOE Interagency CCS Task Force - 2010 - for New NGCC, per DOE Document Figure A-9, page A-14.
0.91	ton/tonne conversion factor
103.42	Cost of CO2 avoided, $/ton CO2, based on DOE Interagency CCS Task Force - 2010 - for New NGCC, per DOE Document Figure A-9, page A-14.

[(2)] Adapted from Cost and Performance Baseline For Fossil Energy Plants, Volume 1: Bituminous and Natural Gas to Electricity, DOE/2010/1397 (Revision 2, November 2010). O&M costs adjusted using the ENR Construction Cost Index to 2015 dollars.

7.54	Annual O&M Costs, $/ton CO2 Captured, based on Cost and Performance Baseline for Fossil Energy Plants Volume 1: Bituminous Coal and Natural Gas to Electricity

[(3)] Fuel costs represent the additional fuel necessary to compensate for parasitic load caused by the addition of CCS. Based on review of review of the plant heat rates used in Case 13 and 14 presented in Cost and Performance Baseline For Fossil Energy Plants, Volume 1: Bituminous and Natural Gas to Electricity, DOE/2010/1397 (Revision 2, November 2010), CCS imposes a 14.7% increase in the plant heat rate; therefore, 14.7% more fuel is necessary to meet plant output. That amount of output needs to come from somewhere, and is assumed to be equivalent to the cost of fuel.

[(4)] Annual based on firing duty from Combustion Turbines/Duct Burners (2.38E+07 MMBtu/yr*2) and Auxiliary Boiler 512,140 MMBtu/yr) and Fuel Gas Heater (47,288 MMBtu/yr).

[(5)] Pipeline and Geologic Storage cost estimates based on National Energy Technology Laboratory (US DOE) document, *Estimating Carbon Dioxide Transport and Storage Costs* , DOE/NETL-2010/1447 (March 2010). Costs adjusted using the ENR Construction Cost Index to 2015 dollars.

[(6)] Estimated distance, in miles from Brooke County, WV to potential CCS site at a coal seam located near Russell County, VA.

[(7)] Average depth of targeted coal seams per SECARB's Central Appalachian Coal Seam Project "Summary of Field Test Site and Operations".

[(8)] Based on a plant nameplate capacity of 750 MW * Installed capital cost * 8,760 hr/yr. The installed capital cost was obtained from a report called “Cost of New Entry Estimates for Combustion Turbine and Combined Cycle Plants in PJM” specifically, Table 1 “Cost of New Entry Estimates for Combustion Turbine and Combined Cycle Plants in PJM" lists $947/kW as the installed capital cost in the RTO region of PJM.

Appendix D – Comparison of GHG Emission Rates and Heat Rates for Combustion Turbines

ESC Brooke County Power I LLC
Comparison of GHG Emission Rates and Heat Rates for Combustion Turbines

Project Information		Turbine Information		Other Information	
Facility	**Location**	**Type**	**Size/Configuration**	**GHG Emission Rate**	**Heat Rate (Btu/kW-hr)**
Proposed Project (Combined-Cycle)					
ESC Brooke County Power I, LLC	Brooke County, WV	General Electric 7HA.01	Two combined-cycle combustion turbines, with a nominal plant nominal gross electrical generating capacity of 750 MW.	735.66 lb CO_2/MW-hr, Gross, 52.4°F, NG Firing, Combined-Cycle 823.89 lb CO_2e/MW-hr, Gross, 52.4°F, Ethane Firing, Combined-Cycle	6,450 Btu/kW-hr HHV, Gross, 52.4°F, NG Firing, Combined-Cycle 6,476 Btu/kW-hr HHV, Gross, 52.4, Ethane Firing, Combined-Cycle
Adopted Regulations					
40 CFR Part 60 (NSPS) Subpart TTTT Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units (as adopted 8/3/2015)			New combined-cycle trains > 25 MW; existing units and simple-cycle trains are not affected	1,000 lb CO_2/MW-hr (gross output, 12-operating month annual average, firing greater than 90% natural gas)	
Projects with Simple-Cycle Combustion Turbines					
Moundsville Power LLC	Moundsville, WV	General Electric 7FA.04	188.5 MW, Gross, 59°F	792 lb CO2e/MW-hr, Gross, 59°F, NG Firing, Combined-Cycle	6,418 Btu/kW-hr HHV 59°F, NG Firing, Combined-Cycle
ExTex LaPorte LP Mountain Creek SES	Dallas County, TX	Siemens SGT6-5000F(4) or equivalent	201.2 MW gross, ISO	1,169 lb CO_2e/MW-hr, 12-month rolling average	10,001 (12-month rolling average) 9,620 (Base load/ISO)
El Paso Electric Company Montana Power Station	East El Paso County, TX	General Electric LMS100	100 MW each; simple-cycle; 400 MW total	277,840 tons/yr CO_2e for each of the 4 turbines (365-day rolling average)	9,299
Cheyenne Prairie Generating Station Black Hills Corporation	Cheyenne, WY	General Electric LM6000 PF Sprint	Site-wide 220 MW	187,318 tons/yr CO_2e per turbine	N/A
			2 combined-cycle turbines	1,600 lb CO2 per MW-hr, (12-month rolling average)	
			3 simple-cycle turbines	1,100 lb CO2 per MW-hr, (12-month rolling average)	
Puget Sound Energy Fredonia Generating Station Expansion Project	Fredonia, WA	Four turbine options	Simple-cycle with number of units required to achieve about 200 MW increase	Based on "worst cased emissions"	N/A
		General Electric 7FA.05	207 MW each	1,299 lb CO_2e/MW-hr	
		General Electric 7FA.04	181 MW each	1.310 lb CO_2e/MW-hr	
		Siemens SGT6-5000F4	197 MW each	1,278 lb CO_2e/MW-hr	
		General Electric LMS100	197 MW each	1,138 lb CO_2e/MW-hr	

ESC Brooke County Power I LLC
Comparison of GHG Emission Rates and Heat Rates for Combustion Turbines

Project Information		Turbine Information		Other Information	
Facility	**Location**	**Type**	**Size/Configuration**	**GHG Emission Rate**	**Heat Rate (Btu/kW-hr)**
Projects with Combined-Cycle Combustion Turbines					
Lower Colorado River Authority Thomas G. Ferguson Plant	Llano, TX	General Electric 7FA	195 MW each; 590 MW for 2-2-1 combined-cycle configuration	0.459 ton CO_2 /net MW-hr (918 lb CO_2/net MW-hr) (365-day rolling average)	7,720 (365-day rolling average), without duct firing
Coronado Ventures La Paloma Energy Center, LLC	Harlingen, TX	Three options	Combined-cycle with 271 MW steam turbine in 2x2x1 configuration	918.5 lb CO_2/MW-hr	7,720 (365-day rolling average), without duct firing
		General Electric 7FA	183 MW each		
		Siemens SGT6-5000F(4)	205 MW each		
		Siemens SGT6-5000F(5)	232 MW each		
Calpine Corporation Channel Energy Center, LLC	Pasadena, TX	Siemens 501F (FD3)	180 MW combined-cycle with 475 MMBtu/hr duct burner	918.5 lb CO_2/MW-hr	7,730, without duct firing
Calpine/Bechtel Joint Development Russell City Energy Center	Hayward, CA	Siemens-Westinghouse 501FD3	2,038.6 MMBtu/hr each; 200 MMBtu/hr duct burners; 2 combined-cycle trains	119.0 lb CO_2e/MMBtu	7,730, without duct firing
Palmdale Hybrid Power Project	Palmdale, CA	General Electric 7FA	154 MW each; 2x2x1 combined-cycle with 267 MW steam turbine	774 lb CO_2 /net MW-hr (site-wide average) 117 lb CO_2/MMBtu (30-day average for each turbine)	6,970
Cricket Valley Energy Center	Dover, NY	General Electric 7FA.05	Three combined-cycle units with 596.8 MMBtu/hr duct burners	3,576,943 tons CO_2e maximum: emissions from 3 combined-cycle units (12-month rolling average)	7,605, without duct firing
Pioneer Valley Energy Center	Westfield, MA	Not specified	431 MW combined-cycle unit	N/A	6,840, without duct firing
PacifiCorp Energy Lake Side 2 Project	UT	Siemens 501F (FD3)	180 MW combined-cycle with 475 MMBtu/hr duct burner	950 lb CO_2e per MW-hr (12-month rolling average)	N/A
Gateway Cogeneration 1, LLC Smart Water Project	Prince George, VA	N/A	Combined-cycle	N/A	8,983
Sevier Power Company Sevier Power Project	UT	Two natural gas fired combined-cycle combustion turbines with heat recovery steam generators	580 MW (expected generating capacity)	2,019,226 tons CO2e (12-month rolling average)	N/A
Newark Energy Center Project	Newark, NJ	GE F class natural gas fired combined-cycle combustion turbines	655 MW (plant)	1,030,168 tons CO2 per turbine (12-month rolling average)	6,005, without duct firing
Old Bridge Clean Energy Center	Old Bridge, Middlesex County, NJ	700 MW natural gas-fired combined-cycle power plant	N/A	950 lb CO2e/MW-hr (12-month rolling average) 121.521 lb CO2e/MMBtu	N/A
Christian County Generation LLC	Taylorville, IL	F-class combustion turbine (either Siemens or GE); Two combined-cycle combustion turbines firing either SNG or pipeline natural gas	Two combustion turbines and the plant have nominal gross electrical generating capacity of 716 MW; Nominal net electrical generating capacity of 602 MW	2,307,110 tons/yr CO_2e (12-month rolling average) 1,201 lb CO_2/MW-hr	N/A

Appendix E – Air Permit Application Forms

Table of Contents

APPLICATION FOR NSR PERMIT

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ATTACHMENT B	LOCATION MAP
ATTACHMENT C	SCHEDULE OF CHANGES
ATTACHMENT D	REGULATORY DISCUSSION
ATTACHMENT E	PLOT PLAN
ATTACHMENT F	DETAILED PROCESS FLOW DIAGRAMS
ATTACHMENT G	PROCESS DESCRIPTION
ATTACHMENT H	MATERIAL SAFETY DATA SHEETS
ATTACHMENT I	EQUIPMENT UNITS TABLE
ATTACHMENT J	EMISSION POINTS DATA SUMMARY SHEET
ATTACHMENT K	FUGITIVE EMISSIONS DATA SUMMARY SHEET
ATTACHMENT L	EMISSIONS UNIT DATA SHEETS
ATTACHMENT M	AIR POLLUTION CONTROL DEVICE SHEETS
ATTACHMENT N	SUPPORTING EMISSIONS CALCULATIONS
ATTACHMENT O	MONITORING, REPORTING, & RECORDKEEPING PLANS
ATTACHMENT P	AIR QUALITY PERMIT NOTICE
ATTACHMENT Q	BUSINESS CONFIDENTIAL CLAIMS
ATTACHMENT R	AUTHORITY FORMS
ATTACHMENT S	TITLE V PERMIT

APPLICATION FOR NSR PERMIT

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☒ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office)*:
   ESC Brooke County Power I, LLC

2. Federal Employer ID No. ***(FEIN):*** **47-3574538**

3. Name of facility *(if different from above)*:

4. The applicant is the: ☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
333 Ganson Street
Buffalo, NY 14202

5B. Facility's present physical address:

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**
– If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
– If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
– If **YES,** please explain: **Option to buy**
– If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.):
   Electric Power Generation Unit

10. North American Industry Classification System **(NAICS)** code for the facility:
   221112

11A. DAQ Plant ID No. (for existing facilities only): –

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
N/A

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From WV State Rt 2, Turn right onto Archer Hill Road, Arrive at site.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
Archer Hill Road **Follansbee, WV 26037**	**Follansbee**	**Brooke**
12.E. UTM Northing (KM): **4,466.6157**	12F. UTM Easting (KM): **534.0966**	12G. UTM Zone: **17**

13. Briefly describe the proposed change(s) at the facility:
Construction of an electric power generation facility

14A. Provide the date of anticipated installation or change: **9 / 01 / 2017**
- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /

14B. Date of anticipated Start-Up if a permit is granted: **01 / 01 / 2020**

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day **24** Days Per Week **7** Weeks Per Year **52**

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known)*. A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known)*. Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☒ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☒ Storage Tanks
☒ General Emission Unit, specify **Cooling Tower**

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☒ Other Collectors, specify **SCR, Oxidation Catalyst**

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ **If YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Partnership
☐ Authority of Governmental Agency
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE ______________________ *(Please use blue ink)* DATE: 2/11/16 *(Please use blue ink)*

35B. Printed name of signee: **Jon Williams**		35C. Title: **Managing Member**
35D. E-mail: **jmwilliams@oscinc.com**	36E. Phone: **(716) 856-3333**	36F. FAX: **(888) 983-5443**
36A. Printed name of contact person (if different from above):		36B. Title:
36C. E-mail:	36D. Phone:	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☒ **Attachment Q: Business Confidential Claims**
- ☒ **Attachment R: Authority Forms**
- ☒ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A
BUSINESS CERTIFICATE

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

ESC BROOKE COUNTY POWER I, LLC

Control Number: 9A9NX

a limited liability company, organized under the laws of the State of Delaware

has filed its "Application for Certificate of Authority" in my office according to the provisions of West Virginia Code §31B-10-1002. I hereby declare the organization to be registered as a foreign limited liability company from its effective date of April 7, 2015, until a certificate of cancellation is filed with our office.

Therefore, I hereby issue this

CERTIFICATE OF AUTHORITY OF A FOREIGN LIMITED LIABILITY COMPANY

to the limited liability company authorizing it to transact business in West Virginia

Given under my hand and the Great Seal of the State of West Virginia on this day of April 7, 2015

Secretary of State

Natalie E. Tennant
West Virginia Secretary of State
1900 Kanawha Blvd. East
Bldg. 1, Suite 157-K
Charleston, WV 25305

FILED
APR 07 2015
IN THE OFFICE OF
WV SECRETARY OF STATE

Penney Barker, Manager
Business & Licensing Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsos.com
E-mail: business@wvsos.com

Office Hours: Monday - Friday
8:30 a.m. - 5:00 p.m. EST

FILE ONE ORIGINAL
(Two if you want a filed stamped copy returned to you.)

FILING FEE: $150

WEST VIRGINIA APPLICATION FOR CERTIFICATE OF AUTHORITY OF LIMITED LIABILITY COMPANY

Control # 9AAQNX

***** The undersigned, having authority to transact business on behalf of a foreign (out-of-state) registered entity, agrees to *** comply with the requirements of West Virginia Code §31B-10-1002 to apply for Certificate of Authority.**

1. The name of the **limited liability company** as registered in its home state: ESC BROOKE COUNTY POWER I, LLC

   and the **State** or **Country** of organization is: DELAWARE

   [X] **CHECK HERE to indicate you have obtained and submitted with this application a CERTIFICATE OF EXISTENCE (GOOD STANDING), dated during the current tax year, from your home state of original formation as required to process your application. The certificate may be obtained by contacting the Secretary of State's Office in the home state of original formation.**

2. The **business name** to be used in West Virginia will be: [**The name must contain one of the required terms** such as "limited liability company" or abbreviations such as "LLC" or "PLLC." See instructions for complete list of acceptable terms and requirements for use of Trade Name.]

   [X] **Home State name as listed in Section 1. above,** if available in West Virginia
   (If name is not available, check **DBA Name** box below and follow special instructions in **Section 2.** attached.)

   [ ] **DBA Name** __________
   (See special instructions in **Section 2.** regarding the **Letter of Resolution** attached to this application. Click here to see a sample Letter of Resolution.)

3. The **company will be a:** [See instructions for limitations on professions which may form P.L.L.C. in WV. All members must have WV professional license. See (*) note at the right.]

   [ ] **regular LLC**
   [ ] **Professional LLC*** for the profession of: __________
   * In most cases, a **Letter of Authorization/Approval from the appropriate State Licensing Board** is required to process the application. See attached instructions.

4. The **address** of the **principal office** of the company will be:

   Street: 360 Delaware Ave., Ste. 406
   City: Buffalo State: NY Zip Code: 14202

   Located in the **County** of (required): County: Erie

   The **mailing address** of the above location, **if different,** will be:

   Street: NONE
   City: ____ State: ____ Zip Code: ____

5. The **address** of the initial **designated** (physical) office of the company in West Virginia, if any, will be:

   Street: NONE
   City: ____ State: ____ Zip Code: ____

   Located in the **County** of: County: ____

RECEIVED
APR 07 2015

5. (*Continued from previous page....*)

The **mailing address** of the above location, if different, will be:

Street: ______

City: ______ State: ______ Zip Code: ______

6. **Agent of Process:** may be sent, if any, will be:

Name: Corporate Creations Network Inc.

Street: 5400-D Big Tyler Road

City: Charleston State: WV Zip Code: 25313

7. **E-mail address** where business correspondence may be received: mdorn@moundsville-power.com

8. **Website address** of the business, if any (*ex: yourdomainname.com*): ______

9. Do you own or operate more than one business in West Virginia? [X] **Yes** ** Answer a. and b. below.* [ ] **No** [ ] **Decline to answer**

If "Yes"... a. How many businesses? ______ b. Located in how many West Virginia counties? ______

10. The company is: (required)
[X] an **AT-WILL** company, conducting business for an indefinite period.
[ ] a **TERM** company, conducting business for the term of ______ years.

11. The company is: (required)
[X] **MEMBER**-MANAGED [List the names and addresses of all **members** below.]
[ ] **MANAGER**-MANAGED [List the names and addresses of all **managers** below.]

List the **name(s) and address(es) of the Member(s)/Manager(s)** of the company (required; attach additional pages if necessary):

Name	No. & Street Address	City	State	Zip Code
Energy Solutions				
Consortium Holdings, LLC	360 Delaware Ave., Ste. 406	Buffalo	NY	14202

12. All or specified members of a limited liability company are **liable in their capacity as members** for all or specified debts, obligations or liabilities of the company (required):
[X] **No** - All debts, obligations and liabilities are those of the company.
[ ] **Yes** - Those persons who are liable in their capacity as members for all debts, obligations or liability of the company have consented in writing to the adoption of the provision or to be bound by the provision.

13. The **purpose(s)** for which this limited liability company is formed is as follows:
[Describe the type(s) of business activity which will be conducted, for example, "real estate," "construction of residential and commercial buildings," "commercial painting," "professional practice of law" (see **Section 2.** for acceptable "professional" business activities). Purpose may conclude with words "...including the transaction of any or all lawful business for which corporations may be incorporated in West Virginia."]

holding company

14. Is the business a **Scrap Metal Dealer**?

[ ] **Yes** [If "Yes," you must complete the **Scrap Metal Dealer Registration Form** (Form SMD-1) and proceed to Section 15.]
[X] **No** [Proceed to Section 15.]

15. Other provisions which may be set forth in the operating agreement or matters not inconsistent with law:
[See instructions for further information; use extra pages if necessary.]

16. The number of pages attached and included in these Articles is: 3

17. The **requested effective date** is:
[Requested date ***may not be earlier than filing nor later than 90 days after filing in our office.***]

☒ the **date and time of filing** in the Secretary of State's Office.

☐ the following date ______ and time ______ .

18. **Contact and Signature Information*** (See below ***Important Legal Notice Regarding Signature***):

a. Contact person to reach in case there is a problem with filing: Deborah E. Kalstek, Paralegal Phone: 716-848-1371

b. Print or type name of signer: Matthew J. Dorn Title/Capacity of signer: VP Finance of LLC

c. **Signature:** [signature] **Date:** 4/5/15

****Important Legal Notice Regarding Signature:*** Per West Virginia Code §31B-2-209. **Penalty for signing false document.** Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

Important Note: This form is a public document. Please **do NOT provide any personal identifiable information on this form** such as social security number, bank account numbers, credit card numbers, tax identification or driver's license numbers.

Reset Form Print Form

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "ESC BROOKE COUNTY POWER I, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE SIXTH DAY OF APRIL, A.D. 2015.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "ESC BROOKE COUNTY POWER I, LLC" WAS FORMED ON THE TWENTY-FOURTH DAY OF FEBRUARY, A.D. 2015.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

SECRETARY OF STATE — 1776 — DELAWARE — 1970

Jeffrey W. Bullock, Secretary of State

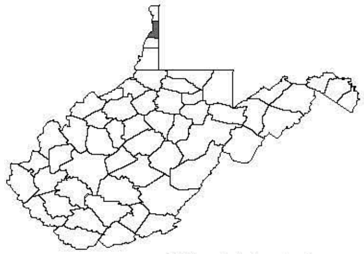
5698884 8300

AUTHENTICATION: 2266167

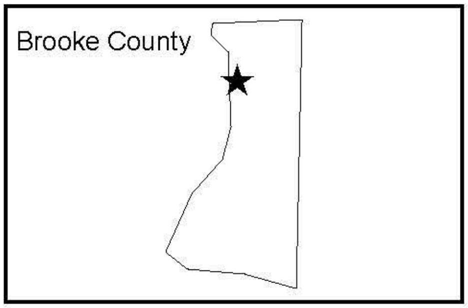
150472635

DATE: 04-06-15

ATTACHMENT B
LOCATION MAP



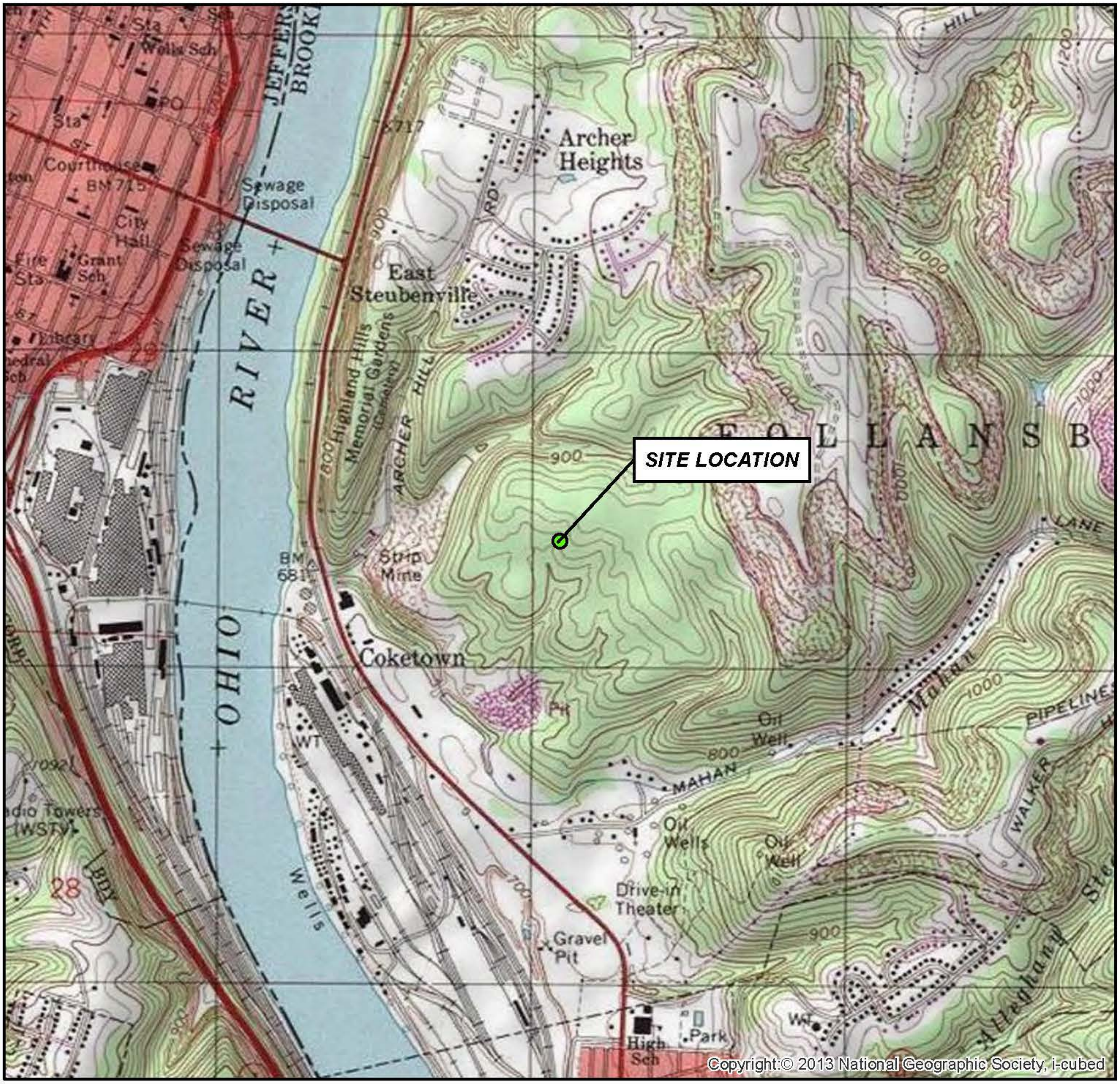
West Virginia



0 1,000 2,000 4,000
Feet

N

LAT. 40.3494 LON. -80.5985
BROOKE COUNTY
WEST VIRGINIA



USGS 1:24K 7.5' Quadrangle:
Steubenville East, WV

SITE LOCATION MAP

ERM	Energy Solutions Consortium Brooke County West Virginia	GIS Review: CHK'D: 0303734
Drawn By: SRV-7/27/15	**Environmental Resources Management**	FIGURE 1

J:\GIS\Projects\SiteLocationMaps\Energy Solutions Consortium ESC_MXD\Site_Location_Map_BrookeWV.mxd - 7/27/2015|SRV

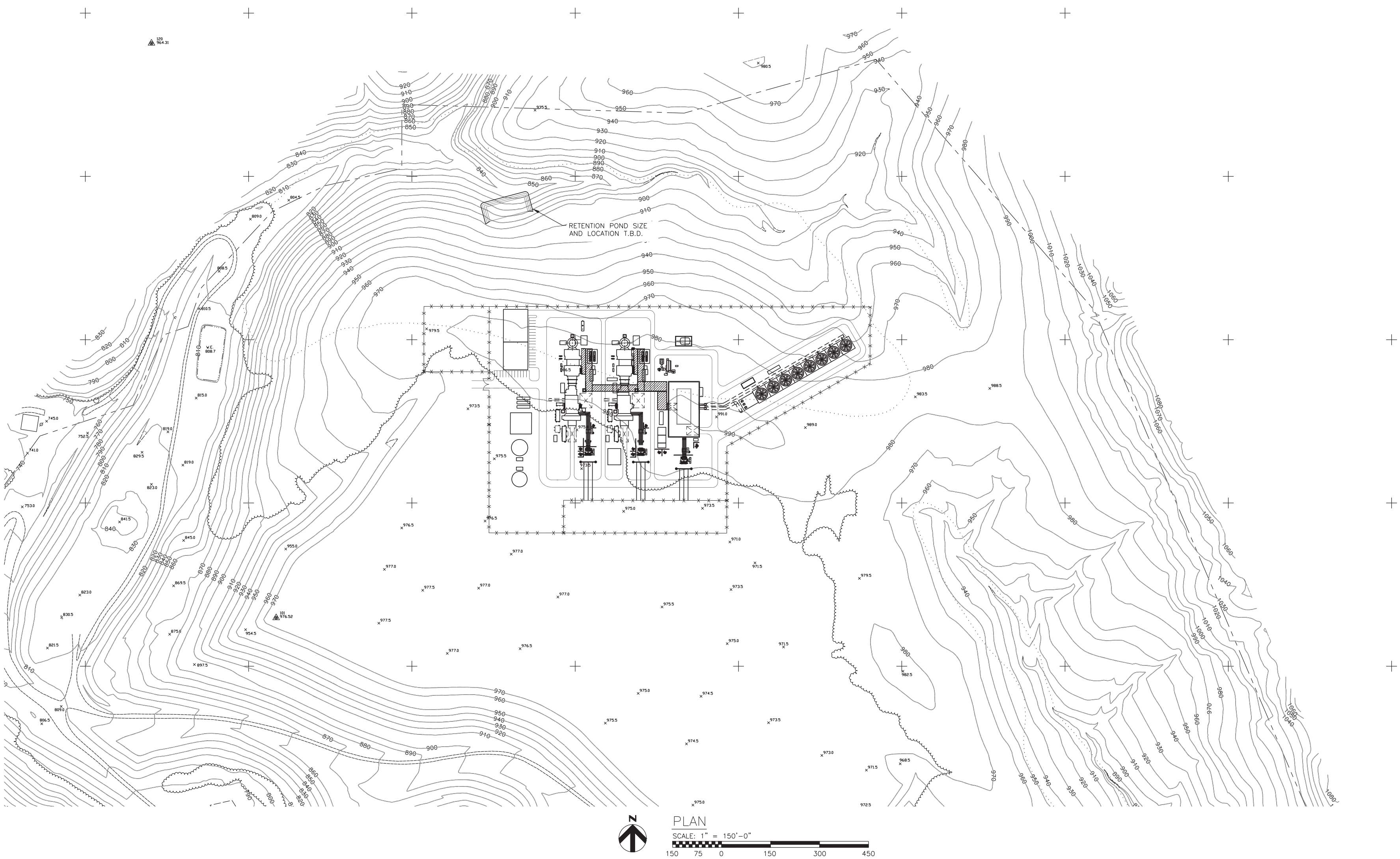
ATTACHMENT C
SCHEDULE OF INSTALLATION AND START-UP

ESC Brooke County Power I, LLC has tentatively scheduled to begin construction related activities during the fall of 2016. Final installation of equipment and start-up of the facility is tentatively scheduled for the second quarter of 2020. This schedule may vary depending on actual delivery of equipment, unforeseen construction delays, etc.

ATTACHMENT D
REGULATORY DISCUSSION

The Plant will be designed and operated in accordance with applicable state and federal regulations. Regulations potentially impacting the proposed Plant are further discussed in the permit application package. Specifically, Section 3.4 provides a detailed applicability analysis of the federal Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT) requirements; Section 3.6.1 addresses federal requirements including New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAPs); and Section 3.6.2 contains the applicable West Virginia state requirements.

ATTACHMENT E
PLOT PLAN



NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	DRAWN	ENGINEER	CHECKED	APPROVED
B	09/11/15	REVISED PER CLIENT COMMENTS	J_B	MSH	JAC	JWB
A	08/28/15	PRELIMINARY	KWS			

ENERGY SOLUTIONS CONSORTIUM, LLC.

GENERAL ARRANGEMENT BROOKE SITE PLAN

OPTION 2

FILENAME SKC-202.DWG

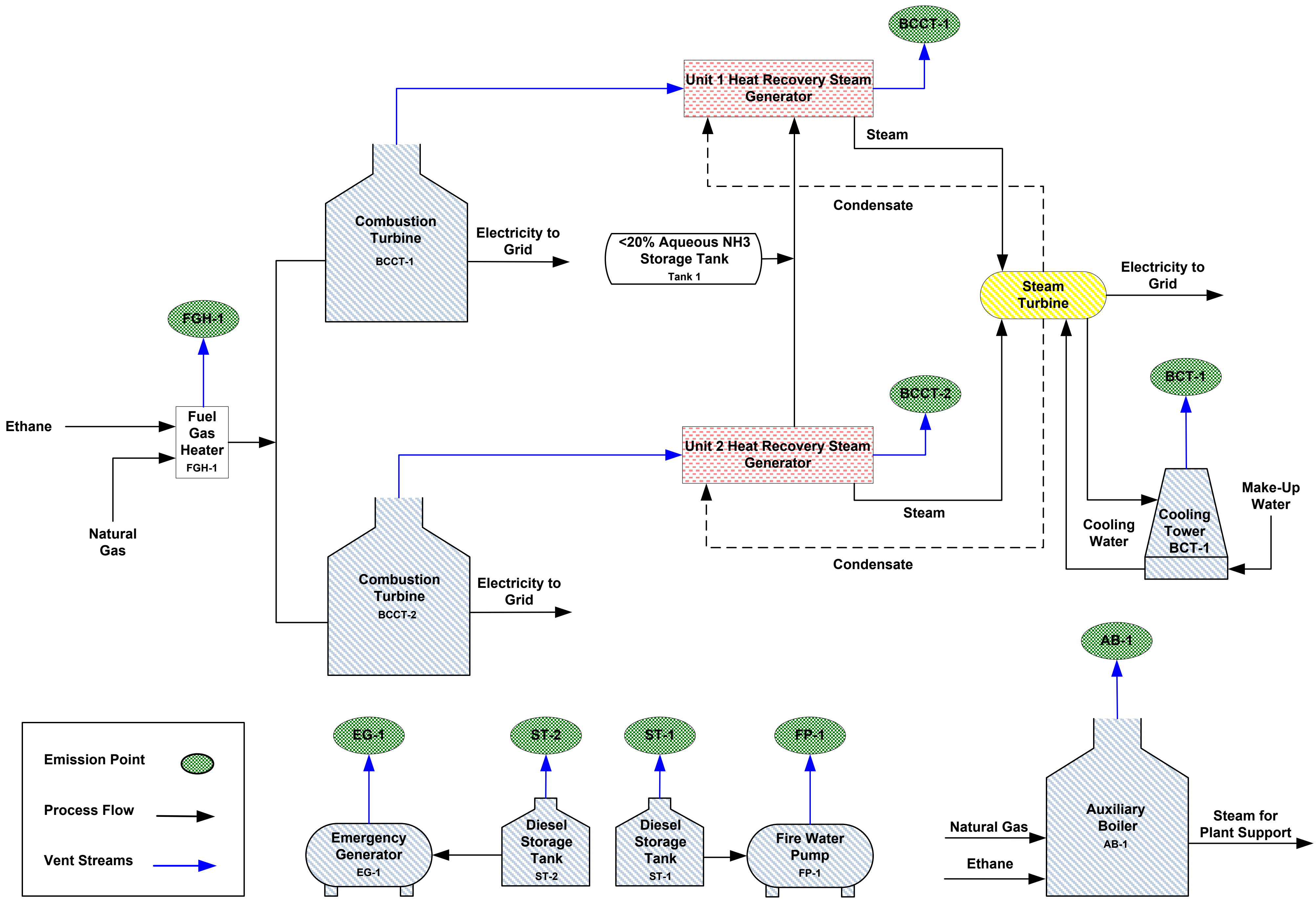
SCALE 1"=150'-0"

SHEET SKC-202

ATTACHMENT F
DETAILED PROCESS FLOW DIAGRAM

Attachment F

Process Flow Diagram



ATTACHMENT G
PROCESS DESCRIPTION

Attachment G

Process Description

The ESC Brooke County Power I, LLC will generate approximately 750 megawatts (MW)[1] of electricity that will be sold on the Pennsylvania-New Jersey-Maryland Interconnection LLC (PJM) regional electric grid. Natural gas used by the plant's combustion turbines will be purchased from local suppliers, and will take advantage of the gas produced in nearby natural gas shale plays. In addition, the combustion turbines may fire a blend of natural gas with up to 100% ethane.

Electricity will be generated using two (2) combined-cycle combustion turbines (BCCT-1 and BCCT-2) each with a design heat input rating of 2,715.4 million Btu per hour (MMBtu/hr)[2]. Electricity generated by the combustion turbines will be routed through a local electrical substation and sold on the grid.

To enhance the plant's overall efficiency and increase the amount of electric generated by the plant, the hot exhaust gases from each combustion turbine will be routed to a downstream Heat Recovery Steam Generator (HRSG). The HRSGs contain a series of heat exchangers designed to recover the heat from the turbines' exhaust gas and produce steam, as in a boiler. Cooled exhaust gas passing through the HRSGs will be vented to the atmosphere through emission points BCCT-1 and BCCT-2. The Selective Catalytic Reduction (SCR) and Oxidation Catalyst control devices used to reduce NO_x and CO emissions from the combustion turbines will be incorporated into the HRSGs, at locations where the emission control reactions optimally occur.

[1] Plant output varies by several factors, including ambient temperature, relative humidity, fuel, load level, whether the evaporative cooling systems are in use, etc. 867.715 MW is the expected plant output at a 26.2 ˚F ambient temperature design condition, 74.1% relative humidity, with both combustion turbines operating at base load, firing ethane, and with the evaporative cooling systems off.

[2] Combustion turbine output and heat input vary by several factors, including ambient temperature, relative humidity, fuel, load level, whether the evaporative cooling systems are in use, etc. 2,907 MMBtu/hr is the expected heat input for a single combustion turbine at a -20 ˚F ambient temperature design condition, 80% relative humidity, at base load, firing ethane, and with the evaporative cooling system off.

The SCRs involve the injection of aqueous ammonia (NH_3) with a concentration of less than 20% by weight into the combustion turbine exhaust gas streams. Ammonia reacts with NO_x in the exhaust gas stream, reducing it to elemental nitrogen (N_2) and water vapor (H_2O). The aqueous ammonia will be stored on-site in one (1) storage tank, with a capacity of 35,000 gallons. The aqueous ammonia storage tank will not normally vent to the atmosphere. It will be equipped with pressure relief valves that would only vent in the event of an emergency. The Oxidation Catalysts do not require the use of chemical reagents.

Steam generated in the HRSGs will be routed to a steam driven electric generator. This generator will produce additional electricity that will be sold on the grid. Electricity generated by the two (2) combustion turbines and the single steam generator represent the plant's total electrical output.

Water from the plant's wet, mechanical draft Cooling Tower will be used to cool the steam driven electric generator. Make-up water will be added to the Cooling Tower as necessary to account for water evaporated in the Cooling Tower. Exhaust from the Cooling Tower will be vented through emission point BCT-1. Steam condensate from the steam generator will be routed back to the HRSGs for reuse in the steam cycle.

Support equipment will also be used by the plant to assist with facility operations. A 111.9 MMBtu/hr Auxiliary Boiler (AB-1) will be used to produce steam for plant support. A 5.4 MMBtu/hr Fuel Gas Heater (FGH-1) will be used to preheat the gaseous fuel received by the plant. In addition, a 2,000 kW (approximately 2,682 hp) Emergency Generator (EG-1) will be used for emergency backup electric power, and a 315 hp Fire Water Pump (FP-1) will be used for plant fire protection. Both the Emergency Generator and the Fire Water Pump will run on ultra low sulfur diesel (USLD) fuel, and will be periodically operated for short periods per manufacturer's maintenance instructions to ensure operational readiness in the event of an emergency. The ULSD fuel will be stored in two (2) small storage tanks; the 500-gallon (nominal) Fire Water Pump Tank (ST-1), and the 3,000-gallon (nominal) Emergency Generator Tank (ST-2).

ATTACHMENT H
MSDS

For informational purposes, attached are typical Material Safety Data Sheets (MSDS) for natural gas and ethane. Chemical compositions included in these MSDS may vary depending on vendor supply, and were not used in determining maximum emission rates.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

NATURAL GAS - SWEET

Company Identification
Appalachian/Michigan Business Unit
Chevron North America Exploration and Production Company (a division of Chevron U.S.A. Inc.)
1550 Coraopolis Heights Road
Moon Township, PA 15108
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Product Information: (412) 865-3408

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Methane	74-82-8	< 88 %weight
Ethane	74-84-0	< 31 %weight
Propane	74-98-6	< 18 %weight
Butane	106-97-8	< 6 %weight
Carbon dioxide	124-38-9	< 6 %weight
Nitrogen	7727-37-9	< 3 %weight
Benzene	71-43-2	< 2.5 %weight

SECTION 3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

- FLAMMABLE GAS. MAY CAUSE FLASH FIRE
- CONTENTS UNDER PRESSURE
- NO ODORANT ADDED; DETECTION OF LEAK VIA SENSE OF SMELL MAY NOT BE POSSIBLE
- MAY CAUSE DIZZINESS, DROWSINESS AND REDUCED ALERTNESS
- MAY CAUSE CANCER
- CONTAINS MATERIAL THAT MAY CAUSE DAMAGE TO:
- BLOOD/BLOOD FORMING ORGANS

- REDUCES OXYGEN AVAILABLE FOR BREATHING
****

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Material is a gas and cannot usually be swallowed.
Inhalation: This material can act as a simple asphyxiant by displacement of air. Symptoms of asphyxiation may include rapid breathing, incoordination, rapid fatigue, excessive salivation, disorientation, headache, nausea, and vomiting. Convulsions, loss of consciousness, coma, and/or death may occur if exposure to high concentrations continues. Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death. If this material is heated, fumes may be unpleasant and produce nausea and irritation of the eye and upper respiratory tract.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: This material is not expected to cause adverse reproductive effects based on animal data.This material is not expected to cause harm to the unborn child based on animal data.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Blood/Blood Forming Organs
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required because this material is a gas.
Inhalation: During an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

SECTION 5 FIRE FIGHTING MEASURES

SPECIAL NOTES: In case of fire do not extinguish. Stop flow of fuel and allow fire to burn out.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Flammable gas.

NFPA RATINGS: Health: 1 Flammability: 4 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: -162 °C (-260 °F) (Typical)
Autoignition: 482 °C - 632 °C (900 °F - 1170 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 3.8 Upper: 17

EXTINGUISHING MEDIA: Allow gas to burn if flow cannot be shut off safely. Apply water from a safe distance to cool container, surrounding equipment and structures. Container areas exposed to direct flame contact should be cooled with large quantities of water (500 gallons water per minute flame impingement exposure) to prevent weakening of container structure.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: Do not extinguish. Stop flow of fuel and allow fire to burn out. If flames are accidentally extinguished, explosive reignition may occur. Eliminate ignition sources. Keep people away. Isolate fire area and deny unnecessary entry. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. For unignited vapor cloud, use water spray to knock down and control dispersion of vapors. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out and danger of reignition has passed. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of released gas. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. For large releases, warn public of downwind explosion hazard.
Spill Management: Stop the source of the release if you can do it without risk. Observe precautions in Exposure Controls/Personal Protection section of the MSDS. All equipment used when handling the product must be grounded. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Do not direct water at spill or source of leak. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: This material presents a fire hazard. Gas can catch fire and burn with explosive force. Invisible gas spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Gases are heavier than air and may travel along the ground or into drains to possible distant ignition sources that may cause an explosive flashback. Do not breathe gas. Wash thoroughly after handling.
Unusual Handling Hazards: This product does not contain an odorant. Detection of leak via sense of smell, therefore, may not be possible.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API)

Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use. When working with this material, the minimal oxygen content should be 19.5% by volume under normal atmospheric pressure.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits. Use in a well-ventilated area. Use explosion-proof ventilation equipment.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Nitrile Rubber, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Supplied-Air Respirator, or Air-Purifying Respirator for Organic Vapors.
Wear an approved positive pressure air-supplying respirator unless ventilation or other engineering controls are adequate to maintain a minimal oxygen content of 19.5% by volume under normal atmospheric pressure.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin
Benzene	CVX	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Butane	ACGIH	1000 ppm (weight)	--	--	--
Carbon dioxide	ACGIH	5000 ppm (weight)	30000 ppm (weight)	--	--
Carbon dioxide	OSHA Z-1	9000 mg/m3	--	--	--

Ethane	ACGIH	1000 ppm (weight)	--	--	--
Methane	ACGIH	1000 ppm (weight)	--	--	--
Nitrogen	ACGIH	--	--	--	Simple asphyxiant.
Propane	ACGIH	1000 ppm (weight)	--	--	--
Propane	OSHA Z-1	1800 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless
Physical State: Gas
Odor: Odorless
pH: Not Applicable
Vapor Pressure: 760 mmHg
Vapor Density (Air = 1): No data available
Boiling Point: -162°C (-259.6°F)
Solubility: Insoluble in water.
Freezing Point: No data available
Melting Point: -184°C (-299.2°F)
Specific Gravity: 0.57
Density: No data available
Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: Carbon Dioxide (Elevated temperatures), Carbon Monoxide (Elevated temperatures)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Ethane	ACGIH	1000 ppm (weight)	--	--	--
Methane	ACGIH	1000 ppm (weight)	--	--	--
Nitrogen	ACGIH	--	--	--	Simple asphyxiant.
Propane	ACGIH	1000 ppm (weight)	--	--	--
Propane	OSHA Z-1	1800 mg/m3	--	--	--

Consult local authorities for appropriate values.

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Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains butane. An atmospheric concentration of 100,000 ppm (10%) butane is not noticeably irritating to the eyes, nose or respiratory tract, but will produce slight dizziness in a few minutes of exposure. No chronic systemic effect has been reported from occupational exposure.

This product contains benzene.
GENETIC TOXICITY/CANCER: Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.
OCCUPATIONAL: The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure level. Refer to the OSHA Standard before using this product.

This product may contain detectable but varying quantities of the naturally occurring radioactive substance radon 222. The amount in the gas itself is not hazardous, but since radon rapidly decays (t1/2 = 3.82days) to form other radioactive elements including lead 210, polonium 210, and bismuth 210, equipment may contain radioactivity. The radon decay products are solids and therefore may attach to dust particles or form films and sludges in equipment. Inhalation, ingestion or skin contact with radon decay products can lead to the deposit (or presence) of radioactive material in the respiratory tract, bone, blood forming organs, intestinal tract, and kidney, which may lead to certain cancers. The International Agency for Research on Cancer (IARC) has classified radon as a Group 1 carcinogen. Some studies of people occupationally exposed to radiation indicate an increased incidence of chromosomal aberrations; the clinical significance of this increase is unknown. Risks can be minimized by following good industrial and personal hygiene practices noted in the section on storage and handling.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN1971, NATURAL GAS, COMPRESSED, 2.1 ADDITIONAL INFORMATION - RQ (BENZENE) FOR SINGLE PACKAGES CONTAINING GREATER THAN OR EQUAL TO 10 LBS AND CONCENTRATION OF 200 PPM

IMO/IMDG Shipping Description: UN1971, NATURAL GAS, COMPRESSED, 2.1

ICAO/IATA Shipping Description: UN1971, NATURAL GAS, COMPRESSED, 2.1

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: YES
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1, 02, 04, 05, 06, 07
Butane	05, 06, 07
Carbon dioxide	05, 06, 07
Ethane	05, 06, 07
Methane	05, 06, 07
Nitrogen	05, 06, 07
Propane	05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	400 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 4 Reactivity: 0

HMIS RATINGS: Health: 1* Flammability: 4 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2, 3, 4, 5, 6, 7, 8, 12, 15
Revision Date: NOVEMBER 01, 2011

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet

Ethane

Section 1. Chemical product and company identification

Product name : Ethane

Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Product use : Synthetic/Analytical chemistry.

Synonym : Bimethyl; Dimethyl; Ethyl hydride; Methylmethane; C2H6; UN 1035; UN 1961

MSDS # : 001024

Date of Preparation/Revision : **4/26/2010.**

In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Gas. [COLORLESS LIQUEFIED COMPRESSED GAS WITH A MILD GASOLINE-LIKE ODOR.]

Emergency overview : WARNING!

GAS:
CONTENTS UNDER PRESURE.
Extremely flammable.
May cause flash fire.
Do not puncture or incinerate container.
Can cause rapid suffocation.
May cause severe frostbite.
LIQUID:
Extremely flammable.
Extremely cold liquid and gas under pressure.
Can cause rapid suffocation.
May cause severe frostbite.

Keep away from heat, sparks and flame. Do not puncture or incinerate container. Use only with adequate ventilation. Keep container closed.

Contact with rapidly expanding gases or liquids can cause frostbite.

Routes of entry : Inhalation

Potential acute health effects

Eyes : Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Skin : Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Inhalation : Acts as a simple asphyxiant.

Ingestion : Ingestion is not a normal route of exposure for gases. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Potential chronic health effects : **CARCINOGENIC EFFECTS**: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Ethane	74-84-0	100	**ACGIH TLV (United States, 1/2009).** TWA: 1000 ppm 8 hour(s).

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training.If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product : Flammable.

Auto-ignition temperature : 530°C (986°F)

Flash point : Closed cup: -135.15°C (-211.3°F).

Flammable limits : Lower: 3% Upper: 12.5%

Products of combustion : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Fire hazards in the presence of various substances : Extremely flammable in the presence of the following materials or conditions: oxidizing materials.

Fire-fighting media and instructions : In case of fire, use water spray (fog), foam or dry chemical.

In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.

Storage : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).
For additional information concerning storage and handling refer to Compressed Gas Association pamphlets P-1 Safe Handling of Compressed Gases in Containers and P-12 Safe Handling of Cryogenic Liquids available from the Compressed Gas Association, Inc.

Section 8. Exposure controls/personal protection

Engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

When working with cryogenic liquids, wear a full face shield.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Insulated gloves suitable for low temperatures

Personal protection in case of a large spill : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name	
ethane	**ACGIH TLV (United States, 1/2009).** TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	:	30.08 g/mole
Molecular formula	:	C2-H6
Boiling/condensation point	:	-88.2°C (-126.8°F)
Melting/freezing point	:	-172.2°C (-278°F)
Critical temperature	:	32.4°C (90.3°F)
Vapor pressure	:	543 (psig)
Vapor density	:	1.1 (Air = 1) Liquid Density: BP@34.1 lb/ft3 (546 kg/m3)
Specific Volume (ft^3/lb)	:	12.6582
Gas Density (lb/ft^3)	:	0.079

Section 10. Stability and reactivity

Stability and reactivity	:	The product is stable.
Incompatibility with various substances	:	Extremely reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Other toxic effects on humans	:	No specific information is available in our database regarding the other toxic effects of this material to humans.

Specific effects

Carcinogenic effects	:	No known significant effects or critical hazards.
Mutagenic effects	:	No known significant effects or critical hazards.
Reproduction toxicity	:	No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

Not available.

Products of degradation	:	Products of degradation: carbon oxides (CO, CO_2) and water.
Environmental fate	:	Not available.
Environmental hazards	:	No known significant effects or critical hazards.
Toxicity to the environment	:	Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1035 UN1961	ETHANE Ethane, refrigerated liquid	2.1	Not applicable (gas).		**Limited quantity** Yes. **Packaging instruction** Passenger aircraft

						Quantity limitation: Forbidden. **Cargo aircraft** Quantity limitation: 150 kg
TDG Classification	UN1035 UN1961	ETHANE Ethane, refrigerated liquid	2.1	Not applicable (gas).		**Explosive Limit and Limited Quantity Index** 0.125 **ERAP Index** 3000 **Passenger Carrying Ship Index** Forbidden **Passenger Carrying Road or Rail Index** Forbidden
Mexico Classification	UN1035 UN1961	ETHANE Ethane, refrigerated liquid	2.1	Not applicable (gas).		-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 15. Regulatory information

United States

U.S. Federal regulations : **United States inventory (TSCA 8b):** This material is listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: ethane
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: ethane: Fire hazard, Sudden release of pressure, Immediate (acute) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: ethane

Clean Air Act (CAA) 112 regulated flammable substances: ethane

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations : **Connecticut Carcinogen Reporting:** This material is not listed.
Connecticut Hazardous Material Survey: This material is not listed.
Florida substances: This material is not listed.
Illinois Chemical Safety Act: This material is not listed.
Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
Louisiana Reporting: This material is not listed.
Louisiana Spill: This material is not listed.
Massachusetts Spill: This material is not listed.
Massachusetts Substances: This material is listed.
Michigan Critical Material: This material is not listed.
Minnesota Hazardous Substances: This material is not listed.
New Jersey Hazardous Substances: This material is listed.
New Jersey Spill: This material is not listed.
New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
New York Acutely Hazardous Substances: This material is not listed.
New York Toxic Chemical Release Reporting: This material is not listed.
Pennsylvania RTK Hazardous Substances: This material is listed.
Rhode Island Hazardous Substances: This material is not listed.

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.

CEPA Toxic substances: This material is listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

Label requirements : GAS:
CONTENTS UNDER PRESURE.
Extremely flammable.
May cause flash fire.
Do not puncture or incinerate container.
Can cause rapid suffocation.
May cause severe frostbite.
LIQUID:
Extremely flammable.
Extremely cold liquid and gas under pressure.
Can cause rapid suffocation.
May cause severe frostbite.

Canada

Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.) :

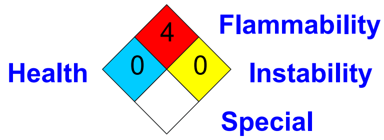
Health	1
Flammability	4
Physical hazards	0

liquid:

Health	3

Fire hazard	4
Reactivity	0
Personal protection	

National Fire Protection Association (U.S.A.) :



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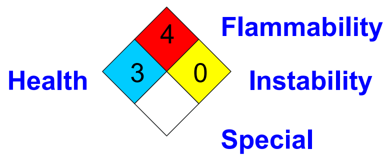

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

ATTACHMENT I
EMISSION UNITS TABLE

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device [4]
BCCT-1	**BCCT-1**	**Combined-Cycle Combustion Turbine**	**2020**	**2,907 MMBtu/hr**	**New**	**DLNC & SCR, Oxidation Catalyst**
BCCT-2	**BCCT-2**	**Combined-Cycle Combustion Turbine**	**2020**	**2,907 MMBtu/hr**	**New**	**DLNC & SCR, Oxidation Catalyst**
AB-1	**AB-1**	**Auxiliary Boiler**	**2020**	**111.9 MMBtu/hr**	**New**	**LNB**
FGH-1	**FGH-1**	**Fuel Gas Heater**	**2020**	**5.4 MMBtu/hr**	**New**	**LNB**
EG-1	**EG-1**	**Emergency Electric Generator**	**2020**	**2,000 kW**	**New**	**NA**
FP-1	**FP-1**	**Firewater Pump**	**2020**	**315 hp**	**New**	**NA**
BCT-1	**BCT-1**	**Cooling Tower**	**2020**	**204,000 gpm**	**New**	**NA**
ST-1	**ST-1**	**Fire Water Pump Tank (ULSD)**	**2020**	**500 gallons**	**New**	**NA**
ST-2	**ST-2**	**Emergency Generator Tank (ULSD)**	**2020**	**3,000 gallons**	**New**	**NA**
NA	**NA**	**Aqueous Ammonia Storage Tank 1**	**2020**	**35,000 gallons**	**New**	**NA**

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J
EMISSION POINTS DATA SUMMARY SHEET

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5 (a)]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/ Vapor)*	Est. Method Used [6]	Emission Concentration [7] (mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
BCCT-1	**Upward Vertical Stack**	**BCCT-1**	**Comb. Cycle Combust-ion Turbine**	**NA**	**Low NOx Burners & SCR, Oxidation Catalyst**	**C**	**8,760**	**NO_x**	**214.0**	**937.3**	**21.4**	**101.0**	**Gas**	**EE**	**3.9**
								CO	**65.0**	**284.7**	**13.0**	**96.8**	**Gas**	**EE**	**2.6**
								Total VOC	**10.6**	**46.5**	**7.43**	**38.4**	**Gas**	**EE**	**1.3**
								$PM/PM_{10}/PM_{2.5}$	**15.5**	**67.9**	**15.5**	**68.7**	**Solid**	**EE**	**2.8**
								SO_2	**4.6**	**20.0**	**4.6**	**20.0**	**Gas**	**MB**	**0.8**
								Sulfur Acid Mist	**2.9**	**12.8**	**2.9**	**12.8**	**Solid**	**MB**	**0.5**
								Lead	**0.001**	**0.006**	**0.001**	**0.006**	**Solid**	**AP-42(b)**	**<0.001**
								Acetaldehyde	**0.1163**	**5.09E-01**	**0.0116**	**5.09E-02**	**Gas**	**AP-42(c)**	**0.002**
								Acrolein	**0.0186**	**8.15E-02**	**0.0019**	**8.15E-03**	**Gas**	**AP-42(c)**	**<0.001**
								Benzene	**0.0349**	**1.53E-01**	**0.0035**	**1.53E-02**	**Gas**	**AP-42(c)**	**<0.001**
								Ethylbenzene	**0.0930**	**4.07E-01**	**0.0093**	**4.07E-02**	**Gas**	**AP-42(c)**	**0.002**
								Formaldehyde	**0.8720**	**3.82**	**0.8720**	**3.82**	**Gas**	**AP-42(c)**	**0.157**
								Naphthalene	**0.0038**	**1.66E-02**	**0.0004**	**1.66E-03**	**Gas**	**AP-42(c)**	**<0.001**
								POM	**0.0064**	**2.80E-02**	**0.0006**	**2.80-03**	**Gas**	**AP-42(c)**	**<0.001**
								Toluene	**0.3779**	**1.66**	**0.0378**	**1.66E-01**	**Gas**	**AP-42(c)**	**0.007**
								Xylenes	**0.1860**	**8.15E-01**	**0.0186**	**8.15E-02**	**Gas**	**AP-42(c)**	**0.003**
								Total HAP	**1.71**	**7.49**	**0.9557**	**4.19**	**Gas**	**AP-42(c)**	**0.172**
								CO_{2e}	**383,351**	**1,679,078**	**383,351**	**1,679,078**	**Gas**	**Sub. C(d)**	**69,166**

(a) For turbines BCCT-1 and BCCT-2, annual "controlled" NOx, CO, VOC, and PM represents combined steady state, start-up, and shutdown emission rates.
(b) Lead emission factor from USEPA's AP-42, Section 1.4.
(c) HAP emission factors obtained from USEPA's AP-42 Section 3.1, except formaldehyde, which is based on the EPA 95th upper percentile emission factor for CTGs (EPA August 21, 2001 memorandum). The formaldehyde emission factor of 3.0E-04 was obtained by taking the formaldehyde factor in Table 3 of the 8/21/2001 memo of 2.92E-03 lb/MMBtu and applying a control efficiency of 90% to account for the use of Oxidation Catalysts. This value was rounded to 3.0E-04.
(d) For CO2e, emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing. For each GHG, emissions are normalized to a CO2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5 (a)]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/ Vapor)*	Est. Method Used [6]	Emission Concentration [7] (mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
BCCT-2	**Upward Vertical Stack**	**BCCT-2**	**Comb. Cycle Combust -ion Turbine**	**NA**	**Low NOx Burners (LNB) & SCR, Oxidation Catalyst**	**C**	**8,760**	**NO_x**	**214.0**	**937.3**	**21.4**	**101.0**	**Gas**	**EE**	**3.9**
								CO	**65.0**	**284.7**	**13.0**	**96.8**	**Gas**	**EE**	**2.6**
								Total VOC	**10.6**	**46.5**	**7.43**	**38.4**	**Gas**	**EE**	**1.3**
								$PM/PM_{10}/ PM_{2.5}$	**15.5**	**67.9**	**15.5**	**68.7**	**Solid**	**EE**	**2.8**
								SO_2	**4.6**	**20.0**	**4.6**	**20.0**	**Gas**	**MB**	**0.8**
								Sulfur Acid Mist	**2.9**	**12.8**	**2.9**	**12.8**	**Solid**	**MB**	**0.5**
								Lead	**0.001**	**0.006**	**0.001**	**0.006**	**Solid**	**AP-42[(b)]**	**<0.001**
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								Acrolein	**0.0186**	**8.15E-02**	**0.0019**	**8.15E-03**	**Gas**	**AP-42[(c)]**	**<0.001**
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								POM	**0.0064**	**2.80E-02**	**0.0006**	**2.80-03**	**Gas**	**AP-42[(c)]**	**<0.001**
								Toluene	**0.3779**	**1.66**	**0.0378**	**1.66E-01**	**Gas**	**AP-42[(c)]**	**0.007**
								Xylenes	**0.1860**	**8.15E-01**	**0.0186**	**8.15E-02**	**Gas**	**AP-42[(c)]**	**0.003**
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								CO_{2e}	**383,351**	**1,679,078**	**383,351**	**1,679,078**	**Gas**	**Sub. C[(d)]**	**69,166**

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(d) For CO2e, emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing. For each GHG, emissions are normalized to a CO2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

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		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
AB-1	**Upward Vertical Stack**	**AB-1**	**Aux. Boiler**	**NA**	**LNB**	**As Required**	**4,576**	**NO_x**	**1.23**	**28.2**	**1.23**	**2.82**	**Gas**	**EE**	**16.50**
								CO	**4.14**	**9.47**	**4.14**	**9.47**	**Gas**	**EE**	**55.48**
								Total VOC	**0.9**	**2.05**	**0.90**	**2.05**	**Gas**	**EE**	**12.00**
								$PM/PM_{10}/PM_{2.5}$	**0.87**	**1.99**	**0.87**	**1.99**	**Solid**	**EE**	**11.66**
								SO_2	**0.12**	**0.28**	**0.12**	**0.28**	**Gas**	**MB**	**1.66**
								Sulfuric Acid Mist	**0.01**	**0.02**	**<0.001**	**<0.001**	**Solid**	**MB**	**1.27E-01**
								Lead	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**Solid**	**AP-42[(a)]**	**7.28E-04**
								2-Methylnaphthalene	**2.61E-06**	**5.97E-06**	**2.61E-06**	**5.97E-06**	**Gas**	**AP-42[(a)]**	**3.49E-05**
								Arsenic	**2.17E-05**	**4.97E-05**	**2.17E-05**	**4.97E-05**	**Gas**	**AP-42[(a)]**	**2.91E-04**
								Benzene	**2.28E-04**	**5.22E-04**	**2.28E-04**	**5.22E-04**	**Gas**	**AP-42[(a)]**	**3.06E-03**
								Cadmium	**1.20E-04**	**2.73E-04**	**1.20E-04**	**2.73E-04**	**Gas**	**AP-42[(a)]**	**1.60E-03**
								Chromium	**1.52E-04**	**3.48E-04**	**1.52E-04**	**3.48E-04**	**Gas**	**AP-42[(a)]**	**2.04E-03**
								Cobalt	**9.13E-06**	**2.09E-05**	**9.13E-06**	**2.09E-05**	**Gas**	**AP-42[(a)]**	**1.22E-04**
								Dichlorobenzene	**1.30E-04**	**2.98E-04**	**1.30E-04**	**2.98E-04**	**Gas**	**AP-42[(a)]**	**1.75E-03**
								Fluoranthene	**3.26E-07**	**7.46E-07**	**3.26E-07**	**7.46E-07**	**Gas**	**AP-42[(a)]**	**4.37E-06**
								Fluorene	**3.04E-07**	**6.96E-07**	**3.04E-07**	**6.96E-07**	**Gas**	**AP-42[(a)]**	**4.08E-06**
								Formaldehyde	**8.15E-03**	**1.86E-02**	**8.15E-03**	**1.86E-02**	**Gas**	**AP-42[(a)]**	**1.09E-01**
								Hexane	**1.96E-01**	**4.48E-01**	**1.96E-01**	**4.48E-01**	**Gas**	**AP-42[(a)]**	**2.62E+00**
								Manganese	**4.13E-05**	**9.45E-05**	**4.13E-05**	**9.45E-05**	**Gas**	**AP-42[(a)]**	**5.53E-04**
								Mercury	**2.83E-05**	**6.46E-05**	**2.83E-05**	**6.46E-05**	**Gas**	**AP-42[(a)]**	**3.79E-04**
								Naphthalene	**6.63E-05**	**1.52E-04**	**6.63E-05**	**1.52E-04**	**Gas**	**AP-42[(a)]**	**8.88E-04**
								Nickel	**2.28E-04**	**5.22E-04**	**2.28E-04**	**5.22E-04**	**Gas**	**AP-42[(a)]**	**3.06E-03**
								Phenanathrene	**1.85E-06**	**4.23E-06**	**1.85E-06**	**4.23E-06**	**Gas**	**AP-42[(a)]**	**2.48E-05**
								Pyrene	**5.43E-07**	**1.24E-06**	**5.43E-07**	**1.24E-06**	**Gas**	**AP-42[(a)]**	**7.28E-06**
								Toluene	**3.69E-04**	**8.45E-04**	**3.69E-04**	**8.45E-04**	**Gas**	**AP-42[(a)]**	**4.95E-03**
								Total HAP	**2.05E-01**	**4.69E-01**	**2.05E-01**	**4.69E-01**	**Gas**	**AP-42[(a)]**	**2.75**
								CO_{2e}	**14,768**	**33,790**	**14,768**	**33,790**	**Gas**	**Sub. C[(b)]**	**197,879**

(a) HAP emission factors obtained from AP-42, Ch. 1.4, Tables 1.4-3 and 1.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(b) For CO2e, emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing. For each GHG, emissions are normalized to a CO2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (mg/m³)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
FGH-1	**Exhaust**	**FGH-1**	**Fuel Gas Heater**	**NA**	**LNB**	**As required**	**8,760**	**NO_x**	**0.19**	**0.85**	**0.19**	**0.85**	**Gas**	**EE**	**53.99**
								CO	**0.21**	**0.92**	**0.21**	**0.92**	**Gas**	**EE**	**58.19**
								Total VOC	**0.04**	**0.17**	**0.04**	**0.17**	**Gas**	**EE**	**10.5**
								$PM/PM_{10}/PM_{2.5}$	**0.04**	**0.18**	**0.04**	**0.18**	**Solid**	**EE**	**11.66**
								SO_2	**0.01**	**0.03**	**0.01**	**0.03**	**Gas**	**MB**	**1.66**
								Sulfuric Acid Mist	**<0.001**	**0.002**	**<0.001**	**0.002**	**Solid**	**MB**	**1.27E-01**
								Lead	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**Solid**	**AP-42[(a)]**	**7.28E-04**
								2-Methylnaphthalene	**1.26E-07**	**5.51E-07**	**1.26E-07**	**5.51E-07**	**Gas**	**AP-42[(a)]**	**3.49E-05**
								Arsenic	**1.05E-06**	**4.59E-06**	**1.05E-06**	**4.59E-06**	**Gas**	**AP-42[(a)]**	**2.91E-04**
								Benzene	**1.10E-05**	**4.82E-05**	**1.10E-05**	**4.82E-05**	**Gas**	**AP-42[(a)]**	**3.06E-03**
								Cadmium	**5.77E-06**	**2.53E-05**	**5.77E-06**	**2.53E-05**	**Gas**	**AP-42[(a)]**	**1.60E-03**
								Chromium	**7.34E-06**	**3.21E-05**	**7.34E-06**	**3.21E-05**	**Gas**	**AP-42[(a)]**	**2.04E-03**
								Cobalt	**4.40E-07**	**1.93E-06**	**4.40E-07**	**1.93E-06**	**Gas**	**AP-42[(a)]**	**1.22E-04**
								Dichlorobenzene	**6.29E-06**	**2.75E-05**	**6.29E-06**	**2.75E-05**	**Gas**	**AP-42[(a)]**	**1.75E-03**
								Fluoranthene	**1.57E-08**	**6.89E-08**	**1.57E-08**	**6.89E-08**	**Gas**	**AP-42[(a)]**	**4.37E-06**
								Fluorene	**1.47E-08**	**6.43E-08**	**1.47E-08**	**6.43E-08**	**Gas**	**AP-42[(a)]**	**4.08E-06**
								Formaldehyde	**3.93E-04**	**1.72E-03**	**3.93E-04**	**1.72E-03**	**Gas**	**AP-42[(a)]**	**1.09E-01**
								Hexane	**9.43E-03**	**4.13E-02**	**9.43E-03**	**4.13E-02**	**Gas**	**AP-42[(a)]**	**2.62E+00**
								Manganese	**1.99E-06**	**8.72E-06**	**1.99E-06**	**8.72E-06**	**Gas**	**AP-42[(a)]**	**5.53E-04**
								Mercury	**1.36E-06**	**5.97E-06**	**1.36E-06**	**5.97E-06**	**Gas**	**AP-42[(a)]**	**3.79E-04**
								Naphthalene	**3.20E-06**	**1.40E-05**	**3.20E-06**	**1.40E-05**	**Gas**	**AP-42[(a)]**	**8.88E-04**
								Nickel	**1.10E-05**	**4.82E-05**	**1.10E-05**	**4.82E-05**	**Gas**	**AP-42[(a)]**	**3.06E-03**
								Phenanathrene	**8.91E-08**	**3.90E-07**	**8.91E-08**	**3.90E-07**	**Gas**	**AP-42[(a)]**	**2.48E-05**
								Pyrene	**2.62E-08**	**1.15E-07**	**2.62E-08**	**1.15E-07**	**Gas**	**AP-42[(a)]**	**7.28E-06**
								Toluene	**1.78E-05**	**7.80E-05**	**1.78E-05**	**7.80E-05**	**Gas**	**AP-42[(a)]**	**4.95E-03**
								Total HAP	**9.89E-03**	**4.33E-02**	**9.89E-03**	**4.33E-02**	**Gas**	**AP-42[(a)]**	**2.75**
								CO_{2e}	**712**	**3,120**	**712**	**3,120**	**Gas**	**Sub. C[(b)]**	**197,889**

(a) HAP emission factors obtained from AP-42, Ch. 1.4, Tables 1.4-3 and 1.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(b) For CO2e, emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing. For each GHG, emissions are normalized to a CO2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
EG-1	**Exhaust**	**EG-1**	**Emerg. Electric Gen.**	**NA**	**NA**	**As Required**	**100**	**NO_x**	**32.22**	**1.61**	**32.22**	**1.61**	**Gas**	**EE**	**562.5**
								CO	**1.77**	**0.09**	**1.77**	**0.09**	**Gas**	**EE**	**31.0**
								Total VOC	**0.65**	**0.03**	**0.65**	**0.03**	**Gas**	**EE**	**11.4**
								$PM/PM_{10}/PM_{2.5}$	**0.15**	**0.01**	**0.15**	**0.01**	**Solid**	**EE**	**2.6**
								SO_2	**0.03**	**0.001**	**0.03**	**0.001**	**Gas**	**MB**	**0.5**
								Acetaldehyde	**4.87E-04**	**2.43E-05**	**4.87E-04**	**2.43E-05**	**Gas**	**AP-42[(a)]**	**8.50E-03**
								Acrolein	**1.52E-04**	**7.61E-06**	**1.52E-04**	**7.61E-06**	**Gas**	**AP-42[(a)]**	**2.66E-03**
								Benzene	**1.50E-02**	**7.50E-04**	**1.50E-02**	**7.50E-04**	**Gas**	**AP-42[(a)]**	**2.62E-01**
								Formaldehyde	**1.52E-03**	**7.62E-05**	**1.52E-03**	**7.62E-05**	**Gas**	**AP-42[(a)]**	**2.66E-02**
								Naphthalene	**2.51E-03**	**1.26E-04**	**2.51E-03**	**1.26E-04**	**Gas**	**AP-42[(a)]**	**4.38E-02**
								POM	**4.10E-03**	**2.05E-04**	**4.10E-03**	**2.05E-04**	**Gas**	**AP-42[(a)]**	**7.15E-02**
								Toluene	**5.43E-03**	**2.71E-04**	**5.43E-03**	**2.71E-04**	**Gas**	**AP-42[(a)]**	**9.48E-02**
								Xylenes	**3.73E-03**	**1.86E-04**	**3.73E-03**	**1.86E-04**	**Gas**	**AP-42[(a)]**	**6.51E-02**
								Total HAP	**3.29E-02**	**1.65E-03**	**3.29E-02**	**1.65E-03**	**Gas**	**AP-42[(a)]**	**5.75E-01**
								CO_2e	**3,161**	**158.1**	**3,161**	**158.1**	**Gas**	**Sub. C[(b)]**	**55,175**
FP-1	**Exhaust**	**FP-1**	**Fire Water Pump**	**NA**	**NA**	**As Required**	**100**	**NO_x**	**1.87**	**0.09**	**1.87**	**0.09**	**Gas**	**EE**	**356.24**
								CO	**0.31**	**0.02**	**0.31**	**0.02**	**Gas**	**EE**	**58.27**
								Total VOC	**0.06**	**0.003**	**0.06**	**0.003**	**Gas**	**EE**	**10.99**
								$PM/PM_{10}/PM_{2.5}$	**0.05**	**0.003**	**0.05**	**0.003**	**Solid**	**EE**	**9.87**
								SO_2	**0.003**	**1.6E-04**	**0.003**	**1.6E-04**	**Gas**	**MB**	**0.60**
								Acetaldehyde	**1.61E-03**	**8.05E-05**	**1.61E-03**	**8.05E-05**	**Gas**	**AP-42[(a)]**	**3.07E-01**
								Acrolein	**7.88E-04**	**1.18E-06**	**7.88E-04**	**1.18E-06**	**Gas**	**AP-42[(a)]**	**4.25E-02**
								Benzene	**1.96E-03**	**9.80E-05**	**1.96E-03**	**9.80E-05**	**Gas**	**AP-42[(a)]**	**3.74E-01**
								Formaldehyde	**2.48E-03**	**1.24E-04**	**2.48E-03**	**1.24E-04**	**Gas**	**AP-42[(a)]**	**4.73E-01**
								Naphthalene	**8.48E-05**	**8.90E-06**	**8.48E-05**	**8.90E-06**	**Gas**	**AP-42[(a)]**	**3.40E-02**
								POM	**1.68E-04**	**1.76E-05**	**1.68E-04**	**1.76E-05**	**Gas**	**AP-42[(a)]**	**6.73E-02**
								Toluene	**4.09E-04**	**4.29E-05**	**4.09E-04**	**4.29E-05**	**Gas**	**AP-42[(a)]**	**1.64E-01**
								Xylenes	**2.85E-04**	**2.99E-05**	**2.85E-04**	**2.99E-05**	**Gas**	**AP-42[(a)]**	**1.14E-01**
								Total HAP	**8.04E-03**	**4.02E-04**	**8.04E-03**	**4.02E-04**	**Gas**	**AP-42[(a)]**	**1.57**
								CO_2e	**344**	**17.2**	**344**	**17.2**	**Gas**	**Sub. C[(b)]**	**65,521**

(a) HAP emission factors obtained from AP-42, Ch. 3.4, Tables 3.4-3 and 3.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(b) For CO2e, emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for distillate fuel oil No. 2 firing. For each GHG, emissions are normalized to a CO2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (mg/m³)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
BCT-1	**NA**	**BCT-1**	**Cooling Tower**	**NA**	**NA**	**C**	**8,760**	**PM** **PM_{10}** **$PM_{2.5}$**	**6.15** **0.27** **0.01**	**26.9** **1.2** **0.02**	**6.15** **0.27** **0.01**	**26.9** **1.2** **0.022**	**Solid** **Solid** **Solid**	**EE** **EE** **EE**	**1.45** **0.06** **0.0012**
ST-1	**Upward Vertical Stack**	**ST-1**	**Diesel Storage Tank**	**NA**	**NA**	**C**	**8,760**	**Total VOC**	**0.09**	**0.39**	**0.09**	**0.39**	**Gas**	**EPA TANKS**	**NA**
ST-2	**Upward Vertical Stack**	**ST-2**	**Diesel Storage Tank**	**NA**	**NA**	**C**	**8,760**	**Total VOC**	**0.49**	**2.1**	**0.49**	**2.1**	**Gas**	**EPA TANKS**	**NA**

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (^{o}F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
BCCT-1	**20.5**	**171.0**	**1,479,400**	**74.7**	**1,100**	**185**	**4,466.6157**	**534.0966**
BCCT-2	**20.5**	**171.0**	**1,479,400**	**74.7**	**1,100**	**185**	**4,466.6157**	**534.0966**
BCT-1[(1)]	**28**	**66.2**	**1,129,000**	**30.6**	**1,100**	**45.8**	**4,466.6157**	**534.0966**
AB-1	**32**	**260**	**19,925**	**59.5**	**1,100**	**65**	**4,466.6157**	**534.0966**
FGH-1	**0.6**	**600**	**961**	**59.9**	**1,100**	**15**	**4,466.6157**	**534.0966**
FP-1	**0.5**	**961**	**1,400**	**118.8**	**1,100**	**15**	**4,466.6157**	**534.0966**
EG-1	**0.7**	**752**	**15,295**	**730.3**	**1,100**	**30**	**4,466.6157**	**534.0966**
ST-1	**NA**	**Ambient**	**NA**	**NA**	**1,100**	**NA**	**4,466.6157**	**534.0966**
ST-2	**NA**	**Ambient**	**NA**	**NA**	**1,100**	**NA**	**4,466.6157**	**534.0966**

(1) Cooling tower diameter, flow, and velocity are per individual cell.

ATTACHMENT K
FUGITIVE EMISSIONS DATA SUMMARY SHEET

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☐ Yes ☒ No ☐ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☐ Yes ☒ No ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☒ Yes ☐ No ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants Chemical Name/CAS[1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	**N/A**	--	--	--	--	--
Unpaved Haul Roads	**No Haul of Bulk Raw Materials or Products**	--	--	--	--	--
Storage Pile Emissions	**N/A**	--	--	--	--	--
Loading/Unloading Operations	**N/A**	--	--	--	--	--
Wastewater Treatment Evaporation & Operations	**N/A**	--	--	--	--	--
Equipment Leaks	**Most equipment leak emissions will be natural gas consisting most of non-regulated chemicals.**	--	--	--	--	--
General Clean-up VOC Emissions	**N/A**	--	--	--	--	--
Other	**N/A**	--	--	--	--	--

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.
[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
[3] Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

ATTACHMENT L
EMISSIONS UNIT DATA SHEETS

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form):

Equipment Information: Combined Cycle Gas Turbine BCCT-1

1. Manufacturer: **General Electric**	2. Model No. **7HA.01** Serial No. **NA**
3. Number of units: **1**	4. Use – **Electric Generation**
5. Rated Boiler Horsepower: **NA** hp	6. Boiler Serial No.: **NA**
7. Date constructed: **2020**	8. Date of last modification and explain: **NA**
9. Maximum design heat input per unit: **2,906** $\times 10^6$ BTU/hr	10. Peak heat input per unit: **2,906** $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: **NA** LB/hr **NA** psig	12. Projected Operating Schedule: Hours/Day **24** Days/Week **7** Weeks/Year **52**
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☐ Front Wall ☐ Opposed ☐ Tangential ☒ Others, specify **Dry Low NO_x Burners**
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: **NA** %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: **NA** %

Stack or Vent Data

19. Inside diameter or dimensions: **18.5** ft.	20. Gas exit temperature: **171** °F
21. Height: **185** ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: **88,764,000** actual ft^3/min	
24. Estimated percent of moisture: **NA** %	

Fuel Requirements

25. **Type**	Fuel Oil No.	Natural Gas	Gas (Ethane)	Coal, Type:	Other:
Quantity (at Design Output)	gph@60°F	**2,822,136 ft^3/hr**	**1,630,286 ft^3/hr**	TPH	
Annually	$\times 10^3$ gal	**24,722 $\times 10^6$ ft^3/yr**	**14,281$\times 10^6$ ft^3/yr**	tons	
Sulfur	Maximum: wt. % Average: wt. %	**0.4 gr/100 ft^3**	**0.4 gr/100 ft^3**	Maximum: wt. %	
Ash (%)		**NA**	**NA**	Maximum	
BTU Content	BTU/Gal. Lbs/Gal.@60°F	**1,030 BTU/ft^3**	**1,783 BTU/ft^3**	BTU/lb	
Source		**Evaluating Suppliers**	**Evaluating Suppliers**		
Supplier		**Evaluating Suppliers**	**Evaluating Suppliers**		
Halogens (Yes/No)		**No**	**No**		
List and Identify Metals		**NA**	**NA**		

26. Gas burner mode of control:
☐ Manual ☐ Automatic hi-low
☒ Automatic full modulation ☐ Automatic on-off

27. Gas burner manufacturer: **GE**

28. Oil burner manufacturer: **NA**

29. If fuel oil is used, how is it atomized? ☐ Oil Pressure ☐ Steam Pressure ☐ Compressed Air ☐ Rotary Cup ☐ Other, specify

30. Fuel oil preheated: ☒ Yes ☐ No

31. If yes, indicate temperature: °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
NA @ **NA** °F, **NA** PSIA, **NA** % moisture

33. Emission rate at rated capacity: **See Attachment J** lb/hr

34. Percent excess air actually required for combustion of the fuel described: **NA** %

Coal Characteristics

35. Seams: **NA**

36. Proximate analysis (dry basis): % of Fixed Carbon: % of Sulfur:
% of Moisture: % of Volatile Matter:
% of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**65.0**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**214.0**	**NA**	**NA**	**NA**
Pb	**0.001**	**NA**	**NA**	**NA**
$PM/PM_{10}/PM_{2.5}$	**15.5**	**NA**	**NA**	**NA**
SO_2	**4.6**	**NA**	**NA**	**NA**
VOCs	**10.6**	**NA**	**NA**	**NA**
Total HAPs	**1.00**	**NA**	**NA**	**NA**
CO_{2e}	**383,351**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**2.9**	**NA**	**NA**	**NA**

Emissions represent hourly steady state emission rates only.

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**13.0**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**21.4**	**NA**	**NA**	**NA**
Pb	**0.001**	**NA**	**NA**	**NA**
$PM/PM_{10}/PM_{2.5}$	**15.5**	**NA**	**NA**	**NA**
SO_2	**4.6**	**NA**	**NA**	**NA**
VOCs	**7.4**	**NA**	**NA**	**NA**
Total HAPs	**1.00**	**NA**	**NA**	**NA**
CO_{2e}	**383,351**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**2.9**	**NA**	**NA**	**NA**

Emissions represent hourly steady state emission rates only.

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit.

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet?

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.
See Attachment O

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.
See Attachment O

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
See Attachment O

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
See Attachment O

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form):

Equipment Information: Combined Cycle Gas Turbine BCCT-2

1. Manufacturer: **General Electric**	2. Model No. **7HA.01** Serial No. **NA**
3. Number of units: **1**	4. Use – **Electric Generation**
5. Rated Boiler Horsepower: **NA** hp	6. Boiler Serial No.: **NA**
7. Date constructed: **2020**	8. Date of last modification and explain: **NA**
9. Maximum design heat input per unit: **2,906** $\times 10^6$ BTU/hr	10. Peak heat input per unit: **2,906** $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: **NA** LB/hr **NA** psig	12. Projected Operating Schedule: Hours/Day **24** Days/Week **7** Weeks/Year **52**
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☐ Front Wall ☐ Opposed ☐ Tangential ☒ Others, specify **Dry Low NO_x Burners**
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: **NA** %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: **NA** %

Stack or Vent Data

19. Inside diameter or dimensions: **18.5** ft.	20. Gas exit temperature: **180.6** °F
21. Height: **185** ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: **88,764,000** actual ft^3/min	
24. Estimated percent of moisture: **NA** %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (Ethane)	Coal, Type:	Other:
Quantity (at Design Output)	gph@60°F	**2,822,136 ft^3/hr**	**1,630,286 ft^3/hr**	TPH	
Annually	$\times 10^3$ gal	**24,722 $\times 10^6$ ft^3/yr**	**$14{,}281 \times 10^6$ ft^3/yr**	tons	
Sulfur	Maximum: wt. % Average: wt. %	**0.4 gr/100 ft^3**	**0.4 gr/100 ft^3**	Maximum: wt. %	
Ash (%)		**NA**	**NA**	Maximum	
BTU Content	BTU/Gal. Lbs/Gal.@60°F	**1,030 BTU/ft^3**	**1,783 BTU/ft^3**	BTU/lb	
Source		**Evaluating Suppliers**	**Evaluating Suppliers**		
Supplier		**Evaluating Suppliers**	**Evaluating Suppliers**		
Halogens (Yes/No)		**No**	**No**		
List and Identify Metals		**NA**	**NA**		

26. Gas burner mode of control:
☐ Manual ☐ Automatic hi-low
☒ Automatic full modulation ☐ Automatic on-off

27. Gas burner manufacturer: **GE**

28. Oil burner manufacturer: **NA**

29. If fuel oil is used, how is it atomized? ☐ Oil Pressure ☐ Steam Pressure ☐ Compressed Air ☐ Rotary Cup ☐ Other, specify

30. Fuel oil preheated: ☒ Yes ☐ No

31. If yes, indicate temperature: °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
NA @ **NA** °F, **NA** PSIA, **NA** % moisture

33. Emission rate at rated capacity: **See Attachment J** lb/hr

34. Percent excess air actually required for combustion of the fuel described: **NA** %

Coal Characteristics

35. Seams: **NA**

36. Proximate analysis (dry basis): % of Fixed Carbon: % of Sulfur:
% of Moisture: % of Volatile Matter:
% of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**65.0**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**214.0**	**NA**	**NA**	**NA**
Pb	**0.001**	**NA**	**NA**	**NA**
$PM/PM_{10}/PM_{2.5}$	**15.5**	**NA**	**NA**	**NA**
SO_2	**4.6**	**NA**	**NA**	**NA**
VOCs	**10.6**	**NA**	**NA**	**NA**
Total HAPs	**1.00**	**NA**	**NA**	**NA**
CO_{2e}	**383,351**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**2.9**	**NA**	**NA**	**NA**

Emissions represent hourly steady state emission rates only.

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**13.0**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**21.4**	**NA**	**NA**	**NA**
Pb	**0.001**	**NA**	**NA**	**NA**
$PM/PM_{10}/PM_{2.5}$	**15.5**	**NA**	**NA**	**NA**
SO_2	**4.6**	**NA**	**NA**	**NA**
VOCs	**7.4**	**NA**	**NA**	**NA**
Total HAPs	**1.00**	**NA**	**NA**	**NA**
CO_{2e}	**383,351**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**2.9**	**NA**	**NA**	**NA**

Emissions represent hourly steady state emission rates only.

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit.

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet?

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.
See Attachment O

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.
See Attachment O

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
See Attachment O

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
See Attachment O

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Attachment L

Emission Unit Data Sheet

(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form): **Auxiliary Boiler AB-1**

Equipment Information

1. Manufacturer: **TBD**	2. Model No. **NA** Serial No. **NA**
3. Number of units: **1**	4. Use: **Steam Production**
5. Rated Boiler Horsepower: **NA** hp	6. Boiler Serial No.: **NA**
7. Date constructed: **2020**	8. Date of last modification and explain: **NA**
9. Maximum design heat input per unit: **111.9** $\times 10^6$ BTU/hr	10. Peak heat input per unit: **111.9** $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: **NA** LB/hr **NA** psig	12. Projected Operating Schedule: Hours/Day **24** Days/Week **7** Weeks/Year **52**
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☒ Front Wall ☐ Opposed ☐ Tangential ☐ Others, specify
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: **NA** %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: **NA** %

Stack or Vent Data

19. Inside diameter or dimensions: **2.7** ft.	20. Gas exit temperature: **260** °F
21. Height: **65** ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: **19,925** ft^3/min	
24. Estimated percent of moisture: **NA** %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (Ethane)	Coal, Type:	Other:
Quantity (at Design Output)	gph@60°F	**108,659 ft^3/hr**	**62,770 ft^3/hr**	TPH	
Annually	$\times 10^3$ gal	**497×10^6 ft^3/yr**	**287×10^6 ft^3/yr**	tons	
Sulfur	Maximum: wt. % Average: wt. %	**0.4 gr/100 ft^3**	**0.4 gr/100 ft^3**	Maximum: wt. %	
Ash (%)		**NA**	**NA**	Maximum	
BTU Content	BTU/Gal. Lbs/Gal.@60°F	**1,030 BTU/ft^3**	**1,783 BTU/ft^3**	BTU/lb	
Source		**Evaluating Suppliers**	**Evaluating Suppliers**		
Supplier		**Evaluating Suppliers**	**Evaluating Suppliers**		
Halogens (Yes/No)		**No**	**No**		
List and Identify Metals		**NA**	**NA**		

26. Gas burner mode of control:
- ☐ Manual
- ☐ Automatic hi-low
- ☒ Automatic full modulation
- ☐ Automatic on-off

27. Gas burner manufacture: TBD

28. Oil burner manufacture: NA

29. If fuel oil is used, how is it atomized? ☐ Oil Pressure ☐ Steam Pressure ☐ Compressed Air ☐ Rotary Cup ☐ Other, specify

30. Fuel oil preheated: ☐ Yes ☐ No

31. If yes, indicate temperature: °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
NA @ **NA** °F, **NA** PSIA, **NA** % moisture

33. Emission rate at rated capacity: **See Attachment J** lb/hr

34. Percent excess air actually required for combustion of the fuel described: **NA** %

Coal Characteristics

35. Seams: **NA**

36. Proximate analysis (dry basis): % of Fixed Carbon: % of Sulfur: % of Moisture: % of Volatile Matter: % of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**4.14**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**1.23**	**NA**	**NA**	**NA**
Pb	**<0.001**	**NA**	**NA**	**NA**
PM_{10}	**0.87**	**NA**	**NA**	**NA**
SO_2	**0.12**	**NA**	**NA**	**NA**
VOCs	**0.9**	**NA**	**NA**	**NA**
Other (specify)				
Total HAPS	**2.05E-01**	**NA**	**NA**	**NA**
CO2e	**14,768**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**<0.001**	**NA**	**NA**	**NA**

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**4.14**	**NA**	**NA**	**NA**
Hydrocarbons	**NA**	**NA**	**NA**	**NA**
NO_x	**1.23**	**NA**	**NA**	**NA**
Pb	**<0.001**	**NA**	**NA**	**NA**
PM_{10}	**0.87**	**NA**	**NA**	**NA**
SO_2	**0.12**	**NA**	**NA**	**NA**
VOCs	**0.9**	**NA**	**NA**	**NA**
Other (specify)				
Total HAPs	**2.05E-01**	**NA**	**NA**	**NA**
CO2e	**14,768**	**NA**	**NA**	**NA**
Sulfuric Acid Mist	**<0.001**	**NA**	**NA**	**NA**

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit.

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet?

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.
See Attachment O

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.
See Attachment O

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
See Attachment O

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
See Attachment O

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form): **Fuel Gas Heater FGH-1**

Equipment Information

1. Manufacturer: **TBD**	2. Model No. **NA** Serial No. **NA**
3. Number of units: **1**	4. Use**: Steam Production**
5. Rated Boiler Horsepower: **NA** hp	6. Boiler Serial No.: **NA**
7. Date constructed: **2020**	8. Date of last modification and explain: **NA**
9. Maximum design heat input per unit: **5.4** $\times 10^6$ BTU/hr	10. Peak heat input per unit: **5.4** $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: **NA** LB/hr **NA** psig	12. Projected Operating Schedule: Hours/Day **24** Days/Week **7** Weeks/Year **52**
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☒ Natural Gas Burner ☐ Others, specify	14. Proposed type of burners and orientation: ☐ Vertical ☒ Front Wall ☐ Opposed ☐ Tangential ☐ Others, specify
15. Type of draft: ☒ Forced ☐ Induced	16. Percent of ash retained in furnace: NA %
17. Will flyash be reinjected? ☐ Yes ☒ No	18. Percent of carbon in flyash: NA %

Stack or Vent Data

19. Inside diameter or dimensions: **0.6** ft.	20. Gas exit temperature: **600** °F
21. Height: **15** ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: **961** ft^3/min	
24. Estimated percent of moisture: **NA** %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (Ethane)	Coal, Type:	Other:
Quantity (at Design Output)	NA gph@60°F	**5,241 ft^3/hr**	**3,028 ft^3/hr**	NA TPH	
Annually	$\times 10^3$ gal	**46×10^6 ft^3/hr**	**27×10^6 ft^3/hr**	tons	
Sulfur	Maximum: wt. % Average: wt. %	**0.4 gr/100 ft^3**	**0.4 gr/100 ft^3**	Maximum: wt. %	
Ash (%)		**NA**	**NA**	Maximum	
BTU Content	BTU/Gal. Lbs/Gal.@60°F	**1,030 BTU/ft^3**	**1,783 BTU/ft^3**	BTU/lb	
Source		**Evaluating Suppliers**	**Evaluating Suppliers**		
Supplier		**Evaluating Suppliers**	**Evaluating Suppliers**		
Halogens (Yes/No)		**No**	**No**		
List and Identify Metals		**NA**	**NA**		

26. Gas burner mode of control:
- ☐ Manual
- ☐ Automatic hi-low
- ☒ Automatic full modulation
- ☐ Automatic on-off

27. Gas burner manufacture: **TBD**

28. Oil burner manufacture: **NA**

29. If fuel oil is used, how is it atomized? ☐ Oil Pressure ☐ Steam Pressure ☐ Compressed Air ☐ Rotary Cup ☐ Other, specify

30. Fuel oil preheated: ☐ Yes ☐ No

31. If yes, indicate temperature: °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
NA @ **NA** °F, **NA** PSIA, **NA** % moisture

33. Emission rate at rated capacity: **See Attachment J** lb/hr

34. Percent excess air actually required for combustion of the fuel described: **NA** %

Coal Characteristics

35. Seams: **NA**

36. Proximate analysis (dry basis): % of Fixed Carbon: % of Sulfur: % of Moisture: % of Volatile Matter: % of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**0.21**	NA	NA	NA
Hydrocarbons	**NA**	NA	NA	NA
NO_x	**0.19**	NA	NA	NA
Pb	**<0.001**	NA	NA	NA
PM_{10}	**0.04**	NA	NA	NA
SO_2	**0.01**	NA	NA	NA
VOCs	**0.04**	NA	NA	NA
Other (specify)				
Total HAPS	**9.89E-03**	NA	NA	NA
CO2e	**712**	NA	NA	NA
Sulfuric Acid Mist	**<0.001**	NA	NA	NA

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	**0.21**	NA	NA	NA
Hydrocarbons	**NA**	NA	NA	NA
NO_x	**0.19**	NA	NA	NA
Pb	**<0.001**	NA	NA	NA
PM_{10}	**0.04**	NA	NA	NA
SO_2	**0.01**	NA	NA	NA
VOCs	**0.04**	NA	NA	NA
Other (specify)				
Total HAPs	**9.89E-03**	NA	NA	NA
CO2e	**712**	NA	NA	NA
Sulfuric Acid Mist	**<0.001**	NA	NA	NA

39. How will waste material from the process and control equipment be disposed of?
NA

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit.

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet?

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.
See Attachment O

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.
See Attachment O

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
See Attachment O

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
See Attachment O

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): **Emergency Generator EG-1**

1. Name or type and model of proposed affected source: **Emergency Electric Generator – 2,000 kW (2,682 hp)**
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: **N/A**
4. Name(s) and maximum amount of proposed material(s) produced per hour: **N/A**
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: **N/A**

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Ultra Low Sulfur Diesel Fuel – As Required

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

0.0015 % sulfur by weight

(c) Theoretical combustion air requirement (ACF/unit of fuel):

NA @ **NA** °F and **NA** psia.

(d) Percent excess air: **NA**

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: **19.3** $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	**24**	Days/Week	**7**	Weeks/Year	**52**

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ **NA** °F and **Ambient** psia

a.	NO_X	**32.22** lb/hr		**N/A** grains/ACF	
b.	SO_2	**0.03** lb/hr		**N/A** grains/ACF	
c.	CO	**1.77** lb/hr		**N/A** grains/ACF	
d.	$PM/PM_{10}/PM_{2.5}$	**0.15** lb/hr		**N/A** grains/ACF	
e.	Hydrocarbons	**N/A** lb/hr		**N/A** grains/ACF	
f.	VOCs	**0.65** lb/hr		**N/A** grains/ACF	
g.	Pb	**N/A** lb/hr		**N/A** grains/ACF	
h.	Specify other(s)				
	CO_{2e}	**3,161** lb/hr		**N/A** grains/ACF	
	Total HAPs	**3.29E-02** lb/hr		**N/A** grains/ACF	
		lb/hr		**NA** grains/ACF	
		lb/hr		**NA** grains/ACF	

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
See Attachment O	**See Attachment O**
REPORTING	TESTING
See Attachment O	**See Attachment O**

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

N/A

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): **Fire Water Pump FP-1**

1.	Name or type and model of proposed affected source: **Fire Water Pump – 315 hp (235 kW)**
2.	On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3.	Name(s) and maximum amount of proposed process material(s) charged per hour: **Fire water – As Required**
4.	Name(s) and maximum amount of proposed material(s) produced per hour: **Fire water – As Required**
5.	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: **NA**

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Ultra Low Sulfur Diesel Fuel – As Required

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

0.0015 % sulfur by weight

(c) Theoretical combustion air requirement (ACF/unit of fuel):

NA @ **NA** °F and **NA** psia.

(d) Percent excess air: **NA**

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: **2.1** $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	**24**	Days/Week	**7**	Weeks/Year	**52**

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ **NA** °F and **Ambient** psia

a.	NO_X	**1.87** lb/hr		**NA** grains/ACF	
b.	SO_2	**0.003** lb/hr		**NA** grains/ACF	
c.	CO	**0.31** lb/hr		**NA** grains/ACF	
d.	$PM/PM_{10}/PM_{2.5}$	**0.05** lb/hr		**NA** grains/ACF	
e.	Hydrocarbons	**NA** lb/hr		**NA** grains/ACF	
f.	VOCs	**0.06** lb/hr		**NA** grains/ACF	
g.	Pb	**NA** lb/hr		**NA** grains/ACF	
h.	Specify other(s)				
	CO_{2e}	**344** lb/hr		**NA** grains/ACF	
	Total HAPs	**8.04E-03** lb/hr		**NA** grains/ACF	
		lb/hr		**NA** grains/ACF	
		lb/hr		**NA** grains/ACF	

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
See Attachment O	**See Attachment O**
REPORTING	TESTING
See Attachment O	**See Attachment O**

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

NA

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): **Cooling Tower BCT-1**

1.	Name or type and model of proposed affected source: **Cooling Tower**
2.	On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3.	Name(s) and maximum amount of proposed process material(s) charged per hour: **Cooling Water:** **Circulating Water – 204,000 gpm**
4.	Name(s) and maximum amount of proposed material(s) produced per hour: **Cooling Water:** **Circulating Water – 204,000 gpm**
5.	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: **NA**

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): **NA**

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	**24**	Days/Week	**7**	Weeks/Year	**52**

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ **NA** °F and **NA** psia

a.	NO_X	**NA** lb/hr		**NA** grains/ACF	
b.	SO_2	**NA** lb/hr		**NA** grains/ACF	
c.	CO	**NA** lb/hr		**NA** grains/ACF	
d.	PM_{10}	**0.27** lb/hr		**NA** grains/ACF	
e.	Hydrocarbons	**NA** lb/hr		**NA** grains/ACF	
f.	VOCs	**NA** lb/hr		**NA** grains/ACF	
g.	Pb	**NA** lb/hr		**NA** grains/ACF	
h.	Specify other(s)				
	PM	**6.15** lb/hr		**NA** grains/ACF	
	$PM_{2.5}$	**0.01** lb/hr		**NA** grains/ACF	
		lb/hr		**NA** grains/ACF	
		lb/hr		**NA** grains/ACF	

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
See Attachment O	**See Attachment O**
REPORTING	TESTING
See Attachment O	**See Attachment O**

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

NA

Attachment L
EMISSIONS UNIT DATA SHEET
STORAGE TANKS

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT **www.epa.gov/tnn/tanks.html**), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (**http://www.epa.gov/tnn/chief/**).

I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name **Diesel**	2. Tank Name **Diesel Storage Tank ST-1**
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) **ST-1**	4. Emission Point Identification No. (as assigned on *Equipment List Form*) **ST-1**
5. Date of Commencement of Construction (for existing tanks) 2017	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) **NA**	
7A. Does the tank have more than one mode of operation? ☐ Yes ☒ No (e.g. Is there more than one product stored in the tank?)	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode). **NA**	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): **NA**	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. **500 gallons**	
9A. Tank Internal Diameter (ft) **3.5**	9B. Tank Internal Height (or Length) (ft) **7**
10A. Maximum Liquid Height (ft) **7**	10B. Average Liquid Height (ft) **3.5**
11A. Maximum Vapor Space Height (ft) **6.25**	11B. Average Vapor Space Height (ft) **3.5**
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. **500 gallons**	

13A. Maximum annual throughput (gal/yr) **1,000**	13B. Maximum daily throughput (gal/day) **As required**
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) **2**	
15. Maximum tank fill rate (gal/min) **25**	
16. Tank fill method ☒ Submerged ☐ Splash ☐ Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems ☒ Does Not Apply	
17A. Volume Expansion Capacity of System (gal) **NA**	17B. Number of transfers into system per year **NA**

18. Type of tank (check all that apply):

☒ Fixed Roof **X** vertical ___ horizontal ___ flat roof ___ cone roof ___ dome roof ___ other (describe)

☐ External Floating Roof ___ pontoon roof ___ double deck roof

☐ Domed External (or Covered) Floating Roof

☐ Internal Floating Roof ___ vertical column support ___ self-supporting

☐ Variable Vapor Space ___ lifter roof ___ diaphragm

☐ Pressurized ___ spherical ___ cylindrical

☐ Underground

☐ Other (describe)

III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe)		
20A. Shell Color Light Gray	20B. Roof Color Light Gray	20C. Year Last Painted 2016
21. Shell Condition (if metal and unlined): ☒ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable		
22A. Is the tank heated? ☐ YES ☒ NO		
22B. If YES, provide the operating temperature (°F) **NA**		
22C. If YES, please describe how heat is provided to tank. **NA**		
23. Operating Pressure Range (psig): Ambient to Ambient		
24. Complete the following section for **Vertical Fixed Roof Tanks** ☐ Does Not Apply		
24A. For dome roof, provide roof radius (ft) **NA**		
24B. For cone roof, provide slope (ft/ft) **NA**		
25. Complete the following section for **Floating Roof Tanks** ☒ Does Not Apply		
25A. Year Internal Floaters Installed:		
25B. Primary Seal Type: (check one) ☐ Metallic (Mechanical) Shoe Seal ☐ Liquid Mounted Resilient Seal ☐ Vapor Mounted Resilient Seal ☐ Other (describe):		
25C. Is the Floating Roof equipped with a Secondary Seal? ☐ YES ☐ NO		
25D. If YES, how is the secondary seal mounted? (check one) ☐ Shoe ☐ Rim ☐ Other (describe):		
25E. Is the Floating Roof equipped with a weather shield? ☐ YES ☐ NO		

25F. Describe deck fittings; indicate the number of each type of fitting:		
ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
COLUMN WELL		
BUILT-UP COLUMN – SLIDING COVER, GASKETED:	BUILT-UP COLUMN – SLIDING COVER, UNGASKETED:	PIPE COLUMN – FLEXIBLE FABRIC SLEEVE SEAL:
LADDER WELL		
PIP COLUMN – SLIDING COVER, GASKETED:	PIPE COLUMN – SLIDING COVER, UNGASKETED:	
GAUGE-HATCH/SAMPLE PORT		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
VACUUM BREAKER		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
RIM VENT		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
DECK DRAIN (3-INCH DIAMETER)		
OPEN:	90% CLOSED:	
STUB DRAIN		
1-INCH DIAMETER:		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks ☐ Does Not Apply	
26A. Deck Type: ☐ Bolted ☐ Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam: ☐ Continuous sheet construction 5 feet wide ☐ Continuous sheet construction 6 feet wide ☐ Continuous sheet construction 7 feet wide ☐ Continuous sheet construction 5 × 7.5 feet wide ☐ Continuous sheet construction 5 × 12 feet wide ☐ Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft^2)
For column supported tanks: 26F. Number of columns:	26G. Diameter of each column:

IV. SITE INFORMANTION (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. **See TANKS Summary Sheet**
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft^2·day))
33. Atmospheric Pressure (psia)

V. LIQUID INFORMATION (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid: **See TANKS Summary Sheet**	
34A. Minimum (°F)	34B. Maximum (°F)
35. Average operating pressure range of tank:	
35A. Minimum (psig)	35B. Maximum (psig)
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)

39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.

39A. Material Name or Composition			
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			

Maximum Vapor Pressure 39F. True (psia) 39G. Reid (psia)			
Months Storage per Year 39H. From 39I. To			

VI. EMISSIONS AND CONTROL DEVICE DATA (required)

40. Emission Control Devices (check as many as apply): ☐ Does Not Apply

- ☐ Carbon Adsorption[1]
- ☐ Condenser[1]
- ☐ Conservation Vent (psig)
  Vacuum Setting Pressure Setting
- ☐ Emergency Relief Valve (psig)
- ☐ Inert Gas Blanket of
- ☐ Insulation of Tank with
- ☐ Liquid Absorption (scrubber)[1]
- ☐ Refrigeration of Tank
- ☐ Rupture Disc (psig)
- ☐ Vent to Incinerator[1]
- ☐ Other[1] (describe):

[1] Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

☒ Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification		
User Identification:	Brooke ST-1	
City:	Follansbee	
State:	West Virginia	
Company:	Energy Solutions Consortium	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Brooke Storage Tank 1, 500 gal, diesel	
Tank Dimensions		
Shell Height (ft):		7.00
Diameter (ft):		3.50
Liquid Height (ft) :		7.00
Avg. Liquid Height (ft):		3.50
Volume (gallons):		500.00
Turnovers:		3.00
Net Throughput(gal/yr):		1,500.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	White/White	
Shell Condition	Good	
Roof Color/Shade:	White/White	
Roof Condition:	Good	
Roof Characteristics		
Type:	Dome	
Height (ft)		0.00
Radius (ft) (Dome Roof)		0.00
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.03

Meterological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Brooke ST-1 - Vertical Fixed Roof Tank
Follansbee, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	40.41	37.02	43.80	50.33	0.0032	0.0031	0.0036	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Feb	41.83	37.90	45.77	50.33	0.0034	0.0031	0.0039	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Mar	47.02	42.23	51.81	50.33	0.0041	0.0034	0.0050	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Apr	51.94	46.34	57.53	50.33	0.0051	0.0040	0.0067	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	May	56.70	50.63	62.76	50.33	0.0064	0.0047	0.0078	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Jun	60.64	54.39	66.89	50.33	0.0075	0.0058	0.0085	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Jul	62.43	56.42	68.45	50.33	0.0078	0.0064	0.0088	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Aug	61.44	55.75	67.12	50.33	0.0076	0.0062	0.0085	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Sep	58.09	52.76	63.42	50.33	0.0068	0.0053	0.0079	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Oct	52.53	47.75	57.31	50.33	0.0052	0.0042	0.0066	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Nov	47.55	43.93	51.18	50.33	0.0042	0.0037	0.0048	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Dec	42.64	39.56	45.73	50.33	0.0035	0.0031	0.0039	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Brooke ST-1 - Vertical Fixed Roof Tank
Follansbee, West Virginia

Month:	January	February	March	April	May	June	July	August	September	October	November	December

Standing Losses (lb):	0.0020	0.0022	0.0037	0.0051	0.0072	0.0083	0.0085	0.0078	0.0064	0.0046	0.0026	0.0019
Vapor Space Volume (cu ft):	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0229	0.0272	0.0336	0.0397	0.0429	0.0440	0.0420	0.0396	0.0371	0.0332	0.0244	0.0204
Vented Vapor Saturation Factor:	0.9994	0.9993	0.9992	0.9990	0.9987	0.9985	0.9985	0.9985	0.9986	0.9990	0.9992	0.9993
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837	35.9837
Tank Diameter (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Vapor Space Outage (ft):	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401
Tank Shell Height (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Average Liquid Height (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Roof Outage (ft):	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401
Roof Outage (Dome Roof)												
Roof Outage (ft):	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401	0.2401
Dome Radius (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Shell Radius (ft):	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500	1.7500
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Daily Avg. Liquid Surface Temp. (deg. R):	500.0788	501.5048	506.6906	511.6057	516.3650	520.3107	522.1042	521.1070	517.7595	512.1979	507.2236	502.3134
Daily Average Ambient Temp. (deg. F):	26.1000	28.6000	39.4000	49.5500	59.5000	67.9000	72.1000	70.5000	63.9000	52.4000	42.2500	31.5000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	551.7325	794.4441	1,117.4249	1,451.8275	1,735.7842	1,921.7044	1,881.0938	1,662.8121	1,332.5340	959.1072	580.6041	446.3989
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0229	0.0272	0.0336	0.0397	0.0429	0.0440	0.0420	0.0396	0.0371	0.0332	0.0244	0.0204
Daily Vapor Temperature Range (deg. R):	13.5702	15.7336	19.1429	22.3907	24.2463	24.9873	24.0740	22.7470	21.3189	19.1094	14.4997	12.3489
Daily Vapor Pressure Range (psia):	0.0005	0.0008	0.0016	0.0027	0.0032	0.0027	0.0024	0.0024	0.0026	0.0024	0.0012	0.0008
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0031	0.0031	0.0034	0.0040	0.0047	0.0058	0.0064	0.0062	0.0053	0.0042	0.0037	0.0031
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0036	0.0039	0.0050	0.0067	0.0078	0.0085	0.0088	0.0085	0.0079	0.0066	0.0048	0.0039
Daily Avg. Liquid Surface Temp. (deg R):	500.0788	501.5048	506.6906	511.6057	516.3650	520.3107	522.1042	521.1070	517.7595	512.1979	507.2236	502.3134
Daily Min. Liquid Surface Temp. (deg R):	496.6863	497.5714	501.9048	506.0080	510.3034	514.0639	516.0857	515.4203	512.4297	507.4206	503.5987	499.2262
Daily Max. Liquid Surface Temp. (deg R):	503.4714	505.4382	511.4763	517.2033	522.4266	526.5575	528.1227	526.7938	523.0892	516.9753	510.8485	505.4006
Daily Ambient Temp. Range (deg. R):	15.2000	16.6000	19.2000	21.5000	22.2000	22.0000	21.0000	20.6000	20.8000	20.2000	16.3000	14.2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9994	0.9993	0.9992	0.9990	0.9987	0.9985	0.9985	0.9985	0.9986	0.9990	0.9992	0.9993
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Vapor Space Outage (ft):	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401	3.7401
Working Losses (lb):	0.0012	0.0013	0.0016	0.0020	0.0025	0.0029	0.0030	0.0030	0.0026	0.0020	0.0016	0.0013
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Net Throughput (gal/mo.):	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000	125.0000
Annual Turnovers:	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000	500.0000
Maximum Liquid Height (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Tank Diameter (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	0.0032	0.0035	0.0052	0.0071	0.0097	0.0112	0.0115	0.0108	0.0091	0.0066	0.0042	0.0032

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Brooke ST-1 - Vertical Fixed Roof Tank
Follansbee, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.03	0.06	0.09

Attachment L
EMISSIONS UNIT DATA SHEET
STORAGE TANKS

Provide the following information for <u>each</u> new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT **www.epa.gov/tnn/tanks.html**), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (**http://www.epa.gov/tnn/chief/**).

I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name **Diesel**	2. Tank Name **Diesel Storage Tank ST-2**
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) **ST-2**	4. Emission Point Identification No. (as assigned on *Equipment List Form*) **ST-2**
5. Date of Commencement of Construction (for existing tanks) 2017	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) **NA**	
7A. Does the tank have more than one mode of operation? ☐ Yes ☒ No (e.g. Is there more than one product stored in the tank?)	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode). **NA**	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): **NA**	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. **3,000 gallons**	
9A. Tank Internal Diameter (ft) **7**	9B. Tank Internal Height (or Length) (ft) **10.5**
10A. Maximum Liquid Height (ft) **10.5**	10B. Average Liquid Height (ft) **7**
11A. Maximum Vapor Space Height (ft) **10.25**	11B. Average Vapor Space Height (ft) **5.25**
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. **3,000 gallons**	

13A. Maximum annual throughput (gal/yr) **6,000**	13B. Maximum daily throughput (gal/day) **As required**

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume)
2

15. Maximum tank fill rate (gal/min) **100**

16. Tank fill method ☒ Submerged ☐ Splash ☐ Bottom Loading

17. Complete 17A and 17B for Variable Vapor Space Tank Systems ☒ Does Not Apply

17A. Volume Expansion Capacity of System (gal) NA	17B. Number of transfers into system per year **NA**

18. Type of tank (check all that apply):
- ☒ Fixed Roof X vertical ___ horizontal ___ flat roof ___ cone roof ___ dome roof ___ other (describe)
- ☐ External Floating Roof ___ pontoon roof ___ double deck roof
- ☐ Domed External (or Covered) Floating Roof
- ☐ Internal Floating Roof ___ vertical column support ___ self-supporting
- ☐ Variable Vapor Space ___ lifter roof ___ diaphragm
- ☐ Pressurized ___ spherical ___ cylindrical
- ☐ Underground
- ☐ Other (describe)

III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction:
☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe)

20A. Shell Color Light Gray	20B. Roof Color Light Gray	20C. Year Last Painted 2016

21. Shell Condition (if metal and unlined):
☒ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable

22A. Is the tank heated? ☐ YES ☒ NO

22B. If YES, provide the operating temperature (°F) **NA**

22C. If YES, please describe how heat is provided to tank. **NA**

23. Operating Pressure Range (psig): Ambient to Ambient

24. Complete the following section for **Vertical Fixed Roof Tanks** ☐ Does Not Apply

24A. For dome roof, provide roof radius (ft) **NA**

24B. For cone roof, provide slope (ft/ft) **NA**

25. Complete the following section for **Floating Roof Tanks** ☒ Does Not Apply

25A. Year Internal Floaters Installed:

25B. Primary Seal Type: (check one) ☐ Metallic (Mechanical) Shoe Seal ☐ Liquid Mounted Resilient Seal ☐ Vapor Mounted Resilient Seal ☐ Other (describe):

25C. Is the Floating Roof equipped with a Secondary Seal? ☐ YES ☐ NO

25D. If YES, how is the secondary seal mounted? (check one) ☐ Shoe ☐ Rim ☐ Other (describe):

25E. Is the Floating Roof equipped with a weather shield? ☐ YES ☐ NO

25F. Describe deck fittings; indicate the number of each type of fitting:		
ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
COLUMN WELL		
BUILT-UP COLUMN – SLIDING COVER, GASKETED:	BUILT-UP COLUMN – SLIDING COVER, UNGASKETED:	PIPE COLUMN – FLEXIBLE FABRIC SLEEVE SEAL:
LADDER WELL		
PIP COLUMN – SLIDING COVER, GASKETED:	PIPE COLUMN – SLIDING COVER, UNGASKETED:	
GAUGE-HATCH/SAMPLE PORT		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
VACUUM BREAKER		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
RIM VENT		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
DECK DRAIN (3-INCH DIAMETER)		
OPEN:	90% CLOSED:	
STUB DRAIN		
1-INCH DIAMETER:		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks ☐ Does Not Apply	
26A. Deck Type: ☐ Bolted ☐ Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam: ☐ Continuous sheet construction 5 feet wide ☐ Continuous sheet construction 6 feet wide ☐ Continuous sheet construction 7 feet wide ☐ Continuous sheet construction 5 × 7.5 feet wide ☐ Continuous sheet construction 5 × 12 feet wide ☐ Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft^2)
For column supported tanks: 26F. Number of columns:	26G. Diameter of each column:

IV. SITE INFORMANTION (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. **See TANKS Summary Sheet**
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft^2·day))
33. Atmospheric Pressure (psia)

V. LIQUID INFORMATION (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid: **See TANKS Summary Sheet**	
34A. Minimum (°F)	34B. Maximum (°F)
35. Average operating pressure range of tank:	
35A. Minimum (psig)	35B. Maximum (psig)
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)

39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.

39A. Material Name or Composition			
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			

Maximum Vapor Pressure 39F. True (psia) 39G. Reid (psia)			
Months Storage per Year 39H. From 39I. To			

VI. EMISSIONS AND CONTROL DEVICE DATA (required)

40. Emission Control Devices (check as many as apply): ☐ Does Not Apply

- ☐ Carbon Adsorption[1]
- ☐ Condenser[1]
- ☐ Conservation Vent (psig)
  - Vacuum Setting Pressure Setting
- ☐ Emergency Relief Valve (psig)
- ☐ Inert Gas Blanket of
- ☐ Insulation of Tank with
- ☐ Liquid Absorption (scrubber)[1]
- ☐ Refrigeration of Tank
- ☐ Rupture Disc (psig)
- ☐ Vent to Incinerator[1]
- ☐ Other[1] (describe):

[1] Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

☒ Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Brooke ST-2
City:	Follansbee
State:	West Virginia
Company:	Energy Solutions Consortium
Type of Tank:	Vertical Fixed Roof Tank
Description:	Brooke storage tank 2, 3,000 gallons, diesel

Tank Dimensions

Shell Height (ft):	10.50
Diameter (ft):	7.00
Liquid Height (ft) :	10.50
Avg. Liquid Height (ft):	7.00
Volume (gallons):	3,000.00
Turnovers:	4.60
Net Throughput(gal/yr):	13,800.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Brooke ST-2 - Vertical Fixed Roof Tank
Follansbee, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	40.41	37.02	43.80	50.33	0.0032	0.0031	0.0036	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Feb	41.83	37.90	45.77	50.33	0.0034	0.0031	0.0039	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Mar	47.02	42.23	51.81	50.33	0.0041	0.0034	0.0050	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Apr	51.94	46.34	57.53	50.33	0.0051	0.0040	0.0067	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	May	56.70	50.63	62.76	50.33	0.0064	0.0047	0.0078	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Jun	60.64	54.39	66.89	50.33	0.0075	0.0058	0.0085	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Jul	62.43	56.42	68.45	50.33	0.0078	0.0064	0.0088	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Aug	61.44	55.75	67.12	50.33	0.0076	0.0062	0.0085	130.0000			188.00	Option 1: VP60 = .0074 VP70 = .009
Distillate fuel oil no. 2	Sep	58.09	52.76	63.42	50.33	0.0068	0.0053	0.0079	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Oct	52.53	47.75	57.31	50.33	0.0052	0.0042	0.0066	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074
Distillate fuel oil no. 2	Nov	47.55	43.93	51.18	50.33	0.0042	0.0037	0.0048	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Dec	42.64	39.56	45.73	50.33	0.0035	0.0031	0.0039	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Brooke ST-2 - Vertical Fixed Roof Tank
Follansbee, West Virginia

Month:	January	February	March	April	May	June	July	August	September	October	November	December

Standing Losses (lb):	0.0083	0.0094	0.0156	0.0218	0.0308	0.0352	0.0360	0.0333	0.0273	0.0195	0.0111	0.0081
Vapor Space Volume (cu ft):	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0229	0.0272	0.0336	0.0397	0.0429	0.0440	0.0420	0.0396	0.0371	0.0332	0.0244	0.0204
Vented Vapor Saturation Factor:	0.9993	0.9993	0.9991	0.9989	0.9986	0.9984	0.9984	0.9984	0.9986	0.9989	0.9991	0.9993
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735	153.1735
Tank Diameter (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Vapor Space Outage (ft):	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801
Tank Shell Height (ft):	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000
Average Liquid Height (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Roof Outage (ft):	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801
Roof Outage (Dome Roof)												
Roof Outage (ft):	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801	0.4801
Dome Radius (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Shell Radius (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Daily Avg. Liquid Surface Temp. (deg. R):	500.0788	501.5048	506.6906	511.6057	516.3650	520.3107	522.1042	521.1070	517.7595	512.1979	507.2236	502.3134
Daily Average Ambient Temp. (deg. F):	26.1000	28.6000	39.4000	49.5500	59.5000	67.9000	72.1000	70.5000	63.9000	52.4000	42.2500	31.5000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983	509.9983
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	551.7325	794.4441	1,117.4249	1,451.8275	1,735.7842	1,921.7044	1,881.0938	1,662.8121	1,332.5340	959.1072	580.6041	446.3989
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0229	0.0272	0.0336	0.0397	0.0429	0.0440	0.0420	0.0396	0.0371	0.0332	0.0244	0.0204
Daily Vapor Temperature Range (deg. R):	13.5702	15.7336	19.1429	22.3907	24.2463	24.9873	24.0740	22.7470	21.3189	19.1094	14.4997	12.3489
Daily Vapor Pressure Range (psia):	0.0005	0.0008	0.0016	0.0027	0.0032	0.0027	0.0024	0.0024	0.0026	0.0024	0.0012	0.0008
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0031	0.0031	0.0034	0.0040	0.0047	0.0058	0.0064	0.0062	0.0053	0.0042	0.0037	0.0031
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0036	0.0039	0.0050	0.0067	0.0078	0.0085	0.0088	0.0085	0.0079	0.0066	0.0048	0.0039
Daily Avg. Liquid Surface Temp. (deg R):	500.0788	501.5048	506.6906	511.6057	516.3650	520.3107	522.1042	521.1070	517.7595	512.1979	507.2236	502.3134
Daily Min. Liquid Surface Temp. (deg R):	496.6863	497.5714	501.9048	506.0080	510.3034	514.0639	516.0857	515.4203	512.4297	507.4206	503.5987	499.2262
Daily Max. Liquid Surface Temp. (deg R):	503.4714	505.4382	511.4763	517.2033	522.4266	526.5575	528.1227	526.7938	523.0892	516.9753	510.8485	505.4006
Daily Ambient Temp. Range (deg. R):	15.2000	16.6000	19.2000	21.5000	22.2000	22.0000	21.0000	20.6000	20.8000	20.2000	16.3000	14.2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9993	0.9993	0.9991	0.9989	0.9986	0.9984	0.9984	0.9984	0.9986	0.9989	0.9991	0.9993
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Vapor Space Outage (ft):	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801	3.9801
Working Losses (lb):	0.0112	0.0119	0.0145	0.0180	0.0229	0.0267	0.0277	0.0272	0.0244	0.0186	0.0148	0.0124
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0032	0.0034	0.0041	0.0051	0.0064	0.0075	0.0078	0.0076	0.0068	0.0052	0.0042	0.0035
Net Throughput (gal/mo.):	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000	1,150.0000
Annual Turnovers:	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000	4.6000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000	3,000.0000
Maximum Liquid Height (ft):	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000
Tank Diameter (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	0.0196	0.0214	0.0301	0.0399	0.0537	0.0619	0.0637	0.0604	0.0516	0.0381	0.0259	0.0204

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Brooke ST-2 - Vertical Fixed Roof Tank
Follansbee, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.23	0.26	0.49

ATTACHMENT M
AIR POLLUTION CONTROL DEVICES

The Combined-Cycle Combustion Turbines will be equipped with dry low-NO_x combustors (DLNC). These combustion controls along with Selective Catalytic Reduction (SCR) systems will control emissions of nitrogen oxides (NO_x). Oxidation catalysts will be used to control the turbines' carbon monoxide (CO) and volatile organic compounds (VOC) emissions. The Auxiliary Boiler will be equipped with low-NO_x burners (LNB) to control NO_x emissions.

The proposed emission control systems and association regulatory implications are further discussed in **Section 3.4 – Prevention of Significant Deterioration (PSD)** of this permit application package.

ATTACHMENT N
SUPPORTING EMISSION CALCULATIONS

Potential emissions from the Project emission sources are estimated using various calculation methodologies including vendor data, emission factors from USEPA's Compilation of Air Pollutant Emission Factors (AP-42) publication, material balances, New Source Performance Standards (NSPS) emission standards, USEPA's Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98), and/or engineering calculations.

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Combustion Turbines

Pollutant	Maximum Short Term Emissions: 1 CT (lb/ hr)	Maximum Annual Steady State Emissions: 2 CTs (tons/yr)	Startup and Shutdown Emissions: 2 CTs (tons/yr)	Total Annual Emissions: 2 CTs (tons/yr)
VOC	7.43	65.1	11.6	76.7
NO_x	21.4	187.5	14.6	202.0
CO	13.0	113.9	79.7	193.6
SO_2	4.6	39.9	-- [1]	39.9
$PM_{10}/PM_{2.5}$	15.5	135.8	1.6	137.4
PM	15.5	135.8	1.6	137.4
Pb	0.001	0.012	-- [1]	0.012
H_2SO_4	2.93	25.6	-- [1]	25.6

[1] *Worst-case annual emissions are addressed by steady-state operation.*

Auxiliary Boiler

Pollutant	Maximum Short Term Emissions (lb/ hr)	Maximum Annual Emissions (tons/yr)
VOC	0.90	2.05
NO_x	1.23	2.82
CO	4.14	9.47
SO_2	0.12	0.28
$PM_{10}/PM_{2.5}$	0.87	1.99
PM	0.87	1.99
Pb	5.43E-05	1.24E-04
H_2SO_4	9.51E-03	2.18E-02

ESC Brooke County Power I, LLC

Facility Emissions Summary Tables

Emergency Generator and Fire Water Pump

Pollutant	Emergency Generator Maximum Short Term Emissions (lb/hr)	Emergency Generator Maximum Annual Emissions (tons/yr)	Fire Water Pump Maximum Short Term Emissions (lb/hr)	Fire Water Pump Maximum Annual Emissions (tons/yr)
VOC	0.65	0.03	0.06	0.00
NO_x	32.22	1.61	1.87	0.09
CO	1.77	0.09	0.31	0.02
SO_2	2.92E-02	1.46E-03	3.17E-03	1.59E-04
$PM_{10}/PM_{2.5}$	0.15	0.01	0.05	0.00
PM	0.15	0.01	0.05	0.00
Pb	--	--	--	--
H_2SO_4	--	--	--	--

Fuel Gas Heater

Pollutant	Fuel Gas Heater Maximum Short Term Emissions (lb/hr)	Fuel Gas Heater Maximum Annual Emissions (tons/yr)
VOC	0.04	0.17
NO_x	0.19	0.85
CO	0.21	0.92
SO_2	0.01	2.62E-02
$PM_{10}/PM_{2.5}$	0.04	0.18
PM	0.04	0.18
Pb	--	--
H_2SO_4	--	--

Cooling Tower

Pollutant	Cooling Tower Maximum Short Term Emissions (lb/hr)	Cooling Tower Maximum Annual Emissions (tons/yr)
PM	6.15	26.95
PM_{10}	0.27	1.20
$PM_{2.5}$	0.0051	0.0222

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Facility-Wide Emissions Summary

Unit	Annual Emissions (tons/yr)									
	VOC	NO_x	CO	SO_2	PM_{10}	PM	$PM_{2.5}$	Pb	H_2SO_4	CO_2e
CTs (2) - Steady State	65.1	187.5	113.9	39.9	135.8	135.8	135.8	0.012	25.6	3,358,156
CTs - Startups & Shutdowns	11.6	14.6	79.7	--	1.6	1.6	1.6	-- (1)	--	--
Auxiliary Boiler	2.05	2.82	9.47	0.28	1.99	1.99	1.99	1.2E-04	0.022	33,790
Fuel Gas Heater	0.17	0.85	0.92	0.03	0.18	0.18	0.18	--	--	3,120
Emergency Generator	0.03	1.61	0.09	0.001	0.01	0.01	0.01	--	--	158.1
Fire Water Pump	0.003	0.09	0.02	1.59E-04	0.003	0.003	0.003	--	--	17.2
Cooling Tower	--	--	--	--	1.20	26.95	0.02	--	--	--
Circuit Breakers	--	--	--	--	--	--	--	--	--	58.4
Total	**79.0**	**207.4**	**204.1**	**40.3**	**140.8**	**166.5**	**139.6**	**0.013**	**25.7**	**3,395,300**

Emission Calculations - GHGs

Source	CO_2		CH_4		N_2O		SF_6		CO_2e	
	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
Combustion Turbines (2)	766,000	3,355,080	12.8	56.1	1.3	5.6	--	--	766,702	3,358,156
Auxiliary Boiler	14,706	33,646	7.4E-01	1.7E+00	1.5E-01	3.4E-01	--	--	14,768	33,790
Fuel Gas Heater	709	3,107	3.6E-02	1.6E-01	7.1E-03	3.1E-02	--	--	712	3,120
Emergency Generator	3,150	158	1.3E-01	6.4E-03	2.6E-02	1.3E-03	--	--	3,161	158.1
Fire Water Pump	342	17	1.4E-02	6.9E-04	2.8E-03	1.4E-04	--	--	344	17.2
Circuit Breakers	--	--	--	--	--	--	5.85E-04	2.56E-03	13.3	58.4
Total CO_2e	**784,908**	**3,392,008**	**14**	**58**	**1**	**6**	**5.85E-04**	**2.56E-03**	**785,701**	**3,395,300**

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Hazardous Air Pollutant (HAP)	Two CTs (lb/hr)	Auxiliary Boiler (lb/hr)	Fuel Gas Heater (lb/hr)	Emergency Generator (lb/hr)	Fire Water Pump (lb/hr)	Facility Total (tons/yr)
2-Methylnaphthalene	NA	2.61E-06	1.26E-07	NA	NA	6.52E-06
Acetaldehyde	2.33E-02	NA	NA	4.87E-04	1.61E-03	1.02E-01
Acrolein	3.72E-03	NA	NA	1.52E-04	7.88E-04	1.63E-02
Arsenic	NA	2.17E-05	1.05E-06	NA	NA	5.43E-05
Benzene	6.98E-03	2.28E-04	1.10E-05	1.50E-02	1.96E-03	3.20E-02
Cadmium	NA	NA	NA	NA	NA	0.00E+00
Chromium	NA	1.52E-04	7.34E-06	NA	NA	3.80E-04
Cobalt	NA	9.13E-06	4.40E-07	NA	NA	2.28E-05
Dichlorobenzene	NA	1.30E-04	6.29E-06	NA	NA	3.26E-04
Ethylbenzene	1.86E-02	NA	NA	NA	NA	8.15E-02
Fluoranthene	NA	3.26E-07	1.57E-08	NA	NA	8.15E-07
Fluorene	NA	3.04E-07	1.47E-08	NA	NA	7.60E-07
Formaldehyde	1.74E+00	8.15E-03	3.93E-04	1.52E-03	2.48E-03	7.66E+00
Hexane	NA	1.96E-01	9.43E-03	NA	NA	4.89E-01
Manganese	NA	4.13E-05	1.99E-06	NA	NA	1.03E-04
Mercury	NA	2.83E-05	1.36E-06	NA	NA	7.06E-05
Naphthalene	7.56E-04	6.63E-05	3.20E-06	2.51E-03	1.78E-04	3.61E-03
Nickel	NA	2.28E-04	1.10E-05	NA	NA	5.70E-04
Phenanathrene	NA	1.85E-06	8.91E-08	NA	NA	4.62E-06
POM	1.28E-03	NA	NA	4.10E-03	3.53E-04	5.82E-03
Pyrene	NA	5.43E-07	2.62E-08	NA	NA	1.36E-06
Toluene	7.56E-02	3.69E-04	1.78E-05	5.43E-03	8.59E-04	3.32E-01
Xylenes	3.72E-02	NA	NA	3.73E-03	5.99E-04	1.63E-01
Maximum Emissions (Single HAP)						**7.66**
Total HAPs						**8.9**

NA = No Emission Factor Available.

Global Warming Potential - CO_2	1
Global Warming Potential - CH_4	25
Global Warming Potential - N_2O	298
Global Warming Potential - SF_6	22,800

ESC Brooke County Power I, LLC

Emission Calculations - Combustion Turbines

Input Data	
No. of Combustion Turbines	2
Natural Gas Heating Value (Btu/lb - HHV)	23,660
Natural Gas Heating Value (Btu/lb - LHV)	21,336
LHV-HHV Conversion Factor (Natural Gas)	1.11
Ethane Heating Value (Btu/lb - HHV)	13,837
Ethane Heating Value (Btu/lb - LHV)	12,667
LHV-HHV Conversion Factor (Ethane)	1.09
CT Annual Capacity Factor (%)	100%
CT Annual Operating Hours (hr/yr)	8,760
Max. Heat Input (MMBtu/hr) per CT (HHV, all conditions)	2,906.8
Max. Heat Input (MMBtu/yr) per CT (HHV, all conditions)	2.55E+07
Pb Emission Factor (lb/MMscf)	0.0005
Global Warming Potential - CO_2	1
Global Warming Potential - CH_4	25
Global Warming Potential - N_2O	298

40 CFR Part 98 Subpart C Emission Factors for GHG Pollutants[4]		
	Natural Gas	**Ethane**
Conversion Factor (kg to lb)	2.20462	2.20462
CO_2 Emission Factor (kg/MMBtu)	53.06	59.60
CO_2 Emission Factor (lb/MMBtu)	116.98	131.40
CH_4 Emission Factor (kg/MMBtu)	1.00E-03	3.00E-03
CH_4 Emission Factor (lb/MMBtu)	2.20E-03	6.61E-03
N_2O Emission Factor (kg/MMBtu)	1.00E-04	6.00E-04
N_2O Emission Factor (lb/MMBtu)	2.20E-04	1.32E-03
Maximum Hourly Fuel Use (SCF/hr)	2,822,136	1,630,286
Maximum Annual Fuel Use (MMSCF/yr)	24,722	14,281

Pollutant	1 CT		2 CTs	
	lb/hr	**ton/yr[1]**	**lb/hr**	**ton/yr**
VOC	7.43	32.5	14.9	65.1
NO_x	21.4	93.7	42.8	187.5
CO	13.0	56.9	26.0	113.9
SO_2	4.56	20.0	9.1	39.9
$PM/PM_{10}/PM_{2.5}$	15.5	67.9	31.0	135.8
Pb[2]	0.0014	0.006	0.003	0.012
H_2SO_4[3]	2.93	12.82	5.86	25.6
CO_2[3]	383,000	1,677,540	766,000	3,355,080
CH_4[4]	6.4	28.1	12.8	56.1
N_2O[4]	0.6	2.8	1.3	5.6
GHG (Mass Basis)[5]	383,007	1,677,571	766,014	3,355,142
GHG (CO_2e Basis)[6, 7]	383,351	1,679,078	766,702	3,358,156

(1) Tons/yr = (Maximum lb/hr) x (8,760 hr/yr) x (1 ton/2000 lb).

(2) Pb emission factor from USEPA's AP-42, Section 1.4.

(3) Based on the emissions and performance data provided by GE.

(4) Default emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing.

(5) The sum of potential annual GHG emissions on a mass basis (i.e., no GWP applied).

(6) For each GHG, emissions are normalized to a CO_2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

(7) The sum of potential annual GHG emissions on a CO_2e basis.

ESC Brooke County Power I, LLC
Emission Calculations - Combustion Turbine Startups and Shutdowns

Type	Pollutant	Emissions (lb/event)[1]	Duration (min/event)[1]	No. of Events per Year[1]	Total Duration (hr/yr)	Emissions (lb/yr)	Emissions from 1 CT (tons/yr)	Emissions from 2 CTs (tons/yr)
	NOx							
Startups	Hot	38	20	208	69.3	7,904	4.0	7.9
	Warm	92	40	40	26.7	3,680	1.8	3.7
	Cold	174	55	12	11.0	2,088	1.0	2.1
Shutdowns		3.4	12	260	52.0	884	0.4	0.9
					Total	14,556	7.3	14.6
	CO							
Startups	Hot	156	20	208	69.3	32,448	16.2	32.4
	Warm	161	40	40	26.7	6,440	3.2	6.4
	Cold	693	55	12	11.0	8,316	4.2	8.3
Shutdowns		125	12	260	52.0	32,500	16.3	32.5
					Total	79,704	39.9	79.7
	VOC (as Methane)							
Startups	Hot	14	20	208	69.3	2,912	1.5	2.9
	Warm	15	40	40	26.7	600	0.3	0.6
	Cold	71	55	12	11.0	852	0.4	0.9
Shutdowns		28	12	260	52.0	7,280	3.6	7.3
					Total	11,644	5.8	11.6
	$PM/PM_{10}/PM_{2.5}$							
Startups	Hot	3.3	20	208	69.3	686	0.3	0.7
	Warm	6.7	40	40	26.7	268	0.1	0.3
	Cold	9.2	55	12	11.0	110	0.06	0.11
Shutdowns		2	12	260	52.0	520	0.3	0.5
					Total	1,585	0.8	1.6

(1) Startup and shutdown emission rates obtained from GE performance data.

(2) Startup and shutdown emission rates were not calculated for SO_2, Pb, H_2SO_4, or GHGs. Worst-case emissions for those pollutants were assumed to be steady-state operation.

ESC Brooke County Power I, LLC
Emission Calculations - Auxiliary Boiler

Parameter	Value (Natural Gas)	Value (Ethane)
Natural Gas Heating Value (Btu/scf)	1,030	1,783
Maximum Heat Input (MMBtu/hr):	111.9	111.9
Maximum Heat Input (Btu/hr)	111,918,770	111,918,770
Maximum Hourly Fuel Use (scf/hr)	108,659	62,770
Maximum Hourly Fuel Use (MMscf/hr)	0.1087	0.0628
Maximum Annual Fuel Use (MMscf/yr)	497	287
Maximum Annual Fuel Use (MMBtu/yr)	512,140	512,140
Maximum Annual Operation (hr/yr)	4,576	4,576
Fuel Sulfur Content (gr/scf)	0.4	
Conversion Factor (gr/lb)	7,000	
Conversion Factor SO_2 to SO_3	5%	
Conversion Factor SO_3 to H_2SO_4	100%	
Molecular weight of S	32	
Molecular weight of SO_2	64	
Molecular weight of SO_3	80	
Molecular weight of H_2SO_4	98	
Global Warming Potential - CO_2	1	
Global Warming Potential - CH_4	25	
Global Warming Potential - N_2O	298	
40 CFR Part 98 Subpart C Emission Factors for GHG Pollutants(5)		
	Natural Gas	**Ethane**
Conversion Factor (kg to lb)	2.20462	2.20462
CO_2 Emission Factor (kg/MMBtu)	53.06	59.60
CO_2 Emission Factor (lb/MMBtu)	116.98	131.40
CH_4 Emission Factor (kg/MMBtu)	1.00E-03	3.00E-03
CH_4 Emission Factor (lb/MMBtu)	2.20E-03	6.61E-03
N_2O Emission Factor (kg/MMBtu)	1.00E-04	6.00E-04
N_2O Emission Factor (lb/MMBtu)	2.20E-04	1.32E-03

Pollutant	Emission Factor (lb/MMBtu)(2, 5)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)	Emissions (mg/m^3)
VOC	0.008	0.90	2.05	6,769	12.00
NOx	0.011	1.23	2.82	9,307	16.50
CO	0.037	4.14	9.47	31,305	55.48
SO_2 (3)	0.0011	0.12	0.28	939	1.66
PM (1)/PM_{10}/$PM_{2.5}$	0.008	0.87	1.99	6,578	11.66
Pb	4.85E-07	5.43E-05	1.24E-04	0.41	7.28E-04
H_2SO_4 (4)	8.50E-05	9.51E-03	2.18E-02	71.88	1.27E-01
CO_2 (5)	131.40	14,706	33,646	111,172,422	197,040
CH_4 (5)	0.01	0.74	1.7	5,596	9.92
N_2O (5)	0.0013	0.15	0.3	1,119.19	1.984
GHG (Mass Basis) (6)	--	14,706	33,648	111,179,137	197,052
GHG (CO_2e Basis) (7, 8)	--	14,768	33,790	111,645,837	197,879

(1) PM emission factor includes filterable and condensable fractions.

(2) Emission factors obtained from potential vendor.

(3) SO_2 lb/hr emission rate calculated as a mass balance and based on fuel consumption and fuel sulfur content.

(4) Exhaust emissions are based on 95% fuel sulfur conversion to SO_2 and 5% fuel sulfur conversion to SO_3. Sulfuric acid mist (H_2SO_4) emission calculations conservatively assume that all SO_3 combines with water to form sulfur mist.
SO_3 = SO_2 emissions (lb/hr) * 5% * MW SO_3/MW SO_2
H_2SO_4 = SO_3 emissions (lb/hr) * 100% * MW H_2SO_4/MW SO_3

(5) Default emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing and ethane combustion. Per Table C-2, the default CH_4 and N_2O factors for ethane combustion are those for "Petroleum".

(6) The sum of potential annual GHG emissions on a mass basis (i.e., no GWP applied).

(7) For each GHG, emissions are normalized to a CO_2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

(8) The sum of potential annual GHG emissions on a CO_2e basis.

Hazardous Air Pollutants

Pollutant	Emission Factor (lb/MMscf) (1)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)(2)	Emissions (mg/m^3)(3)
2-Methylnaphthalene	2.4E-05	2.61E-06	5.97E-06	1.97E-02	3.49E-05
Arsenic	2.0E-04	2.17E-05	4.97E-05	1.64E-01	2.91E-04
Benzene	2.1E-03	2.28E-04	5.22E-04	1.73E+00	3.06E-03
Cadmium	1.1E-03	1.20E-04	2.73E-04	9.04E-01	1.60E-03
Chromium	1.4E-03	1.52E-04	3.48E-04	1.15E+00	2.04E-03
Cobalt	8.4E-05	9.13E-06	2.09E-05	6.90E-02	1.22E-04
Dichlorobenzene	1.2E-03	1.30E-04	2.98E-04	9.86E-01	1.75E-03
Fluoranthene	3.0E-06	3.26E-07	7.46E-07	2.46E-03	4.37E-06
Fluorene	2.8E-06	3.04E-07	6.96E-07	2.30E-03	4.08E-06
Formaldehyde	7.5E-02	8.15E-03	1.86E-02	6.16E+01	1.09E-01
Hexane	1.8E+00	1.96E-01	4.48E-01	1.48E+03	2.62E+00
Manganese	3.8E-04	4.13E-05	9.45E-05	3.12E-01	5.53E-04
Mercury	2.6E-04	2.83E-05	6.46E-05	2.14E-01	3.79E-04
Naphthalene	6.1E-04	6.63E-05	1.52E-04	5.01E-01	8.88E-04
Nickel	2.1E-03	2.28E-04	5.22E-04	1.73E+00	3.06E-03
Phenanathrene	1.7E-05	1.85E-06	4.23E-06	1.40E-02	2.48E-05
Pyrene	5.0E-06	5.43E-07	1.24E-06	4.11E-03	7.28E-06
Toluene	3.4E-03	3.69E-04	8.45E-04	2.79E+00	4.95E-03

(1) Emission factors obtained from AP-42, Ch. 1.4, Tables 1.4-3 and 1.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(2) Grams per Pound Conversion Factor 453.592

(3) Based on stack exhaust flow rate of (ACFM) 19,925

ESC Brooke County Power I, LLC
Emission Calculations - Fuel Gas Heater

Parameter	Value (Natural Gas)	Value (Ethane)
Natural Gas Heating Value (Btu/scf)	1,030	1,783
Maximum Heat Input (MMBtu/hr):	5.4	5.4
Maximum Heat Input (Btu/hr)	5,398,230	5,398,230
Maximum Annual Fuel Use (scf/hr)	5,241	3,028
Maximum Annual Fuel Use (MMscf/hr)	0.0052	0.0030
Maximum Annual Fuel Use (MMscf/yr)	46	27
Maximum Annual Fuel Use (MMBtu/yr)	47,288	47,288
Maximum Annual Operation (hr/yr)	8,760	8,760
Fuel Sulfur Content (gr/scf)	0.4	
Conversion Factor (gr/lb)	7,000	
Conversion Factor SO_2 to SO_3	5%	
Conversion Factor SO_3 to H_2SO_4	100%	
Molecular weight of S	32	
Molecular weight of SO_2	64	
Molecular weight of SO_3	80	
Molecular weight of H_2SO_4	98	
Global Warming Potential - CO_2	1	
Global Warming Potential - CH_4	25	
Global Warming Potential - N_2O	298	

40 CFR Part 98 Subpart C Emission Factors for GHG Pollutants[5]	Natural Gas	Ethane
Conversion Factor (kg to lb)	2.20462	2.20462
CO_2 Emission Factor (kg/MMBtu)	53.06	59.60
CO_2 Emission Factor (lb/MMBtu)	116.98	131.40
CH_4 Emission Factor (kg/MMBtu)	1.00E-03	3.00E-03
CH_4 Emission Factor (lb/MMBtu)	2.20E-03	6.61E-03
N_2O Emission Factor (kg/MMBtu)	1.00E-04	6.00E-04
N_2O Emission Factor (lb/MMBtu)	2.20E-04	1.32E-03

Pollutant	Emission Factor (lb/MMBtu)[2, 5]	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)	Emissions (mg/m^3)
VOC	0.007	0.04	0.17	285.67	10.50
NOx	0.036	0.19	0.85	1,469	53.99
CO	0.039	0.21	0.92	1,583	58.19
SO_2 [3]	0.0011	0.01	0.03	45.28	1.66
PM [1]/PM_{10}/$PM_{2.5}$	0.008	0.04	0.18	317.26	11.66
Pb	4.85E-07	2.62E-06	1.15E-05	0.02	7.28E-04
H_2SO_4 [4]	8.50E-05	4.59E-04	2.01E-03	3.47	1.27E-01
CO_2 [5]	131.40	709	3,107	5,362,231	197,050
CH_4 [5]	0.01	0.04	0.2	269.91	9.92
N_2O [5]	0.00	0.01	0.03	53.98	1.984
GHG (Mass Basis) [6]	--	709	3,107	5,362,555	197,062
GHG (CO_2e Basis) [7, 8]	--	712	3,120	5,385,066	197,889

(1) PM emission factor includes filterable and condensable fractions.

(2) Emission factors obtained from potential vendor.

(3) SO_2 lb/hr emission rate calculated as a mass balance and based on fuel consumption and fuel sulfur content.

(4) Exhaust emissions are based on 95% fuel sulfur conversion to SO_2 and 5% fuel sulfur conversion to SO_3. Sulfuric acid mist (H_2SO_4) emission calculations conservatively assume that all SO_3 combines with water to form sulfur mist.
SO_3 = SO_2 emissions (lb/hr) * 5% * MW SO_3/MW SO_2
H_2SO_4 = SO_3 emissions (lb/hr) * 100% * MW H_2SO_4/MW SO_3

(5) Default emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for natural gas firing and ethane combustion. Per Table C-2, the default CH_4 and N_2O factors for ethane combustion are those for "Petroleum".

(6) The sum of potential annual GHG emissions on a mass basis (i.e., no GWP applied).

(7) For each GHG, emissions are normalized to a CO_2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective Global warming potentials (GWP). GWP of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

(8) The sum of potential annual GHG emissions on a CO_2e basis.

Hazardous Air Pollutants

Pollutant	Emission Factor (lb/MMscf) [1]	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)[2]	Emissions (mg/m^3)[3]
2-Methylnaphthalene	2.4E-05	1.26E-07	5.51E-07	9.51E-04	3.49E-05
Arsenic	2.0E-04	1.05E-06	4.59E-06	7.92E-03	2.91E-04
Benzene	2.1E-03	1.10E-05	4.82E-05	8.32E-02	3.06E-03
Cadmium	1.1E-03	5.77E-06	2.53E-05	4.36E-02	1.60E-03
Chromium	1.4E-03	7.34E-06	3.21E-05	5.55E-02	2.04E-03
Cobalt	8.4E-05	4.40E-07	1.93E-06	3.33E-03	1.22E-04
Dichlorobenzene	1.2E-03	6.29E-06	2.75E-05	4.75E-02	1.75E-03
Fluoranthene	3.0E-06	1.57E-08	6.89E-08	1.19E-04	4.37E-06
Fluorene	2.8E-06	1.47E-08	6.43E-08	1.11E-04	4.08E-06
Formaldehyde	7.5E-02	3.93E-04	1.72E-03	2.97E+00	1.09E-01
Hexane	1.8E+00	9.43E-03	4.13E-02	7.13E+01	2.62E+00
Manganese	3.8E-04	1.99E-06	8.72E-06	1.51E-02	5.53E-04
Mercury	2.6E-04	1.36E-06	5.97E-06	1.03E-02	3.79E-04
Naphthalene	6.1E-04	3.20E-06	1.40E-05	2.42E-02	8.88E-04
Nickel	2.1E-03	1.10E-05	4.82E-05	8.32E-02	3.06E-03
Phenanathrene	1.7E-05	8.91E-08	3.90E-07	6.74E-04	2.48E-05
Pyrene	5.0E-06	2.62E-08	1.15E-07	1.98E-04	7.28E-06
Toluene	3.4E-03	1.78E-05	7.80E-05	1.35E-01	4.95E-03

(1) Emission factors obtained from AP-42, Ch. 1.4, Tables 1.4-3 and 1.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(2) Grams per Pound Conversion Factor 453.592

(3) Based on stack exhaust flow rate of (ACFM) 961

ESC Brooke County Power I, LLC
Emission Calculations - Emergency Generator (Tier 2)

Parameter	Value
Heating Value of ULSD (Btu/gal):	140,000
ULSD Sulfur Content (wt. %):	0.0015
Rated Output (kW):	2,000
Rated Output (hp):	2,682
Fuel Consumption (gal/hr):	138
Heat Input (MMBtu/hr):	19.3
Maximum Annual Operation (hr/yr)	100
NOx + NMHC Emission Factor (g/hp-hr)	2.8
Concentration of NOx	90%
Concentration of NMHC	10%
Molecular weight of S	32
Molecular weight of SO_2	64
Fuel Oil Density (lb/gal)	7.05
kg-lb Conversion Factor	2.20462
CO_2 Emission Factor (kg/MMBtu)	73.96
CO_2 Emission Factor (lb/MMBtu)	163.05
CH_4 Emission Factor (kg/MMBtu)	3.00E-03
CH_4 Emission Factor (lb/MMBtu)	6.61E-03
N_2O Emission Factor (kg/MMBtu)	6.00E-04
N_2O Emission Factor (lb/MMBtu)	1.32E-03
Global Warming Potential - CO_2	1
Global Warming Potential - CH_4	25
Global Warming Potential - N_2O	298

Criteria Pollutants

Pollutant	Emission Factor (g/hp-hr) (1)	Emission Factor (lb/MMBtu)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)	Emissions (mg/m^3)
VOC	0.11	--	0.65	0.03	4,917.0	11.4
NOx	5.45	--	32.22	1.61	243,616.1	562.5
CO	0.3	--	1.77	0.09	13,410.1	31.0
SO_2	--	--	0.03	0.001	220.6	0.5
$PM/PM_{10}/PM_{2.5}$	0.025	--	0.15	0.01	1,117.5	2.6
CO_2	--	163	3,150	157.5	23,815,072.3	54,986.7
CH_4	--	6.61E-03	1.28E-01	0.01	966.0	2.2
N_2O	--	1.32E-03	2.56E-02	0.0013	193.2	0.4
GHG (Mass Basis)	--	--	3,150	157.5	23,816,231	54,989
GHG (CO_2e Basis)	--	--	3,161	158.1	23,896,796	55,175

(1) Emission factors NOx, CO, PM, and VOC provided by vendor. SO_2 lb/hr emission rate calculated as a mass balance and based on fuel consumption and fuel oil sulfur content.
(2) Default emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for distillate fuel oil No. 2 firing.
(3) Global warming potentials (GWP) of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.
(4) For each GHG, emissions are normalized to a CO_2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective GWP.
(5) The sum of potential annual GHG emissions on a mass basis (i.e., no GWP applied).
(6) The sum of potential annual GHG emissions on a CO_2e basis.

Hazardous Air Pollutants

Pollutant	Emission Factor (lb/MMBtu)(1), (2)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)(3)	Emissions (mg/m^3)(4)
Acetaldehyde	2.52E-05	4.87E-04	2.43E-05	3.68E+00	8.50E-03
Acrolein	7.88E-06	1.52E-04	7.61E-06	1.15E+00	2.66E-03
Benzene	7.76E-04	1.50E-02	7.50E-04	1.13E+02	2.62E-01
Formaldehyde	7.89E-05	1.52E-03	7.62E-05	1.15E+01	2.66E-02
Naphthalene	1.30E-04	2.51E-03	1.26E-04	1.90E+01	4.38E-02
POM	2.12E-04	4.10E-03	2.05E-04	3.10E+01	7.15E-02
Toluene	2.81E-04	5.43E-03	2.71E-04	4.10E+01	9.48E-02
Xylenes	1.93E-04	3.73E-03	1.86E-04	2.82E+01	6.51E-02

(1) Emission factors obtained from AP-42, Ch. 3.4, Tables 3.4-3 and 3.4-4. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.
(2) Polycyclic Organic Matter (listed as "Total PAH" in AP-42)
(3) Grams per Pound Conversion Factor 453.592
(4) Based on stack exhaust flow rate of (ACFM) 15,295

ESC Brooke County Power I, LLC
Emission Calculations - Fire Water Pump (Tier 2)

Parameter	Value
Heating Value of ULSD (Btu/gal):	140,000
ULSD Sulfur Content (wt. %):	0.0015
Rated Output (hp):	315
Fuel Consumption (gal/hr):	15.0
Heat Input (MMBtu/hr):	2.1
Maximum Annual Operation (hr/yr):	100
NOx + NMHC Emission Factor (g/hp-hr)	3.0
Concentration of NOx	90%
Concentration of NMHC	10%
Molecular weight of S	32
Molecular weight of SO2	64
Fuel Oil Density (lb/gal)	7.05
kg-lb Conversion Factor	2.20462
CO_2 Emission Factor (kg/MMBtu)	73.96
CO_2 Emission Factor (lb/MMBtu)	163.05
CH_4 Emission Factor (kg/MMBtu)	3.00E-03
CH_4 Emission Factor (lb/MMBtu)	6.61E-03
N_2O Emission Factor (kg/MMBtu)	6.00E-04
N_2O Emission Factor (lb/MMBtu)	1.32E-03
Global Warming Potential - CO_2	1
Global Warming Potential - CH_4	25
Global Warming Potential - N_2O	298

Criteria Pollutants

Pollutant	Emission Factor (g/hp-hr)[1]	Emission Factor (lb/MMBtu)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)	Emissions (mg/m^3)
VOC	0.083	--	0.06	0.003	435.75	10.99
NO_x	2.69	--	1.87	0.09	14,123	356.24
CO	0.44	--	0.31	0.02	2,310	58.27
SO_2	--	--	0.003	1.6E-04	23.98	0.60
$PM/PM_{10}/PM_{2.5}$	0.075	--	0.05	0.003	391.13	9.87
CO_2	--	163	342	17.1	2,588,595	65,297
CH_4	--	6.61E-03	1.39E-02	0.001	105.00	2.65
N_2O	--	1.32E-03	2.78E-03	0.0001	21.00	0.53
GHG (Mass Basis)	--	--	342	17.1	2,588,721	65,300
GHG (CO_2e Basis)	--	--	344	17.2	2,597,478	65,521

(1) Emission factors NOx, CO, PM, and VOC provided by vendor. SO_2 lb/hr emission rate calculated as a mass balance and based on fuel consumption and fuel oil sulfur content.

(2) Default emission factors obtained from 40 CFR Part 98, Subpart C: General Stationary Fuel Combustion Sources, Tables C-1 and C-2 for distillate fuel oil No. 2 firing.

(3) Global warming potentials (GWP) of each pollutant established by 40 CFR Part 98, Subpart A: General Provisions, Table A-1.

(4) For each GHG, emissions are normalized to a CO_2e basis by multiplying the mass emissions of each individual GHG pollutant by its respective GWP.

(5) The sum of potential annual GHG emissions on a mass basis (i.e., no GWP applied).

(6) The sum of potential annual GHG emissions on a CO_2e basis.

Hazardous Air Pollutants

Pollutant	Emission Factor (lb/MMBtu)[(1), (2)]	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (mg/min)[(3)]	Emissions (mg/m^3)[(4)]
Acetaldehyde	7.67E-04	1.61E-03	8.05E-05	1.22E+01	3.07E-01
Acrolein	7.88E-06	7.88E-04	1.18E-06	1.84E+01	4.25E-02
Benzene	9.33E-04	1.96E-03	9.80E-05	1.48E+01	3.74E-01
Formaldehyde	1.18E-03	2.48E-03	1.24E-04	1.87E+01	4.73E-01
Naphthalene	8.48E-05	1.78E-04	8.90E-06	1.35E+00	3.40E-02
POM	1.68E-04	3.53E-04	1.76E-05	2.67E+00	6.73E-02
Toluene	4.09E-04	8.59E-04	4.29E-05	6.49E+00	1.64E-01
Xylenes	2.85E-04	5.99E-04	2.99E-05	4.52E+00	1.14E-01

(1) Emission factors obtained from AP-42, Ch. 3.3, Table 3.3-2. Emission factors were not included for pollutants at or below the method detection limits, designated as "less than (<)" in AP-42 emission factor tables.

(2) Polycyclic Organic Matter (listed as "Total PAH" in AP-42)

(3) Grams per Pound Conversion Factor 453.592

(4) Based on stack exhaust flow rate of (ACFM) 1,400

ESC Brooke County Power I, LLC
Emission Calculations - Cooling Tower

Parameter	
Number of Units	1
Design Circulating Water Flow Rate (gpm)	204,000
Cooling Tower Drift Rate (% of circulating water flow rate)	0.0005
(mg/L)	12,000
PI	3.1416
Specific Gravity of Water	1
Specific Gravity of TDS	2.2
PM_{10} Fraction	4.5%
$PM_{2.5}$ Fraction	0.08%
Conversion Factor (min/hr)	60
Grams/lb	453.59
Water Density (L/gal)	3.8
Maximum Annual Operations (hr/yr)	8,760
Conversion Factor (lb/ton)	2,000

Pollutant	PM	PM_{10}	$PM_{2.5}$
Maximum Hourly Emissions (lb/hr)	6.15	0.27	0.0051
Maximum Daily Emissions (lb/day)	147.66	6.59	0.12
Maximum Annual Emissions (tons/yr)	26.9	1.2	0.02219
Concentration (mg/min)	46,511.76	2,075.27	38.31
Concentration (mg/m^3)	1.45	0.06	1.20E-03

Reisman/Frisbie Particle Sizing

EPRI Droplet Diameter (um)	Droplet Volume (µm^3)	Droplet Mass (µg)	Particle Mass (Solids) (µg)	Solid Particle Volume (µm3)	Solid Particle Diameter (µm)	EPRI % Mass Smaller	EPRI % Mass Smaller
10	524	5.24E-04	6.28E-06	2.86	1.760	0.000	**0.08**
20	4189	4.19E-03	5.03E-05	22.85	3.521	0.196	
30	14137	1.41E-02	1.70E-04	77.11	5.281	0.226	
40	33510	3.35E-02	4.02E-04	182.78	7.041	0.514	
50	65450	6.54E-02	7.85E-04	357.00	8.801	1.816	**4.5**
60	113097	1.13E-01	1.36E-03	616.89	10.562	5.702	
70	179594	1.80E-01	2.16E-03	979.61	12.322	21.348	
90	381704	3.82E-01	4.58E-03	2082.02	15.843	49.812	
110	696910	6.97E-01	8.36E-03	3801.33	19.363	70.509	
130	1150347	1.15E+00	1.38E-02	6274.62	22.884	82.023	
150	1767146	1.77E+00	2.12E-02	9638.98	26.404	88.012	
180	3053628	3.05E+00	3.66E-02	16656.15	31.685	91.032	
210	4849048	4.85E+00	5.82E-02	26449.35	36.966	92.468	
240	7238229	7.24E+00	8.69E-02	39481.25	42.247	94.091	
270	10305995	1.03E+01	1.24E-01	56214.52	47.528	94.689	
300	14137167	1.41E+01	1.70E-01	77111.82	52.809	96.288	
350	22449298	2.24E+01	2.69E-01	122450.71	61.610	97.011	
400	33510322	3.35E+01	4.02E-01	182783.57	70.412	98.340	
450	47712938	4.77E+01	5.73E-01	260252.39	79.213	99.071	
500	65449847	6.54E+01	7.85E-01	356999.17	88.015	99.071	
600	113097336	1.13E+02	1.36E+00	616894.56	105.618	100.000	

ESC Brooke County Power I, LLC
Emission Calculations - HAPs

Parameters	Units	CT[1]	Auxiliary Boiler	Fuel Gas Heater	Emergency Generator	Fire Water Pump	CT Organic HAP Control Efficiency[2]
Maximum Heat Input	MMBtu/hr	2,906.8	111.9	5.4	19.3	2.1	90%
Maximum Annual Operation	hr/yr	8,760	4,576	8,760	100	100	

[1] Expected heat input at an ambient temperature of 10 °F.

HAP	CT Emission Factor[1] (lb/MMBtu)	One CT (lb/hr)	Two CT (lb/hr)	One CT (tons/yr)	Two CTs (tons/yr)	Emissions (mg/min)	Emissions (mg/m^3)
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA
Acetaldehyde	4.0E-05	0.0116	2.33E-02	5.09E-02	1.02E-01	87.900	0.00210
Acrolein	6.4E-06	0.0019	3.72E-03	8.15E-03	1.63E-02	14.064	0.000336
Arsenic	NA	NA	NA	NA	NA	NA	NA
Benzene	1.2E-05	0.0035	6.98E-03	1.53E-02	3.06E-02	26.370	0.000629
Cadmium	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA
Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	3.2E-05	0.0093	1.86E-02	4.07E-02	8.15E-02	70.320	0.0017
Fluoranthene	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA
Formaldehyde	3.0E-04	0.8720	1.74E+00	3.82E+00	7.64E+00	6592.506	0.157
Hexane	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA
Naphthalene	1.3E-06	0.0004	7.56E-04	1.66E-03	3.31E-03	2.857	0.0000682
Nickel	NA	NA	NA	NA	NA	NA	NA
Phenanathrene	NA	NA	NA	NA	NA	NA	NA
POM	2.2E-06	0.0006	1.28E-03	2.80E-03	5.60E-03	4.835	0.00012
Pyrene	NA	NA	NA	NA	NA	NA	NA
Toluene	1.3E-04	0.0378	7.56E-02	1.66E-01	3.31E-01	285.675	0.00682
Xylenes	6.4E-05	0.0186	3.72E-02	8.15E-02	1.63E-01	140.640	0.003

NA = No Emission Factor Available.

[1] Emission Factors obtained from EPA's AP-42 Section 3.1, except formaldehyde, which is based on the EPA 95th upper percentile emission factor for CTGs (EPA August 21, 2001 memorandum). The formaldehyde emission factor of 3.0E-04 was obtained by taking the formaldehyde factor in Table 3 of the 8/21/2001 memo of 2.92E-03 lb/MMBtu and applying a control efficiency of 90% to account for the use of Oxidation Catalysts. This value was rounded to 3.0E-04.

[2] A control efficiency of 90% was applied to all other organic HAP emissions to account for the use of Oxidation Catalysts.

Hazardous Air Pollutant (HAP)	Two CTs (lb/hr)	Auxiliary Boiler (lb/hr)	Fuel Gas Heater (lb/hr)	Emergency Generator (lb/hr)	Fire Water Pump (lb/hr)	Two CTs (tons/yr)	Auxiliary Boiler (tons/yr)	Fuel Gas Heater (tons/yr)	Emergency Generator (tons/yr)	Fire Water Pump (tons/yr)	Facility Total (tons/yr)
2-Methylnaphthalene	NA	2.61E-06	1.26E-07	NA	NA	NA	5.97E-06	5.51E-07	NA	NA	6.52E-06
Acetaldehyde	2.33E-02	NA	NA	4.87E-04	1.61E-03	1.02E-01	NA	NA	2.43E-05	8.05E-05	1.02E-01
Acrolein	3.72E-03	NA	NA	1.52E-04	7.88E-04	1.63E-02	NA	NA	7.61E-06	1.18E-06	1.63E-02
Arsenic	NA	2.17E-05	1.05E-06	NA	NA	NA	4.97E-05	4.59E-06	NA	NA	5.43E-05
Benzene	6.98E-03	2.28E-04	1.10E-05	1.50E-02	1.96E-03	3.06E-02	5.22E-04	4.82E-05	7.50E-04	9.80E-05	3.20E-02
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00E+00
Chromium	NA	1.52E-04	7.34E-06	NA	NA	NA	3.48E-04	3.21E-05	NA	NA	3.80E-04
Cobalt	NA	9.13E-06	4.40E-07	NA	NA	NA	2.09E-05	1.93E-06	NA	NA	2.28E-05
Dichlorobenzene	NA	1.30E-04	6.29E-06	NA	NA	NA	2.98E-04	2.75E-05	NA	NA	3.26E-04
Ethylbenzene	1.86E-02	NA	NA	NA	NA	8.15E-02	NA	NA	NA	NA	8.15E-02
Fluoranthene	NA	3.26E-07	1.57E-08	NA	NA	NA	7.46E-07	6.89E-08	NA	NA	8.15E-07
Fluorene	NA	3.04E-07	1.47E-08	NA	NA	NA	6.96E-07	6.43E-08	NA	NA	7.60E-07
Formaldehyde	1.74E+00	8.15E-03	3.93E-04	1.52E-03	2.48E-03	7.64E+00	1.86E-02	1.72E-03	7.62E-05	1.24E-04	7.66E+00
Hexane	NA	1.96E-01	9.43E-03	NA	NA	NA	4.48E-01	4.13E-02	NA	NA	4.89E-01
Manganese	NA	4.13E-05	1.99E-06	NA	NA	NA	9.45E-05	8.72E-06	NA	NA	1.03E-04
Mercury	NA	2.83E-05	1.36E-06	NA	NA	NA	6.46E-05	5.97E-06	NA	NA	7.06E-05
Naphthalene	7.56E-04	6.63E-05	3.20E-06	2.51E-03	1.78E-04	3.31E-03	1.52E-04	1.40E-05	1.26E-04	8.90E-06	3.61E-03
Nickel	NA	2.28E-04	1.10E-05	NA	NA	NA	5.22E-04	4.82E-05	NA	NA	5.70E-04
Phenanathrene	NA	1.85E-06	8.91E-08	NA	NA	NA	4.23E-06	3.90E-07	NA	NA	4.62E-06
POM	1.28E-03	NA	NA	4.10E-03	3.53E-04	5.60E-03	NA	NA	2.05E-04	1.76E-05	5.82E-03
Pyrene	NA	5.43E-07	2.62E-08	NA	NA	NA	1.24E-06	1.15E-07	NA	NA	1.36E-06
Toluene	7.56E-02	3.69E-04	1.78E-05	5.43E-03	8.59E-04	3.31E-01	8.45E-04	7.80E-05	2.71E-04	4.29E-05	3.32E-01
Xylenes	3.72E-02	NA	NA	3.73E-03	5.99E-04	1.63E-01	NA	NA	1.86E-04	2.99E-05	1.63E-01
Maximum Emissions (Single HAP)											**7.66**
Total HAPs											**8.9**

NA = No Emission Factor Available.

ESC Brooke County Power I, LLC
Emission Calculations - GHGs (SF_6) from Circuit Breakers

Pollutant	Emission Source	Count (Breakers)	Mass of SF_6 per Breaker (lb/Breaker/year)	Annual SF_6 Leak Rate (% by weight)	SF_6 Mass Emissions (tons/yr)	Global Warming Potential	CO_2e (tons/yr)
SF_6	Generator Breakers	2	25	0.50%	1.25E-04	22,800	2.9
SF_6	Switchyard Circuit Breakers	3	325	0.50%	2.44E-03	22,800	55.6
	Total	**5**	**350**		**0.0026**		**58.43**

(1) The annual mass emissions of SF_6 from electrical breakers are calculated using the number of breakers, mass of SF_6 per breaker, and annual leak rate as follows:

SF_6 for Breakers (tons/yr) = Number of Breakers x Mass of SF_6 per Breaker (lb) x Annual SF_6 Leak Rate (%) x 1 ton/2000 lb

(2) The Global Warming Potential factor for SF_6 was obtained from 40 CFR Part 98, Subpart A, Table A-1.

ATTACHMENT O
MONITORING, RECORDKEEPING, REPORTING AND TESTING PLANS

ESC Brooke County Power I, LLC suggests the following:

- Limit the annual gas consumption for the combined-cycle Combustion Turbine, Auxiliary Boiler, and Fuel Gas Heater as presented in this permit application.
- Record the amount of natural gas consumed in the combined-cycle Combustion Turbine, Auxiliary Boiler, and Fuel Gas Heater on a daily, monthly, and 12-month rolling total.
- Operate and maintain SCR and Oxidation Catalyst for the combined-cycle Combustion Turbines for NOx and CO control.
- Limit the sulfur content of the natural gas as required by regulation.
- Install, operate, calibrate, and maintain continuous emission monitoring systems (CEMS) on the combined-cycle Combustion Turbines as required and in accordance with applicability regulations.
- Conduct performance testing for each pollutant in accordance with the methods, standards, and deadlines mandated by regulation.
- Combust only ultra low sulfur diesel (ULSD) fuel in the Emergency Generator and Fire Water Pump engines.
- Record the annual hours of operation for the Emergency Generator and Fire Water Pump engines.
- Maintain required records for at least five (5) years.

ATTACHMENT P
AIR QUALITY PERMIT NOTICE

Attachment P

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that ESC Brooke County Power I, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a PSD permit application, for an electric power generation facility located on Archer Hill Road in the City of Follansbee, Brooke County, West Virginia. The latitude and longitude coordinates are: 40°20'56.22''N and 80°35'47.48''W. The applicant estimates the potential to discharge the following Regulated Air Pollutants: 207.4 tons per year of nitrogen oxides, 204.1 tons per year of carbon monoxide, 3,395,300 tons per year of carbon dioxide equivalent emissions, 79.0 tons per year of volatile organic compounds, 166.5 tons per year of particulate matter, 40.3 tons per year of sulfur dioxide, 0.013 tons per year of lead, and 8.9 tons per year of hazardous air pollutants. Startup of operation is expected to occur in the 2nd quarter of 2020. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice. Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the **(day)** day of March, 2016.

By: ESC Brooke County Power I, LLC
Jon M. Williams
Managing Member
333 Ganson Street
Buffalo, NY 14202

ATTACHMENT Q
BUSINESS CONFIDENTIAL CLAIMS

This permit application does not contain business confidential information; therefore, this application is considered non-confidential.

ATTACHMENT R
AUTHORITY FORMS

Since this application is signed by the "Responsible Official", this section is not applicable.

ATTACHMENT S
TITLE V PERMIT REVISION INFORMATION

Since the site does not currently possess a Title V Permit, Attachment S is not being provided with this permit application.

Appendix F – Check for Air Permitting Fees

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND ON WHITE PAPER AND ORIGINAL DOCUMENT SECURITY SCREEN ON BACK WITH PADLOCK SECURITY ICON.

ESC Brooke County Power I, LLC
360 Delaware Ave, Suite 406
Buffalo, New York 14202

First Niagara
50-7044/2223

000128

2/16/2016

PAY TO THE ORDER OF WVDEP Air Pollution Control Fund $ **14,500.00

Fourteen Thousand Five Hundred and 00/100*** DOLLARS

WVDEP Air Pollution Control Fund

MEMO

ESC Brooke County Power I, LLC

AUTHORIZED SIGNATURE MP

SECURITY FEATURES INCLUDED. DETAILS ON BACK.

⑈000128⑈ ⑆222370440⑆ 7901306469⑈

ESC Brooke County Power I, LLC **000128**

WVDEP Air Pollution Control Fund 2/16/2016

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
2/16/2016	Bill	NSR Application	14,500.00	14,500.00		14,500.00
					Check Amount	14,500.00

FNFG Checking ESC Brooke County Power I, LLC 14,500.00

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Combustion Turbines

Pollutant	Maximum Short Term Emissions: 1 CT (lb/ hr)	Maximum Annual Steady State Emissions: 2 CTs (tons/yr)	Startup and Shutdown Emissions: 2 CTs (tons/yr)	Total Annual Emissions: 2 CTs (tons/yr)
VOC	7.43	65.1	11.6	76.7
NO_x	21.4	187.5	14.6	202.0
CO	13.0	113.9	79.7	193.6
SO_2	4.6	39.9	-- [1]	39.9
$PM_{10}/PM_{2.5}$	15.5	135.8	1.6	137.4
PM	15.5	135.8	1.6	137.4
Pb	0.001	0.012	-- [1]	0.012
H_2SO_4	2.93	25.6	-- [1]	25.6

[1] *Worst-case annual emissions are addressed by steady-state operation.*

Auxiliary Boiler

Pollutant	Maximum Short Term Emissions (lb/ hr)	Maximum Annual Emissions (tons/yr)
VOC	0.90	2.05
NO_x	1.23	2.82
CO	4.14	9.47
SO_2	0.12	0.28
$PM_{10}/PM_{2.5}$	0.87	1.99
PM	0.87	1.99
Pb	5.43E-05	1.24E-04
H_2SO_4	9.51E-03	2.18E-02

ESC Brooke County Power I, LLC

Facility Emissions Summary Tables

Emergency Generator and Fire Water Pump

Pollutant	Emergency Generator Maximum Short Term Emissions (lb/hr)	Emergency Generator Maximum Annual Emissions (tons/yr)	Fire Water Pump Maximum Short Term Emissions (lb/hr)	Fire Water Pump Maximum Annual Emissions (tons/yr)
VOC	0.65	0.03	0.06	0.00
NO_x	32.22	1.61	1.87	0.09
CO	1.77	0.09	0.31	0.02
SO_2	2.92E-02	1.46E-03	3.17E-03	1.59E-04
$PM_{10}/PM_{2.5}$	0.15	0.01	0.05	0.00
PM	0.15	0.01	0.05	0.00
Pb	--	--	--	--
H_2SO_4	--	--	--	--

Fuel Gas Heater

Pollutant	Fuel Gas Heater Maximum Short Term Emissions (lb/hr)	Fuel Gas Heater Maximum Annual Emissions (tons/yr)
VOC	0.04	0.17
NO_x	0.19	0.85
CO	0.21	0.92
SO_2	0.01	2.62E-02
$PM_{10}/PM_{2.5}$	0.04	0.18
PM	0.04	0.18
Pb	--	--
H_2SO_4	--	--

Cooling Tower

Pollutant	Cooling Tower Maximum Short Term Emissions (lb/hr)	Cooling Tower Maximum Annual Emissions (tons/yr)
PM	6.15	26.95
PM_{10}	0.27	1.20
$PM_{2.5}$	0.0051	0.0222

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Facility-Wide Emissions Summary

Unit	Annual Emissions (tons/yr)									
	VOC	NO_x	CO	SO_2	PM_{10}	PM	$PM_{2.5}$	Pb	H_2SO_4	CO_2e
CTs (2) - Steady State	65.1	187.5	113.9	39.9	135.8	135.8	135.8	0.012	25.6	3,358,156
CTs - Startups & Shutdowns	11.6	14.6	79.7	--	1.6	1.6	1.6	-- (1)	--	--
Auxiliary Boiler	2.05	2.82	9.47	0.28	1.99	1.99	1.99	1.2E-04	0.022	33,790
Fuel Gas Heater	0.17	0.85	0.92	0.03	0.18	0.18	0.18	--	--	3,120
Emergency Generator	0.03	1.61	0.09	0.001	0.01	0.01	0.01	--	--	158.1
Fire Water Pump	0.003	0.09	0.02	1.59E-04	0.003	0.003	0.003	--	--	17.2
Cooling Tower	--	--	--	--	1.20	26.95	0.02	--	--	--
Circuit Breakers	--	--	--	--	--	--	--	--	--	58.4
Total	**79.0**	**207.4**	**204.1**	**40.3**	**140.8**	**166.5**	**139.6**	**0.013**	**25.7**	**3,395,300**

Emission Calculations - GHGs

Source	CO_2		CH_4		N_2O		SF_6		CO_2e	
	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
Combustion Turbines (2)	766,000	3,355,080	12.8	56.1	1.3	5.6	--	--	766,702	3,358,156
Auxiliary Boiler	14,706	33,646	7.4E-01	1.7E+00	1.5E-01	3.4E-01	--	--	14,768	33,790
Fuel Gas Heater	709	3,107	3.6E-02	1.6E-01	7.1E-03	3.1E-02	--	--	712	3,120
Emergency Generator	3,150	158	1.3E-01	6.4E-03	2.6E-02	1.3E-03	--	--	3,161	158.1
Fire Water Pump	342	17	1.4E-02	6.9E-04	2.8E-03	1.4E-04	--	--	344	17.2
Circuit Breakers	--	--	--	--	--	--	5.85E-04	2.56E-03	13.3	58.4
Total CO_2e	**784,908**	**3,392,008**	**14**	**58**	**1**	**6**	**5.85E-04**	**2.56E-03**	**785,701**	**3,395,300**

ESC Brooke County Power I, LLC
Facility Emissions Summary Tables

Hazardous Air Pollutant (HAP)	Two CTs (lb/hr)	Auxiliary Boiler (lb/hr)	Fuel Gas Heater (lb/hr)	Emergency Generator (lb/hr)	Fire Water Pump (lb/hr)	Facility Total (tons/yr)
2-Methylnaphthalene	NA	2.61E-06	1.26E-07	NA	NA	6.52E-06
Acetaldehyde	2.33E-02	NA	NA	4.87E-04	1.61E-03	1.02E-01
Acrolein	3.72E-03	NA	NA	1.52E-04	7.88E-04	1.63E-02
Arsenic	NA	2.17E-05	1.05E-06	NA	NA	5.43E-05
Benzene	6.98E-03	2.28E-04	1.10E-05	1.50E-02	1.96E-03	3.20E-02
Cadmium	NA	NA	NA	NA	NA	0.00E+00
Chromium	NA	1.52E-04	7.34E-06	NA	NA	3.80E-04
Cobalt	NA	9.13E-06	4.40E-07	NA	NA	2.28E-05
Dichlorobenzene	NA	1.30E-04	6.29E-06	NA	NA	3.26E-04
Ethylbenzene	1.86E-02	NA	NA	NA	NA	8.15E-02
Fluoranthene	NA	3.26E-07	1.57E-08	NA	NA	8.15E-07
Fluorene	NA	3.04E-07	1.47E-08	NA	NA	7.60E-07
Formaldehyde	1.74E+00	8.15E-03	3.93E-04	1.52E-03	2.48E-03	7.66E+00
Hexane	NA	1.96E-01	9.43E-03	NA	NA	4.89E-01
Manganese	NA	4.13E-05	1.99E-06	NA	NA	1.03E-04
Mercury	NA	2.83E-05	1.36E-06	NA	NA	7.06E-05
Naphthalene	7.56E-04	6.63E-05	3.20E-06	2.51E-03	1.78E-04	3.61E-03
Nickel	NA	2.28E-04	1.10E-05	NA	NA	5.70E-04
Phenanathrene	NA	1.85E-06	8.91E-08	NA	NA	4.62E-06
POM	1.28E-03	NA	NA	4.10E-03	3.53E-04	5.82E-03
Pyrene	NA	5.43E-07	2.62E-08	NA	NA	1.36E-06
Toluene	7.56E-02	3.69E-04	1.78E-05	5.43E-03	8.59E-04	3.32E-01
Xylenes	3.72E-02	NA	NA	3.73E-03	5.99E-04	1.63E-01
Maximum Emissions (Single HAP)						**7.66**
Total HAPs						**8.9**

NA = No Emission Factor Available.

Global Warming Potential - CO_2	1
Global Warming Potential - CH_4	25
Global Warming Potential - N_2O	298
Global Warming Potential - SF_6	22,800