



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Casco Bay Energy Company, LLC
Penobscot County
Veazie, Maine
A-728-70-D-R**

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Renewal**

FINDINGS OF FACT

After review of the Part 70 License renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Casco Bay Energy Company, LLC (CBEC)
LICENSE TYPE	Part 70 License Renewal, incorporating the Part 72 Acid Rain Permit Renewal
NAICS CODES	221112, Fossil Fuel Electric Power Generation
NATURE OF BUSINESS	Electric Services
FACILITY LOCATION	125 Shore Road, Veazie, Maine

Casco Bay Energy Company, LLC (CBEC) is a power generation facility that began operation in 2000. Power is generated using combined cycle power generation technology. The Electric Generating System consists of combustion turbines, heat recovery steam generators, and a steam turbine generator, as well as associated supporting industrial equipment.

CBEC has the potential to emit more than 100 tons per year (TPY) of particulate matter (PM), particulate matter under 10 micrometers (PM₁₀), nitrogen oxides (NO_x), and carbon monoxide (CO) and more than 100,000 tons of carbon dioxide equivalent (CO₂e); therefore, the source is a major source for criteria pollutants. CBEC does not have the potential to emit more than 10 TPY of a single hazardous air pollutant (HAP) or more than 25 TPY of combined HAP, therefore, the source is an area source for HAP.

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B. Emission Equipment

The following emission units are addressed by this Part 70 License:

Turbines

Equipment	Max. Design Heat Input Capacity (MMBtu/hr)	Max. Design Firing Rate (scf/hr)	Fuel Type	Manuf. Date	Install. Date	Stack No.
Combustion Turbine #1	1937 ^a	2,039,000 ^b	Natural Gas	1999	2000	1
Combustion Turbine #2	1937 ^a	2,039,000 ^b	Natural Gas	1999	2000	2

Table Notes: a Assumes an ambient temperature of 45°F.
 b Assumes a lower heating value (LHV) of 950 Btu/scf and an ambient temperature of 45°F.

Boiler and Heater

Equipment	Max. Design Heat Input Capacity (MMBtu/hr)	Max. Design Firing Rate (scf/hr)	Fuel Type	Manuf. Date	Install. Date	Stack No.
Auxiliary Boiler	21	20,400 ^a	Natural Gas	1999	2000	5
Natural Gas Fuel Heater	5	4,900 ^a	Natural Gas	1999	2000	6,7

Table Notes: a Assumes a heat content of natural gas of 1030 Btu/scf.

Generators

Equipment	Max. Design Heat Input Capacity (MMBtu/hr)	Max. Design Firing Rate (gal/hr)	Fuel Type, % sulfur	Mfr. Date	Install. Date	Stack No.
Standby Generator	3.9	29	Distillate, 0.0015% S	1999	2000	4

Process Equipment

Equipment	Production Rate	Pollution Control Equipment
Cooling Tower *	110,000 gal/min	Drift Eliminators

Table Notes: * The previous license A-728-70-C-R (issued January 6, 2010) incorrectly classified the Cooling Tower as an insignificant

activity. The Cooling Tower went through a BACT analysis for license A-728-70-A-I (issued January 14, 2003), which is still applicable.

CBEC has additional insignificant activities which do not need to be listed in the emission equipment tables above. The list of insignificant activities can be found in the Part 70 license application and in Appendix B of *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended).

C. Application Classification

The application for CBEC does not include the installation of new or modified equipment. However, the license does include increased licensed emission limits due to corrections, updated emission factors, and the inclusion of the Cooling Tower, which is an existing piece of equipment that was previously considered an insignificant activity and has since been deemed significant. Therefore, the license is considered to be a Part 70 License renewal issued under 06-096 Code of Maine Rules (CMR) 140 (as amended), incorporating the Part 72 Acid Rain Permit renewal.

D. Facility Description

CBEC produces electricity through the use of combined cycle power generation technology. The Electric Generating System consists of two combustion turbines (designated Combustion Turbines #1 and #2), two heat recovery steam generators (HRSGs), and one condensing steam turbine generator (steam turbine). Natural gas is combusted in Combustion Turbines #1 and #2 to generate the majority of the electrical output for the facility. Heat from the exhausts of the combustion turbines is captured in the two HRSGs to produce steam, which then is converted into additional electrical output through the use of the steam turbine generator. The two HRSGs and the steam turbine are unfired units, meaning that they do not burn any natural gas when in operation. The facility also consists of a natural gas fired auxiliary boiler, a natural gas fired fuel heater, a standby (emergency) generator, a wet mechanical draft cooling tower, and associated ancillary equipment.

Combustion Turbines #1 and #2 are two General Electric GE 7FA combustion turbines with unfired HRSGs that generate a combined nominal power output of 520 MW at design conditions (45 degrees Fahrenheit, 60% relative humidity and 1 atmosphere). CBEC uses dry low-NO_x combustors to limit NO_x formation and selective catalytic reduction (SCR) with ammonia injection to control NO_x on each turbine. Combustion Turbines #1 and #2 operate in the pre-mix mode (low-NO_x mode) down to 50 percent of the rated load during normal operation. Combustion gases from each turbine are directed to the HRSGs to produce steam

which is then directed to a single steam turbine/generator. Facility emissions exit to the atmosphere through two 155-foot exhaust stacks.

The natural gas-fired Auxiliary Boiler is used to maintain steam pressure to shorten startup times for the combustion turbines, and to provide auxiliary steam for plant operations. The Auxiliary Boiler is equipped with dry low-NO_x combustors and is maintained in low-fire standby mode during normal operations.

CBEC also operates the Natural Gas Fuel Heater to pre-heat the natural gas before it reaches the combustion turbines, a 535 HP diesel-fired standby generator to provide emergency power to the facility when necessary, and the 8 cell wet-mechanical Cooling Tower to dissipate heat generated by the facility processes with noncontact cooling water. The facility also includes insignificant emission sources, which includes but is not limited to liquid storage tanks, space heaters, maintenance support equipment, and other smaller pieces of equipment.

E. General Facility Requirements

CBEC is subject to the following state and federal regulations listed below, in addition to the regulations listed for specific units as described further in this license.

CITATION	REQUIREMENT TITLE
06-096 CMR 101	Visible Emissions
06-096 CMR 102	Open Burning
06-096 CMR 103	Fuel Burning Equipment Particulate Emission Standard
06-096 CMR 106	Low Sulfur Fuel
06-096 CMR 109	Emergency Episode Regulation
06-096 CMR 110	Ambient Air Quality Standard
06-096 CMR 116	Prohibited Dispersion Techniques
06-096 CMR 117	Source Surveillance
06-096 CMR 137	Emission Statements
06-096 CMR 140	Part 70 Air Emission License Regulations
06-096 CMR 143	New Source Performance Standards
06-096 CMR 144	National Emission Standards for Hazardous Air Pollutants (NESHAP)
06-096 CMR 156	CO ₂ Budget Trading Program
40 CFR Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR Part 60, Subpart GG	Standards of Performance for Stationary Gas Turbines
40 CFR Part 63, Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 CFR Part 68	Chemical Accident Prevention Provisions

CITATION	REQUIREMENT TITLE
40 CFR Part 70	State Operating Permit Programs
40 CFR Part 72	Permits Regulation (Acid Rain)
40 CFR Part 75	Continuous Emissions Monitoring
40 CFR Part 82	Protection of Stratospheric Ozone
40 CFR Part 98	Mandatory Greenhouse Gas Reporting

Table Notes: CMR = Code of Maine Regulations
 CFR = Code of Federal Regulations

F. Units of Measurement

The following units of measurement are used in this license:

°F	degrees Fahrenheit
Btu/scf	British Thermal Units per standard cubic feet
gal/hr	gallons per hour
HP	horsepower
hr	hour(s)
hrs/yr	hours per year
kW	kilowatt
lb/hr	pounds per hour
lb/MMBtu	pounds per million British Thermal Units
lb/scf	pounds per standard cubic feet
min	minute(s)
MMBtu/hr	million British Thermal Units per hour
MMBtu/scf	million British Thermal Units per standard cubic feet
ppm	parts per million
ppmv	parts per million by volume on a dry basis
ppmw	parts per million by weight
scf	standard cubic feet
tons/yr	tons per year
TPY	tons per year

II. BEST PRACTICAL TREATMENT (BPT) AND EMISSION STANDARDS

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

Control equipment installed less than 15 years prior to the date of license application approval is deemed to be receiving BPT.

B. NO_x RACT (Reasonably Available Control Technology)

Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides, 06-096 CMR 138 (as amended) is not applicable to CBEC. NO_x RACT is applicable to existing sources that were operating prior to May 31, 1995. CBEC was first licensed in 1998, and therefore is considered a new source according to 06-096 CMR 138 and is not subject to the rule.

C. VOC RACT (Reasonably Available Control Technology)

Reasonably Available Control Technology for Facilities that Emit Volatile Organic Compounds, 06-096 CMR 134 (as amended) is not applicable CBEC. CBEC does have the potential to emit quantities of VOC equal to or greater than 40 tons/year; however, the generator, boilers, and turbines are classified as VOC-emitting equipment from which the VOCs emitted are from the incomplete combustion of any material and are considered exempt when determining the facility's total VOC emissions. [06-096 CMR 134(1)(C)(4)] With the exemption of the VOC emissions from these units, the total emitted quantity of VOC emissions for the facility is under the 40 TPY threshold.

D. Acid Rain

The combined cycle gas combustion turbines at CBEC are subject to the federal Acid Rain Program, 40 CFR Part 70, *State Operating Permits Program*, and Part 72, *Permits Regulation*, and the facility is therefore required to have a Phase II acid rain permit. CBEC was issued an acid rain permit, A-728-70-A-S, on March 17, 1999 and the acid rain permit is incorporated in this renewal.

E. Mandatory Greenhouse Gas (GHG) Reporting

Federal regulation 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*, which contains GHG reporting and related monitoring and recordkeeping requirements, is applicable to the owners/operators of any facility which falls into any one of the

following three categories, per 40 CFR Part 98, Subpart A, *General Provision*, § 98.2, *Who must report?*

- (a)(1) A facility that contains any source category that is listed in Table A–3 of this subpart in any calendar year starting in 2010.
- (a)(2) A facility that contains any source category that is listed in Table A–4 of this subpart and that emits 25,000 metric tons CO₂e or more per year in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories that are listed in Table A–3 and Table A–4 of this subpart.
- (a)(3) A facility that in any calendar year starting in 2010 meets all three of the conditions listed in this paragraph (a)(3). For these facilities, the annual GHG report must cover emissions from stationary fuel combustion sources only.
 - (i) The facility does not meet the requirements of either paragraph (a)(1) or (a)(2) of this section.
 - (ii) The aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 MMBtu/hour or greater.
 - (iii) The facility emits 25,000 metric tons CO₂e or more per year in combined emissions from all stationary fuel combustion sources.

CBEC is an electricity generation facility that reports CO₂ mass emissions year round through 40 CFR Part 75, as found in Table A-3 of this subpart, and thus is subject under (a)(1) above.

This facility shall fulfill the recordkeeping and reporting requirements of 40 CFR Part 98.

F. CO₂ Budget Source

CBEC was issued license A-728-78-A-N on January 15, 2009, per Maine's *CO₂ Budget Trading Program*, 06-096 CMR 156 (as amended) for the combined cycle gas combustion turbines. This Part 70 license does not affect the CO₂ Budget license, which remains in effect.

G. Compliance Assurance Monitoring (CAM)

40 CFR Part 64, *Compliance Assurance Monitoring*, is applicable to units at major sources if the unit has emission limits, a control device to meet the limits, and pre-control emissions greater than 100 tons/year for any pollutant. The only units that satisfy the three general applicability criteria for CAM are Combustion Turbines #1 and #2 for the pollutant NO_x. However, 40 CFR §64.2(b)(vi) of the CAM rule specifies an exemption for any emission limitation or standard for which a Part 70 permit specifies a continuous compliance determination method.

CBEC is required per the Part 70 license to use a continuous emission monitoring system (CEMs) to determine compliance with the NO_x emission limits (both the NO_x ppm and lb/hr limits) for Combustion Turbines #1 and #2, thereby the units are exempt from 40 CFR Part 64. All other pollutant emission units contained in this license do not meet the general applicability criteria. Therefore, CAM is not applicable to any emission units at CBEC.

H. Combustion Turbines #1 and #2

Combustion Turbines #1 and #2 were manufactured by General Electric (GE) each with a nominal design heat input capacity of 1937 MMBtu/hr firing natural gas. The turbines were both installed in 2000 and are operated for electric power generation purposes. Combustion Turbines #1 and #2 are part of the Electric Generating System in combination with two heat recovery steam generators and one steam turbine.

Emissions from the turbines exit through separate stacks designated Stack #1 and Stack #2, respectively. Stacks #1 and #2 each have an inside diameter of 18 feet and an above ground level height of 155 feet.

1. BPT

BPT for each of the combustion turbines was determined to be the following:

Pollutant	BPT Practices
PM/PM ₁₀	Good combustion practices and combustion of natural gas
SO ₂	Combustion of natural gas
NO _x	Dry low-NO _x combustors and selective catalytic reduction (SCR)
CO	Good combustion practices, use of dry low-NO _x combustors, and instrumentation and controls
VOC	Good combustion practices
NH ₃ slip *	Optimizing the ratio of NH ₃ to NO _x to near the stoichiometric requirement

Notes: * The ammonia (NH₃) slip is generated by the use of the ammonia injection system associated with SCR.

2. Control Equipment

Combustion Turbines #1 and #2 each are equipped with dry low-NO_x combustors and a selective catalytic reduction (SCR) system with ammonia injection for the control of NO_x emissions.

3. New Source Performance Standards (NSPS)

Combustion Turbines #1 and #2 are subject to the New Source Performance Standards (NSPS) titled *Standards of Performance for Stationary Gas Turbines*, 40 CFR Part 60, Subpart GG. These standards apply to stationary gas turbines with a heat input capacity of 10 MMBtu/hr or more, based on the lower heating value of the fuel fired, that are constructed, modified, or reconstructed after October 3, 1977.

Pursuant to 40 CFR Subpart GG, Part 60.333, SO₂ emissions are limited to either (a) 0.015% by volume @ 15% O₂ on a dry basis; or (b) the fuel sulfur content shall not exceed 0.8% by weight.

Pursuant to 40 CFR Subpart GG, Part 60.332(a)(1), NO_x is limited based on the following equation:

$$STD = 0.0075 \times \frac{14.4}{Y} + F$$

where: *STD* is the allowable NO_x emissions (percent by volume at 15% O₂ and on a dry basis);

Y is a function of the manufacturer's rated load (kilojoules per watt hour); and

F is a function of the fuel-bound nitrogen.

Due to Combustion Turbines #1 and #2 being installed in 2000, the units are not subject to the New Source Performance Standards (NSPS) titled *Standards of Performance for Stationary Combustion Turbines*, 40 CFR Part 60, Subpart KKKK. These standards apply to stationary combustion turbines with a heat input capacity of 10 MMBtu/hr or more that are constructed, reconstructed, or modified after February 18, 2005.

4. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Combustion Turbines #1 and #2 are not subject to *NESHAP Pollutants for Stationary Combustion Turbines* contained in 40 CFR Part 63, Subpart YYYY because the facility is not classified as a major source for HAPs.

5. Emission Limits and Streamlining

For Combustion Turbines #1 and #2, a listing for each turbine of the potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits below (except during startup and shutdown unless noted) can be found.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.06 lb/MMBtu	06-096 CMR 103(2)(B)(1)(c) & A-728-70-A-I (01/14/03), BPT	0.06 lb/MMBtu
	116.2 lb/hr (based on 0.06 lb/MMBtu limit)	06-096 CMR 140, BPT	10 lb/hr *
	10 lb/hr	A-728-71-A-N (07/13/98), BACT	
PM ₁₀	10 lb/hr	A-728-71-A-N (07/13/98), BACT	10 lb/hr
SO ₂	0.015% S by volume @ 15% O ₂ on a dry basis ...OR... 0.8% S by weight (8000 ppmw)	40 CFR Part 60, Subpart GG, §60.333(a) and (b)	0.015% S by volume @ 15% O ₂ on a dry basis ...OR... 0.8% S by weight *
	2% sulfur by weight	06-096 CMR 106(2)(A)(2)	11 lb/hr
	11 lb/hr	A-728-71-A-N (07/13/98), BACT	
NO _x	75 ppmvd @ 15% O ₂ (at 100% load)	40 CFR Part 60, Subpart GG, §60.332(a)(1) and (b)	3.5 ppmvd @ 15% O ₂ (24-hr block avg) * ¹
	3.5 ppmvd @ 15% O ₂ (24-hr block avg)	A-728-71-A-N (07/13/98), BACT	
	25 lb/hr	A-728-71-A-N (07/13/98), BACT	25 lb/hr
CO	20 ppmvd @ 15% O ₂ (24-hr block avg)	A-728-71-A-N (07/13/98), BACT	20 ppmvd @ 15% O ₂ (24-hr block avg) ¹
	86.9 lb/hr	A-728-70-C-R (01/06/10), BPT	86.9 lb/hr
VOC	4.5 lb/hr	A-728-71-A-N (07/13/98), BACT	4.5 lb/hr
Ammonia (NH ₃)	20 ppmvd @ 15% O ₂ (24-hr block avg)	A-728-71-A-N (07/13/98), BACT	20 ppmvd @ 15% O ₂ (24-hr block avg)
	10 ppmvd @ 15% O ₂ (30-day rolling avg)	A-728-71-A-N (07/13/98), BACT	10 ppmvd @ 15% O ₂ (30-day rolling avg)
	52.7 lb/hr (24-hr block avg)	A-728-70-C-R (01/06/10), BPT	52.7 lb/hr (24-hr block avg)
	26.4 lb/hr (30-day rolling avg)	A-728-70-C-R (01/06/10), BPT	26.4 lb/hr (30-day rolling avg)
Visible Emissions	30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hr period	06-096 CMR 101 (2)(B)(1)(f)	20% opacity on a 6-minute block average basis, except for one 6-minute period per hour of not more than 27% opacity * ²

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
	20% opacity on a 6-minute block average basis, except for one 6-minute period per hour of not more than 27% opacity ²	A-728-71-A-N (07/13/98), BACT	

Notes: * streamlining requested

% S = percent fuel sulfur

¹ = During startup and shutdown, CBEC shall not exceed the following alternative NO_x and CO emissions limits:

- 90 ppmvd @ 15% O₂ for NO_x over the duration of all the block hours of the startup/shutdown using the hourly data validation procedures as specified in 40 CFR §60.334(b)(2).
- 1,000 ppmvd @ 15% O₂ for CO over the duration of all the block hours of the startup/shutdown using the hourly data validation procedures as specified in 40 CFR §60.334(b)(2).

[A-728-70-A-I (01/14/03), BPT]

² = Opacity emissions shall be exempt during the following scenarios provided that operating records are available to demonstrate that the facility was being operated to minimize emissions :

- the first 4 hours following the initiation of a cold startup,
- the first 3 hours following the initiation of a warm startup,
- the first hour following the initiation of a hot startup,
- the first hour following the initiation of a shutdown.

[A-728-71-A-N (07/13/98), BACT and A-728-70-A-I (01/14/03), BPT]

Startup of a turbine is defined as the period of time from initiation of the combustion turbine firing until the combustion turbine achieves combustion operational Mode 6Q. This period shall not exceed 60 minutes (1 hour) for a hot start, 180 minutes (3 hours) for a warm start, nor 240 minutes (4 hours) for a cold start.

Mode 6Q is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation.

A hot start is defined as startup when the generating unit has been down for less than 2 hours.

A warm start is defined as startup when the generating unit has been down for more than 2 hours and less than or equal to 48 hours.

A cold start is defined as startup when the generating unit has been down for more than 48 hours.

Shutdown is defined as the period beginning when the combustion turbine leaves operational Mode 6Q and ending when combustion has ceased. This period shall not exceed 60 minutes.

6. Emission Limit Compliance Methods

Compliance with the emission limits associated with Combustion Turbines #1 and #2 shall each be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Applicable Emission Limit	Compliance Method	Frequency
PM	lb/MMBtu	Stack Testing: 40 CFR Part 60, App. A, Method 5	As requested
	lb/hr		
PM ₁₀	lb/hr	Stack Testing: 40 CFR Part 60, App. A, Method 5 or EPA Test Method 201 or 201A	As requested
SO ₂	lb/hr	Stack Testing: 40 CFR Part 60, App. A, Method 6 or 20	As requested
NO _x	ppmvd	NO _x CEMS	Continuously
	lb/hr		
CO	ppmvd	CO CEMS	Continuously
	lb/hr	Stack Testing: 40 CFR Part 60, App. A, Method 10 or 19	As requested
VOC	lb/hr	Stack Testing: 40 CFR Part 60, App. A, Method 25 or 25A	As requested
NH ₃	ppmvd	NH ₃ CEMS	Continuously
	lb/hr	Stack Testing: 40 CFR Part 60, App. A	As requested
Visible Emissions	Opacity	40 CFR Part 60, App. A, Method 9	As requested

7. Periodic Monitoring

Periodic monitoring for Combustion Turbines #1 and #2 shall include the following, for each turbine, whenever the equipment is operating.

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel Flowmeters	Annually
Natural gas heat content	MMBtu/scf	Purchase records from supplier	As fuel is purchased
Natural gas firing rate	scf input	Fuel flowmeters	Continuously ²
Operating time ¹	Hours	Recordkeeping	Daily, monthly, and annually
Air pollution control system malfunctions	N/A	Recordkeeping	As malfunctions occur

Notes: ¹ Includes startup, shutdown, and any other down time

² Continuously is defined as a minimum of one data point per hour, except for periods of unavoidable monitor malfunction.

8. Continuous Emissions Monitoring Systems (CEMS)

For Combustion Turbines #1 and #2, the table below lists the required continuous emission monitoring systems (CEMS) for each turbine. The origin and authority of the most stringent CEM requirements upon which the CEM is operated according to is present in **bold type** in the following table.

Pollutant and Continuous Monitor	Units	Origin and Authority
NO _x CEMS	ppmvd	06-096 CMR 117, 40 CFR Part 60, Subpart GG, and 40 CFR Part 75
	lb/hr	
CO CEMS	ppmvd	06-096 CMR 117
O ₂ CEMS	%	06-096 CMR 117, 40 CFR Part 60, Subpart GG, and 40 CFR Part 75
NH ₃ CEMS *	ppmvd	06-096 CMR 117

Notes: * For the measurement of NH₃, two NO_x analyzers are used to measure the NH₃ slip in the flue gas. This measurement involves splitting the gas sample into two flow streams and converting the NH₃ present in one stream to a gas that can be measured. NH₃ is converted to NO_x in one half of the sample which combines with the NO_x naturally existing in the sample. This converted sample stream will have higher NO_x level than the non-converted stream. The differences in the readings are equal to the NH₃ concentration in the flue gas.

The gas turbines affected by 40 CFR Part 60, Subpart GG are already required to install and certify CEMs for NO_x under other requirements, such as the acid rain monitoring regulation in 40 CFR Part 75, or through conditions in various permit requirements. To reduce the burden on the gas turbines, the use of CEMS units that are certified according to the requirements of 40 CFR Part 75 will be allowed. The 40 CFR Part 75 testing procedures to certify the

CEMS are nearly identical to those in 40 CFR Part 60, and 40 CFR Part 75 has rigorous quality assurance and quality control (QA/QC) standards. It is appropriate to allow the use of 40 CFR Part 75 CEMS data for 40 CFR Part 60, Subpart GG compliance demonstration. Furthermore, neither Part 60 nor Part 75 has QA/QC procedures for ammonia monitors. Therefore, CBEC requests that the license specify:

- the NO_x and O₂ monitors shall meet the applicable requirements of 40 CFR Part 75, not those of 40 CFR Part 60;
- the NO_x, O₂, CO, and NH₃ monitors may use the hourly data validation procedures specified in 40 CFR Part 60, Subpart GG, §60.334(b)(2); and
- the NO_x, O₂, CO, and NH₃ monitors shall perform ongoing CEMS QA/QC tests at the frequency specified in 40 CFR Part 75, Appendix B.

The CO and NH₃ (and O₂ diluent) CEMS are subject to the requirements of 06-096 CMR 117, including, but not limited to, the data availability requirements in Section 5. The NO_x CEMS and O₂ CEMS (to the extent that it acts as a diluent for NO_x) are also subject to 06-096 CMR 117; however, 40 CFR Part 75 supersedes 06-096 CMR 117.

I. Auxiliary Boiler

The Auxiliary Boiler was manufactured in 1999 by Cleaver Brooks and is licensed at a heat input capacity of 21 MMBtu/hr firing natural gas. The Auxiliary Boiler was installed in June of 2000 and is operated for freeze protection, to provide steam during outages and startup conditions, and to maintain steam side components in a "hot" condition when a turbine is not operating so as to maintain steam pressure to shorten startup times for the combustion turbines. CBEC maintains the boiler in low-fire standby mode during normal operations.

Emissions for the Auxiliary Boiler exit through Stack #5, which has an inside diameter of 2 feet and an above ground level height of 24 feet.

1. BPT

BPT for the Auxiliary Boiler was determined to be the firing of pipeline quality natural gas with negligible or zero ash content, proper combustion control, providing adequate fuel residence time and proper temperature in the combustion zone to ensure complete combustion, and the use of dry low-NO_x combustors for the minimization of NO_x emissions.

2. Control Equipment

The Auxiliary Boiler is equipped with dry low-NO_x combustors. The dry low-NO_x combustors result in lean fuel-to-air mixtures throughout the boiler's combustion zone, thereby eliminating high flame temperatures and thermal NO_x formation.

3. New Source Performance Standards (NSPS)

The Auxiliary Boiler is subject to the New Source Performance Standards (NSPS) titled *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc. These standards apply to steam generating units with a heat input capacity of more than 10 MMBtu/hr but less than or equal to 100 MMBtu/hr that are constructed after June 9, 1989. Due to the boiler firing only natural gas, there are no applicable emission standards or monitoring and testing requirements; however, CBEC shall record and maintain records of the amount of natural gas combusted during each calendar month. [40 CFR Part 60, §60.48c(g)(2)]

4. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The Auxiliary Boiler is not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). Gas-fired boilers are exempt from 40 CFR Part 63, Subpart JJJJJ where a "gas-fired boiler" is defined as any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Due the Auxiliary Boiler only being licensed to fire natural gas, the boiler meets the definition of a "gas-fired boiler" and is exempt from the federal regulation. [40 CFR Part §63.11237]

5. Emission Limits and Streamlining

For the Auxiliary Boiler, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM **	0.12 lb/MMBtu	06-096 CMR 103(2)(B)(1)(a)	0.05 lb/MMBtu *
	0.05 lb/MMBtu	A-728-70-A-I (01/14/03), BPT	
	1.05 lb/hr	A-728-70-A-I (01/14/03), BPT	1.05 lb/hr
PM ₁₀ **	1.05 lb/hr	A-728-70-A-I (01/14/03), BPT	1.05 lb/hr
SO ₂	0.02 lb/hr	A-728-71-B-A (11/10/99), BACT	0.02 lb/hr
NO _x	0.74 lb/hr	A-728-71-B-A (11/10/99), BACT	0.74 lb/hr
CO	0.76 lb/hr	A-728-71-B-A (11/10/99), BACT	0.76 lb/hr
VOC	0.34 lb/hr	A-728-71-B-A (11/10/99), BACT	0.34 lb/hr
Visible Emissions	10% opacity on a 6-min block average basis, except for no more than one 6-min block average in a 3-hr period.	06-096 CMR 101(2)(B)(c)	10% opacity on a 6-minute block average basis. *
	10% opacity on a 6-min block average basis.	A-728-71-B-A (11/10/99), BACT	

Notes: * streamlining requested
 ** filterable portion only

6. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Auxiliary Boiler shall be demonstrated in accordance with the appropriate test methods upon request of the Department. The licensee shall conduct emission testing, and demonstrating compliance with the applicable standard within 60 days after receipt of notice from the Department.

Compliance with the PM and PM₁₀ limits shall be based on 40 CFR Part 60, Appendix A, Method 5 or EPA Test Method 201 or 201A (filterable portion only).

7. Periodic Monitoring

Periodic monitoring for the Auxiliary Boiler shall include the following, whenever the equipment is operating.

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel flowmeter	Monthly & annually

Based on best management practices and the type of fuel for which the boiler was designed, it is unlikely that the boiler will exceed the opacity limit.

Therefore, periodic monitoring by the source for opacity in the form of visible emission testing is not required. However, neither the EPA nor the Department is precluded from performing its own testing and may take enforcement action for any violations discovered.

J. Natural Gas Fuel Heater

The Natural Gas Fuel Heater was manufactured in May of 1999 by Natco and is licensed at a maximum heat input capacity of 5 MMBtu/hr firing pipeline natural gas. The Natural Gas Fuel Heater was installed in May of 2000 and is operated to preheat the natural gas before it reaches the combustion turbines.

Emissions for the Natural Gas Fuel Heater exit through Stacks #6 and #7, which each have an inside diameter of 1.5 feet and an above ground level height of 20 feet.

1. BPT

BPT for the Natural Gas Fuel Heater was determined to be the firing of pipeline quality natural gas with negligible or zero ash content, proper combustion control, and providing adequate fuel residence time and proper temperature in the combustion zone to ensure complete combustion.

2. New Source Performance Standards (NSPS)

Due to the heat input capacity, the Natural Gas Fuel Heater is not subject to 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, which applies to steam generating units which have a heat input capacity of more than 10 MMBtu/hr but less than or equal to 100 MMBtu/hr for which construction is commenced after June 9, 1989.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The Natural Gas Fuel Heater is not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The Natural Gas Fuel Heater is excluded from the definition of a "boiler" according to 40 CFR §63.11237 because it heats natural gas rather than water and therefore the unit does not apply to the federal regulation.

4. Emission Limits and Streamlining

For the Natural Gas Fuel Heater, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.12 lb/MMBtu	06-096 CMR 103(2)(B)(1)(a)	0.0092 lb/MMBtu *
	0.0092 lb/MMBtu	A-728-70-A-I (01/14/03), BPT	
	0.046 lb/hr	A-728-70-A-I (01/14/03), BPT	0.046 lb/hr
PM ₁₀	0.046 lb/hr	A-728-70-A-I (01/14/03), BPT	0.046 lb/hr
SO ₂	0.023 lb/hr	A-728-70-A-I (01/14/03), BPT	0.023 lb/hr
NO _x	0.48 lb/hr	A-728-70-A-I (01/14/03), BPT	0.48 lb/hr
CO	0.41 lb/hr	A-728-70-A-I (01/14/03), BPT	0.41 lb/hr
VOC	0.023 lb/hr	A-728-70-A-I (01/14/03), BPT	0.023 lb/hr
Visible Emissions	10% opacity on a 6-min block average basis, except for no more than one 6-min block average in a 3-hr period.	06-096 CMR 101(2)(B)(c)	10% opacity on a 6-minute block average basis. *
	10% opacity on a 6-min block average basis.	A-728-70-A-I (01/14/03), BPT	

Notes: * streamlining requested

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Natural Gas Fuel Heater shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

Periodic monitoring for the Natural Gas Fuel Heater shall include the following, whenever the equipment is operating.

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel flowmeter	Annually

Based on best management practices and the type of fuel for which the heater uses, it is unlikely that the heater will exceed the opacity limit. Therefore,

periodic monitoring by the source for opacity in the form of visible emission testing is not required. However, neither the EPA nor the Department is precluded from performing its own testing and may take enforcement action for any violations discovered.

K. Standby Generator

The Standby Generator was manufactured in 1999 by Cummins Diesel (535 HP) and was installed in 2000. The generator has a maximum firing rate of 29 gal/hr firing distillate fuel with a maximum sulfur content of 0.0015% by weight.

The Standby Generator is used for emergencies and is tested regularly. The Standby Generator provides power to maintain control, heat tracing, and other required services to allow the plant to remain ready to start, but is not intended to provide enough power for a cold start.

Emissions for the Standby Generator exit through Stack #4.

1. BPT

BPT for the Standby Generator was determined to be limiting operation to less than 100 hours per year for non-emergency purposes and limiting fuel use to distillate fuel with a sulfur content not to exceed 0.0015% by weight.

2. New Source Performance Standards (NSPS)

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is not applicable to the Standby Generator since the unit was ordered and manufactured prior to the applicability dates.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the Standby Generator. The generator is considered an existing, emergency stationary reciprocating internal combustion engine at an area HAP source and is not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt this unit from the federal requirements.

a. Emergency Definition:

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary ICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary RICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
 - (i) Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
 - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing,

emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except provided in the following paragraphs:

- (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution center.
- (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
 - (b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (d) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

The Standby Generator shall be limited to the usage outlined in §63.6640(f) and therefore may be classified as an existing emergency stationary RICE as defined in 40 CFR Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in §63.6640(f) may cause the engine to not be considered an emergency engine and therefore subject to all the requirements for non-emergency engines.

b. 40 CFR Part 63, Subpart ZZZZ Requirements:

(1) Operation and Maintenance Requirements

	Operating Limitations (40 CFR §63.6603(a) and Table 2(d))
Compression ignition (distillate fuel) units: - Standby Generator	<ul style="list-style-type: none"> - Change oil and filter every 500 hours of operation or annually, whichever comes first; - Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and - Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The Standby Generator shall be operated and maintained according to the manufacturer's emission-related written instructions or CBEC shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(2) Optional Oil Analysis Program

CBEC has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, CBEC must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the Standby Generator. [40 CFR §63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup CBEC must minimize the Standby Generator's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit For Maintenance and Testing

The Standby Generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand

response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

(6) Recordkeeping

CBEC shall keep records that include maintenance conducted on the Standby Generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the Standby Generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CBEC shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

(7) Requirements for Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake HP)

If the Standby Generator operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CBEC shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

4. Emission Limits and Streamlining

For the Standby Generator, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.12 lb/MMBtu	06-096 CMR 103(2)(B)(1)(a) & A-728-71-A-N (7/13/98), BACT	0.12 lb/MMBtu
	0.47 lb/hr	A-728-71-A-N (7/13/98), BACT	0.47 lb/hr
PM ₁₀	0.47 lb/hr	A-728-71-A-N (7/13/98), BACT	0.47 lb/hr
SO ₂	ASTM D396 0.005% by July 1, 2016 0.0015% by Jan. 1, 2018	06-096 CMR 106	0.0015% sulfur by weight distillate fuel *
	0.05% S fuel	A-728-71-A-N (7/13/98), BACT	
	0.0015% S fuel	06-096 CMR 140, BPT	
	0.01 lb/hr (based on 0.0015% S)	06-096 CMR 140, BPT	0.01 lb/hr
NO _x	17.0 lb/hr	A-728-71-A-N (7/13/98), BACT	17.0 lb/hr
CO	3.6 lb/hr	A-728-71-A-N (7/13/98), BACT	3.6 lb/hr
VOC	1.3 lb/hr	A-728-71-A-N (7/13/98), BACT	1.3 lb/hr
Visible emissions	20% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.	06-096 CMR 101(2)(B)(d) & A-728-70-A-I (1/14/03), BPT	20% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.

Notes: * streamlining requested
 % S = percent fuel sulfur, by weight

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Standby Generator shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

Periodic monitoring for the Standby Generator shall include the following, whenever the equipment is operating.

Parameter	Units	Monitoring Tool/Method	Frequency
Distillate fuel sulfur content	Percent, by weight	Fuel receipts from supplier	As fuel is purchased
Operating time	Hours	Hour meter	Annually
Type of Operation (emergency, maintenance, ect.)	N/A	Operating Records	Following each operational period

Based on best management practices and the type of fuel for which the generator uses, it is unlikely that the Standby Generator will exceed the opacity limit. Therefore, periodic monitoring by the source for opacity in the form of visible emission testing is not required. However, neither the EPA nor the Department is precluded from performing its own testing and may take enforcement action for any violations discovered.

L. Cooling Tower

CBEC has in operation an 8-celled wet mechanical cooling tower. Cooling towers are designed to dissipate heat loads to the atmosphere by efficiently evaporating water. As water evaporates, it absorbs heat, causing the remaining water to become colder. To improve the evaporation rate, cooling towers induce a flow of fresh air across the wetted surface area. Because wet cooling towers provide direct contact between the cooling water and the air passing through the tower, some of the liquid water may be entrained in the air stream and be carried out of the tower as “drift” droplets. The fine droplets subsequently evaporate in the ambient air, liberating the total dissolved solids formerly in solution as emissions of particulate matter (PM and PM₁₀).

To reduce the drift from the Cooling Tower, drift eliminators were incorporated into the tower design to limit the droplets, and subsequently PM and PM₁₀ emissions, from the air stream before exiting the tower. The drift eliminators consist of layers of plastic chevrons located within the tower to knock out and coalesce fine water droplets before they are emitted in to the atmosphere.

Therefore, the Department determined that BPT for the Cooling Tower shall be the use of the drift eliminators in the tower. This level of control in the Cooling tower results in total annual emission of PM and PM₁₀ to each be less than 4.9 tons/year. The 4.9 tons/year emission limits are worst case scenario values based on the maximum recirculating rate of the water in the tower, a conservative concentration of total dissolved solids (TDS) in the water, and a design drift rate of 0.001%.

CBEC shall maintain proper operation and maintenance of the Cooling Tower, including the drift eliminators. CBEC shall maintain records documenting inspection dates, times and reasons for inspections, and any maintenance conducted on the Cooling Tower.

[A-728-71-A-N (07/13/98), BACT, A-728-70-A-I (01/14/03), BPT, and 06-096 CMR 140, BPT]

M. Facility Annual Emissions

1. Total Annual Emissions

CBEC is licensed for the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on a maximum operation of 8,760 hours/year for Combustion Turbines #1 and #2, the Auxiliary Boiler, and the Natural Gas Fuel Heater, and 100 hours/year for the Standby Generator:

Total Licensed Annual Emissions for the Facility
Tons/year
 (used to calculate the annual license fee)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	NH ₃
Combustion Turbine #1	43.8	43.8	48.2	109.5	227.8 *	19.7	115.6
Combustion Turbine #2	43.8	43.8	48.2	109.5	227.8 *	19.7	115.6
Cooling Tower	4.9	4.9	-	-	-	-	-
Auxiliary Boiler	4.6	4.6	0.1	3.3	3.4	1.5	-
Standby Generator	0.1	0.1	0.1	0.9	0.2	0.1	-
Natural Gas Fuel Heater	0.2	0.2	0.1	2.1	1.8	0.1	-
Total TPY	97.4	97.4	96.7	225.3	461.0	41.1	231.2

Notes: The total licensed annual emissions for the facility have been updated due to the following:

- Errors were found in the previous license for the Combustion Turbines' PM, PM₁₀, SO₂, and NH₃ annual emissions calculations that have been corrected,
- the addition of PM and PM₁₀ annual emissions from the Cooling Tower because it was determined not to be an insignificant activity and is included in the license,
- an error was found in the previous license for the Auxiliary Boiler PM and PM₁₀ annual emissions calculations that has been corrected,

- the annual emissions from the Standby Generator were changed from being based on an operation of 500 hrs/yr to 100 hrs/yr to align with the federal regulation, and
 - the Standby Generator SO₂ annual emissions were changed due to the lower sulfur content of the fuel.
- * The CO annual emissions from the Combustion Turbines are based on an annual cap as established in license A-728-70-C-R (issued January 7, 2010).

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, CBEC is above the major source threshold of 100,000 tons of CO₂e per year.

III. AMBIENT AIR QUALITY ANALYSIS

CBEC previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-728-71-A-N, issued on July 13, 1998). An additional ambient air quality analysis is not required for this Part 70 License.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this source:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards; and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License A-728-70-D-R pursuant to 06-096 CMR 140 and the preconstruction permitting requirements of 06-096 CMR 115 and subject to the standard and specific conditions below.

All federally enforceable and State-only enforceable conditions in existing air licenses previously issued to CBEC pursuant to the Department's preconstruction permitting requirements in 06-096 CMR 108 or 115 have been incorporated into this Part 70 license, except for such conditions that the Department has determined are obsolete, extraneous or otherwise environmentally insignificant, as explained in the findings of fact accompanying this permit. As such, the conditions in this license supercede all previously issued air license conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 CMR 115 for making such changes and pursuant to the applicable requirements in 06-096 CMR 140.

For each standard and specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only.**

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD STATEMENTS

- (1) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both; [06-096 CMR 140]
- (2) The Part 70 license does not convey any property rights of any sort, or any exclusive privilege; [06-096 CMR 140]
- (3) All terms and conditions are enforceable by EPA and citizens under the CAA unless specifically designated as state enforceable. [06-096 CMR 140]
- (4) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license; [06-096 CMR 140]

- (5) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 140]
- (6) Compliance with the conditions of this Part 70 license shall be deemed compliance with any Applicable requirement as of the date of license issuance and is deemed a permit shield, provided that:
- A. Such Applicable and state requirements are included and are specifically identified in the Part 70 license, except where the Part 70 license term or condition is specifically identified as not having a permit shield; or
 - B. The Department, in acting on the Part 70 license application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the Part 70 license includes the determination or a concise summary, thereof.

Nothing in this section or any Part 70 license shall alter or affect the provisions of Section 303 of the CAA (emergency orders), including the authority of EPA under Section 303; the liability of an owner or operator of a source for any violation of Applicable requirements prior to or at the time of permit issuance; or the ability of EPA to obtain information from a source pursuant to Section 114 of the CAA.

The following requirements have been specifically identified as not applicable based upon information submitted by the licensee in an application dated February 6, 2014.

Source	Citation	Description	Basis for Determination
Facility	06-096 CMR 134	VOC RACT	Units exempt pursuant to section (1)(C)(4) and potential to emit from nonexempt sources is less than 40 TPY
Facility	06-096 CMR 138	NO _x RACT	All facility units were constructed after May 31, 1995 and therefore NO _x RACT does not apply
Auxiliary Boiler & Natural Gas Fuel Heater	40 CFR 60, Subpart D	NSPS for Fossil- Fuel-Fired Steam Generators	Heat input capacity is less than the 250 MMBtu/hr applicability threshold.
Combustion Turbines #1 & #2			Exempt because turbines are not steam generating units.
Heat Recovery Steam Generators (HRSGs)			Exempt because they do not utilize duct burners.

Source	Citation	Description	Basis for Determination
Auxiliary Boiler & Natural Gas Fuel Heater	40 CFR 60, Subpart Da	NSPS for Electric Utility Steam Generating Units	Heat input capacity is less than the 250 MMBtu/hr applicability threshold and does not meet the definition of an electric utility unit.
Combustion Turbines #1 & #2			Exempt because turbines are not steam generating units.
Heat Recovery Steam Generators (HRSGs)			Exempt because they do not utilize duct burners.
Auxiliary Boiler & Natural Gas Fuel Heater	40 CFR 60, Subpart Db	NSPS for Industrial-Commercial-Institutional Steam Generating Units	Heat input capacity is less than the 100 MMBtu/hr applicability threshold.
Combustion Turbines #1 & #2			Exempt because turbines are not steam generating units.
Heat Recovery Steam Generators (HRSGs)			Exempt because they do not utilize duct burners.
Natural Gas Fuel Heater	40 CFR 60, Subpart Dc	NSPS for Small Industrial-Commercial-Institutional Steam Generating Units	Heat input capacity is less than the 10-100 MMBtu/hr applicability threshold.
Combustion Turbines #1 & #2			Exempt because turbines are not steam generating units.
Heat Recovery Steam Generators (HRSGs)			Exempt because they do not utilize duct burners.
Standby Generator	40 CFR 60, Subpart IIII	NSPS for Stationary Ignition Internal Combustion Engines	Manufactured before the applicability date of July 11, 2005.
Combustion Turbines #1 & #2	40 CFR 60, Subpart KKKK	NSPS for Stationary Combustion Turbines	Manufactured before the applicability date of February 18, 2005.
Cooling Tower	40 CFR 63, Subpart Q	NESHAP for Industrial Process Cooling Towers	Facility is not a major source of HAPS.
Combustion Turbines #1 & #2	40 CFR 63, Subpart YYYY	NESHAP for Stationary Combustion Turbines	Facility is not a major source of HAPS.
Auxiliary Boiler, Natural Gas Fuel Heater, Heat Recovery Steam Generators	40 CFR 63, Subpart DDDDD	NESHAP for Industrial, Commercial, and Institutional	Facility is not a major source of HAPS.

Source	Citation	Description	Basis for Determination
(HRSGs)		Boilers and Process Heaters	
Auxiliary Boiler	40 CFR Part 63, Subpart JJJJJ	NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources	Exempt because unit fires natural gas.
Natural Gas Fuel Heater, Heat Recovery Steam Generators (HRSGs)			Not applicable because unit is not considered a boiler per §63.11237
Facility	40 CFR Part 64	Compliance Assurance Monitoring	Combustion turbines exempt per §64.2(b)(vi) with the use of a CEM and all other units do not meet the applicability criteria
Auxiliary Boiler, Natural Gas Fuel Heater, Standby Generator	40 CFR Parts 72-75	Acid Rain Program	Units are not electrical steam generating units

[06-096 CMR 140]

- (7) The Part 70 license shall be reopened for cause by the Department or EPA, prior to the expiration of the Part 70 license, if:
- A. Additional Applicable requirements under the CAA become applicable to a Part 70 major source with a remaining Part 70 license term of 3 or more years. However, no opening is required if the effective date of the requirement is later than the date on which the Part 70 license is due to expire, unless the original Part 70 license or any of its terms and conditions has been extended pursuant to 06-096 CMR 140;
 - B. Additional requirements (including excess emissions requirements) become applicable to a Title IV source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the Part 70 license;
 - C. The Department or EPA determines that the Part 70 license contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Part 70 license; or
 - D. The Department or EPA determines that the Part 70 license must be revised or revoked to assure compliance with the Applicable requirements.

The licensee shall furnish to the Department within a reasonable time any information that the Department may request in writing to determine whether

cause exists for modifying, revoking and reissuing, or terminating the Part 70 license or to determine compliance with the Part 70 license.
[06-096 CMR 140]

- (8) No license revision or amendment shall be required, under any approved economic incentives, marketable licenses, emissions trading and other similar programs or processes for changes that are provided for in the Part 70 license.
[06-096 CMR 140]

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions and this license (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 140. [06-096 CMR 140]
- (3) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 140]
Enforceable by State-only
- (4) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to 38 M.R.S.A. §353-A.
- (5) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 140]
Enforceable by State-only
- (6) The licensee shall retain records of all required monitoring data and support information for a period of at least six (6) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Part 70 license. The records shall be submitted to the Department upon written request or in accordance with other provisions of this license.
[06-096 CMR 140]

- (7) The licensee shall comply with all terms and conditions of the air emission license. The submission of notice of intent to reopen for cause by the Department, the filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a Part 70 license or amendment shall not stay any condition of the Part 70 license. [06-096 CMR 140]
- (8) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions;
 - 2. to demonstrate compliance with the applicable emission standards; or
 - 3. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
[06-096 CMR 140]

Enforceable by State-only

- (9) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicates emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated

under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

- C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 140]

Enforceable by State-only

- (10) The licensee shall maintain records of all deviations from license requirements. Such deviations shall include, but are not limited to malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emission unit itself that is not consistent with the terms and conditions of the air emission license.

- A. The licensee shall notify the Commissioner within 48 hours of a violation of any emission standard and/or a malfunction or breakdown in any component part that causes a violation of any emission standard, and shall report the probable cause, corrective action, and any excess emissions in the units of the applicable emission limitation;
- B. The licensee shall submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component part causes a violation of any emission standard, together with any exemption requests.

Pursuant to 38 M.R.S.A. § 349(9), the Commissioner may exempt from civil penalty an air emission in excess of license limitations if the emission occurs during start-up or shutdown or results exclusively from an unavoidable malfunction entirely beyond the control of the licensee and the licensee has taken all reasonable steps to minimize or prevent any emission and takes corrective action as soon as possible. There may be no exemption if the malfunction is caused, entirely or in part, by poor maintenance, careless operation, poor design or any other reasonably preventable condition or preventable equipment breakdown. The burden of proof is on the licensee seeking the exemption under this subsection.

- C. All other deviations shall be reported to the Department in the facility's semiannual report.

[06-096 CMR 140]

- (11) Upon the written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use, and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 140]
- (12) The licensee shall submit semiannual reports of any required periodic monitoring. All instances of deviations from Part 70 license requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. [06-096 CMR 140]
- (13) The licensee shall submit a compliance certification to the Department and EPA at least annually, or more frequently if specified in the applicable requirement or by the Department. The compliance certification shall include the following:
- A. The identification of each term or condition of the Part 70 license that is the basis of the certification;
 - B. The compliance status;
 - C. Whether compliance was continuous or intermittent;
 - D. The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
 - E. Such other facts as the Department may require to determine the compliance status of the source.
- [06-096 CMR 140]

SPECIFIC CONDITIONS

- (14) The following shall apply to the conditions in this order as appropriate:
- A. A 30-day rolling block average shall be calculated as the arithmetic average of not more than 30 contiguous 24-hour block averages. A 30-day rolling block average is defined as the sum of the block hour values monitored for the last 30 unit operating days divided by the sum of the block hours monitored for the past 30 unit operating days. [40 CFR Part 60, Appendix A, Method 19, Equation 19 and A-728-71-A-N (7/13/98), BPT]
 - B. A 24-hour block average shall be calculated as the arithmetic average of not more than 24 one-hour block periods. Only one 24-hour block average shall be calculated for one day, beginning at midnight. Hours in which no operation occurs and any hours that are considered exempt from emission standards shall not be included in the 24-hour block average calculation. [A-728-71-A-N (7/13/98), BPT]

- C. A valid 24-hour block average shall consist of at least 12 hours of valid hourly averages, excluding periods of startup/shutdown. [A-728-71-A-N (7/13/98), BPT]
- D. The facility can use the same hourly data validation procedure as specified in 40 CFR Part §60.334(b)(2) for all monitors, i.e., NO_x, O₂, CO, and NH₃ monitors, to maximize data availability during partial hours of operation. [40 CFR Part 60, Subpart GG]

(15) **Combustion Turbines #1 and #2**

- A. The exhaust from each turbine shall be vented through a 155 foot above ground level stack. [A-728-71-A-N (7/13/98), BACT]
- B. Allowable Fuels
 - 1. Combustion Turbines #1 and #2 are licensed to fire natural gas. [06-096 CMR 140, BPT]
 - 2. CBEC shall maintain records of the quantity of fuel consumed on an annual basis. [06-096 CMR 140, BPT]

C. Control Equipment

CBEC shall operate dry low-NO_x combustors and selective catalytic reduction (SCR) on each combustion turbine to reduce NO_x emissions and meet the NO_x emission limits for these units. SCR shall operate at all times each associated Combustion Turbine is operating except during startup and shutdown. [A-728-71-A-N (07/13/98), BACT]

D. Combustion Turbines #1 and #2 Emission Limits

- 1. Emissions from Combustion Turbines #1 and #2 shall each not exceed the following limits, except during startups and shutdowns:

Pollutant	Emission Limit	Averaging Time	Origin and Authority
PM	0.06 lb/MMBtu	-	06-096 CMR 103(2)(B)(1)(c) & A-728-70-A-I (01/14/03), BPT
NO _x	3.5 ppmvd @ 15% O ₂ *	24-hr block avg	A-728-71-A-N (07/13/98), BACT
CO	20 ppmvd @ 15% O ₂ *	24-hr block avg	A-728-71-A-N (07/13/98), BACT
NH ₃	20 ppmvd @ 15% O ₂	24-hr block avg	A-728-71-A-N (07/13/98), BACT
	10 ppmvd @ 15% O ₂	30-day rolling avg	

Notes: * Emissions from each gas turbine shall not exceed the following limits during startup and shutdown:

- For NO_x: 90 ppmvd @ 15% O₂ over the duration of all of the block hours of the startup/shutdown using the hourly data validation procedures as specified in 40 CFR §60.334(b)(2).
- For CO: 1,000 ppmvd @ 15% O₂ over the duration of all of the block hours of the startup/shutdown using the hourly data validation procedures as specified in 40 CFR §60.334(b)(2).

[A-728-70-A-I (01/14/03), BPT]

Pollutant	lb/hr	Averaging Time	Origin and Authority
PM**	10	-	A-728-71-A-N (07/13/98), BACT
PM ₁₀ **	10	-	A-728-71-A-N (07/13/98), BACT
SO ₂	11	-	A-728-71-A-N (07/13/98), BACT
NO _x	25	-	A-728-71-A-N (07/13/98), BACT
CO	86.9	-	A-728-70-C-R (01/06/10), BPT
VOC	4.5	-	A-728-71-A-N (07/13/98), BACT
NH ₃	52.7	24-hr block avg	A-728-70-C-R (01/06/10), BPT
	26.4	30-day rolling avg	A-728-70-C-R (01/06/10), BPT

Notes: ** filterable portion only

2. Visible emissions from Combustion Turbines #1 and #2 shall each not exceed 20% opacity, measured as six (6) minute block averages, except for one (1) six minute block average period per hour of not more than 27% opacity. Opacity emission limits shall be exempt during the first four (4) hours following the initiation of a cold startup, the first three (3) hours following the initiation of a warm startup, the first hour following the initiation of a hot startup, or the first hour following the initiation of a shutdown, provided that operating records are available to demonstrate that the facility was being operated to minimize emissions. Compliance with the visible emission limitation shall be demonstrated in accordance with 40 CFR Part 60, Appendix A, Method 9, when requested by the Department. [A-728-71-A-N (07/13/98), BACT and A-728-70-A-I (01/14/03), BPT]

E. Compliance Methods

Compliance with the emission limits listed above shall be demonstrated in accordance with the following methods and frequencies, or other methods and frequencies as approved by the Department [06-096 CMR 140]:

Pollutant	Units	Compliance Method	Frequency
PM	lb/MMBtu	Stack Testing: 40 CFR Part 60, Appendix A, Method 5	As requested
	lb/hr		
PM ₁₀	lb/hr	Stack Testing: 40 CFR Part 60, Appendix A, Method 5 or EPA Test Method 201 or 201A	As requested
SO ₂	lb/hr	Stack Testing: 40 CFR Part 60, App. A, Method 6 or 20	As requested
NO _x	ppmvd	NO _x CEMS (24-hour block average basis)	Continuously
	lb/hr		
CO	ppmvd	CO CEMS (24-hour block average basis)	Continuously
	lb/hr	Stack Testing: 40 CFR Part 60, Appendix A, Method 10 or 19	As requested
VOC	lb/hr	Stack Testing: 40 CFR Part 60, Appendix A, Method 25 or 25A	As requested
NH ₃	ppmvd	NH ₃ CEMS (24-hour block average basis and 30-day rolling average basis)	Continuously
	lb/hr	Stack Testing: 40 CFR Part 60, Appendix A	As requested
Visible Emissions	Opacity	40 CFR Part 60, Appendix A, Method 9	As requested

CBEC shall conduct emission testing, and demonstrate compliance with the applicable standard within 60 days after receipt of notice from the Department.

[A-728-71-A-N (7/13/98), BPT, A-728-70-A-I (1/14/03), and A-728-70-C-R (01/06/10), BPT]

F. Combustion Turbine Startup/Shutdown

CBEC shall minimize emissions from the gas turbines to the maximum extent practicable during startup and shutdown, under maintenance or adjustment conditions, and during equipment cleaning conditions by following proper operating procedures to minimize the emission of air contaminants to the maximum extent practical.

Turbine startup shall be defined as that period of time from initiation of combustion turbine firing until the combustion turbine achieves combustion operation Mode 6Q. *Mode 6Q* is defined by the manufacturer as the low emissions mode during which all 6 of the burner nozzles are in use, burning a lean premixed gas for steady-state operation. This period shall not exceed 60 minutes (1 hour) for a hot start, 180 minutes (3 hours) for a warm start, nor 240 minutes (4 hours) for a cold start. *A hot start* shall be defined as startup when the generating unit has been down for less than 2 hours. *A warm start*

shall be defined as startup when the generating unit has been down for more than 2 hours and less than or equal to 48 hours. *A cold start* shall be defined as startup when the generating unit has been down for more than 48 hours. *Unit shutdown* shall be defined as the period beginning when the combustion turbine leaves operation Mode 6Q and ending when the combustion has ceased. This period shall not exceed 60 minutes (1 hour).

[A-728-71-A-N (7/13/98), BPT and A-728-70-A-I (1/14/03)]

G. Periodic Monitoring

CBEC shall monitor and record the following as specified, for each combustion turbine [A-728-71-A-N (7/13/98), BPT, A-728-70-A-I (1/14/03), and 06-096 CMR 140 BPT]:

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel Flowmeters	Annually
Natural gas heat content	MMBtu/scf	Purchase records from supplier	As fuel is purchased
Natural gas firing rate	scf input	Fuel flowmeters	Continuously **
Operating time *	Hours	Recordkeeping	Daily, monthly, and annually
Air pollution control system malfunctions	N/A	Recordkeeping	As malfunctions occur

Notes: * Includes startup, shutdown, and any other down time
 ** Continuously is defined as a minimum of one data point per hour, except for periods of unavoidable monitor malfunction.

H. Continuous Emissions Monitoring Systems (CEMS)

CBEC shall operate and maintain the following CEMS for each gas turbine:

Pollutant and Continuous Monitor	Units	Origin and Authority
NO _x CEMS	ppmvd	40 CFR Part 75
	lb/hr	
CO CEMS	ppmvd	06-096 CMR 117
O ₂ CEMS	%	40 CFR Part 75
NH ₃ CEMS	ppmvd	06-096 CMR 117

1. The NO_x, O₂, CO, and NH₃ monitors shall use the hourly data validation procedures as specified in 40 CFR §60.334(b)(2).
2. The NO_x, O₂, CO, and NH₃ monitors shall follow the frequency for performance of ongoing CEMS QA/QC tests as specified in 40 CFR Part 75, Appendix B.
3. The NO_x CEMS shall meet the QA/QC requirements as specified in 40 CFR Part 75, Appendices A and B.
4. In the event that CBEC uses a split scale NO_x CEMS with a lower scale at 1-10 ppm and an upper scale at approximately 10-250 ppm, CBEC shall be permitted to modify the calibration method in 40 CFR Part 60, Appendix B & F in order to calibrate their NO_x CEMS across two scales, with only one point required to be calibrated in the lower scale.
5. The daily calibration drift procedure described in 40 CFR Part 60.13(d) and 40 CFR Part 60, Appendix B, Performance Specification 2 may be modified for the NH₃ CEMS to allow span drift to be checked using the same daily calibration gas used for the low range of the NO_x CEMS.

[A-728-71-A-N (7/13/98), BPT, A-728-70-A-I (1/14/03), and A-728-70-C-R (01/06/10), BPT]

I. Federal Regulations

Each gas turbine is subject to and shall comply with the applicable requirements in 40 CFR Part 60, Subparts A and GG. This includes but is not limited to complying with the notifications and record keeping requirements of 40 CFR Part §60.7 and §60.334(j), (j)(1)(iii), and (j)(5), and the sulfur and nitrogen content monitoring requirements in 40 CFR Part §60.334.

(16) **Auxiliary Boiler**

A. Allowable Fuels

1. The Auxiliary Boiler is licensed to fire natural gas. [06-096 CMR 140, BPT]
2. CBEC shall maintain records of the quantity of fuel consumed on a monthly and annual basis. [06-096 CMR 140, BPT and 40 CFR §60.48c(g)(2)]

B. Auxiliary Boiler Emission Limits

1. Emissions from the Auxiliary Boiler shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.05	A-728-70-A-I (01/14/03), BPT

Pollutant	lb/hr	Origin and Authority
PM	1.05	A-728-70-A-I (01/14/03), BPT
PM ₁₀	1.05	A-728-70-A-I (01/14/03), BPT
SO ₂	0.02	A-728-71-B-A (11/10/99), BACT
NO _x	0.74	A-728-71-B-A (11/10/99), BACT
CO	0.76	A-728-71-B-A (11/10/99), BACT
VOC	0.34	A-728-71-B-A (11/10/99), BACT

2. Visible emissions from the Auxiliary Boiler shall not exceed 10% opacity on a six (6) minute block average basis. Compliance with the visible emission limitation shall be demonstrated in accordance with 40 CFR Part 60, Appendix A, Method 9, when requested by the Department. [A-728-71-B-A (11/10/99), BACT]

C. Compliance Methods

Compliance with the emission limits associated with the Auxiliary Boiler shall be demonstrated in accordance with the appropriate test methods and frequencies upon request of the Department. The licensee shall conduct emission stack testing, and demonstrate compliance with the applicable standard within 60 days after receipt of notice from the Department. [06-096 CMR 140 and A-728-70-A-I (01/14/03), BPT]

D. Periodic Monitoring

CBEC shall monitor and record parameters for the Auxiliary Boiler as indicated in the following table whenever the equipment is operating. [06-096 CMR 140, BPT and A-728-71-B-A (11/10/99), BACT]

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel flowmeter	Monthly & annually

(17) **Natural Gas Fuel Heater**

A. Allowable Fuels

1. The Natural Gas Fuel Heater is licensed to fire natural gas. [06-096 CMR 140, BPT]
2. CBEC shall maintain records of the quantity of fuel consumed on an annual basis. [06-096 CMR 140, BPT]

B. Natural Gas Fuel Heater Emission Limits

1. Emissions from the Natural Gas Fuel Heater shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.0092	A-728-70-A-I (01/14/03), BPT

Pollutant	lb/hr	Origin and Authority
PM	0.046	A-728-70-A-I (01/14/03), BPT
PM ₁₀	0.046	A-728-70-A-I (01/14/03), BPT
SO ₂	0.023	A-728-70-A-I (01/14/03), BPT
NO _x	0.48	A-728-70-A-I (01/14/03), BPT
CO	0.41	A-728-70-A-I (01/14/03), BPT
VOC	0.023	A-728-70-A-I (01/14/03), BPT

2. Visible emissions from the Natural Gas Fuel Heater shall not exceed 10% opacity on a six (6) minute block average basis. Compliance with the visible emission limitation shall be demonstrated in accordance with 40 CFR Part 60, Appendix A, Method 9, when requested by the Department. [A-728-70-A-I (01/14/03), BPT]

C. Compliance Methods

Compliance with the emission limits associated with the Natural Gas Fuel Heater shall be demonstrated in accordance with the appropriate test methods upon request of the Department. [06-096 CMR 140]

D. Periodic Monitoring

CBEC shall monitor and record parameters for the Natural Gas Fuel Heater as indicated in the following table whenever the equipment is operating. [06-096 CMR 140, BPT and A-728-70-A-I (01/14/03), BPT]

Parameter	Units	Monitoring Tool/Method	Frequency
Natural gas use	scf	Fuel flowmeter	Annually

(18) **Standby Generator**

A. Allowable Operation and Fuels

1. The Standby Generator is licensed to fire distillate fuel. [06-096 CMR 140, BPT]
2. The Standby Generator is limited to 100 hours per year of total operation for non-emergency purposes, based on a calendar year. [06-096 CMR 115]

B. Fuel Sulfur Content

1. The distillate fuel sulfur content for the Standby Generator shall be limited to 0.0015% sulfur. [06-096 CMR 140, BPT]
2. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 140, BPT]

C. Standby Generator Emission Limits

1. Emissions from the Standby Generator shall not exceed the following limits [06-096 CMR 140, BPT]:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.12	06-096 CMR 103(2)(B)(1)(a) & A-728-71-A-N (07/13/98), BACT

Pollutant	lb/hr	Origin and Authority
PM	0.47	A-728-71-A-N (07/13/98), BACT
PM ₁₀	0.47	A-728-71-A-N (07/13/98), BACT
SO ₂	0.01	06-096 CMR 140, BPT
NO _x	17.0	A-728-71-A-N (07/13/98), BACT
CO	3.6	A-728-71-A-N (07/13/98), BACT
VOC	1.3	A-728-71-A-N (07/13/98), BACT

2. Visible emissions from the Standby Generator shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 101] Compliance with the visible emission limitation shall be demonstrated in accordance with 40 CFR Part 60, Appendix A, Method 9, when requested by the Department. [A-728-71-A-N (07/13/98), BACT]

D. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Standby Generator shall be demonstrated in accordance with the appropriate test methods upon request of the Department. [06-096 CMR 140]

E. Periodic Monitoring

CBEC shall monitor and record parameters for the Standby Generator as indicated in the following table whenever the equipment is operating. [06-096 CMR 140, BPT and A-728-71-A-N (07/13/98), BACT]

Parameter	Units	Monitoring Tool/Method	Frequency
Distillate fuel sulfur content	Percent, by weight	Fuel receipts from supplier	As fuel is purchased
Operating time	Hours	Hour Meter	Annually
Type of Operation (emergency, maintenance, etc.)	N/A	Operating Records	Following each operational period

F. The Standby Generator shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. CBEC shall meet the following operational limitations for the compression ignition emergency generator (Standby Generator):
 - a. Change the oil and filter annually,
 - b. Inspect the air cleaner annually, and
 - c. Inspect the hoses and belts annually and replace as necessary.

Records shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]

2. Oil Analysis Program Option
CBEC has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, CBEC must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]
3. Non-Resettable Hour Meter
A non-resettable hour meter shall be installed and operated on the Standby Generator. [40 CFR §63.6625(f)]
4. Maintenance, Testing, and Non-Emergency Operating Situations
 - a. The Standby Generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by

providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §63.6640(f)(4)(ii) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §63.6640(f) and 06-096 CMR 115]

- b. CBEC shall keep records that include maintenance conducted on the Standby Generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the Standby Generator is operated during a period of demand response or deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CBEC must keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

5. Operation and Maintenance

The Standby Generator shall be operated and maintained according to the manufacturer's emission-related written instructions, or CBEC shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup CBEC must minimize the Standby Generator's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

7. Requirements for Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake hp)

If the Standby Generator operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CBEC shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016.

Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

(19) **Cooling Tower**

- A. CBEC shall use drift eliminators in the Cooling Tower to reduce drift and resulting PM and PM₁₀ emissions. [06-096 CMR 140, BPT and A-728-71-A-N (07/13/98)]
- B. CBEC shall maintain proper operation and maintenance of the Cooling Tower, including the drift eliminators. [06-096 Chapter 140, BPT]
- C. CBEC shall maintain records documenting inspection dates, times and reasons for inspections, and maintenance conducted on the Cooling Tower. [06-096 Chapter 140, BPT]

(20) **Insignificant Units and Activities**

- A. CBEC may add or modify units and activities that are identified as "categorically exempt" insignificant units and activities under Appendix B, Section A of 06-096 CMR 140 of the Department's regulations. Addition or modification of such units and activities does not require a license amendment or notice to the Department.
- B. CBEC may add or modify units and activities that are identified as "insignificant based on size or production rate" under Appendix B, Section B of 06-096 CMR 140 of the Department's regulations. CBEC shall provide written notice to the Department within 30 days of such installation or modification. Addition or modification of such units and activities may not require a license amendment.

(21) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20 percent, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour. [06-096 CMR 101]

(22) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

(23) **CEMS Recordkeeping**

- A. CBEC shall maintain records documenting that all CEMS are continuously accurate, reliable and operated in accordance with 06-096 CMR 117 (as amended), 40 CFR Part 60, Appendices B and F, or 40 CFR Part 75, as applicable;
- B. CEMS shall meet the data availability requirements in 06-096 CMR 117, Section 5.
- C. CBEC shall maintain records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS as required by 06-096 CMR 117 (as amended); and
- D. CBEC shall maintain records of other data indicative of compliance with the applicable emission standards for those periods when the CEMS were not in operation or produced invalid data. In the event the Department does not concur with CBEC's compliance determination, CBEC shall, upon the Department's request, provide additional data, and shall have the burden of demonstrating that the data is indicative of compliance with the applicable standard.

[06-096 CMR 140] **Enforceable by State-only**

(24) **Quarterly Reporting**

CBEC shall submit a Quarterly Report to the Department within 30 days after the end of each calendar quarter, detailing the following, for the control equipment, parameter monitors, and Continuous Emission Monitoring Systems (CEMS) required by this license. [06-096 CMR 117]

- A. All control equipment downtimes and malfunctions;
- B. All CEMS downtimes and malfunctions;
- C. All parameter monitor downtimes and malfunctions;
- D. All excess events of emission and operational limitations set by this Order, Statute, state or federal regulations, as appropriate. The following information shall be reported for each excess event;
 - 1. Standard exceeded;
 - 2. Date, time, and duration of excess event;
 - 3. Amount of air contaminant emitted in excess of the applicable emission standard expressed in the units of the standard;
 - 4. A description of what caused the excess event;
 - 5. The strategy employed to minimize the excess event; and
 - 6. The strategy employed to prevent reoccurrence.
- E. A report certifying there were no excess emissions, if that is the case.

(25) **Semiannual Reporting** [06-096 CMR 140]

- A. CBEC shall submit to the Department semiannual reports which are due on **January 31st** and **July 31st** of each year. The facility's designated responsible official must sign this report.
- B. The semiannual report shall be considered on-time if the postmark of the submittal is before the due date or if the report is received by the DEP within seven calendar days of the due date.
- C. Each semiannual report shall include a summary of the periodic and CEM monitoring required by this license.
- D. All instances of deviations from license requirements and the corrective action taken must be clearly identified and provided to the Department in summary form for each six-month interval.

(26) **Annual Compliance Certification**

CBEC shall submit an annual compliance certification to the Department and EPA in accordance with Standard Condition (13) of this license. The annual compliance certification is due January 31 of each year. The facility's designated responsible official must sign this report.

The annual compliance certification shall be considered on-time if the postmark of the submittal is before the due date or if the report is received by the Department within seven calendar days of the due date. Certification of compliance is to be based on the stack testing or monitoring data required by this license. Where the license does not require such data, or the license requires such data upon request of the Department and the Department has not requested the testing or monitoring, compliance may be certified based upon other reasonably available information such as the design of the equipment or applicable emission factors. [06-096 CMR 140]

(27) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (as amended), the licensee shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 CMR 137.

(28) **General Applicable State Regulations**

CBEC is subject to the State regulations listed below.

<u>Origin and Authority</u>	<u>Requirement Summary</u>	<u>Enforceability</u>
06-096 CMR 102	Open Burning	-
06-096 CMR 109	Emergency Episode Regulation	-
06-096 CMR 110	Ambient Air Quality Standard	-
06-096 CMR 116	Prohibited Dispersion Techniques	-
38 M.R.S.A. §585-B, §§5	Mercury Emission Limit	Enforceable by State-only

(29) **Units Containing Ozone Depleting Substances**

When repairing or disposing of units containing ozone depleting substances, CBEC shall comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioning units in Subpart B. Examples of such units include refrigerators and any size air conditioners that contain CFCs. [40 CFR, Part 82, Subpart F]

(30) **Asbestos Abatement**

When undertaking Asbestos abatement activities, CBEC shall comply with the Standard for Asbestos Demolition and Renovation 40 CFR Part 61, Subpart M.

(31) **Acid Rain**

CBEC shall continue to comply with the federal Acid Rain Program, 40 CFR Part 70, *State Operating Permits Program*, and Part 72, *Permits Regulation*, in accordance with the Phase II acid rain permit, A-728-70-A-S, issued on March 17, 1999.

- A. CBEC shall comply with the applicable Federal acid rain program requirements codified in 40 CFR Parts 72, 73, 75, 77, and 78.
- B. CBEC shall obtain and hold in the EPA Allowance Management System, sufficient Acid Rain allowances for each ton of SO₂ emitted annually in accordance with the requirements of 40 CFR Parts 72, 73, 75, 77, 78.
- C. The Phase II Acid Rain permit requirements are incorporated and thereby renewed into this Part 70 air license renewal. This Part 70 Air License Renewal constitutes both CBEC's Part 70 Air Emission License and its Phase II Acid Rain Permit.

(32) **CO₂ Budget Source**

CBEC shall continue to comply with the requirements of license A-728-78-A-N, issued January 15, 2009, per Maine's *CO₂ Budget Trading Program*, 06-096 CMR 156 (as amended) for Combined Cycle Gas Turbines #1 and #2. [06-096 CMR 156] **Enforceable by State-only**

(33) **Risk Management Plan**

CBEC is subject to all applicable requirements of 40 CFR Part 68 (Risk Management Plan).

(34) **Expiration of a Part 70 license**

- A. CBEC shall submit a complete Part 70 renewal application at least 6 months prior, but no more than 18 months prior, to the expiration of this air license.
- B. Pursuant to Title 5 MRSA §10002, and 06-096 CMR 140, the Part 70 license shall not expire and all terms and conditions shall remain in effect until the Department takes final action on the renewal application of the Part 70 license. An existing source submitting a complete renewal application under

Casco Bay Energy Company, LLC
Penobscot County
Veazie, Maine
A-728-70-D-R

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Departmental
Findings of Fact and Order
Part 70 Air Emission License
Renewal

06-096 CMR 140 prior to the expiration of the Part 70 license will not be in violation of operating without a Part 70 license. **Enforceable by State-only**

DONE AND DATED IN AUGUSTA, MAINE THIS 28 DAY OF April, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mar Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

[Note: If a complete renewal application as determined by the Department, is submitted at least 6 months prior to expiration but no earlier than 18 months, then pursuant to Title 5 MRSA §10002, all terms and conditions of the Part 70 license shall remain in effect until the Department takes final action on the renewal of the Part 70 license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 02/18/2014

Date of application acceptance: 02/24/2014

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard and Kathleen E. Tarbuck, Bureau of Air Quality.

