



DEPARTMENT ORDER

**Bucksport Generation LLC
Hancock County
Bucksport, Maine
A-22-77-22-M**

**Departmental
Findings of Fact and Order
New Source Review
Minor Revision**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

FACILITY	Bucksport Generation LLC (Bucksport Generation)
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Revision
NAICS CODES	221112
NATURE OF BUSINESS	Fossil Fuel Electric Power Generation
FACILITY LOCATION	2 River Road, Bucksport, Maine

B. NSR License Description

Bucksport Generation has requested a New Source Review (NSR) license to:

1. Address the removal of equipment from their air emission license;
2. Reduce the short-term SO₂ emission limit for the gas turbine (GEN4);
3. Reestablish facility potential emissions;
4. Update the visible emission standards for GEN4;
5. Add a small emergency generator; and
6. Document all remaining applicable NSR requirements for the facility.

C. Emission Equipment

The following equipment is addressed in this NSR license:

Bucksport Generation has requested the removal of all equipment from their air emission license except the following:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur
GEN4	1,963	1,963,000 scf/hr	natural gas, negligible
	2,082	14,871 gal/hr	distillate fuel, 0.0015%
Gas Heater	4.1 ^a	4,100 scf/hr	natural gas, negligible
BSEG #1	19.12	138 gal/hr	distillate fuel, 0.0015%
BSEG #2	19.12	138 gal/hr	distillate fuel, 0.0015%
BSEG #3	19.12	138 gal/hr	distillate fuel, 0.0015%
BSEG #4	19.12	138 gal/hr	distillate fuel, 0.0015%
BSEG #5	19.12	138 gal/hr	distillate fuel, 0.0015%
BSEG #6	19.12	138 gal/hr	distillate fuel, 0.0015%
EG1 ^b	1.0	1,020 scf/hr	natural gas, negligible

^aThe size of the Gas Heater has been corrected to 4.1 MMBtu/hr based on the maximum firing rate of 4,100 scf/hr and a heat content of natural gas of 1,000 Btu/scf.

^bDenotes new equipment.

Bucksport Generation may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

Bucksport Generation may operate aqueous-based parts washers where the cleaning solution contains less than 5% VOC. This equipment does not meet the definition of solvent cleaning machines, and there are no applicable requirements in *Solvent Cleaners*, 06-096 C.M.R. ch. 130. Therefore, they are considered insignificant activities.

D. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

Portable Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

E. Revision Description

Bucksport Generation operates on a site previously licensed as a pulp and paper manufacturing facility. Operation of the pulp and papermaking activities ceased in 2014, and associated equipment was removed from Bucksport Generation's license in 2015. At that point, the remaining licensed equipment consisted of a gas turbine and several boilers, and the facility changed from being an industrial source to an electrical generating facility.

Bucksport Generation has now requested the removal of all equipment from their license except that listed in Section I(C) above, including removal of Boilers 5, 6, and 8.

F. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application submitted by Bucksport Generation does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The proposed revisions do not change any short-term emission limits and will result in an overall decrease in the facility's annual emissions. Therefore, this NSR license is determined to be a minor revision under *Minor and Major Source Air Emission License Regulations* 06-096 Code of Maine Rules (C.M.R.) ch. 115. The procedures found in

06-096 C.M.R. ch. 115 can be utilized to process this application since the proposed revisions are not prohibited by the Part 70 air emission license. An application to incorporate the requirements of this NSR license into the Part 70 air emission license has been submitted to the Department.

II. BEST PRACTICAL TREATMENT (BPT)

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 *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Emission Reductions

Bucksport Generation was limited to the following annual emissions from Boilers 5, 6, and 8 and GEN4 (combined) on a 12-month rolling total basis in NSR license A-22-71-AB-M (issued 4/29/2003):

Pollutant	Tons/year
PM	351
PM ₁₀	341
SO ₂	2,800
NO _x	1,410
CO	628
VOC	205

Combined limits for this equipment were originally established through netting in order for the installation of GEN4 to be considered a minor modification. GEN4 alone does not have the potential to emit at these levels.

A Part 70 Section 502(b)(10) Change was issued to the facility (A-22-70-J-A, issued 11/8/2013) which lowered the SO₂ emission limit from 2,800 tpy to 1,400 tpy. However, emissions of SO₂ from the Gast Turbine were based on a sulfur content in the distillate fuel of 0.05%. Per 38 M.R.S. § 603-A(2)(A)(3), as of July 1, 2018, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm). Therefore, the short-term emission limit for GEN4 when firing distillate

fuel shall be lowered from 102.00 lb/hr to 3.15 lb/hr and the annual emission limit shall be lowered to 46.1 tpy.

NSR license A-22-77-11-A added combined emission limits on GEN4 and Boiler 5 of 250 tpy for NO_x and 120 tpy for CO. Although Boiler 5 is being removed from this license, these emission limits were established in order for the Boiler 5 conversion project to be considered a minor modification. Therefore, these limits have been retained for GEN4 alone.

Therefore, this license establishes the following annual emission limits for GEN4 replacing all previous annual emission limits for GEN4 and the facility's boilers.

Pollutant	Tons/year
PM	45.2
PM ₁₀	45.2
SO ₂	46.1
NO _x	250.0
CO	120.0
VOC	16.8

These limits represent emissions from GEN4 alone at the currently licensed fuel limits, restrictions imposed as part of the Boiler 5 conversion project, and lowering the sulfur content limit for the distillate fuel to 0.0015%. Based on the removal of the facility's boilers from the license, the Department agrees that a short-term SO₂ emission limit of 3.15 lb/hr and the annual emission limits listed above represent BPT for GEN4.

C. Visible Emission Standards

GEN4 has a visible emission standard set by BACT. However, in 2019, *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101 was updated. The requirements in the updated regulation are more stringent than the previous BACT standards. Therefore, the visible emission requirements for GEN4 are being updated as follows.

GEN4 was previously subject to the following BACT emission standard:

Visible emissions from GEN4 shall not exceed an opacity of 20% on a 6-minute block average basis, except for one 6-minute block average period per hour of not more than 27% opacity.

Due to changes in 06-096 C.M.R. ch. 101, GEN4 will become subject to the following visible emission standard as of January 1, 2020:

Visible emissions from GEN4 shall not exceed an opacity of 20% on a 6-minute block average basis, except for periods of startup during which time Bucksport Generation may comply with the following work practice standards in lieu of the numerical opacity limit:

1. Bucksport Generation shall maintain a log (written or electronic) of the date, time, and duration of all operating time, startups, shutdowns, and malfunctions for GEN4.
2. Bucksport Generation shall develop and implement a written startup and shutdown plan for GEN4.
3. The duration of unit startups shall each not exceed one hour per occurrence.
4. GEN4 shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

D. EG1

Bucksport Generation has requested the addition of a small emergency generator (EG1). EG1 is rated for 70kW and has a Generac engine rated at 1.0 MMBtu/hr which fires natural gas. It was manufactured in 2019.

1. BACT Findings

The BACT emission limits for EG1 are based on the following:

PM/PM ₁₀	- 9.50E-03 lb/MMBtu from AP-42 Table 3.2-3 dated 7/00
SO ₂	- 5.88E-04 lb/MMBtu from AP-42 Table 3.2-3 dated 7/00
NO _x	- 2.27 lb/MMBtu from AP-42 Table 3.2-3 dated 7/00
CO	- 3.51 lb/MMBtu from AP-42 Table 3.2-3 dated 7/00
VOC	- 0.296 lb/MMBtu from AP-42 Table 3.2-3 dated 7/00
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for EG1 are the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
EG1	0.01	0.01	neg.	2.32	3.58	0.30

Visible emissions from EG1 shall not exceed 10% opacity on a six-minute block average basis except for periods of startup during which time Bucksport Generation may comply with the following work practice standards in lieu of the numerical opacity limit.

- a. Bucksport Generation shall maintain a log (written or electronic) of the date, time, and duration of all generator startups which result in the operator electing to utilize work practice standards.
- b. EG1 shall be operated in accordance with the manufacturer's emission-related operating instructions.
- c. Bucksport Generation shall minimize the engine's time spent at idle during startup 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 shall apply.
- d. The engine, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

The Department has determined that the proposed BACT visible emission limit is more stringent than the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for EG1 has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the air emission license.

2. 40 C.F.R. Part 60, Subpart JJJJ

Standards of Performance for Spark Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart JJJJ is applicable to EG1 since the unit was ordered after June 12, 2006, and manufactured after January 1, 2009. [40 C.F.R. § 60.4230] By meeting the requirements of 40 C.F.R. Part 60, Subpart JJJJ, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants*

for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart JJJJ requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart JJJJ, a stationary reciprocating internal combustion engine (ICE) is considered an emergency stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart JJJJ, resulting in the engine being subject to requirements applicable to non-emergency engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for 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 ICE more than 100 hours per calendar year.

- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, 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.

[40 C.F.R. §§ 60.4243(d) and 60.4248]

b. 40 C.F.R. Part 60, Subpart JJJJ Requirements

(1) Manufacturer Certification Requirement

The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. § 60.4233]

(2) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4237]

(3) Operation and Maintenance Requirement

The engine shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Bucksport Generation that are approved by the engine manufacturer. Bucksport Generation may only change those settings that are permitted by the manufacturer. [40 C.F.R. § 60.4243]

(4) Annual Time Limit for Maintenance and Testing

As an emergency engine, the unit shall be limited to 100 hours/year for maintenance and testing. The emergency engine may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours total allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 C.F.R. § 60.4243(d)]

(5) Recordkeeping

Bucksport Generation shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4245(b)]

E. Applicable NSR Requirements

The facility currently owned and operated by Bucksport Generation was originally licensed as a pulp and paper manufacturing facility in the 1970s. Since its original licensing, the facility has undergone many NSR licensing actions, most of them minor NSR amendments.

Operation of the pulp and papermaking activities ceased in 2014 and associated equipment was removed from Bucksport Generation's license in 2015. At that point the remaining licensed equipment consisted of a gas turbine and several boilers, and the facility changed from being an industrial source to an electrical generating facility.

Bucksport Generation has now requested the removal of all equipment from their license except that listed in Section I(C) above, including removal of Boilers 5, 6, and 8.

Due to the significant change in the facility's operation, many of the previously issued NSR licenses and amendments no longer contain applicable conditions. In order to simplify compliance demonstration and determination, the Department has proposed concatenating all currently applicable NSR requirements in this license.

EPA's New Source Review program began as part of the 1977 Clean Air Act Amendments. Below is an accounting of all NSR licensing actions undertaken by the facility since 1977 and a determination of what, if any, requirements from those licensing actions are still applicable.

1. License 2040 (Issued 3/10/1982)

License 2040 addressed the initial installation of Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in license 2040.

2. A-22-71-D-M (Issued 11/7/1990)

Minor revision A-22-71-D-M addressed adding tire-derived fuel (TDF) to the fuel mix for Boiler 8 as well as establishing NO_x, CO, and VOC emission limits for Boilers 5, 6, and 7.

Bucksport Generation has requested the removal of Boilers, 5, 6, and 8 from the license. Boiler 7 was removed in 2010 (see A-22-77-4-A). Therefore, all conditions specific to these boilers shall be deleted. There are no other applicable requirements contained in minor revision A-22-71-D-M.

3. A-22-71-H-M (Issued 2/10/1994)

Minor revision A-22-71-H-M addressed adding fiber cores to the fuel mix for Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-71-H-M.

4. A-22-71-I-M (Issued 10/24/1994)

Minor revision A-22-71-I-M addressed adding wood waste to the fuel mix for Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-71-I-M.

5. A-22-71-L-M (Issued 2/3/1997)

Minor revision A-22-71-L-M addressed optimizing the No. 5 Paper Machine and upgrading the Thermal Mechanical Pulping (TMP) process.

All pulp and papermaking equipment was removed from the facility's license in 2015 (see A-22-77-19-M). Therefore, there are no applicable requirements contained in minor revision A-22-71-L-M.

6. A-22-71-O-M (Issued 6/12/1998)

Minor revision A-22-71-O-M addressed replacement of the starch unloading/storage system.

All pulp and papermaking equipment was removed from the facility's license in 2015 (see A-22-77-19-M). Therefore, there are no applicable requirements contained in minor revision A-22-71-O-M.

7. A-22-71-N-A (Issued 9/14/1998)

Minor modification A-22-71-N-A addressed the installation of GEN4. In order for this project to be considered a minor modification, the facility accepted new annual emission caps for GEN4 and Boilers 5, 6, 7, and 8 combined.

As described in Section II(B) above, in this license Bucksport Generation has requested the removal of all of the facility's boilers from the license. This license modifies the requirements contained in A-22-71-N-A to remove references to the boilers, to lower the annual emission limits to include only GEN4, and to lower the short-term SO₂ emission limit for GEN4.

Minor modification A-22-71-N-A established a NO_x emission limit of 30 ppm_{dv} @ 15% O₂ on a 24-hour block average basis for GEN4 when firing distillate fuel. This limit was subsequently lowered to 15 ppm_{dv} @ 15% O₂ on a 24-hour block average basis in the facility's Part 70 license. For clarity and consistency, this license revises the NO_x emission limit for distillate fuel contained in Condition (17)(G) of air emission license A-22-71-N-A to include the revisions made in the Part 70 license.

All remaining applicable requirements from A-22-71-N-A have been included in the Order section of this license.

8. A-22-71-P-M (Issued 7/12/1999)

Minor revision A-22-71-P-M addressed changes to the dimensions and location of the stack for GEN4.

All applicable requirements from A-22-71-P-M have been included in the Order section of this license.

9. A-22-71-Q-M (Issued 8/30/1999)

Minor revision A-22-71-Q-M addressed the installation of a gas flare at the facility's landfill.

The flare was subsequently determined to be considered an insignificant activity and is no longer included in the facility's license. Therefore, the requirements contained in A-22-71-Q-M are determined to be obsolete and no longer applicable.

10. A-22-71-R-M (Issued 5/15/2000)

Minor revision A-22-71-R-M addressed the removal of a heat input cap on Boilers 5, 6, 7, and 8.

Bucksport Generation has requested the removal of all of the facility's boilers from the license. Additionally, although A-22-71-R-M modified previous NSR licenses, it itself did not contain any enforceable conditions. Therefore, there are no applicable requirements contained in minor revision A-22-71-R-M.

11. A-22-71-S-M (Issued 7/13/2000)

Minor revision A-22-71-S-M modified reporting.

These reporting requirements are now covered by the Part 70 (also known as Title V) permitting program. Therefore, there are no applicable requirements contained in minor revision A-22-71-S-M.

12. A-22-71-U-M (Issued 10/20/2000)

Minor revision A-22-71-U-M addressed the use of temporary stationary internal combustion engines.

All applicable requirements contained in A-22-71-U-M were later replaced by minor revision A-22-71-AA-M. Therefore, there are no applicable requirements contained in minor revision A-22-71-U-M.

13. A-22-71-V-M (Issued 7/2/2001)

Minor revision A-22-71-V-M addressed a number of licensing issues including:

- a. Limiting Boilers 5, 6, and 7 to 30% capacity.
- b. Changing stack testing requirements for Boiler 8.
- c. Modifying weekly sweeping requirements to maintenance of a Best Management Practices (BMP) plan.
- d. Removing the requirement of a COMS for GEN4.
- e. Adding language regarding minimum CO₂ for cold startups of Boiler 8.
- f. Changing the definition of "steady state load operation" for GEN4.
- g. Changing GEN4 fuel transfer exemption period.
- h. Changing GEN4 hot startup period.
- i. Allowing the use of pipeline natural gas in the off machine coater.
- j. Adding a definition of "Fired Shutdown" for GEN4.

All pulp and papermaking equipment was removed from the facility's license, and Bucksport Generation has requested the removal of all of the facility's boilers from the license. Therefore, items (a), (b), (e), and (i) are no longer applicable to the facility.

BMP plans (item c) are addressed in a standard condition in Bucksport Generation's Part 70 license. Therefore, the condition in A-22-71-V-M regarding establishing a BMP plan for fugitive particulate matter is considered obsolete.

The removal of a COMS for GEN4 (item d) did not result in any enforceable conditions in A-22-71-V-M.

Conditions associated with items (f), (g), (h), and (j) were subsequently updated and replaced by A-22-71-X-M (issued 9/28/2001).

Therefore, there are no applicable requirements contained in minor revision A-22-71-V-M.

14. A-22-71-X-M (Issued 9/28/2001)

Minor revision A-22-71-X-M addressed redefining the time frame for the burning of liquid fuel in GEN4 and re-tuning after major overhauls/rebuilds.

Definitions of turbine startup, hot startup, warm start, cold start, and shutdown were originally established in A-22-71-N-A. Associated requirements were subsequently amended in minor revision A-22-71-V-M (issued 7/2/2001) and again in minor revision A-22-71-X-M. These minor revisions were also expanded to address turbine cleaning, periods of fuel transfer, and re-tuning.

Definitions of these periods outside of "normal" operation were later clarified further in the facility's Part 70 license. For clarity and consistency, this license revises Condition (24) of air emission license A-22-71-X-M to include the revisions made in the Part 70 license. Additionally, the original definition of "turbine startup" relied on GEN4 reaching "6Q." Bucksport Generation no longer utilize quaternary burners, so "Q6" is no longer an accurate description of the mode. Therefore, the definition of "turbine startup" has been revised to end when the unit reaches "Mode 6" and steady state operation. When firing natural gas, steady state operation is defined as when NO_x emissions from GEN4 reach 9 ppm or less. When firing distillate fuel, steady state operation is defined as when the water injection rate reaches 20 gpm.

Bucksport Generation shall minimize emissions from GEN4 to the maximum extent practicable during startup and shutdown, during fuel transfer, and under maintenance or adjustment conditions, by following proper operating procedures to minimize the emissions of air contaminants to the maximum extent practical. Gas Turbine startup and shutdown and fuel transfer limits for NO_x and CO shall not exceed the following:

Pollutant	Fuel	ppmdv
NO _x	natural gas or distillate fuel	200 @15% O ₂ (1-hr block average)
CO	natural gas or distillate fuel	2,250 @15% O ₂ (1-hr block average)

Turbine startup shall be defined as that period of time from initial combustion in GEN4 until the unit reaches “Mode 6” and steady state load operation. When firing natural gas, steady state operation shall be defined as when the GEN4 turbine NO_x emissions reach 9 ppm or less. When firing distillate fuel, steady state operation shall be defined as when the combustion turbine water injection rate reaches steady sustainable load (defined as 20 gpm). Aborted startups shall be included in this definition.

This period shall not exceed 90 minutes for a hot start, 180 minutes for a warm start, or 240 minutes for a cold start. A hot start shall be defined as startup when the generating unit has been down for 2 hours or less. 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.

Shutdown shall be defined as that period of time from steady state operation to cessation of combustion turbine firing, or when the turbine goes into a fired shutdown. Aborted shutdowns shall be included in this definition. This period shall not exceed 60 minutes.

A fuel transfer mode shall be defined as the period of time during which the fuel fired in the turbine is switched from fuel oil to gas or gas to fuel oil. Aborted fuel transfer shall be included in this definition. This period shall not exceed 120 minutes.

Turbine re-tuning shall be defined as that period of time from initiation of combustion turbine firing until two hours after the computer has signaled the turbine reaching base load. This period shall not exceed 48 hours for each fuel.

15. A-22-71-Y-A (Issued 8/15/2002)

Minor modification A-22-71-Y-A addressed a number of licensing issues including:

- a. Installation of three emergency generators.
- b. Clarification of how to demonstrate compliance with SO₂ limits for GEN4.
- c. Clarification of how to demonstrate compliance with annual VOC limits for the boilers.
- d. Clarification of how to demonstrate compliance with annual NO_x limits for the boilers.
- e. Addition of NO_x and CO emission limits for GEN4 during periods of startup, shutdown, and turbine cleaning.

Bucksport Generation has requested the removal of all of the facility's boilers and previously licensed emergency generators from the license. Therefore, items (a), (c) and (d) are no longer applicable to the facility.

Conditions associated with item (e) were subsequently deleted and replaced by A-22-71-AA-M (issued 3/11/2003).

Applicable requirements associated with item (b) have been included in the Order section of this license.

16. A-22-71-Z-M (Issued 12/4/2002)

Minor revision A-22-71-Z-M addressed opacity during startup of Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-71-Z-M.

17. A-22-71-AA-M (Issued 3/11/2003)

Minor revision A-22-71-AA-M addressed a number of licensing issues including:

- a. An extension in the timeframe for proposing emission limits for GEN4 while firing liquid fuel.
- b. Clarification of how to calculate VOC emissions from the boilers.
- c. Expanding startup limits for GEN4 to also apply during shutdown.
- d. Clarification of CEMS requirements for GEN4.
- e. Clarification of requirements for temporary stationary internal combustion engines.

Bucksport Generation has requested the removal of all of the facility's boilers from the license. Therefore, item (b) is no longer applicable to the facility.

Conditions associated with the temporary stationary internal combustion engines (item e) are considered obsolete and no longer applicable.

Minor revision A-22-71-AA-M reestablished emission limits for NO_x and CO from GEN4 during periods of startup when firing natural gas as well as expanding those limits to include periods of shutdown (item c). At the time, not enough information was available to address startup/shutdown emission limits when firing distillate fuel. However, the facility was required to propose limits no later than January 30, 2004 (item a). The facility subsequently proposed using the same startup/shutdown emission limits for both fuels. For clarity and consistency, this license revises Condition (46) of air emission license A-22-71-AA-M to such that the startup/shutdown emission limits for NO_x and CO apply when firing either natural gas or distillate fuel.

Applicable requirements associated with item (d) have been included in the Order section of this license.

18. A-22-71-AB-A (Issued 4/29/03)

Minor modification A-22-71-AB-A addressed implementing a stakeholder process to develop alternative projects for reduction of NO_x as well as reductions of facility-wide emissions of SO₂ and NO_x.

The timeframe for completion of the stakeholder process (by 6/30/2006) has past. Therefore, these requirements are considered obsolete and no longer applicable.

As described in Section II(B) above, in this license Bucksport Generation has requested the removal of all of the facility's boilers from the license. This license modifies the requirements contained in A-22-71-AB-A to remove references to the boilers and to lower the annual emission limits to include only GEN4.

Therefore, there are no currently applicable requirements contained in minor modification A-22-71-AB-A.

19. A-22-71-AC-A (Issued 7/30/2004)

Minor modification A-22-71-AC-A addressed improvements to the groundwood process.

All pulp and papermaking equipment was removed from the facility's license in 2015 (see A-22-77-19-M). Therefore, there are no applicable requirements contained in minor modification A-22-71-AC-A.

20. A-22-77-4-A (Issued 11/29/2010)

Major modification A-22-77-4-A addressed increasing the biomass feed rate in Boiler 8 while removing coal and TDF as licensed fuels.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-77-4-A.

21. A-22-77-3-A (Issued 6/7/2011)

Minor modification A-22-77-3-A addressed replacing the steam heated dryers in the coating section of the No. 5 Paper Machine with two non-contact natural gas-fired air cap dryers.

All pulp and papermaking equipment was removed from the facility's license in 2015 (see A-22-77-19-M). Therefore, there are no applicable requirements contained in minor modification A-22-77-3-A.

22. A-22-77-6-M (Issued 6/30/2011)

Minor revision A-22-77-6-M clarified the startup and shake-down period for Boiler 8 after installation of the new steam turbine.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-77-6-M.

23. A-22-77-7-A (Issued 10/13/2011)

Minor modification A-22-77-7-A addressed the installation of a new baghouse as part of the Boiler 8 biomass upgrade and woodyard project licensed in A-22-77-4-A and A-22-77-6-M.

The equipment addressed in this license is part of the support system for Boiler 8. Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted, including those associated with the Biomass Receiving Tower, Biomass Transport, and their respective baghouses. There are no other applicable requirements contained in minor modification A-22-77-7-A.

24. A-22-77-8-M (Issued 3/12/2013)

Minor revision A-22-77-8-M addressed revisions to the SO₂ compliance demonstration method for Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-77-8-M.

25. A-22-77-9-M (Issued 4/9/2013)

Minor revision A-22-77-9-M addressed extending the startup and shake-down period for Boiler 8 after installation of the new steam turbine as well as extending the deadline for stack testing.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-77-9-M.

26. A-22-77-10-A (Issued 7/31/2013)

Minor modification A-22-77-10-A addressed the end date of the startup and shake-down period for Boiler 8 after installation of the new steam turbine. It also addressed the extension of stack test deadlines as well as clarification on how to calculate the initial 30-day rolling average lb/MMBtu emission limits.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor modification A-22-77-10-A.

27. A-22-77-11-A (Issued 1/17/2014)

Minor modification A-22-77-11-A addressed the conversion of Boiler 5 from firing oil to natural gas. It also establishes combined emission limits for Boiler 5 and GEN4 to limit the project to a minor modification and reestablished how compliance with the annual emission limits for NO_x and CO is demonstrated.

Bucksport Generation has requested the removal of all boilers from the license. Therefore, all conditions specific to only Boiler 5 shall be deleted.

This license reestablishes annual emission limits for all criteria pollutants. The annual NO_x and CO emission limits are based on those established in A-22-77-11-A.

How compliance with the annual NO_x and CO emission limits is demonstrated is addressed in both A-22-71-N-A and A-22-77-11-A. For clarity, this license establishes that the compliance methods listed in A-22-77-11-A supersede previously licensed methods.

Applicable requirements associated with GEN4 have been included in the Order section of this license.

28. A-22-77-12-M (Issued 5/27/2014)

Minor revision A-22-77-12-M addressed establishing a 30-day rolling average basis for the CO emission limit on Boiler 5.

Bucksport Generation has requested the removal of all boilers from the license. Therefore, all conditions specific to Boiler 5 shall be deleted. Additionally, all requirements of A-22-77-12-M were subsequently deleted by A-22-77-13-M.

29. A-22-77-13-M (Issued 8/13/2014)

Minor revision A-22-77-13-M simply undid A-22-77-12-M.

There are no applicable requirements contained in minor revision A-22-77-13-M.

30. A-22-77-14-M (Issued 12/5/2014)

Minor revision A-22-77-14-M addressed removal of the restriction on simultaneous operation of Boiler 5 and GEN4.

There are no applicable conditions contained in A-22-77-14-M as it only removes a condition contained in A-22-77-11-A.

31. A-22-77-15-M (Issued 7/17/2015)

Minor revision A-22-77-15-M addressed revisions to the stack testing deadlines for Boiler 8.

Bucksport Generation has requested the removal of Boiler 8 from the license. Therefore, all conditions specific to Boiler 8 shall be deleted. There are no other applicable requirements contained in minor revision A-22-77-15-M.

32. A-22-77-16-M (Issued (10/2/2015)

Minor revision A-22-77-16-M addressed demolition activities and updating the Part 70 renewal application regarding the equipment removed.

Although mostly complete, some demolition may be ongoing as the site of the former paper mill is redeveloped. Applicable requirements associated with the demolition activities have been included in the Order section of this license. Other requirements pertaining to updating the Part 70 renewal application have been satisfied, and associated conditions contained in A-22-77-16-M are determined to be obsolete and no longer applicable.

33. A-22-77-19-M (Issued 12/31/2015)

Minor revision A-22-77-19-M addressed changing the classification of the facility from a major source of hazardous air pollutants (HAP) to an area HAP source. Requirements included removing the pulp and papermaking equipment from the license, establishing facility-wide emission limits for HAP, and establishing an annual capacity factor for Boiler 6.

The pulp and papermaking equipment have been demolished and removed from the site. Bucksport Generation has requested the removal of all boilers, including Boiler 6 from the license. Therefore, conditions pertaining to this equipment are determined to be obsolete and no longer applicable.

The applicable facility-wide annual HAP emission limits are included in the Order section of this license.

34. A-22-77-18-A (Issued 1/13/2016)

Minor modification A-22-77-18-A addressed operating GEN4 as a simple cycle unit as well as maintaining the ability to operate as a combined cycle unit.

The applicable requirements for the alternative operating scenarios for GEN4 contained in A-22-77-18-A have been included in the Order section of this license.

35. A-22-77-20-M (Issued 3/1/2016)

Minor revision A-22-77-20-M addressed the addition of a Gas Heater. There was a typo on page 2 of A-22-77-20-M which listed the size of the Gas Heater as 4.8 MMBtu/hr although it was listed correctly elsewhere as 4.1 MMBtu/hr.

The applicable requirements for the Gas Heater contained in A-22-77-20-M have been included in the Order section of this license.

36. A-22-77-21-A (Issued 10/23/2018)

Minor modification A-22-77-21-A addressed the installation of six, 2-megawatt (MW) black start emergency generators (BSEG) used to restart GEN4 in the event of a system-wide failure of the electrical grid.

The applicable requirements for the BSEGs contained in A-22-77-21-A have been included in the Order section of this license.

F. Incorporation Into the Part 70 Air Emission License

Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5. An application to incorporate the requirements of this NSR license into the Part 70 air emission license has been submitted to the Department.

G. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on the following assumptions:

- Firing 21,587,040 gal/yr distillate fuel with a sulfur content of 0.0015% by weight in GEN4;
- Firing GEN4 for the maximum number of remaining hours per year on natural gas;
- An annual limit of 250 tpy of NO_x from GEN4;
- An annual limit of 120 tpy of CO from GEN4;
- Operating the Gas Heater for 8,760 hrs/year;
- Operating BSEG #1 - #6 for 250 hrs/year each; and
- Operating EG1 for 100 hrs/year.

Please note, this information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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
GEN4	45.2	45.2	46.1	250.0	120.0	16.8
Gas Heater	0.9	0.9	–	1.8	1.5	0.1
BSEG #1 - #6	1.7	1.7	0.1	31.9	3.0	0.8
EG1	–	–	–	0.1	0.2	0.1
Total TPY	47.8	47.8	46.2	283.8	124.7	17.8

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

Bucksport Generation previously submitted an ambient air quality impact analysis outlined in air emission license A-22-77-4-A (dated 11/29/2010) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (AAQS). An additional ambient air quality impact analysis is not required for this NSR license amendment.

ORDER

The Department hereby grants New Source Review Minor Revision A-22-77-22-M pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the standard and specific conditions below.

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

SPECIFIC CONDITIONS

This license is intended to concatenate all currently applicable NSR requirements into one location. No changes to requirements are intended except where specifically addressed in the Findings of Fact (e.g., removal of requirements associated with the boilers).

Therefore, the following Conditions replace all previous Conditions in NSR licenses and amendments issued to the facility. Although citations to the originating licenses have been maintained for clarity, this license becomes the base condition for future licensing actions.

(1) GEN4

- A. Bucksport Generation's gas turbine facility shall consist of a nominal 175 MW F class, combustion turbine generator with advanced dry low NO_x combustors, and an unfired heat recovery steam generator (HRSG). [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
- B. Bucksport Generation may operate GEN4 as a simple-cycle unit with the HRSG system inactive. Bucksport Generation shall remain in compliance with all applicable Gas Turbine licensing requirements while operating in simple-cycle mode. [06-096 C.M.R. ch. 115, BPT (A-22-77-18-A, 1/13/2016)]
- C. The exhaust from GEN4 shall be vented through a 250-foot above ground stack. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
- D. Bucksport Generation shall fire only natural gas and distillate fuel in GEN4. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
- E. Bucksport Generation shall not exceed the use of 21,587,040 gallons per year (based on a calendar year) of distillate fuel in GEN4. [06-096 C.M.R. ch. 115, BPT (A-22-71-X-M, issued 9/28/2001)]
- F. The sulfur content of the distillate fuel shall not exceed 0.0015% by weight. [06-096 C.M.R. ch. 115, BPT]
- G. Bucksport Generation shall operate GEN4 with water injection during the firing of distillate fuel for NO_x emission control. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]

H. Emissions from GEN4 shall not exceed the following, except for periods of startup, shutdown, and fuel transfer periods:

Pollutant	Fuel	ppmdv	Ave Time	lb/hr	Origin and Authority
PM	natural gas	–	–	9	06-096 C.M.R. ch. 115, BACT (A-22-71-N-A, 9/14/1998)
	distillate fuel	–	–	17	
PM ₁₀	natural gas	–	–	9	
	distillate fuel	–	–	17	
SO ₂	natural gas	–	–	12	
	distillate fuel	–	–	3.15	
NO _x	natural gas	9 @ 15% O ₂	24-hr block	65	06-096 C.M.R. ch. 115, BACT (A-22-71-N-A, 9/14/1998)
	distillate fuel	42 @ 15% O ₂	24-hr block	348	
CO	natural gas	9 @ 15% O ₂	24-hr block	32	06-096 C.M.R. ch. 115, BPT (A-22-77-22-M)
	distillate fuel	15 @ 15% O ₂	24-hr block	104	
VOC	natural gas	–	–	3	06-096 C.M.R. ch. 115, BACT (A-22-71-N-A, 9/14/1998)
	distillate fuel	–	–	8	

- I. Prior to 1/1/2020, visible emissions from GEN4 shall not exceed an opacity of 20% on a 6-minute block average basis, except for one 6-minute block average period per hour of not more than 27% opacity.
[06-096 C.M.R. ch. 115, BACT (A-22-71-N-A, 9/14/1998)]
- J. Beginning 1/1/2020, visible emissions from GEN4 shall not exceed an opacity of 20% on a 6-minute block average basis, except for periods of startup during which time Bucksport Generation may comply with the following work practice standards in lieu of the numerical opacity limit:
1. Bucksport Generation shall maintain a log (written or electronic) of the date, time, and duration of all operating time, startups, shutdowns, and malfunctions for GEN4.
 2. Bucksport Generation shall develop and implement a written startup and shutdown plan for GEN4.
 3. The duration of unit startups shall each not exceed one hour per occurrence.
 4. GEN4 shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.
[06-096 C.M.R. ch. 101, § (3)(A)(4)(b)]

K. Compliance Requirements for Short-Term Emission Limits

1. Upon request by the Department, compliance with the PM and PM₁₀ lb/hr emission limits shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 5 or other method as approved by the Department. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
2. Compliance with the SO₂ lb/hr emission limit shall be demonstrated by the natural gas and distillate fuel firing rate into the turbine and by fuel sample analysis of the natural gas and distillate fuel sulfur content as required in accordance with 40 CFR Part 60, Subpart GG, § 60.333 or by other methods allowed by 40 CFR Part 75, Subpart B. For any hour during which distillate fuel is fired in GEN4, the lb/hr emission limits associated with firing distillate fuel shall apply. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
3. Compliance with the NO_x and CO ppm_{dv} emission limits shall be demonstrated through use of a Continuous Emission Monitoring System (CEMS) which meet the performance specifications of 40 C.F.R. Part 60, Appendix B and F, 40 C.F.R. Part 75, Appendix A and B, and 06-096 C.M.R. ch. 117 as applicable. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
4. Upon request by the Department, compliance with the NO_x and CO lb/hr emission limits shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 20 (for NO_x) and Method 10 or 19 (for CO) or other method as approved by the Department. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
5. Upon request by the Department, compliance with the VOC lb/hr emission limit shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 25A or other method as approved by the Department. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
6. Upon request by the Department, compliance with the visible emission limits shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9. [06-096 C.M.R. ch. 115, BPT (A-22-77-22-M)]

- L. Annual emissions from GEN4 shall not exceed the following on a 12-month rolling total basis. [06-096 C.M.R. ch. 115, BACT (A-22-77-22-M)]

Pollutant	Tons/year
PM	45.2
PM ₁₀	45.2
SO ₂	46.1
NO _x	250.0
CO	120.0
VOC	16.8

M. Compliance Requirements for Annual Limits

1. On a monthly basis, Bucksport Generation shall calculate and record the 12-month rolling total annual emissions (tons) from GEN4 for PM, PM₁₀, SO₂, NO_x, and CO. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
 2. Monthly emissions of PM and PM₁₀ from GEN4 shall be based on the licensed PM and PM₁₀ emission limits (lb/hr) for natural gas and distillate fuel (as applicable) and the number of hours GEN4 fired each fuel in the given month. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
 3. Monthly emissions of SO₂ from GEN4 shall be based on fuel flow monitoring (scf/month and gallon/month) and the sulfur content of the fuel fired. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998 and A-22-77-22-M)]
 4. Monthly emissions of NO_x and CO from GEN4 shall be based on hourly CEMS data, if available. For periods where CEMS data is not available, Bucksport Generation shall multiply the licensed lb/hr emission limits for natural gas and distillate fuel by the number of hours GEN4 fired each fuel. [06-096 C.M.R. ch. 115, BPT (A-22-77-11-A, 1/17/2014)]
- N. Turbine Startup, Shutdown, Fuel Transfer, Turbine Cleaning, and Re-Tuning [06-096 C.M.R. ch. 115, BPT (A-22-77-22-M)]
1. Bucksport Generation shall minimize emissions from GEN4 to the maximum extent practicable during startup and shutdown, during fuel transfer, and under maintenance or adjustment conditions, by following proper operating procedures to minimize the emissions of air contaminants to the maximum extent practical.

2. Emissions from GEN4 during periods of startup, shutdown, and fuel transfer shall not exceed the following:

Pollutant	Fuel	ppmdv	Ave Time	Origin and Authority
NO _x	natural gas	200 @ 15% O ₂	1-hr block	06-096 C.M.R. ch. 115, BACT (A-22-77-22-M)
	distillate fuel		1-hr block	
CO	natural gas	2,250 @ 15 O ₂	1-hr block	
	distillate fuel		1-hr block	

3. *Turbine startup* shall be defined as that period of time from initial combustion in GEN4 until the unit reaches “Mode 6” and steady state load operation. When firing natural gas, steady state operation shall be defined as when the GEN4 turbine NO_x emissions reach 9 ppm or less. When firing distillate fuel, steady state operation shall be defined as when the combustion turbine water injection rate reaches steady sustainable load (defined as 20 gpm). Aborted startups shall be included in this definition.

This period shall not exceed 90 minutes for a hot start, 180 minutes for a warm start, or 240 minutes for a cold start. A hot start shall be defined as startup when the generating unit has been down for 2 hours or less. 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.

4. *Shutdown* shall be defined as that period of time from steady state operation to cessation of combustion turbine firing, or when the turbine goes into a fired shutdown. Aborted shutdowns shall be included in this definition. This period shall not exceed 60 minutes.
5. A *fuel transfer* mode shall be defined as the period of time during which the fuel fired in the turbine is switched from fuel oil to gas or gas to fuel oil. Aborted fuel transfer shall be included in this definition. This period shall not exceed 120 minutes.
6. *Turbine re-tuning* shall be defined as that period of time from initiation of combustion turbine firing until two hours after the computer has signaled the turbine reaching base load. This period shall not exceed 48 hours for each fuel.

O. Periodic Monitoring

Bucksport Generation shall operate, record data, and maintain records from the following periodic monitors for GEN4:

1. The number of hours GEN4 fires natural gas on a monthly basis. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
2. The number of hours GEN4 fires distillate fuel on a monthly basis. Hours in which GEN4 fired both natural gas and distillate fuel shall be counted as an hour of distillate fuel firing.
[06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
3. Records of whether GEN4 is in simple-cycle or combined-cycle mode for all operating hours. [06-096 C.M.R. ch. 115, BPT (A-22-77-18-A, 1/13/2016)]
4. Fuel use for both natural gas and distillate fuel on a monthly basis. [06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
5. Hourly NO_x CEMS data and daily totaled NO_x mass emissions.
[06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
6. Hours of operation, including startup, shutdown, and any other down time.
[06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]
7. Any instances of malfunction of the air pollution control system.
[06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]

P. Parameter Monitoring

During all operating times, Bucksport Generation shall operate, record data, and maintain records from the following parameter monitors for GEN4:

Parameter	Frequency
Natural Gas Firing Rate	Monitor: Continuously Record: Continuously
Distillate Fuel Firing Rate	Monitor: Continuously Record: Continuously
Water Injection Rate	Monitor: Continuously Record: Continuously

[06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998)]

Q. CEMS

Bucksport Generation shall operate and maintain the following continuous emission monitoring systems (CEMS) for GEN4 whenever the unit is operating:

Pollutant and Continuous Monitors	Units	Averaging Period	Origin and Authority
NO _x CEMS	ppmdv	24-hr block average	06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998 and A-22-71-AA-M, 3/11/2003)
O ₂ CEMS	%	1-hour average	06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998 and A-22-71-AA-M, 3/11/2003)
CO CEMS	ppmdv	24-hr block average	06-096 C.M.R. ch. 115, BPT (A-22-71-N-A, 9/14/1998 and A-22-71-AA-M, 3/11/2003)

(2) Demolition Activities

- A. Bucksport Generation 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 (including demolition) which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115, BPT (A-22-77-16-M, 10/2/2015)]
- B. Potential sources of fugitive PM emissions, including demolition activities, material stockpiles, and paved and unpaved roadways shall be controlled when appropriate by wetting with water, calcium chloride, by sweeping paved roadways, or other methods as approved by the Department. [06-096 C.M.R. ch. 115, BPT (A-22-77-16-M, 10/2/2015)]
- C. Visible emissions from a fugitive emission source shall not exceed an opacity of 20% on a five-minute block average basis. [06-096 C.M.R. ch. 101, § (3)(C)]
- D. Bucksport Generation shall maintain the integrity of each structure's outer walls to the maximum extent possible as each structure is demolished. To minimize fugitive emissions, the outer walls of each structure shall be the last portion of each structure to be removed and the walls and roof shall remain intact as long as structurally and safely feasible. [06-096 C.M.R. ch. 115, BPT (A-22-77-16-M, 10/2/2015)]
- E. During transportation of CDD materials such as crushed concrete, dirt, wall board, sawdust, and other materials that have the potential to cause fugitive dust, the material

shall be covered or enclosed; or other control methods may be utilized as approved by the Department. [06-096 C.M.R. ch. 115, BPT (A-22-77-16-M, 10/2/2015)]

- F. Any portable rock crusher brought on site shall be individually licensed by the owner of the rock crusher either through 06-096 C.M.R. ch. 115 or 06-096 C.M.R. ch. 149, as appropriate, and shall meet all requirements, as applicable. [06-096 C.M.R. ch. 115, BPT (A-22-77-16-M, 10/2/2015)]

(3) Facility-Wide HAP Emission Limits

- A. Bucksport Generation shall be limited to 24.9 ton/year of total HAPs and 9.9 tons/year of any single HAP, based on a 12-month rolling total.
- B. Compliance with the facility-wide HAP emission limits shall be demonstrated by fuel use records and emission calculations on a monthly and 12-month rolling total basis.

[06-096 C.M.R. ch. 115, BACT (A-22-77-19-M, 12/31/2015)]

(4) Gas Heater

- A. Fuel

The Gas Heater shall fire only natural gas. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type. Records of fuel use shall be kept on a monthly and calendar year total basis.

[06-096 C.M.R. ch. 115, BPT (A-22-77-20-M, 3/1/2016)]

- B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Gas Heater	PM	0.05	06-096 C.M.R. ch. 115, BACT (A-22-77-20-M, 3/1/2016)

- C. Emissions shall not exceed the following:

[06-096 C.M.R. ch. 115, BACT (A-22-77-20-M, 3/1/2016)]

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Gas Heater	0.21	0.21	0.01	0.41	0.34	0.02

- D. Visible Emissions

Visible emissions from the Gas Heater shall not exceed 10% opacity on a 6-minute block average basis. [06-096 C.M.R. ch. 115, BACT (A-22-77-20-M, 3/1/2016)]

(5) **BSEG #1-#6**

A. BSEG #1-#6 shall each be limited to 250 hours of operation per calendar year, with no more than 100 hours/year of the 250 hours/year being used for testing and maintenance (non-emergency) purposes. Bucksport Generation shall maintain records documenting usage of BSEG #1-#6 on a monthly and calendar year total basis.
[06-096 C.M.R. ch. 115, BACT (A-22-77-21-A, 10/23/2018)]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
BSEG #1	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a) and 06-096 C.M.R. ch. 115, BACT (A-22-77-21-A, 10/23/2018)
BSEG #2	PM	0.12	
BSEG #3	PM	0.12	
BSEG #4	PM	0.12	
BSEG #5	PM	0.12	
BSEG #6	PM	0.12	

C. Emissions shall not exceed the following:
[06-096 C.M.R. ch. 115, BACT (A-22-77-21-A, 10/23/2018)]

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
BSEG #1	2.3	0.6	0.03	42.5	4.0	1.1
BSEG #2	2.3	0.6	0.03	42.5	4.0	1.1
BSEG #3	2.3	0.6	0.03	42.5	4.0	1.1
BSEG #4	2.3	0.6	0.03	42.5	4.0	1.1
BSEG #5	2.3	0.6	0.03	42.5	4.0	1.1
BSEG #6	2.3	0.6	0.03	42.5	4.0	1.1

D. Visible emissions from BSEG #1-#6 shall each not exceed 20% opacity on a six-minute block average basis.

Bucksport Generation may elect to comply with the following work practice standards during periods of startup in lieu of the visible emission standards listed above:

1. Bucksport Generation shall maintain a log (written or electronic) of the date, time, and duration of all engine startups which result in the operator electing to utilize work practice standards.
2. The BSEG shall be operated in accordance with the manufacturer's emission-related operating instructions.

3. Bucksport Generation shall minimize the engine'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 shall apply.
4. The BSEGs, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

[06-096 C.M.R. ch. 115, BACT (A-22-77-21-A, 10/23/2018)]

- E. The BSEG #1-#6 shall each meet the applicable requirements of 40 C.F.R. Part 60, Subpart III, including the following:

[incorporated under 06-096 C.M.R. ch. 115, BPT (A-22-77-21-A, 10/23/2018)]

1. Manufacturer Certification

The engines are certified to meet U.S. EPA emission limits when operated as emergency engines. The certification shall be maintained by the source and submitted to the Department upon request. [40 C.F.R. § 60.4205(b)]

2. Ultra-Low Sulfur Fuel

The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

- a. As emergency engines, the BSEG #1-#6 shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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). These limits are based on a calendar

year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours.

[40 C.F.R. § 60.4211(f) and 06-096 C.M.R. ch. 115]

- b. Bucksport Generation shall keep records that include maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Bucksport Generation that are approved by the engine manufacturer. Bucksport Generation may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(6) **EG1**

- A. EG1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BPT]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
EG1	0.01	0.01	neg.	2.32	3.58	0.30

C. Visible Emissions

Visible emissions from EG1 shall not exceed 10% opacity on a six-minute block average basis.

Bucksport Generation may elect to comply with the following work practice standards during periods of startup in lieu of the visible emission standards listed above:

- 1. Bucksport Generation shall maintain a log (written or electronic) of the date, time, and duration of all engine startups which result in the operator electing to utilize work practice standards.
- 2. The engines shall be operated in accordance with the manufacturer's emission-related operating instructions.

3. Bucksport Generation shall minimize the engine'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 shall apply.
 4. The engines, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.
- D. EG1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ, including the following: [incorporated under 06-096 C.M.R. ch. 115, BPT]
1. **Manufacturer Certification**
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1.
 2. **Non-Resettable Hour Meter**
A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4237 and 06-096 C.M.R. ch. 115, BPT]
 3. **Annual Time Limit for Maintenance and Testing**
 - a. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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). The limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 C.F.R. § 60.4243(d) and 06-096 C.M.R. ch. 115, BPT]
 - b. Bucksport Generation shall keep records that include maintenance conducted on the engine(s) and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4245(b)]

4. Operation and Maintenance

The engine shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Bucksport Generation that are approved by the engine manufacturer. Bucksport Generation may only change those settings that are permitted by the manufacturer. [40 C.F.R. § 60.4243]

DONE AND DATED IN AUGUSTA, MAINE THIS 29th DAY OF October, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: 

GERALD D. REID, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 9/17/19

Date of application acceptance: 9/18/19

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

