



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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General Dynamics – OTS, Inc.
York County
Saco, Maine
A-434-71-S-R/A (SM)

Departmental Findings of Fact and Order
Air Emission License
Renewal and Amendment

FINDINGS OF FACT

After review of the air emissions license renewal and 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 Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

General Dynamics – OTS, Inc. (General Dynamics) has applied to renew and amend their Air Emission License permitting the operation of emission sources associated with their military weapons manufacturing facility.

General Dynamics has requested to amend their license in order to do the following:

- 1) make corrections to the boiler ratings, firing rates, and fuel usage for Boilers #1, #2, and #3. Boilers #4 and #5 are no longer operational and have been removed from service.
- 2) remove the particulate matter (PM) emissions limit for the scrubbers
- 3) remove Generator #2 from license. Generator #2 is no longer at the facility.
- 4) remove residual fuel (No. 6 Fuel Oil) as a licensed fuel for the boilers. The lines have been disconnected and the tank has been emptied and rendered inoperable.
- 5) remove the Tin/Lead Plating Line
- 6) remove Foam-in-place as a source of emissions

In addition to these changes, General Dynamics has applied to amend their Air Emission License to include the installation of a new seven lane firing range.

The equipment addressed in this license is located at 291 North Street, Saco, Maine.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
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(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
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PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>	<u>Stack #</u>
Boiler #1	12.6	12,353 scf/hr	Natural gas	1971	1
		90 gph	Distillate, 0.5%		
Boiler #2	12.6	12,353 scf/hr	Natural gas	1951	2
		90 gph	Distillate, 0.5%		
Boiler #3	16.7	16,412 scf/hr	Natural Gas	1951	3
		120 gph	Distillate, 0.5%		
HT-0005 (Lindberg- #1200)	1.0	980 scf/hr	Natural Gas	1951	N/A
HT-0006 (Spray Booth Oven #5030)	1.0	980 scf/hr	Natural Gas	1951	N/A
HT-6213	1.6	1,569 scf/hr	Natural Gas	1951	N/A

Engines

<u>Equipment</u>	<u>Power KW</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>
Boiler Room Generator #1	175	2.4	17.5	Distillate, 0.0015%	1975
Fire Pump #1	110	1.1	8	Distillate, 0.0015%	2001

Process Equipment

<u>Equipment</u>	<u>Type of Equipment</u>	<u>Pollutant</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Misc. Parts Plating Line #3	Misc. Parts Plating Line	Particulate Matter (PM), Chrome	Dual 3-stage composite mesh pad system	SC-3
Small Barrel Plating Line #4	Small Barrel Plating Line	PM, Chrome	FBME	FBME
Large Barrel Plating Line #5	Large Barrel Plating Line	PM, Chrome	FBME	FBME
Mn Phos Line	Mn- Zinc Phos Coating Line	PM, Manganese	None	Mn-1
Spray Booth	Spray Booth	PM, Volatile Organic Compound (VOC)	PA-HEPAs	PB-1
Evaporator	Evaporator (#1266)	VOC	None	6
Barrel Blast	Forge Pangborn (AO44)	PM	Cyclone & Filter	N/A
Shot Blast	Asset #4185 Gun Barrel Unit #2	PM	Cyclone & Filter	N/A
Shot Blasting #1	Rotary Table #1 (E290)	PM	SB cyclone and Filter	SB-1
Shot Blasting #2	Rotary Table #2 (#B046)	PM	SB cyclone and Filter	SB-1
Shot Blasting #3	Rotary Table #3 (#B470)	PM	SB cyclone and Filter	SB-1
Solvent Degreaser	Up to 10 degreasers	VOC	-	-

C. Definitions

Distillate Fuel means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials 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.

D. Application Classification

The application for General Dynamics includes the licensing of existing equipment as well as the installation of new equipment. Therefore, the license is considered to be a renewal of currently licensed emission units processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as

amended). However, the application for General Dynamics includes an amendment to make corrections to the boiler ratings for Boilers #1, #2 and #3, to remove Boilers #4 and #5, and to remove the PM limit on the scrubbers.

General Dynamics has also submitted a minor revision request for the addition of a new seven lane firing range. The emissions from the new firing range will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined. Therefore, this modification is determined to be a minor revision and will be included in this renewal.

The amendment will not result in a significant emission increase of regulated pollutants, therefore, this application is considered a renewal and a minor revision of a minor source and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). General Dynamics is limited to a combined annual heat input of 90,000 MMBtu/yr for Boilers #1, #2 and #3. This will allow General Dynamics the operational flexibility to burn distillate fuel or natural gas at any time. The facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor. The facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

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 emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Process Description

General Dynamics is a manufacturer of military armaments. Production of these armaments results in the use of several chrome electroplating lines, manganese phosphate coating lines and associated equipment.

C. Boilers #1, #2, and #3

General Dynamics makes use of three boilers to satisfy their process steam, facility heating, and hot water needs. Boilers #1 and #2 each have a rated heat input of 12.6 MMBtu/yr firing primarily natural gas with distillate fuel available during times of gas curtailment. Boiler #3 has a rated heat input of 16.7 MMBtu/hr firing distillate fuel and natural gas. Boiler #1 was installed in 1971 and Boilers #2 and #3 were installed in 1951.

Due to the year of manufacture, the boilers are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BPT Findings

The BPT emission limits for Boilers #1, #2, and #3 were based on the following:

Natural Gas

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BPT
- SO₂ – 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- NO_x – 100 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
- CO – 84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
- VOC – 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- Opacity – 06-096 CMR 101

Emissions shall not exceed the following when firing natural gas:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.05	06-096 CMR 115, BPT
Boiler #2	PM	0.05	06-096 CMR 115, BPT
Boiler #3	PM	0.05	06-096 CMR 115, BPT

Emissions shall not exceed the following when firing natural gas [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.63	0.63	0.01	1.22	1.03	0.07
Boiler #2	0.63	0.63	0.01	1.22	1.03	0.07
Boiler #3	0.84	0.84	0.01	1.63	1.37	0.09

Visible emissions from each boiler firing natural gas shall not exceed 10% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 101]

Distillate Fuel

- PM/PM₁₀ – 0.12 lb/MMBtu based on 06-096 CMR 103
- SO₂ – based on firing distillate fuel with a maximum sulfur content of 0.5%
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10
- Opacity – 06-096 CMR 101

Emissions shall not exceed the following when firing distillate fuel:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boiler #2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boiler #3	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

Emissions shall not exceed the following when firing distillate fuel [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	1.51	1.51	6.35	1.8	0.45	0.03
Boiler #2	1.51	1.51	6.35	1.8	0.45	0.03
Boiler #3	2.01	2.01	8.43	2.39	0.60	0.04

Visible emissions from each boiler when firing distillate fuel shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 101]

General Dynamics shall be limited to a combined total heat input for Boilers #1, #2, and #3 of 90,000 MMBtu/year based on firing 643,000 gallons of distillate fuel or 88,379,000 standard cubic feet (scf) of natural gas if these fuels are combusted alone.

Boilers #1, #2, and #3 are to fire distillate fuel which, by definition, has a sulfur content of 0.5% or less by weight. Per 38 M.R.S.A. §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, beginning July 1,

2018, the distillate fuel purchased or otherwise obtained for use in Boilers #1, #2, and #3 shall not exceed 0.0015% by weight (15 ppm).

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use both on a monthly and 12 month rolling total basis. Documentation shall include the type of fuel used and sulfur content of the fuel, if applicable.

[40 CFR Part 63 Subpart JJJJJJ]

3. 40 CFR Part 63, Subpart JJJJJJ

Boilers #1 and #2 can burn both natural gas and distillate fuel and are operated as gas fired boilers. Thus, they are exempt from the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJJ) as long as they continue to meet the definition of gas-fired boilers.

Gas-fired boilers are exempt from 40 CFR Part 63, Subpart JJJJJJ. However, boilers which fire fuel oil are not. 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. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.[40 CFR Part 63.11237]

Although Boiler #3 no longer plans to fire residual oil, General Dynamics fired residual fuel after the compliance date of the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJJ) thus it is considered an existing oil boiler and is subject to this regulation.

Any boiler designed to burn fuels besides gaseous fuels prior to June 4, 2010 will be considered an existing boiler under this rule. A boiler which currently fires gaseous fuels, but converts back to firing another fuel (such as distillate fuel) in the future would become subject as an existing boiler at the time it is converted back to oil.

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source Boiler MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however, General Dynamics is still subject to the requirements. Notification forms and additional rule information can be found on the following website:

<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

General Dynamics submitted an initial notification to EPA dated September 17, 2011 in accordance with 40 CFR Part 63.11225(a)(2).

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented to include the initial tune-up of applicable boilers. [40 CFR Part 63.11223]

1. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
Existing oil fired boilers that are not designated such as seasonal, limited use, have a heat input capacity of <5MMBtu/hr or have with oxygen trim system which maintains an optimum air-to-fuel ratio	Every 2 years

[40 CFR Part 63.11223(a) and Table 2]

2. The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA or the Department. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]

(b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:

1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 36 months from

the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(1)]

2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(3)]
4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

iii. Energy Assessment

Boiler #3 are subject to the energy assessment requirement as follows:

- (a) A one-time energy assessment was required to be performed by a qualified energy assessor on the applicable boilers. [40 CFR Part 63.11196(a)(3)]
- (b) The energy assessment was required to include a visual inspection of the boiler system; an evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints; an inventory of major energy use systems consuming energy from affected boiler(s) and which are under control of the boiler owner or operator; a review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; a list of major energy conservation measures that are within the facility's control; a list of the energy savings potential of the energy conservation measures identified; and a comprehensive report detailing the ways to improve efficiency, the

cost of specific improvements, benefits, and the time frame for recouping those investments.

[40 CFR Part 63, Table 2(4)]

(c) General Dynamics completed the energy assessment and submitted a Notification of Compliance Status to EPA on July 18, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b) and (c)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

D. Heat Treat Units

General Dynamics operates several heat treat units of different sizes to treat parts to increase hardness, decrease brittleness, increase fracture resistance and enhance the carbon content of the metal surfaces. The process is a six-step process which includes cleaning, hardening, inducting, annealing, carbonizing and tempering the metal. There are eight heat treat units in total, five of the heat treat units are, in accordance with Appendix B of Maine's rule 06-096 CMR 115, insignificant sources of emissions and three of the units have maximum heat input capacities larger than 1.0 MMBtu/hr. The three units that are subject to licensing, designated HT-0005, HT-0006, and HT-6213, have maximum heat input capacities of 1.0, 1.0, and 1.6 MMBtu/hr, respectively. The units fire natural gas.

The following is a summary of the BPT analysis for the Heat Treat units:

Natural Gas

PM/PM ₁₀	–	0.05 lb/MMBtu based on 06-096 CMR 115, BPT
SO ₂	–	0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO _x	–	100 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
CO	–	84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Opacity	–	06-096 CMR 101

Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
HT-0005- Lindberg #1200	0.05	0.05	0.01	0.10	0.08	0.01
HT-0006 – Spray Booth Oven #5030	0.05	0.05	0.01	0.10	0.08	0.01
HT-6213	0.08	0.08	0.01	0.16	0.13	0.01

When firing natural gas, visible emissions from each heat treat unit shall not exceed 10% opacity on a six-minute block average, except for no more than 1 six-minute block average in a 3-hour period. [06-096 CMR 101]

E. Emergency Engines – Boiler Room Generator #1 and Fire Pump #1

General Dynamics operates Boiler Room Generator #1 and Fire Pump #1. The emergency generators are generator sets with each gen set consisting of an engine and an electrical generator. Boiler Room Generator #1 is rated at 2.4 MMBtu/hr and Fire Pump #1 is rated at 1.1 MMBtu/hr. Both units fire distillate fuel. Boiler Room Generator #1 was manufactured in 1975 and Fire Pump #1 was manufactured in 2001.

1. BPT Findings

The BPT emission limits for Boiler Room Generator #1 and Fire Pump #1 are based on the following:

- PM/PM₁₀ - 0.3 lb/MMBtu from 06-096 CMR 115, BPT
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 dated 10/96, Table 3.3-1
- CO - 0.95 lb/MMBtu from AP-42 dated 10/96, Table 3.3-1
- VOC - 0.35 lb/MMBtu from AP-42 dated 10/96, Table 3.3-1
- Opacity - 06-096 CMR 101

The BPT emission limits for Boiler Room Generator #1 and Fire Pump #1 are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler Room Generator #1 (2.4 MMBtu/hr) Distillate fuel	0.72	0.72	0.01	10.58	2.28	0.84
Fire Pump #1 (1.1 MMBtu/hr) Distillate fuel	0.33	0.33	0.01	4.85	1.05	0.39

Visible emissions from Boiler Room Generator #1 and Fire Pump #1 shall each 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.

2. 40 CFR Part 63, Subpart ZZZZ

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 Boiler Room Generator #1 and Fire Pump #1 listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source and are 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 these units from the federal requirements. Boiler Room Generator #1 and Fire Pump #1 are operated as emergency engines.

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 RICE 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, unless:

- (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.

Boiler Room Generator #1 and Fire Pump #1 shall be limited to the usage outlined in §63.6640(f) and therefore may be classified as 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 these engines to not be considered emergency engines 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: Boiler Room Generator #1 and Fire Pump #1	<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 engines shall be operated and maintained according to the manufacturer's emission-related written instructions or the facility shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(2) Optional Oil Analysis Program

General Dynamics 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, General Dynamics 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 each engine. [40 CFR §63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup the facility must minimize each 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 apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d

(5) Annual Time Limit for Maintenance and Testing

As emergency engines, the units shall each 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

General Dynamics shall keep records that include maintenance conducted on the engines and the hours of operation of each 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 engines are 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), General Dynamics shall keep records of the notification of the emergency situation, and the date, start time, and end time of engine 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 General Dynamics 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), beginning January 1, 2015, the fuel fired in the engine(s) shall not exceed 15 ppm sulfur (0.0015%). Any existing fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted. [40 CFR §63.6604(b)]

If General Dynamics 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), the facility 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:

U.S. Environmental Protection Agency, Region I
5 Post Office Square, Suite 100 (OES04-2)
Boston, MA 02109-3912
Attn: Air Compliance Clerk

[40 CFR §63.6650(h)]

F. Chrome Plating

General Dynamics makes use of several chrome electroplating lines to plate metal parts with several layers of chrome. Each line consists of several tanks that are used in series to prepare, chrome plate, post-plating treat and rinse the metal parts. Solutions in the plating tanks emit particulate matter and chrome emissions that must be controlled. Chrome is one of the hazardous air pollutants (HAP) that poses a potential health threat in urban areas. For this reason, EPA promulgated 40 CFR Part 63, Subpart N "National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks" (40 CFR Part 63, Subpart N) for both major and area sources. Area sources of HAP emit less than 10 tons per year (ton/yr) of a single HAP and less than 25 ton/yr of a combination of HAP. As General Dynamics is a facility that performs hard chromium electroplating and is an area source of HAP emissions, the chrome plating tanks at the General Dynamics' facility are subject to 40 CFR Part 63, Subpart N.

General Dynamics' previous Air Emission License amendment (A-434-71-N-M), established a federally enforceable restriction on the total cumulative annual rectifier capacity of less than 60 million amp-hr/yr. General Dynamics is subject to the requirements for "Small Hard Chromium Electroplating Facility" as provided by 40 CFR 63.341 and 63.342(c)(3). In order to demonstrate compliance with the above restriction, General Dynamics shall maintain a record of the actual cumulative rectifier capacity based on a rolling twelve-month total. Compliance shall be determined monthly by adding the previous 11-month capacities to the current capacity.

Chromium Emission Standards as established in 40 CFR 63.342 and previous licenses:

In 2012, EPA lowered the chromium emission standard from 0.03 to 0.015 milligrams per dry standard cubic meter (mg/dscm) in 40 CFR Part 63, Subpart N for chromium emissions from a "Small Hard Chromium Electroplating Facility".

As previously licensed, General Dynamics shall be subject to an annual chrome emission restriction of no greater than 0.1 ton/yr, based on a twelve-month rolling total. In order to demonstrate compliance, General Dynamics shall maintain a record of chrome emissions which shall include calculations of chrome emissions based on a 0.015 mg/dscm concentration, the flow rates for each piece of control equipment and the time at which flow rates are altered as part of air balancing operations in the system.

Work Practice Standards as established in 40 CFR 63.342 and previous licenses:

General Dynamics must comply with the work practice standards found in 40 CFR Part 63.342(f), including the following:

- General Dynamics shall develop and maintain an "Operation and Maintenance Plan". The plan shall incorporate the applicable requirements of 40 CFR Part 63.342(f)(3) and shall be available for inspection upon request;
- At all times, including periods of startup, shutdown and malfunction, General Dynamics shall operate and maintain chrome plating equipment, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices and consistent with the facility's operation and maintenance plan.

General Dynamics shall record any actions taken during malfunctions which were inconsistent with the "Operation and Maintenance Plan" and notify the Department within 2 working days. A letter shall be sent to the Department within 7 working days detailing the event including the actions taken.

Compliance Standards as established in 40 CFR 63.343:

General Dynamics operates a Fiber-bed Mist Eliminator (FBME) and a 3-stage composite mesh pad scrubber system to control emissions from the chrome plating tanks. The three chrome plating lines are: #3 Miscellaneous Small Parts Line, #4 Small Barrel Line, and #5 Large (Cannon) Barrel Line.. The mesh pad scrubber system, is a HMF-74 HexMaster Chrome Dry Scrubbing System, manufactured by the Duall Division of the Met-pro Corporation and is designed to achieve mist elimination of 99% at greater than 5 microns and achieve outlet concentrations of no greater than 0.015 mg Cr⁺⁶/dscm. This system is specified to meet the new source requirements for hard chrome electroplating operations under Part 63 Subpart N.

Emissions from tanks from Line #3 (Tanks #1, #6, #7, #8 and #9) are captured and exhausted to the Duall mesh pad scrubber system. The Duall mesh pad system is a dry and wet scrubber. The Duall mesh pad system cleans the gas stream by means of composite mesh material that provides surface area for small dirty water droplets to accumulate and by means of a mist cleaning spray on the mesh material, the dirty particulate laden water drops out of the gas stream. A water mist is sprayed into the gas stream and water droplets come into contact with the particulate and chrome particles in the gas stream capturing the particles in the water droplets. The dirty water droplets accumulate, are collected and removed. General Dynamics shall comply with the applicable compliance provisions established in 40 CFR Part 63.343. As required by 40 CFR Part 63.343(c)(1)(ii), General Dynamics shall monitor and record the pressure drop across the Duall mesh pad system at least once each day during the periods of time that the scrubber is in operation. As established by 40 CFR Part 63.343(c)(1)(ii), General Dynamics shall establish the compliant pressure drop value at the time of the initial performance test. As established by 40 CFR Part 63.343(c)(1)(i) and (ii), compliance with the chrome emission limits from the new composite mesh pad system discharge is based on the pressure drop across the system being within ± 2 inch of water column of the three-run average pressure drop value established during the initial or most recent passing performance test.

Emissions from tanks from Line #4 (Tanks #21, #22, #23 and #34) and Line #5 (Tanks #41, #42, #43, #44, #45, #49, #50 and #52) are captured and exhausted to the FBME. The FBME is a dry scrubber. The FBME consists of an initial wet composite mesh pad control unit designed to remove the majority of particles and prevents plugging of the fiber-bed system. The FBME consists of a mesh pad mist eliminator, pre-filters followed by fiber bed filters. The system is designed to achieve 99.5% removal of particles equal to or smaller than 3 microns and 100% of particles greater than 3 microns. FBME technology meets the new source requirements for hard chrome electroplating operations under Part 63 Subpart N. As required by 40 CFR Part 63.343(c)(3)(ii), General Dynamics shall monitor and record the pressure drop across the FBME scrubber system once per day during the periods of time that the scrubber is in operation. Compliance with the chrome emission limits from the FBME scrubber discharge is based on the pressure drop being within ± 1 inch of water column of the three-run average pressure drop value established during the most recent passing performance test or General Dynamics may conduct multiple performance tests to establish a range of compliant pressure drop values. .

Performance Test Requirements and Test Methods as established in 40 CFR 63.344:

In accordance with 40 CFR Part 63.344 and 40 CFR Part 63.7, General Dynamics shall demonstrate, through compliance testing, compliance with chrome emission restrictions developed during initial performance testing (40 CFR Part 63.344) every two years.

Chrome testing shall be performed in accordance with the EPA Method 306 or Method 306A or an alternate test method if the test method has been validated using Method 301, Appendix A of Part 63 and if approved by the Department.

Record Keeping Requirements as established in 40 CFR 63.346:

In accordance with 40 CFR Part 63.346(a), General Dynamics shall fulfill the recordkeeping requirements for the applicable tanks and control devices for the chrome plating process at the Saco facility. The record shall incorporate the requirements of 40 CFR Part 63.346(b)(1) through (16).

Record Keeping Requirements as established in 40 CFR 63.347 and previous licenses:

In accordance with 40 CFR Part 63.347(h), General Dynamics shall prepare a summary report documenting the ongoing compliance status of the Saco facility. The report shall incorporate the requirements of 40 CFR Part 63.346(g)(3)(i) through (xiii). The report shall be completed annually, retained on site and made available to the Department and EPA upon request. General Dynamics shall report required results for each monitoring device. In accordance with 40 CFR Part 63.347(h)(2), if exceedances occur, or at the request of the Department or EPA, the report shall be submitted to the Department semiannually.

Particulate Matter Emission restrictions and testing requirements:

As part of the BPT review of this renewal, it was determined that the particulate matter emission testing on the FBME and the 3-stage mesh pad system is not required. This determination was based on the following:

- 1) PM emissions from the scrubbers are <1 ton/yr.
- 2) The original PM emissions limit was meant to be a surrogate for Chromium emissions. However, the Chrome Plating MACT does not require PM testing as a surrogate of chromium emission control, instead it utilizes the pressure drop across the scrubber as an indicator of adequate chromium emission control.
- 3) Stack test data compiled by General Dynamics comparing PM emissions and chromium emissions indicates that these two emissions do not correlate. General Dynamics' chromium emissions remain significantly below license limits regardless of the PM emissions.
- 4) Scrubbers were installed to remove Chromium not PM and General Dynamics believes PM emissions from plating are small and PM emissions maybe coming from other parts of the facility (which use the same stack)
- 5) A review of similar facilities indicates no other facilities have PM emission limits on their process scrubbers.

Porous Pots:

The chrome plating lines at General Dynamic's facility makes use of four to eight porous pot systems that are used to extend the bath life of the chrome plating tanks. The porous pot systems are located in the two process tanks of the Chrome Reclamation Unit. Each process tank contains two to four porous pot systems that consist of a semi-permeable membrane (porcelain pot) that separates a cathode plate from an anode plate. An applied power source (rectifier) generates a current across the cathode and anode which causes iron and other contaminant metal ions from the plating solution to pass through the membrane and accumulate in the cathode chamber of the porous pot. Once contained in the chamber, the contaminants are removed periodically for disposal. This process also converts trivalent chromium back into hexavalent chromium. After purification, the chromium solution can be returned to the plating tanks for further use. This results in the generation of less chromium hazardous waste. Emissions from the porous pots are to be controlled by either the three stage Duall filter unit or the fiber bed mist eliminator.

G. Manganese Phosphate Coating

In 2012, General Dynamics installed a new operation which consists of two new coating tanks (one primary tank and a redundant tank), designated Tanks #2 and #3. Each new tank in the new coating line is of similar size. Emissions from the tanks are expected to be of equal value to the existing manganese phosphate coating line at the facility. General Dynamics utilizes only one of the new tanks as a main or primary processing unit and the second tank as a redundant or backup tank, so any increase in emission can be attributed to the operation of a single new tank.

1. Manganese Phosphate

Emissions from the pre-2012 manganese phosphate coating line were tested and measured to be 1.12×10^{-3} ton/yr. Each new line in the new plating system is of similar size and emissions from each line are expected to be of equal value to the existing manganese phosphate coating line at the facility. General Dynamics utilizes only one of the new tanks as a main or primary processing unit and the second tank as a redundant or backup tank, so any increase in emissions can be attributed to the operation of a single new tank.

If General Dynamics uses manganese phosphate in the new system, the operation of a single new plating line essentially doubles the current total facility emissions from manganese phosphate coating from 1.12×10^{-3} to 2.24×10^{-3} ton/yr.

2. Zinc Phosphate

General Dynamics estimates emissions while utilizing zinc phosphate solution to be similar to that of the manganese phosphate coating process. Zinc is not a HAP and is not listed in Appendix C of 06-096 CMR 115, however, nickel is identified in trace

amounts (<1%) in the concentrated zinc phosphate solution. As emissions from utilizing zinc phosphate solution are estimated to be in the 1.12×10^{-3} ton/yr range, nickel emissions are expected to be <1% or in the range of 1.12×10^{-5} ton/yr.

A significant hazardous air pollution (HAP) emission rate is one that exceeds 1600 pounds (0.8 tons) per year as defined in Appendix C of 06-096 CMR 115. As emissions of manganese, zinc, and nickel from manganese/zinc phosphate plating at the General Dynamics facility are all expected to be below 0.1 ton/yr, therefore considered insignificant.

Although the manganese/zinc phosphate plating operations at the General Dynamics facility are insignificant in the context of 06-096 CMR 115 of the Departments regulations, the plating lines are still subject to 40 CFR 63, Subpart WWWW (National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations).

H. 40 CFR 63, Subpart WWWW

General Dynamics' Saco facility undertakes several plating and polishing processes that are subject to 40 CFR 63, Subpart WWWW (National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations). These processes include electro-polishing operations, sodium dichromate sealing, dry mechanical polishing, chrome stripping/reverse etching, and as mentioned above, the manganese phosphate coating line.

General Dynamics was required to begin complying shall comply with the requirements of Subpart WWWW no later than July 1, 2010, which was two years from the date of publication of this rule in the Federal Register. In accordance with 40 CFR 63.11509(a)(3), General Dynamics was required to submit the Initial Notification no later than 120 days from July 1, 2008. The initial notification was submitted to EPA on October 28, 2008. The Initial Notification included the information specified in 40 CFR 63.9(i) through (iv) and 40 CFR 63.11509(a)(1) and (2).

I. Spray Booth

General Dynamics operates a spray booth to apply coatings to some of the products manufactured at the Saco facility. To meet the customer specifications for the military aircraft gun systems, conventional spray gun applications are required. General Dynamics' Air Emission License (A-434-71-L-M/R) established the BPT requirements for the spray booth operation. Those requirements include the following:

- i. The use of high volume/low pressure (HVLP) spray guns with maximum application rates of no greater than 0.75 gallons per hour (gal/hr) for non-aircraft gun coating as averaged over 24 hr periods for all spray operations;

- ii. Conventional spray systems with maximum application rates of no greater than 0.75 gal/hr (averaged over a 24-hour period) may be used on aircraft gun systems;
- iii. Compliance with the above hourly restriction for aircraft gun systems shall be demonstrated through recordkeeping indicating the volume of coatings applied to the material on a daily basis;
- iv. General Dynamics shall limit the use of Chromium VI in its coatings to no greater than 200 lb/yr (0.1 ton/yr) based on a twelve-month rolling total;
- v. General Dynamics shall be restricted to using only one spray gun at any one time in the spray booth;
- vi. General Dynamics is required to utilize paint arrestors followed by a two-stage filtration system consisting of a pre-filter and a HEPA filter to remove PM from the spray booth exhaust;
- vii. General Dynamics shall measure the pressure drop across the two-stage filtration system once per day and record the pressure drop daily in a log to be located at the filtration system;
- viii. General Dynamics shall utilize activated charcoal filter trays to reduce the VOC emissions from the spray booth operations;
- ix. The carbon filter trays shall be changed on a floating schedule which shall be based on the VOC loading rate, the volume of activated carbon present in the filters, initial saturation tests and theoretical breakthrough curves provided by the manufacturer of the carbon filter trays;
- x. General Dynamics shall document the filter tray change dates.

Annual VOC emissions from the spray booth operation shall be no greater than 1500 pounds per month (lb/month) and 9 ton/yr, based on a twelve-month rolling total. As previously licensed, compliance with this VOC restriction shall be based on recordkeeping which indicates the coating usage (in units of gallons) and the VOC content (in units pounds per gallon) of the coatings. The emissions record shall also indicate General Dynamics' Chromium VI usage. General Dynamics shall maintain the spray booth VOC emission record on a monthly as well a twelve-month rolling total basis.

Visible Emissions from the spray booth operation exhaust shall be no greater than 10% on a 6-minute block average basis except for no more than one 6-minute block average in a 1-hour period.

J. Evaporator

At the General Dynamics facility, cutting and machining of metal parts is undertaken routinely. The cutting and machining require the use of machine oils to cool the metal parts and the process equipment. After use, the hot machine oils drain into a capture basin and are cooled by a coolant solution loop. The coolant solution is a mixture of water and a coolant additive. During these operations the coolant solution becomes contaminated with dirt, grime and machine oils. In order to minimize the facility's coolant solution usage, General Dynamics makes use of a steam heated evaporator to

evaporate water out of the coolant so that it may be cleaned and reused. During the evaporation process some of the VOC content of the coolant is evaporated away.

Air Emission License amendment (A-434-71-M-M) established a throughput limit of coolant through the evaporator of no greater than 40,000 gal/yr, based on a quarterly rolling total. Assuming the worst case scenario that General Dynamics only runs the higher VOC content coolant through the evaporator, 100% of the VOCs are vaporized and a dilution ratio of 5:1, the maximum VOC emissions from the evaporator process calculates to 2.6 ton/yr.

General Dynamics shall maintain a record on a quarterly basis, of the amount of coolant (in gallons) and type of coolant (including VOC content in pounds per gallon as indicated by SDS sheets) processed through the evaporator.

The evaporator has been a source of visible emissions due to machine oil carryover in the coolant. Visible emissions from the machine oil contamination has not yet been found to exceed the visible emissions restriction for general processes as established by 06-096 CMR 101, *Visible Emissions Regulation*, (last amended on May 18, 2003). General Dynamics has agreed to continue efforts to remove machine oils from the coolant mixture prior to the evaporation process.

K. Shot Blasting

General Dynamics makes use of several shot blast units to surface treat metal parts prior to coating or plating at their Saco facility. Many of these units are self-contained and do not exhaust to the ambient air. However, General Dynamics operates three rotary shot blast tables and one barrel shot blast units. Fine steel shot entrained in high velocity/high flow rate air streams is fired at the metal surfaces to remove oxidation, metal fragments and other buildups.

The pollutant of concern from this process is particulate matter (PM) emissions. General Dynamics makes use of a cyclone and fabric filter baghouse combination to control PM from each of the four above mentioned shot blast units. As previously license, BPT for the shot blast units is the use of the cyclone/fabric filter baghouse control devices for each unit. General Dynamics shall document all routine and non-routine maintenance for the shot blast cyclone/baghouse units.

The shot blast process at General Dynamics is subject to the General Process Source visible emissions restriction as established in 06-096 CMR 101, *Visible Emissions Regulation*, (last amended on May 18, 2003). Visible emissions from the each shot blast baghouse shall not exceed an opacity of 10 percent on a six-minute block average basis, except for no more than 1 six-minute block average in a 1-hour period. The facility shall take corrective action if visible emissions from the baghouses exceed five percent opacity.

Fugitive visible emissions from the shot blast process (emissions other than from the baghouse) shall not exceed an opacity of 20%, except for no more than five minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual 15-second opacity observations which exceed 20% in any 1-hour period. [06-096 CMR 101]

L. Solvent Degreasers

General Dynamics makes use of up to 10 portable and stationary solvent metal cleaners (solvent degreasers) depending on the needs of the facility. The solvent degreasers at the General Dynamics' Saco facility are subject to 06-096 CMR 130, *Solvent Degreasers* (as amended).

As previously licensed, General Dynamics shall be limited to an annual VOC emissions restriction of no greater than 3.0 ton/yr, based on a twelve-month rolling total.

General Dynamics shall maintain a record of solvent use that shall include the amount, type of solvent added to the solvent degreasers and the dates that the solvent was added and mass balance calculations to determine the quantity of VOC and HAP emissions. For purposes of record keeping, the amount of solvent used shall be considered as the difference between the amount of solvent added and the amount of solvent removed. The record shall be maintained on a monthly and a twelve-month rolling total basis.

In accordance with Maine's rule *Solvent Degreasers*, 06-096 CMR 130, Section 1(B), the following are exempt from the requirements of 06-096 CMR 130:

- (1) A solvent cleaner using less than two liters (68 oz) of cleaning solvent with a vapor pressure of 1.00 mm Hg, or less, at 20° C (68° F);
- (2) Wipe cleaning; and
- (3) Cold cleaning machines using solvents containing less than or equal to 5% VOCs by weight.

If, in the future, General Dynamics switches to a solvent that contains less than 5% VOC for use in the parts washers, to satisfy recordkeeping requirements General Dynamics need only keep a copy of the SDS sheet that demonstrates the VOC content of the solvent on file at the Saco facility.

1. In accordance with Maine's rule *Solvent Degreasers*, 06-096 CMR 130, Section 3(A) and (B), General Dynamics shall be subject to the following compliance standards:
 - A. Immersion cold cleaning machines shall have a freeboard ratio of 0.75 or greater unless the machines are equipped with covers that are kept closed except when parts are being placed into or being removed from the machine.

- B. Immersion cold cleaning machines and remote reservoir cold cleaning machines shall:
- (1) Have a permanent, conspicuous label summarizing the operating requirements in Subsection 3 below.
 - (2) Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage reservoir, a perforated drain with a diameter of not more than six inches shall constitute an acceptable cover.
 - (3) Cold cleaning machines shall be operated in accordance with the following procedures:
 - (a) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container;
 - (b) Cleaned parts shall be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts shall be positioned so that solvent drains directly back to the cold cleaning machine;
 - (c) Flushing of parts using a flexible hose or other flushing device shall be performed only within the freeboard area of the cold cleaning machine. The solvent spray shall be a solid fluid stream, not an atomized or shower spray at a pressure that does not exceed 10 pounds per square inch gauge (psig);
 - (d) The owner or operator shall ensure that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between 1 and 2 meters (3.3 and 6.6 feet) upwind and at the same elevation as the tank lip;
 - (e) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the cold cleaning machine;
 - (f) When a pump-agitated solvent bath is used, the agitator shall be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used;

- (g) Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately, and the wipe rags or other sorbent material shall be immediately stored in covered containers for disposal or recycling;
- (h) Work area fans shall be located and positioned so that they do not blow across the opening of the degreaser unit; and
- (i) The owner or operator shall ensure that the solvent level does not exceed the fill line.

M. Firing Ranges

General Dynamics makes use of onsite indoor firing ranges in a ventilated building to test weapons manufactured at their Saco facility. Historically, emissions from the firing ranges at the General Dynamics' Saco facility were considered to be insignificant and emissions from these activities were considered unquantifiable. However, In February, 2008, EPA published a draft Section 15 to EPA's AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources* (AP-42) which provides proposed emission factors for the firing of various ammunitions. General Dynamics undertook an estimation of emissions from the weapons testing activities based on the draft Section 15 of AP-42.

Results from General Dynamics' calculations of firing range emissions resulted in negligible emissions of all of the criteria pollutants except carbon monoxide (CO) and lead (Pb). Emissions from CO and Pb were estimated at approximately 1.75 ton/yr and 4.1 lb/yr, respectively. The small amount of emissions and the high cost of any control device to control these emissions make the addition of any control device impractical and financially infeasible. To satisfy BPT for this activity, General Dynamics shall maintain a record of emissions which shall include the amount and type of ordnance fired at the facility's firing range and an estimation of annual emissions of CO and Pb.

General Dynamics has proposed the addition of a new seven lane firing range. The proposed range will be for the firing of pistols equipped with .40 caliber ordnance. Currently it is estimated that up to 250,000 rounds per month or 3,000,000 rounds per year will be fired in the new range. Based on emission factors from AP-42 Draft Section 15 (Table 15.1.23-2) for .38 caliber ordnance, the annual carbon monoxide and lead emissions that will be emitted from the firing range are 580 and 54 pounds, respectively. Since no emission factors were available for .40 caliber ordnance, the emission factors for .38 caliber was used instead. General Dynamics may also be firing 9 mm ordnance in combination with .40 caliber ordnance in the new range but the total emissions should not exceed the emissions referenced above.

N. Annual Emissions

1. Total Annual Emissions

General Dynamics shall be limited to the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on at total heat input of 90,000 MMBtu/yr based on the total amount of natural gas and distillate fuel combusted in the boilers, 100 hrs/yr of non-emergency operation for generators, and 8760 hr/yr for process sources:

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

Equipment	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boilers	5.40	5.40	22.66	6.43	3.67	0.24
Heat Treat	0.79	0.79	0.01	1.55	1.30	0.09
Generator	0.04	0.04	0.01	0.53	0.11	0.04
Fire Pump #1	0.02	0.02	0.01	0.24	0.05	0.02
Cr. Plating	-	-	-	-	-	-
Mn Plating	-	-	-	-	-	-
Spray Booth	-	-	-	-	-	9.0
Evaporator	-	-	-	-	-	2.6
Degreasers	-	-	-	-	-	3.0
Firing Ranges	-	-	-	-	2.04	-
Totals	6.25	6.25	22.69	8.75	7.17	14.99

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 limits, 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, General Dynamics is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

<u>Pollutant</u>	<u>Tons/Year</u>
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

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

4. will receive Best Practical Treatment,
5. will not violate applicable emission standards, and
6. will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-434-71-S-R/A subject to the following conditions:

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 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 (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 115. [06-096 CMR 115]
- (3) 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 115]
- (4) 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 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. 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 a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]

- (10) 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 115]
- (11) 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 to demonstrate compliance with the applicable emission standards 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; or
 - 2. 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 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate 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 115]
- (13) Notwithstanding any other provisions 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 115]

- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from 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 a 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 115]

SPECIFIC CONDITIONS

(16) **Boiler #1, #2, and #3**

A. Fuel

1. Total fuel use for Boilers #1, #2, and #3 shall not exceed a combined heat input of 90,000 MMBtu/yr. of natural gas and distillate fuel, based on a 12 month rolling total basis. [06-096 CMR 115, BPT]
 - a. Heat input shall be estimated using 140,000 Btu per gallon for distillate fuel
 - b. Heat input shall be estimated using 1020 Btu per scf for natural gas
2. Per the current dates and requirements of 38 M.R.S.A. §603-A(2)(A)(3), the facility shall comply with the following statements; however, if the statute is revised, the facility shall comply with the revised dates and requirements upon promulgation of the statute revision.
 - i. Prior to July 1, 2018, the facility shall fire distillate fuel with a maximum sulfur content not to exceed 0.5% by weight. [06-096 CMR 115, BPT]
 - ii. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 CMR 115, BPT]
3. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. [06-096 CMR 115, BPT]

B. Natural gas

a. Emissions shall not exceed the following when firing natural gas:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.05	06-096 CMR 115, BPT
Boiler #2	PM	0.05	06-096 CMR 115, BPT
Boiler #3	PM	0.05	06-096 CMR 115, BPT

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.63	0.63	0.01	1.22	1.03	0.07
Boiler #2	0.63	0.63	0.01	1.22	1.03	0.07
Boiler #3	0.84	0.84	0.01	1.63	1.37	0.09

b. Visible emissions from each boiler firing natural gas shall not exceed 10% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 101]

C. Distillate Fuel

1. Emissions shall not exceed the following when firing distillate fuel:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boiler #2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boiler #3	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	1.51	1.51	6.35	1.8	0.45	0.03
Boiler #2	1.51	1.51	6.35	1.8	0.45	0.03
Boiler #3	2.01	2.01	8.43	2.39	0.60	0.04

2. Visible emissions from each boiler when firing distillate fuel shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 101]

D. Boilers #1 and #2 are not subject to the Subpart JJJJJ requirements as long as they meet the definition of a gas-fired boiler. 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. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.[40 CFR Part 63.11237]

- E. Boiler MACT (40 CFR Part 63, Subpart JJJJJ) Requirements for Boiler #3
[incorporated under 06-096 CMR 115, BPT]
1. General Dynamics shall implement a boiler tune-up program. [40 CFR Part 63.11223]
 - (a) Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
Existing oil fired boiler	Every 2 years

[40 CFR Part 63.11223(a) and Table 2]

- (b) The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]
2. The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
 - (a) As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(1)]
 - (b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]

- (c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(3)]
 - (d) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 - (e) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 - (f) If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]
3. After conducting the initial boiler tune-up, a Notification of Compliance Status was to have been submitted to EPA no later than July 19, 2014. General Dynamics submitted a Notification of Compliance Status on July 18, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
4. Energy Assessment:
 - (a) A one-time energy assessment was required to be performed by a qualified energy assessor on the applicable boilers. [40 CFR Part 63.11196(a)(3)]
 - (b) The energy assessment was required to include a visual inspection of the boiler system; an evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints; an inventory of major energy use systems consuming energy from affected boiler(s) and which are under control of the boiler owner or operator; a review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; a list of major energy conservation measures that are within the facility's control; a list of the energy savings potential of the energy conservation measures identified; and a comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. [40 CFR 63, Table 2(4)]
 - (c) A Notification of Compliance Status was to have been submitted to EPA no later than July 19, 2014. General Dynamics submitted a Notification of Compliance Status on July 18, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(c)]
5. Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of

notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

(17) **Heat Treat Units**

A. General Dynamics shall fire natural gas only in the heat treat units.

B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
HT-0005- Lindberg #1200	0.05	0.05	0.01	0.10	0.08	0.01
HT-0006 – Spray Booth Oven #5030	0.05	0.05	0.01	0.10	0.08	0.01
HT-6213	0.08	0.08	0.01	0.16	0.13	0.01

C. **Visible Emissions**

Visible emissions from each Heat Treat Unit firing natural gas shall not exceed 10% opacity on a 6 minute block average basis, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 101]

(18) **Emergency Engines – Boiler Room Generator #1 and Fire Pump #1**

A. Boiler Room Generator #1 and Fire Pump #1 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]

B. General Dynamics shall keep records that include maintenance conducted on Boiler Room Generator #1 and Fire Pump #1 and the hours of operation of each of these units 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. [06-096 CMR 115, BACT]

C. The fuel sulfur content for Boiler Room Generator #1 and Fire Pump #1 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel

records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]

D. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler Room Generator #1	PM	0.30	06-096 CMR 115, BPT
Fire Pump #1	PM	0.30	06-096 CMR 115, BPT

E. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler Room Generator #1 (2.4 MMBtu/hr) distillate fuel	0.72	0.72	0.01	10.58	2.28	0.84
Fire Pump #1 (1.1 MMBtu/hr) Distillate fuel	0.33	0.33	0.01	4.85	1.05	0.39

F. Visible Emissions

Visible emissions from Boiler Room Generator #1 and Fire Pump #1 shall each 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]

G. Boiler Room Generator #1 and Fire Pump #1 shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. General Dynamics shall meet the following operational limitations for each of the compression ignition emergency engines:
 - a. Change the oil and filter annually,
 - b. Inspect the air cleaner annually and replace as necessary, and
 - c. Inspect the hoses and belts annually and replace as necessary.

A log 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

General Dynamics 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, General Dynamics 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 Boiler Room Generator #1 and Fire Pump #1. [40 CFR §63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

a. The engines shall each 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 to 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. General Dynamics shall keep records that include maintenance conducted on the generators and the hours of operation of each 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 engines are 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), the General Dynamics shall keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [40 CFR §63.6655(e) and (f)]

5. Operation and Maintenance

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions or General Dynamics 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 the facility must 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 apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

(19) **Chrome Plating**

A. Emissions from Line #3 (Tanks #1, #6, #7, #8 and #9) shall be captured and exhausted to the 3-stage composite mesh pad. Emissions from Line #4 (Tanks #21, #22, #23 and #29) and Line #5 (Tanks #41, #42, #43, #44, #45, #49, #50 and #52) shall be captured and exhausted to the FBME.

[40 CFR Part 63, Subpart N]

B. General Dynamics shall be subject to a federally enforceable restriction on the total cumulative annual rectifier capacity of less than 60 million amp-hr/yr. [40 CFR Part 63, Subpart N]

C. General Dynamics shall maintain a record of the actual cumulative rectifier capacity based on a rolling twelve-month total. Compliance shall be determined monthly by adding the previous 11-month total capacities to the current month's total capacity. [40 CFR Part 63, Subpart N]

D. General Dynamics shall be subject to a chromium emission restriction of no greater than 0.015 milligrams per dry standard cubic meter (mg/dscm). [40 CFR Part 63, Subpart N and 06-096 CMR, BPT]

E. General Dynamics shall be subject to an annual chrome emission restriction of no greater than 0.1 ton/yr, based on a twelve-month rolling total. In order to demonstrate compliance, General Dynamics shall maintain a record of emissions which shall include the amount of chrome processed and an estimation of chromium emissions. [06-096 CMR 115, BPT]

F. General Dynamics shall demonstrate compliance with the above listed chromium emission restrictions through compliance testing to be conducted once every two years. Chromium emissions testing shall be performed in accordance with the EPA Method 306 or Method 306A or an alternate test method if the test method has been validated using Method 301, Appendix A of Part 63 and approved by the Department. [06-096 CMR 115, BPT, 40 CFR Part 63, Subpart N]

G. General Dynamics shall have and maintain an "Operation and Maintenance Plan". The plan shall incorporate the requirements of 40 CFR Part 63.342(f)(3) and shall be available for inspection upon request. [40 CFR Part 63, Subpart N]

- H. At all times, including periods of startup, shutdown and malfunction, General Dynamics shall operate and maintain chrome plating equipment, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices and consistent with the facility's operation and maintenance plan. [40 CFR Part 63, Subpart N]
- I. As required by 40 CFR Part 63.343(c)(1)(ii), General Dynamics shall monitor and record the pressure drop across the mesh pad system at least once each day during the periods of time that the scrubber is in operation. As established by 40 CFR Part 63.343(c)(1)(ii), General Dynamics shall establish the compliant pressure drop value at the time of the initial performance test. Compliance with the chromium emission limits from the 3-stage composite mesh pad system discharge is based on the pressure drop across the system being within ± 2 inch of water column of the pressure drop value established during the initial or most recent passing performance test. [40 CFR Part 63, Subpart N]
- J. As required by 40 CFR Part 63.343(c)(3)(ii), General Dynamics shall monitor and record the pressure drop across the FBME scrubber system once per day during the periods of time that the scrubber is in operation. Compliance with the chromium emissions limits from the FBME scrubber discharge is based on the pressure drop being within ± 1 inch of water column of the pressure drop value established during the most recent performance test or General Dynamics may conduct multiple performance test to establish a range of compliant pressure drop values. [40 CFR §63.343(c)(4)]
- K. Compliance with the emissions standards, operational standards, compliance provisions, record keeping and reporting requirements of 40 CFR Part 60, Subpart N shall be considered BPT for the Chrome Plating Lines at General Dynamics. [40 CFR Part 63, Subpart N]
- L. General Dynamics shall maintain an inspection and maintenance record for the applicable tanks and control devices for the chrome plating process at the Saco facility. The record shall incorporate the requirements of 40 CFR Part 63.346(b)(1) through (16). [40 CFR Part 63, Subpart N]
- M. In accordance with 40 CFR Part 63.347(h), General Dynamics shall prepare a summary report documenting the ongoing compliance status of the Saco facility. The report shall incorporate the requirements of 40 CFR Part 63.347(g)(3)(i) through (xiii). The report shall be completed annually, retained on site and made available to the Department and/or upon request. General Dynamics shall report required results for each monitoring device. In accordance with 40 CFR Part 63.347(h)(2), if exceedances or deviations occur, or at the request of the Department or EPA, the report shall be submitted to the Department semiannually. [40 CFR Part 63, Subpart N]

- N. General Dynamics shall comply with the applicable emission standards, work practice standards, operational standards, compliance provisions, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart N. [40 CFR Part 63, Subpart N]
- O. General Dynamics shall be restricted to an annual PM emissions limit from the discharge of the new mesh pad system and FBME of no greater than 0.5 ton/yr, based on a twelve month rolling total. General Dynamics shall maintain a record of annual PM emissions from the new mesh pad system and FBME which shall include calculations of PM emissions based on a PM emission rate of 0.6 mg/dscm, equipment flow rates and the hours of operation for the chrome plating equipment. The record shall also include entries of the times when flow rates are altered as part of air balancing operations in the system. [06-096 CMR 115, BPT]
- P. Emissions from the porous pots shall be controlled by the 3-stage composite mesh pad scrubber and/or FBME wet scrubber. [06-096 CMR 115, BPT]

(20) **40 CFR 63, Subpart WWWWWW**

- A. General Dynamics' Saco facility undertakes several plating and polishing processes that are subject to 40 CFR 63, Subpart WWWWWW (National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations). These processes include electro-polishing operations, sodium dichromate sealing, dry mechanical polishing, chrome stripping/reverse etching, and the manganese phosphate coating line.
[40 CFR 63, Subpart WWWWWW]
- B. General Dynamics was required to begin complying with the requirements of Subpart WWWWWW no later than July 1, 2010.
[40 CFR 63, Subpart WWWWWW]

(21) **Spray Booth**

- A. General Dynamics shall make use of high volume/low pressure (HVLP) spray guns with maximum application rates of no greater than 0.75 gallons per hour (gal/hr) as averaged over a 24-hour period for all spraying operations. [06-096 CMR 115, BPT]
- B. Conventional spray systems with maximum application rates of no greater than 0.75 gal/hr (averaged over a 24-hour period) may be used on aircraft gun systems or HVLP spray guns. [06-096 CMR 115, BPT]
- C. General Dynamics shall limit the use of Chromium VI in its coatings to no greater than 200 lb/yr (0.1 ton/yr) based on a twelve-month rolling total. [06-096 CMR 115, BPT]

- D. General Dynamics shall be restricted to using only one spray gun at any one time in the spray booth. [06-096 CMR 115, BPT]
- E. General Dynamics is required to utilize paint arrestors followed by a two-stage filtration system consisting of a pre-filter and a HEPA filter to remove PM from the spray booth exhaust. [06-096 CMR 115, BPT]
- F. General Dynamics shall measure the pressure drop across the two-stage filtration system once per day and record the pressure drop daily in a log to be located at the filtration system. [06-096 CMR 115, BPT]
- G. General Dynamics shall utilize activated charcoal filter trays to reduce the VOC emissions from the spray booth operations. [06-096 CMR 115, BPT]
- H. General Dynamics shall change the carbon filter trays on a floating schedule which shall be based on the VOC loading rate, the volume of activated carbon present in the filters, initial saturation tests and theoretical breakthrough curves provided by the manufacturer of the carbon filter trays.
[06-096 CMR 115, BPT]
- I. General Dynamics shall maintain records documenting the filter tray change dates.
[06-096 CMR 115, BPT]
- J. General Dynamics shall be restricted to VOC emissions from the spray booth of no greater than 1500 pounds per month (lb/month) and 9 ton/yr, based on a twelve-month rolling total. Compliance with this VOC restriction shall be based on recordkeeping which indicates the coating usage (in units of gallons) and the VOC content (in units of pounds per gallon) of the coatings. General Dynamics shall maintain the spray booth VOC emission record on a monthly as well as a twelve-month rolling total basis. The emissions record shall also indicate General Dynamics' Chromium VI usage. [06-096 CMR 115, BPT]
- K. General Dynamics shall be restricted to an opacity limit for the spray booth operation exhaust of no greater than 10% on a 6-minute block average basis except for no more than one 6-minute block average in a 1-hour period. [06-096 CMR 101]

(22) **Evaporator**

- A. General Dynamics shall be subject to a throughput limit of coolant through the evaporator of no greater than 40,000 gal/yr, based on a quarterly rolling total.
[06-096 CMR 115, BPT]

- B. General Dynamics shall be subject to an annual VOC emissions restriction from the evaporator process of no greater than 2.6 ton/yr, based on a quarterly rolling total. [06-096 CMR 115, BPT]
- C. General Dynamics shall maintain a record on a quarterly basis, of the amount of coolant (in gallons) and type of coolant (including VOC content in pounds per gallon as indicated by SDS sheets) processed through the evaporator. [06-096 CMR 115, BPT]
- D. General Dynamics shall be restricted to an opacity limit from the evaporator operation exhaust of no greater than 20% on a 6-minute block average basis except for no more than one 6-minute block average in a 1-hour period. [06-096 CMR 101]

(23) **Shot Blast**

- A. General Dynamics shall continue to operate and maintain the cyclone and fabric filter baghouse combination as control of emissions from the shot blast process. [06-096 CMR 115, BPT]
- B. General Dynamics shall maintain records documenting all routine and non-routine maintenance for the shot blast cyclone/baghouse units. [06-096 CMR 115, BPT]
- C. Visible emissions from each shot blast baghouse shall not exceed an opacity of 10 percent on a six-minute block average basis, except for no more than 1 six-minute block average in a 1-hour period. The facility shall take corrective action if visible emissions from the baghouses exceed five percent opacity. [06-096 CMR 101]

(24) **Solvent Degreasers**

- A. General Dynamics shall be limited to an annual VOC emissions restriction of no greater than 3.0 ton/yr, based on a twelve-month rolling total. [06-096 CMR 115, BPT]
- B. General Dynamics shall maintain a record of solvent use that shall include the amount, type of solvent added to the solvent degreasers and the dates that the solvent was added and mass balance calculations to determine the quantity of VOC and HAP emissions. For purposes of record keeping, the amount of solvent used shall be considered as the difference between the amount of solvent added and the amount of solvent removed. The record shall be maintained on a monthly and a twelve-month rolling total basis. [06-096 CMR 115, BPT]
- D. Parts washers at General Dynamics are subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended).

- E. General Dynamics shall keep records of the amount of solvent added to each parts washer. [06-096 CMR 115, BPT]
- F. The following are exempt from the requirements of 06-096 CMR 130 [06-096 CMR 130]:
1. Solvent cleaners using less than two liters (68 oz) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
 2. Wipe cleaning; and,
 3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.
- G. The following standards apply to cold cleaning machines that are applicable sources under Chapter 130.
1. General Dynamics shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 CMR 130]:
 - (i) Waste solvent shall be collected and stored in closed containers.
 - (ii) Cleaned parts shall be drained of solvent directly back to the cold cleaning machine by tipping or rotating the part for at least 15 seconds or until dripping ceases, whichever is longer.
 - (iii) Flushing of parts shall be performed with a solid solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure that does not exceed 10 psig. Flushing shall be performed only within the freeboard area of the cold cleaning machine.
 - (iv) The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
 - (v) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the degreaser.
 - (vi) When a pump-agitated solvent bath is used, the agitator shall be operated to produce no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used.
 - (vii) Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
 - (viii) Work area fans shall not blow across the opening of the degreaser unit.
 - (ix) The solvent level shall not exceed the fill line.
 2. Immersion cold cleaning machines and remote reservoir cold cleaning machines shall be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage reservoir, a perforated drain with a diameter of not more than six inches shall constitute an acceptable cover. [06-096 CMR 130]
- H. If, in the future, General Dynamics switches to a solvent that contains less than 5% VOC for use in the parts washers, to satisfy record keeping requirements General Dynamics need only keep a copy of the SDS sheet that demonstrates the VOC content of the solvent on file at the Saco facility. [06-096 CMR 115, BPT, 06-096 CMR 130]

(25) **Firing Ranges**

General Dynamics shall document and maintain records of the amount and types of ordnance fired at the facility's firing ranges and the calculated annual emissions of CO and Pb, on a calendar year basis. [06-096 CMR 115, BPT]

(26) **General Process Sources**

Visible emissions from any general process source including plating operations, solvent degreasing, evaporator operations and shot blasting operations shall not exceed an opacity of 20% on a six-minute block average, except for no more than 1 six-minute block average in a 1-hour period. [06-096 CMR 101]

(27) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, 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% in any one (1) hour. [06-096 CMR 101]

(28) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (as amended), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of either:

- 1) A computer program and accompanying instructions supplied by the Department;
or
- 2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

General Dynamics - OTS, Inc.
York County
Saco, Maine
A-434-71-S-R/A (SM)

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Departmental Findings of Fact and Order
Air Emission License
Renewal and Amendment

- (29) General Dynamics shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 29 DAY OF December, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allan Robert Core for
AVERY T. DAY, ACTING COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: January 29, 2014

Date of application acceptance: February 3, 2014

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

