

**CYRO Industries  
York County  
Sanford, Maine  
A-393-71-T-R**

**Departmental  
Findings of Fact and Order  
Air Emission License**

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

**I. REGISTRATION**

A. Introduction

CYRO Industries (CYRO) of Sanford, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their acrylic sheet manufacturing facility.

B. Emission Equipment

CYRO is licensed to operate the following equipment:

**Fuel Burning Equipment**

<b><u>Equipment</u></b>	<b><u>Maximum Capacity (MMBtu/hr)</u></b>	<b><u>Maximum Firing Rate (gal/hr)</u></b>	<b><u>Fuel Type, % sulfur</u></b>	<b><u>Stack #</u></b>
Boiler #1	29.1	194.0	#6 Fuel Oil, 1.7%	1
Boiler #2	52.4	349.3	#6 Fuel Oil, 1.7%	1
Hot Oil Heater	7.3	52.1	#2 Fuel Oil, 0.5%	19
Propane Oven	1.5	16.0	Propane, negligible	PO

**Emergency Diesels**

<b><u>Equipment</u></b>	<b><u>Power Output (hp)</u></b>	<b><u>Maximum Capacity (MMBtu/hr)</u></b>	<b><u>Firing Rate (gal/hr)</u></b>	<b><u>Fuel Type, % sulfur</u></b>
Bldg 1 Generator	375	2.63	19.2	diesel, 0.05%
Giebel Bldg Generator	375	2.63	19.2	diesel, 0.05%
Fire Pump	240	1.68	12.3	diesel, 0.05%

**Process Equipment**

<u>Source Description</u>	<u>Pollutant(s)</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Building One	VOC/HAP	Chiller and Biofilter	3
Giebel Building	VOC/HAP	Chillers & Catalytic Oxidizers	4
Giebel Building Production Area	PM	Dust Collector	8
Wiped Film Evaporator	VOC/HAP	Biofilter	3
Multi-functional Coating	VOC/HAP	Thermal Oxidizer	6
Laser Cutting Process	HAP	Carbon Adsorption	7

C. Application Classification

The application for CYRO does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only.

**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 Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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

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

B. VOC RACT

MEDEP Chapter 134 requires facilities that have the potential to emit forty (40) tons or more of Volatile Organic Compounds (VOCs) per calendar year to apply VOC Reasonable Available Control Technology (VOC RACT) to their applicable emissions. VOC RACT requirements were addressed in air emission license

A-393-72-E-M. The conditions of that amendment are incorporated into this renewal.

**C. NO<sub>x</sub> RACT**

MEDEP Chapter 138 requires facilities that have the potential to emit one hundred (100) tons or more of Nitrogen Oxides (NO<sub>x</sub>) per calendar year to apply NO<sub>x</sub> RACT to their applicable emissions. NO<sub>x</sub> RACT requirements were addressed in air emission license A-393-72-F-M. The conditions of that amendment are incorporated into this renewal.

**D. Boilers #1 and #2**

Boilers #1 and #2 have maximum design heat inputs of 29.1 MMBtu/hr and 52.4 MMBtu/hr respectively and are used to supply hot water, steam, and heat.

Both Boiler #1 and Boiler #2 were installed prior to 1989 and are therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BPT analysis for Boiler #1 and Boiler #2 is the following:

1. The total fuel use for Boilers #1 and #2 shall not exceed 2,500,000 gal/year of #6 fuel oil, based on a 12 month rolling total, with a maximum sulfur content not to exceed 1.7% by weight.
2. Chapter 106 regulates fuel sulfur content, however in this case to meet ambient air quality standards, BPT for SO<sub>2</sub> was determined to be a more stringent limit of 1.7% and shall be used.
3. Chapter 103 regulates PM emission limits. The PM<sub>10</sub> limits are derived from the PM limits.
4. NO<sub>x</sub> emission limits are based on data from similar #6 fired boilers of this size and age.
5. CO and VOC emission limits are based upon AP-42 data dated 9/98.
6. Visible emissions from the boilers shall not exceed 30% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

**E. Hot Oil Heater**

CYRO operates at Hot Oil Heater with a maximum design heat input of 7.3 MMBtu/hr firing #2 fuel oil.

The Hot Oil Heater has a heat input less than 10 MMBtu/hr and is therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BPT analysis for the Hot Oil Heater is the following:

1. The total fuel use for the Hot Oil Heater shall not exceed 400,000 gal/year of #2 fuel oil, based on a 12 month rolling total, with a maximum sulfur content not to exceed 0.5% by weight.
2. Chapter 106 regulates fuel sulfur content, however in this case BPT for SO<sub>2</sub> was determined to be a more stringent limit of 0.5% and shall be used.
3. Chapter 103 regulates PM emission limits. The PM<sub>10</sub> limits are derived from the PM limits.
4. NO<sub>x</sub> emission limits are based on data from similar #2 fired equipment of this size and age.
5. CO and VOC emission limits are based upon AP-42 data dated 9/98.
6. Visible emissions from the Hot Oil Heater shall not exceed 20% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

**F. Propane Oven**

CYRO operates a propane fired oven with a maximum heat input of 1.5 MMBtu/hr to heat treat acrylic sheets to relieve stress from the casting process.

The Propane Oven has a heat input less than 10 MMBtu/hr , and is therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BPT analysis for the Propane Oven is the following:

1. The total propane use for the facility shall not exceed 100,000 gal/year, based on a 12 month rolling total.
2. Chapter 103 regulates PM emission limits, however in this case BPT for PM was determined to be a more stringent limit of 0.05 lb/MMBtu and shall be used. The PM<sub>10</sub> limits are derived from the PM limits
3. NO<sub>x</sub>, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
4. Visible emissions from the Propane Oven shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six-minute block average in a continuous one-hour period.

**G. Emergency Diesels**

CYRO operates three emergency diesels (Bldg 1 Generator, Giebel Bldg Generator, and the Fire Pump).

“Emergency” is defined in Chapter 100 and throughout this document as: “... any situation arising from sudden and reasonably unforeseeable events beyond the

control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology based emission limitation under the license, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.”

A summary of the BPT analysis for the Bldg 1 Generator (375 kW), the Giebel Bldg Generator (375 kW) and the Fire Pump (240 kW) is the following:

1. The diesels shall be limited to a combined total of 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by record keeping of generator operating time on a monthly basis.
2. Chapter 106 regulates fuel sulfur content, however in this case BPT for SO<sub>2</sub> was determined to be a more stringent limit of 0.05% and shall be used.
3. The PM and PM<sub>10</sub> limits are derived from Chapter 103.
4. NO<sub>x</sub>, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
5. Visible emissions from the generators shall not exceed 20% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

#### H. Process Sources

CYRO’s process sources include Building One, the Giebel Building, the Wiped Film Evaporator, a Multi-functional Coating Facility, and a Laser Cutting process. The VOC emissions from Building One, the Giebel Building, the Wiped Film Evaporator, and the Laser Cutting process contain Methyl Acrylate (MA) and Methyl Methacrylate (MMA) which are major components in the acrylic sheet manufacturing process. MMA is also classified as a Hazardous Air Pollutant (HAP) pursuant to Section 112(b) of the Clean Air Act (CAA).

##### 1. Building One

VOC and HAP emission sources in Building One include cleaning booths, syrup rooms, the casting room, and the Gasket Department. BPT for control of VOC and HAP emissions in Building One is the operation of capture and control equipment including an Edward’s Chiller (condenser) and a biofilter.

Emissions collected by a degassing vacuum pump in the syrup room are first sent to the condenser in order to recover MMA and MA. The small percentage of MMA and MA that is not recovered by the condenser is exhausted to the biofilter for further control. CYRO monitors the VOC collection in the vacuum pump condenser in Building One by recording the pounds of VOC recovered on a weekly basis.

The biofilter accepts all room and vessel ventilation from the syrup room, casting room and Gasket Department for treatment. Additionally, the biofilter accepts emissions from the Wiped Film Evaporator vacuum system. VOC laden air streams pass through a humidifier before injection into the bottom of the biofilter basin. The biofilter is a moss and bark mixture that provides an environment where microorganisms flourish. MMA and MA are adsorbed onto the surfaces of the pores in the bark compost and are broken down by the bacteria into CO<sub>2</sub> and H<sub>2</sub>O. The biofilter is divided into three zones that allow for sections of the filter to be worked on without shutting the entire filter down. The VOC concentration exiting the biofilter does not change rapidly since the biofilter acts like a buffer zone quickly absorbing large or small volumes of VOCs and then breaking the VOCs down at a steady rate allowing for a constant emission rate. Artificial heat and humidity maintain the proper conditions for VOC destruction.

The inlet and outlet VOC concentrations to the biofilter are continuously monitored with Flame Ionization Detectors (FIDs) and recorded on a strip chart. The total quantity of VOCs is computed automatically through a totalizer.

In the event that one of the FIDs is out of service, the remaining FID is used on the inlet and grab measurements are made at the outlet. Outlet grab samples are to be taken a minimum of 3 times per day with each sample length to be not less than 15 minutes in duration.

Control of VOCs from Building One by using the chiller and biofilter complies with the Department's VOC RACT requirements.

**2. Giebel Building**

The VOC and HAP emission sources generated in the Giebel Building include the continuously extruding sheet lines, two post color PMMA (palletized MMA) extruders, and all vents and vessels associated with the KP process (converting MMA and MA into PMMA pellets). BPT for VOC and HAP emissions include condensers on the extruding sheet lines and post color extruder and two catalytic oxidizers for VOC and HAP destruction. The KP process VOC and HAP emissions are also controlled with the two catalytic oxidizers.

CYRO shall continually monitor the operation of the catalytic oxidizers in the Giebel Building by continuously monitoring and recording the inlet and outlet temperatures across the catalyst beds.

Control of the VOC emissions from the Giebel Building by using condensers and the catalytic oxidizers complies with the Department's VOC RACT requirements.

CYRO operates a baghouse type dust collector that collects dust generated from saws and grinders associated with flat sheet extrusion. BPT for particulate matter emissions shall be the use of dust collectors and limiting visible emissions from the dust collectors to no more than 5% opacity on a six-minute block average except for one (1) six-minute block in a continuous one hour period.

**3. Multi-functional Coating Facility**

In CYRO's Multi-functional Coating Facility, acrylic sheet manufactured by other production departments is coated with a material to enhance the product in various applications.

All chemical processing takes place in a completely enclosed environment which is continually ventilated through a thermal oxidizer. All criteria pollutant emissions from the thermal oxidizer, except VOCs, have been previously determined to be insignificant.

BPT for the Multi-functional Coating Facility is the use of a thermal oxidizer to control emissions from this operation. BPT shall also include monthly record keeping indicating the amount of coating used, the VOC content of the coating, and the percent control efficiency for VOC. Record keeping shall also include records of thermal oxidizer bed temperature to ensure sufficient VOC destruction.

Control of VOC emissions from the Multi-functional Coating Facility by using the thermal oxidizer complies with the Department's VOC RACT requirements.

**4. Laser Cutting Process**

CYRO operates a Laser Cutting Process for cutting acrylic sheet. The cutting process emits small amounts of MMA.

BPT for the Laser Cutting Process is the operation and maintenance of a carbon adsorption unit for control of MMA.

5. Fugitive Emission Sources

Active storage tanks which service the manufacturing operations also vent small amounts of VOC and HAP. Emissions from the following fugitive sources shall be monitored through record keeping:

HWF Facility Tanks		Building One Tanks		Giebel Building Tanks	
Tank ID	Size (gal)	Tank ID	Size (gal)	Tank ID	Size (gal)
T-11	2,000	T-70	5,000	T-80	30,000
T-12	2,000	T-71	5,000	T-81	30,000
T-13	2,000	T-72	20,000	T-82	12,000
T-14	2,000	T-73	20,000	-	-
T-15	2,000	-	-	-	-
T-16	1,000	-	-	-	-
T-52	5,000	-	-	-	-

BPT shall include maintaining all tanks and associated piping free of liquid and vapor leaks. BPT shall also include venting tanks only through appropriate weighted pressure/vacuum relief valves in order to reduce tank losses.

Fugitive VOC and HAP emission sources include process equipment valves, seals, and flanges. VOC and HAP emissions shall be monitored through routine leak inspection and prompt corrective action.

BPT for fugitive emission sources shall also include keeping all containers covered when not in immediate use, and managing materials in such a manner as to reduce the likelihood of spills.

I. Annual Emission Restrictions

CYRO shall be restricted to the following annual emissions, based on a 12 month rolling total:

**Total Allowable Annual Emission for the Facility**  
(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Single HAP	Total HAP
Boilers #1 & #2	34.5	34.5	-	86.3	5.8	0.3	-	-
Hot Oil Heater	5.6	5.6	-	8.4	1.0	0.1	-	-
Propane Oven	0.2	0.2	-	0.7	0.1	0.1	-	-
Diesels	0.1	0.1	-	2.9	0.6	0.2	-	-
Process & Fugitive	-	-	-	-	-	49.2	9.99	24.9
<b>Total TPY</b>	<b>40.4</b>	<b>40.4</b>	<b>99.9*</b>	<b>98.3</b>	<b>7.5</b>	<b>49.9</b>	<b>9.99</b>	<b>24.9</b>

\*CYRO has accepted federally enforceable facility wide limits for SO<sub>2</sub>, VOC and HAPS. Emissions from each specific unit may vary.

**III. AMBIENT AIR QUALITY ANALYSIS**

CYRO previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this renewal.

**ORDER**

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

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

The Department hereby grants Air Emission License A-393-71-T-R subject to the following 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.
- (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.
  - (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.
  - (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.
  - (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. § 353.
  - (6) The license does not convey any property rights of any sort, or any exclusive privilege.
  - (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.
  - (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.
  - (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.

- (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.
- (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:
  - (i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - a. 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
    - b. pursuant to any other requirement of this license to perform stack testing.
  - (ii) 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
  - (iii) submit a written report to the Department within thirty (30) days from date of test completion.
- (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:
  - (i) 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
  - (ii) 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
  - (iii) 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.

- (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.
- (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 emission 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.
- (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.
- (16) Boilers #1 and #2
  - A. Total fuel use for Boiler #1 shall not exceed 2,300,000 gal/yr (12-month rolling total) of #6 fuel oil and specification waste oil with a maximum sulfur content not to exceed 1.7% by weight. Compliance shall be based on fuel receipts from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. Records of the specification waste oil shall include the type of waste oil and an analysis of a representative sample of the waste oil fired. Records of annual fuel use shall be kept on a 12-month rolling total basis.
  - B. Emissions shall not exceed the following:

<b>Equipment</b>		<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Boiler #1	lb/MMBtu	0.20	-	-	0.50	-	-
	lb/hr	5.82	5.82	51.98	14.55	0.97	0.05
Boiler #2	lb/MMBtu	0.20	-	-	0.50	-	-
	lb/hr	10.48	10.48	93.59	26.20	1.75	0.10

C. Visible emissions from the combined stack of Boiler #1 and #2 shall not exceed 30% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

(17) Hot Oil Heater

A. Total fuel use for the Hot Oil Heater shall not exceed 400,000 gal/yr (12-month rolling total) of #2 fuel oil with a maximum sulfur content not to exceed 0.5% by weight. Compliance shall be based on fuel receipts from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. Records of annual fuel use shall be kept on a 12-month rolling total basis.

B. Emissions shall not exceed the following:

Equipment		PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Hot Oil Heater	lb/MMBtu	0.20	-	-	-	-	-
	lb/hr	1.46	1.46	3.68	2.19	0.26	0.01

C. Visible emissions from the Hot Oil Heater shall not exceed 20% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

(18) Propane Oven

A. Total propane use for the facility shall not exceed 100,000 gal/yr (12-month rolling total). Compliance shall be based on fuel receipts from the supplier showing the quantity of fuel delivered. Records of annual fuel use shall be kept on a 12-month rolling total basis.

B. Emissions shall not exceed the following:

Equipment		PM	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC
Propane Oven	lb/hr	0.08	0.08	0.22	0.03	0.01

C. Visible emissions from the Propane Oven shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six-minute block average in a continuous one-hour period.

(19) Emergency Diesels

- A. The Building One Generator, Giebel Building Generator, and the Fire Pump shall not exceed a combined total of 500 hours per year of operation (based on a 12 month rolling total). An hour meter shall be maintained and operated on each diesel.
- B. CYRO shall maintain records of generator operating time on a monthly basis.
- C. The diesels shall fire diesel fuel with a sulfur limit not to exceed 0.05% by weight. Fuel records, including percent sulfur, shall be maintained.
- D. Emissions shall not exceed the following:

<b>Equipment</b>		<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Bldg One Generator	lb/hr	0.32	0.32	0.14	11.60	2.50	0.92
Giebel Bldg Generator	lb/hr	0.32	0.32	0.14	11.60	2.50	0.92
Fire Pump	lb/hr	0.20	0.20	0.09	7.41	1.60	0.59

- E. Visible emissions from the diesels shall each not exceed 20% opacity on a 6-minute block average, except for no more than 2 six-minute block averages in a continuous 3-hour period.

(20) Emission Limits

- A. CYRO shall not exceed an emission limit of 99.9 tons per year of SO<sub>2</sub> based on a 12 month rolling total demonstrated by the record keeping requirements listed in Condition (21).
- B. CYRO shall not exceed an emission limit of 49.9 tons per year of VOC based on a 12 month rolling total demonstrated by the record keeping required by this license.
- C. CYRO shall not exceed an emission limit of 9.99 tons per year of any single HAP or 24.9 tons per year for all HAPs combined, each based on a 12 month rolling total demonstrated by the record keeping required by this license. HAP emissions are as specified in MEDEP Chapter 115, Appendix B and in Section 112(b) of the Clean Air Act.

- (21) The following equations shall be used to determine compliance with the SO<sub>2</sub> ton per year limit (12-month rolling total). CYRO shall maintain monthly records documenting the 12 month rolling total SO<sub>2</sub> emissions.

$$AD + \frac{[(0.141)(y)(S_2)] + [(0.1576)(z)(S_6)]}{2000} \leq 99.9 \text{ tons/year}$$

Where:

- AD = annual quantity (tons) of SO<sub>2</sub> from the operation of all diesel generators = sum of [(total hours of operation) × (lb/hr limit)]/2000 for each unit  
y = annual quantity of #2 oil combusted (gallons) facility wide  
S<sub>2</sub> = average sulfur content by weight of #2 oil (percent)  
z = annual quantity of #6 oil combusted (gallons) facility wide  
S<sub>6</sub> = average sulfur content by weight of #6 oil (percent)

$$0.141 = \left( \frac{1 \text{ lb S}}{100 \text{ lb \#2 fuel}} \right) \left( \frac{2 \text{ lb SO}_2}{1 \text{ lb S}} \right) \left( \frac{7.05 \text{ lb \#2 fuel}}{\text{gallon \#2 fuel}} \right) (\text{mass balance})$$

$$0.1576 = \left( \frac{1 \text{ lb S}}{100 \text{ lb \#6 fuel}} \right) \left( \frac{2 \text{ lb SO}_2}{1 \text{ lb S}} \right) \left( \frac{7.88 \text{ lb \#6 fuel}}{\text{gallon \#6 fuel}} \right) (\text{mass balance})$$

- (22) Building One
- A. CYRO shall operate the biofilter and a vacuum pump condenser to control the VOC and HAP emissions generated in Building One.
  - B. CYRO shall continually monitor the VOC and HAP collection in the vacuum pump condenser in Building One with a flow meter and record the pounds recovered on a weekly basis.
  - C. CYRO shall monitor and record the following to demonstrate the VOC destruction in the Building One biofilter:
    1. The quantity of VOC in the inlet stream to the biofilter shall be monitored with a Flame Ionization Detector (FID) and recorded on an hourly basis while Building One processes are in operation. CYRO shall monitor the biofilter inlet stream VOC concentration in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 25A or Appendix B, Performance Specification 8 or in accordance with an equivalent method approved by the Department. The VOC FID shall be operated in accordance with Chapter 117 and shall collect data at least 90% of the source operating time in each quarter of the calendar year. The daily total

quantity (pounds) of VOC input to the biofilter shall be computed automatically through a totalizer.

2. CYRO shall monitor and record the outlet VOC concentration from the biofilter on a daily basis. CYRO shall monitor the biofilter outlet stream VOC concentration in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 25A or in accordance with an equivalent method approved by the Department.
3. In the event that one of the FIDs is out of service, the remaining FID shall be used on the inlet stream and grab measurements shall be made at the outlet. Outlet grab samples shall be taken a minimum of 3 times per day with each sample length to be not less than 15 minutes in duration.
4. In order to demonstrate VOC destruction efficiency, the daily (24-hour) totaled input quantity (pounds) of VOC to the biofilter shall be compared with the daily outlet quantity (pounds) of VOC calculated from the measured VOC concentration from the biofilter. CYRO shall maintain daily records of pounds of VOC into and out of the biofilter and VOC destruction in the biofilter.

D. CYRO shall operate, maintain, and monitor the performance of the biofilter such that the biofilter operates at optimum performance.

(23) Giebel Building

- A. CYRO shall operate two catalytic oxidizers to capture and control VOC and HAP emissions from the Giebel Building.
- B. CYRO shall continuously monitor and record the inlet and outlet temperatures across the catalyst beds.
- C. The catalytic oxidizers shall be operated such that the minimum temperature of the process vent stream immediately before the catalyst bed is no less than 450 degrees Fahrenheit.
- D. CYRO shall monitor the destruction efficiency of the catalytic oxidizers by taking carbon filter samples of the VOC concentrations in the inlet and outlet streams of the catalytic oxidizers. This monitoring shall be done and recorded on a monthly basis.
- E. Visible emissions from the flat sheet extrusion process saw and grinder dust collector shall not exceed 5% opacity on a six-minute block average except for one (1) six-minute block in a continuous one-hour period.

(24) Multi-functional Coating Facility

- A. CYRO shall maintain records of the percent control efficiency achieved in the thermal oxidizer. CYRO shall also maintain monthly records indicating the amount of coating used and the VOC and HAP content of the coating to determine monthly emissions from in the Multi-functional Coating Facility.
- B. CYRO shall continuously control VOC emissions from the coating facility by the use of a thermal oxidizer.
- C. CYRO shall maintain, in the thermal oxidizer, a temperature of at least 1500 °F or the temperature which successful stack testing demonstrates a destruction efficiency of at least 98%. Compliance shall be demonstrated by thermocouples maintained in the incinerator chamber. CYRO shall continuously monitor and record the thermal oxidizer bed temperature.
- D. CYRO shall conduct additional performance testing on the thermal oxidizer when VOC loading to the thermal oxidizer exceeds 110% of the maximum demonstrated pounds of VOC per hour loading achieved in previous performance tests.

(25) Wiped Film Evaporator

CYRO shall control VOC emissions from the Wiped Film Evaporator vacuum system in the Building One Biofilter.

(26) Laser Cutting Process

- A. CYRO shall operate the carbon adsorption unit to control emissions from the Laser Cutting Process whenever this process is in operation.
- B. CYRO shall keep records on a monthly basis of the estimated MMA emissions from the laser cutting operation after control.
- C. CYRO shall keep records of the operating hours and the maintenance performed on the carbon unit for the laser cutting process.

(27) Fugitive VOC and HAP Sources

A. CYRO shall maintain monthly records of VOC and HAP emissions from the following sources demonstrated by using EPA's TANKS program:

HWF Facility Tanks		Building One Tanks		Giebel Building Tanks	
Tank ID	Size (gal)	Tank ID	Size (gal)	Tank ID	Size (gal)
T-11	2,000	T-70	5,000	T-80	30,000
T-12	2,000	T-71	5,000	T-81	30,000
T-13	2,000	T-72	20,000	T-82	12,000
T-14	2,000	T-73	20,000	-	-
T-15	2,000	-	-	-	-
T-16	1,000	-	-	-	-
T-52	5,000	-	-	-	-

B. CYRO shall maintain all tanks and associated piping free of liquid and vapor leaks. CYRO shall vent tanks only through appropriately weighted pressure/vacuum relief valves in order to reduce tank losses.

C. Inspection of Piping Components

1. CYRO shall conduct quarterly preventive maintenance inspections on all piping components not covered by automatic vapor monitoring equipment, including valves, seals, drains, and flanges located outdoors in accordance with 40 CFR Part 60, Appendix B, Method 21 or in accordance with a method approved by the Department.
2. All detected leaks shall be repaired within fifteen (15) days of their discovery. Any leaks taking longer than 15 days to repair shall be reported to the Department including a description of the leaking component and a schedule for conducting the repairs.
3. CYRO shall maintain a log of the quarterly inspections documenting any detected leaks and the corrective action taken.
4. Emissions from malfunctioning components will be included in the determination of compliance with VOC RACT requirements.

D. CYRO shall minimize fugitive VOC and HAP emissions by keeping all containers covered when not in immediate use, and managing materials in such a manner as to reduce the likelihood of spills.

(28) VOC RACT

CYRO shall control VOC emissions such that the total facility VOC emission do not exceed, on a daily basis, 15% of the uncontrolled daily VOC emissions. The following summarizes the controls and record keeping required by VOC RACT:

- A. CYRO shall operate:
    - 1. a biofilter and a condenser to control the VOC emissions generated in Building One;
    - 2. two catalytic oxidizers to capture and control VOC emissions in the Giebel Building;
    - 3. and a thermal oxidizer to control VOC emissions from the Multi-functional Coating Facility.
  - B. CYRO shall maintain daily records of VOC destruction in the biofilter.
  - C. CYRO shall maintain monthly records of the VOC destruction in the catalytic oxidizers and the thermal oxidizer.
  - D. CYRO shall maintain weekly records of VOC collection in the condenser.
  - E. CYRO shall maintain monthly records of all VOC emissions from all uncontrolled storage tanks calculated by using EPA's TANKS program.
  - F. CYRO shall, by the 21<sup>st</sup> of the succeeding month, calculate and record the daily total facility wide VOC emissions. Records shall indicate on a daily basis the percent control efficiency for VOC, the control equipment utilized, and when specific control equipment (biofilter, condenser, catalytic oxidizers, and thermal oxidizer) was not considered into the daily emissions calculation.
- (29) For the dust collector, biofilter, condenser, thermal oxidizer, and catalytic oxidizers, CYRO shall keep a maintenance log recording the date and reasons for all emission upsets as well as all routine and non-routine maintenance procedures.
- (30) **Monitoring and Record Keeping Requirements**
- A. The following are identified as Parameter Monitors:
    - 1. Temperature monitors on the catalytic oxidizers;
    - 2. Temperature monitors on the thermal oxidizer;
    - 3. Flow meter on the vacuum pump condenser
  - B. Parameter monitors must record accurate and reliable data. If a parameter monitor allows the recording of accurate and reliable data less than 98% of the source operating time within any quarter of the calendar year the Department may initiate enforcement action and may include in that enforcement action any period of time that the parameter monitor was not providing accurate and reliable data during that quarter unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to provide accurate and reliable data was due to the performance of the established quality assurance and quality control procedures or unavoidable malfunctions.

- C. The following are identified as CEMS required by this license:
  - 1. Biofilter Inlet and Outlet FIDs
  
- D. The CEMS required by this license shall be the primary means of demonstrating compliance with the emission standards for the biofilter. For all CEMS record keeping shall include:
  - 1. Documentation that the VOC CEMS are continuously accurate, reliable and operated in accordance with Chapter 117 or in accordance with methods approved by the Department;
  - 2. Records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS;
  - 3. Upon the written request by the Department, a report of other data indicative of compliance with the applicable emission standard for those periods when the CEMS were not in operation or produced invalid data. In the event the Department does not concur with the licensee's compliance determination, the licensee shall, upon the Departments request, provide additional data, and shall have the burden of demonstrating that the data is indicative of compliance with the applicable standard.

(31) **Quarterly Reporting**

The licensee shall submit a Quarterly Report to the Department within 30 days after the end of each calendar quarter detailing the following for the control equipment, parameter monitors, and Continuous Emission Monitoring Systems (CEMS) required by this license:

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

(32) CYRO 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 (Title 38 MRSA §605-C).

(33) **Annual Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

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

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator  
Maine DEP  
Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by September 1 or as otherwise required by Chapter 137.

(34) **Toxic Air Pollutants Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall report, no later than September 1, every two years (1996,1998,etc.) or in a timeframe designated by the Department, the information necessary to accurately update the State's toxic air pollutants emission inventory by means of a written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions on the Air Toxics emissions inventory portion should be directed to:

Attn: Toxics Inventory Coordinator  
Maine DEP  
Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

Phone: (207) 287-2437

- (35) CYRO shall pay the annual air emission license fee within 30 days of September 30<sup>th</sup> of each year. Pursuant to 38 M.R.S.A. Section 353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 M.R.S.A. Section 341-D, Subsection 3.
- (36) The term of this Order shall be for five (5) years from the signature below.

DONE AND DATED IN AUGUSTA, MAINE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2003.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/2/03

Date of application acceptance: 4/4/03

Date filed with the Board of Environmental Protection: \_\_\_\_\_

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