STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

Evonik Cyro LLC	)	**Department**
York County	)	**Findings of Fact and Order**
Sanford, Maine	)	**Air Emission License**
A-393-71-Y-M (SM)	)	**Amendment #4**

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

1. Evonik Cyro LLC (Evonik) was issued Air Emission License A-393-71-T-R on June 10, 2003 permitting the operation of emission sources associated with the manufacture of molding and extrusion compounds and plastic sheet products. The license was subsequently amended on March 4, 2004 (A-393-71-U-M), on October 29, 2008 (A-393-71-W-A) and on March 1, 2011 (A-393-71-X-A). An application for renewal was filed prior to June 10, 2008; thus, the license and current amendments remain in effect.

2. The equipment addressed in this license is located at 1796 Main Street, Sanford, Maine.

3. Evonik has requested an amendment to their license in order to change the emission control strategy for control of emissions from the Wiped Film Evaporator chemical reclaim process (WFE).

B. Application Classification

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions. Although Evonik expects VOC emissions from the WFE system to be less than 1.0 ton per year (ton/yr) as a result of this modification there will be no resulting change in the facility's annual Potential to Emit (PTE), therefore, this modification is determined to be a minor modification. As this minor modification will not increase emissions of any pollutant, this modification is determined to be a minor revision to the facility's Air Emission License and has been processed as such.

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 as well as for those sources located in designated non-attainment areas.

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

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. Amendment Description

Evonik operates a Wiped Film Evaporator process (WFE) in order to reclaim methyl methacrylate (MMA) for reuse in the polymerization process. Emissions for the WFE were previously controlled by means of the previously licensed biofilter. The biofilter was the primary control device of emissions from the Cell Cast Department processes. In conjunction with the closure of the Cell Cast Department at the end of 2010, Evonik also discontinued use of the biofilter. As the biofilter also acted as the VOC emission control device for the WFE, Evonik has been unable to utilize the WFE system. Evonik has submitted an application to the Department to include a new control strategy for the control of VOC emissions from the WFE system.

Evonik has proposed the utilization of an "Xchanger" vent condenser cooled by either city water or service water to control WFE VOC emissions. Evonik prefers this control option for reasons including efficiency, high reliability, low energy use and low operational costs.

In evaluating VOC emissions control measures, Evonik looked at routing WFE emissions to one of the facility's existing VOC emissions control devices, the thermal oxidizer or the catalytic oxidizer. These measures would require the installation of large piping systems. These long piping runs create the potential for polymerization of MMA in the piping causing dangerous blockages of material in the piping. Therefore, it is technically infeasible to utilize the facility's existing VOC emissions control devices for VOC emission control from the WFE.

In evaluating the use of a vent condenser, Evonik considered the cost both on its own and in conjunction with a carbon adsorption system following the condenser. Evonik determined that the cost per ton reduction of VOC emissions resulting from the use of the condenser is approximately $4,200. In comparison, the cost per ton reduction for the condenser/carbon adsorption combination is approximately $11,500. Evonik estimates that VOC emissions from normal use of the WFE system is approximately 1.6 ton/yr. VOC emissions are expected to be reduced to 0.6 ton/yr from use of the condenser. Although VOC emissions from the WFE system can be reduced to 0.05 ton/yr with use of the condenser/carbon adsorption control approach, the relatively small reduction of VOC emissions (0.6 ton/yr to 0.05 ton/yr) does not justify requiring the more costly control scheme of the condenser/carbon adsorber.

The Department has determined that the use of a vent condenser satisfies BACT for the control of VOC emissions from the WFE system. As an indicator of the effectiveness of the vent condenser, Evonik shall maintain weekly records of condensate collection in the vent condenser.

C. VOC RACT

Reasonable Available Control Technology for Facilities That Emit Volatile Organic Compounds, 06-096 CMR 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 were incorporated into Evonik's current Air Emission License (A-393-71-T-R).

As a result of the removal of the Cell Cast Department at the Evonik facility and the resultant removal of the biofilter, VOC RACT requirements established in A-393-71-T-R shall be modified to reflect current operating conditions at the Sanford Evonik facility.

D. CEMS

Requirements for Continuous Emissions Monitoring Systems (CEMS) were established in Evonik's current Air Emission License (A-393-71-T-R). These requirements were established as indicators of the performance of the biofilter utilized to control VOC emissions from the Cell Cast Department processes as well as the WFE system. As the biofilter has been removed, this amendment shall remove the requirements for CEMS for the biofilter as well as revise any conditions found in A-393-71-T-R or any subsequent amendments that pertain to the operation of the biofilter.

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-Y-M subject to the conditions found in Air Emission License A-393-71-T-R, in amendments A-393-71-U-M, A-393-71-W-A, A-393-71-X-A and in the following conditions.

The following condition shall replace Condition (25) found in Air Emission License A-393-71-T-R:

(25) Wiped Film Evaporator

1. Evonik shall control VOC emissions from the Wiped Film Evaporator vacuum system by means of a vent condenser. [06-096 CMR 115, BACT]

2. As an indicator of the effectiveness of the vent condenser, Evonik shall maintain weekly records of condensate collection in the vent condenser. [06-096 CMR 115, BACT]

The following condition shall replace Condition (28) found in Air Emission License A-393-71-T-R:

(28) VOC RACT

Evonik shall control VOC emissions such that the total facility VOC emissions 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. Evonik shall operate:
   1. a vent condenser to control the VOC emissions resulting from the operation of the WFE system;
   2. two catalytic oxidizers to capture and control VOC emissions in the Giebel Building;
   3. a thermal oxidizer to control VOC emissions from the Multi-functional Coating Facility.

   [06-096 CMR 134, 06-096 CMR 115, BPT/BACT]

B. Evonik shall maintain monthly records of the VOC destruction in the catalytic oxidizers and the thermal oxidizer.
   [06-096 CMR 134, 06-096 CMR 115, BPT]

C. Evonik shall maintain weekly records of condensate collection in the vent condenser. [06-096 CMR 134, 06-096 CMR 115, BPT/BACT]

D. Evonik shall maintain monthly records of all VOC emissions from all uncontrolled storage tanks calculated by using EPA's TANKS program.
   [06-096 CMR 134, 06-096 CMR 115, BPT]

E. Evonik shall, by the 21st 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 (vent condenser, catalytic oxidizers, and thermal oxidizer) was not considered into the daily emissions calculation.
   [06-096 CMR 134, 06-096 CMR 115, BPT/BACT]

The following condition shall replace Condition (29) found in Air Emission License A-393-71-T-R:

(29) For the dust collector, vent condenser, thermal oxidizer, and catalytic oxidizers, Evonik shall keep a maintenance log recording the date and reasons for all emission upsets as well as all routine and non-routine maintenance procedures.

The following condition shall replace Condition (30) found in Air Emission License A-393-71-T-R:

(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

   [06-096 CMR 115, BPT]

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. [06-096 CMR 115, BPT]

The following condition shall replace Condition (31) found in Air Emission License A-393-71-T-R:

(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 and parameter monitors required by this license:

A. All control equipment downtimes and malfunctions;

B. All parameter monitor downtimes and malfunctions;

C. 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.

D. A report certifying there were no excess emissions, if that is the case.

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The following condition shall replace Condition (33) found in Air Emission License A-393-71-T-R:

(33) 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:

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.

DONE AND DATED IN AUGUSTA, MAINE THIS 2nd DAY OF November 2011

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Melanie Loyzim for
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

This Amendment shall expire concurrently with Air Emission License A-393-71-T-R.

Date of initial receipt of application: **September 28, 2011**
Date of application acceptance: **October 18, 2011**

Date filed with the Board of Environmental Protection: _____

This Order prepared by, Peter G. Carleton, Bureau of Air Quality

Filed
NOV 4 2011
State of Maine
Board of Environmental Protection