

**Louisville Metro Air Pollution Control District**  
**850 Barret Ave., Louisville, Kentucky 40204**  
**17 December 2011**

**Construction Statement of Basis**

**Company:** Reynolds Packaging LLC, Louisville Laminating Plant

**Plant Location:** 1225 W. Burnett Ave, Louisville, KY 40210

**Date Application Received:** 26 February 2008    **Date Admin Complete:** 28 March 2008

**Date of Draft Permit:** 17 December 2011

**District Engineer:** Chris Gerstle

**Permit No:** 103-74-C(R1), 107-74-C(R1),  
577-74-C(R1)

**Plant ID:** 0015

**SIC Code:** 3497

**NAICS:** 332999

**AFS:** 00015

**Introduction:**

This permit will be issued pursuant to District Regulation 2.03, Permit Requirements Non-Title V construction and Operating Permits and Demolition/Renovation Permits. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for particulate matter less than 2.5 microns (PM<sub>2.5</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Construction

**Compliance Summary:**

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

**I. Source Information**

1. **Product Description:** Laminated and/or coated/printed aluminum foil.
2. **Project Description:** This emission unit is covered by a source-specific State Implementation Plan (Revised 4/89 & 3/97). The printing/coating machines were treated as one affected facility with a pound per day and ton per year VOC emission limit. The source shall now comply with District Regulation 6.29 material composition limits, therefore this permit will replace the previous permit's 'bubble' limits. When applying solvent based coatings on Laminator #12, the Thermal Oxidizer will be utilized to control VOC emissions. In addition, this permit removes the requirement to test the VOC content of the coatings, instead information from MSDS' shall be used to determine compliance.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

| <b>Equipment</b>      |  |
|-----------------------|--|
| <b>Emission Point</b> | <b>Description</b>   |
| E-1                   | Laminator #12 [Inta-Roto Inc., Model # GM-2000-M-201]<br>Lacquer Mixing Room |
| E-1a                  | Oven #12 [7.50 MMBtu/hr]   |
| C-1                   | One Thermal Oxidizer, Inta-Roto Inc., Model No.7 HFP-GOL-P. [6.00 MMBtu/hr]  |
| E-2                   | Laminator #6 [Inta-Roto Inc., Model # GM-1000]                               |
| E-2a                  | Oven #6 [4.00 MMBtu/hr]  |
| E-3                   | Laminator #7 [Schmutz Mfg, Model # 2768]                                     |
| E-3a                  | Oven #7 [3.60 MMBtu/hr]  |
| E-4                   | Laminator #8 [Miesel Press Co]   |
| E-4a                  | Oven #8 [5.40 MMBtu/hr]  |
| E-5                   | Laminator #9 [Miesel Press Co]   |
| E-5a                  | Oven #9 [3.60 MMBtu/hr]  |
| E-6                   | Laminator #10 [Schmutz Mfg, Model # 2769]                                    |
| E-6a                  | Oven #10 [3.60 MMBtu/hr]   |
| E-7                   | Laminator #11 [Anaconda & Fisher Klosterman,<br>Model # MUCT-609-48-(60)]    |
| E-7a                  | Oven #11 [3.60 MMBtu/hr]   |
| E-8                   | Laminator #14 [Inta-Roto Inc., Model # GM-1000]                              |
| E-8a                  | Oven #14 [3.60 MMBtu/hr]   |
| E-9                   | Coater #15; [Waldron, Model # K4479]   |
| E-9a                  | Oven #15 [8.16 MMBtu/hr]   |

**5. Permit Revisions:**

| Revision No. | Date of Issuance | Public Notice Date | Type    | Page No.      | Description                                  |
|--------------|------------------|--------------------|---------|---------------|--|
| N/A          | N/A              | N/A                | Initial | Entire Permit | Initial Permit Issuance                      |
| R1           | ??/??/2012       | 12/16/2011         | Renewal | Entire Permit | Remove the SIP from the Construction Permits |

**6. Fugitive Sources:** There are fugitive VOC emissions from the laminators, the Lacquer Mixing Room, the Lacquer Storage Room.

**7. Plant-wide Emission Summary:**

| Pollutant          | Actual Emissions (tpy) 2010 Data | Major Source Status (based on PTE) |
|--------------------|----------------------------------|------------------------------------|
| CO                 | 3.58                             | No                                 |
| NO <sub>x</sub>    | 4.27                             | No                                 |
| SO <sub>2</sub>    | 0.04                             | No                                 |
| PM <sub>10</sub>   | 0.33                             | No                                 |
| VOC                | 68.48                            | Yes*                               |
| Single HAP > 1 tpy | NA                               | Yes*                               |
| Total HAPs         | 0.08                             | Yes*                               |

**8. Applicable Requirements:**

PSD       40 CFR 60       40 CFR 63       SIP  
 NSR       40 CFR 61       District-Origin       Other

**9. Future MACT Requirements:**

40 CFR 63 Subpart DDDDD

National Emission Standards for Industrial, Commercial, and Institutional Boilers and Process Heaters (Final rule published March 21, 2011. Stayed on May 18, 2011). The company has submitted the Part 1 and 2 112j permit application for the stayed boiler MACT (40 CFR 63 Subpart DDDDD), which was received March 6, 2009 and May 6, 2009 respectively. The District is evaluating how to implement this requirement.

**10. Referenced Federal Regulations in Permit:**

|                      |  |
|----------------------|--|
| 40 CFR 60 Subpart A  | General Provisions   |
| 40 CFR 63 Subpart KK | National Emission Standards for the Printing and Publishing Industry |
| 40 CFR Part 64       | Compliance Assurance Monitoring for Major Stationary Sources         |

**II. Regulatory Analysis**

- 1. Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- 2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source’s use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- 3. Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
- 4. 40 CFR Part 64 Applicability Determination:** The source is subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources* since the source is major for VOC and needs to apply control devices to ensure the compliance with the VOC emission standards specified in the Title V permit.
- 5. Basis of Regulation Applicability**

a. **Applicable Regulations:**

| Regulation | Title  | Type  |
|------------|--|-------|
| 1.05       | Compliance with Emission Standards and Maintenance Requirements  | SIP   |
| 2.03       | Permit Requirements – Non-Title V Construction and Operating Permits and Demolition/Renovation Permits | SIP   |
| 5.01       | General Provisions   | Local |
| 5.02       | Adoption and Incorporation by Reference of National Emissions Standards for Hazardous Air Pollutants   | Local |
| 5.21       | Environmental Acceptability for Toxic Air Contaminants   | Local |
| 6.29       | Graphic Arts Facilities Using Rotogravure or Flexographic Printing                                     | SIP   |

| Regulation           | Title   | Type    |
|----------------------|---|---------|
| 6.42                 | Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities | SIP     |
| 40 CFR 63 Subpart A  | General Provisions  | Federal |
| 40 CFR 63 Subpart KK | National Emission Standards for the Printing and Publishing Industry  | Federal |
| 40 CFR 64            | Compliance Assurance Monitoring for Major Stationary Sources  | Federal |

**b. Basis for Applicability:**

| Regulation           | Basis for Applicability  |
|----------------------|--|
| 1.05                 | All sources emitting VOCs in quantities equal to or greater than 100 tons per year and all Control Technique Guidance (CTG) sources emitting VOCs in quantities of 25 tons or more per year or some lesser applicability amount as defined in the specific CTG regulation shall maintain daily records and calculations that demonstrate daily compliance with the VOC emission standards defined in the applicable portions of Regulation 6 or 7. |
| 6.29                 | Applies to each printing line for packaging rotogravure, publication rotogravure, specialty rotogravure, or flexographic printing.   |
| 6.42                 | Applies to the VOC and NO <sub>x</sub> emissions from all VOC and NO <sub>x</sub> -emitting facilities located at all major VOC and NO <sub>x</sub> -emitting stationary sources   |
| 40 CFR 63 Subpart A  | These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants  |
| 40 CFR 63 Subpart KK | Applies to each new and existing facility that is a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated   |

**i. Standards/Operating Limits**

**1) VOC**

- (a) Regulation 6.29 establishes VOC content limits for various inks and solvents (<25% VOC, >60% non VOC, or <0.5 lb VOC/lb solid). This laminator may use inks and solvents which exceed the VOC requirements. Therefore, a percent reduction limit is established.

- (b) When using the thermal oxidizer to comply with the percent reduction standard (65%), a minimum temperature (1400 °F, or the combustion chamber temperature established during the most recent performance test that demonstrated compliance with >65% destruction efficiency) must be maintained over a three hour averaging period. The oxidizer combustion chamber temperature is monitored with an electronic thermocouple and the emission control system has an interlock system incorporated into the oxidizer control that shuts down the laminator if the average oxidizer temperature falls below 1375 °F for one hour. The functionality of the interlock / automatic shut down system is tested annually.
- (c) Reynolds Packaging is a CTG source and must show compliance on a daily basis per Regulation 1.05, section 4.1.

2) **HAP**

40 CFR 63 Subpart KK establishes HAP emission limits or content limits for various ink and solvents. Reynolds Packaging has opted to show compliance with the content limit standard (<4% HAP).

3) **TAC**

Regulation 5.21, section 2.2 establishes Environmental Acceptability Goals for TACs and Regulation 5.20 provides methodology for determining benchmark ambient concentration of TAC. In accordance with Regulation 5.20 and 5.21, the source shall not allow any TAC emissions to exceed environmentally acceptable levels.

ii. **Monitoring/Record Keeping**

1) **VOC**

- (a) Regulation 6.29 has specific record keeping requirements.
- (b) When using solvent based inks and coatings Reynolds Packaging is required to use the thermal oxidizer to meet the VOC emission standards, therefore a CAM plan is necessary.
- (c) Reynolds Packaging is a CTG source and must maintain daily records and calculations that demonstrate daily compliance with the VOC emission standards per Regulation 1.05, section 4.1.

2) **HAP**

40 CFR 63 Subpart KK allows many methods to show compliance with the standard. Reynolds Packaging has opted to use Equation 6 from the Regulation.

3) **TAC**

Regulation 2.16, sections 4.1.9.1 and 4.1.9.2 establish monitoring and record keeping requirements to assure ongoing compliance with the terms and conditions of the permit.

iii. **Reporting**

1) **VOC/TAC**

Regulations 6.24 and 5.01 do not require any specific reporting requirements for VOC and TAC, however, Regulation 2.16, section 4.1.9.3 requires sufficient reporting requirements to assure compliance with the terms and conditions of the permit.

2) **HAP**

40 CFR 63 Subpart KK requires semi-annual reports including any exceedances of the standard, if applicable.

**III. Other Requirements**

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The source requested an alternative operating scenario in its Title V permit application that would allow Laminator #12 to operate without the thermal oxidizer when water based inks and coatings are being used.
5. **Compliance Status:**

| Incident Date(s) | Regulation Violated | Result  |
|------------------|---------------------|---------|
| 9/7/1999         | 2.03                | Settled |
| 6/20/2000        | 2.03                | Settled |
| 9/19/2000        | 7.18                | Settled |

Reynolds Packaging LLC, Louisville Laminating Plant is required to submit their annual Compliance Certification to the District on or before April 15<sup>th</sup> of each calendar year. As of the effective date of Permit 148-97-TV (R2), there are no compliance schedules in effect or progress reports required.

**6. Calculation Methodology or Other Approved Method:**

- a. Uncontrolled VOC emissions from the laminators may be calculated according to the following methodology:

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)}$$

or

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{VOC content (lb/gal)}$$

Controlled VOC emissions from Laminator #12 may be calculated according to the following methodology:

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)} \times [100 - \text{Capture Efficiency (\%)} \times \text{Destruction Efficiency (\%)}]$$

or

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{VOC content (lb/gal)} \times [100 - \text{Capture Efficiency (\%)} \times \text{Destruction Efficiency (\%)}]$$

An example of a methodology to determine compliance is as follows:

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- b. In a letter dated January 9, 2001, Reynolds submitted their Notification of Compliance Status to the District and proposed to follow the compliance option §63.825(b)(4). To demonstrate compliance with §63.825(b)(4), the following equation is used:

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$C_{hi}$  = the organic HAP content of ink or other solids-containing material,  $i$ , expressed as a weight-fraction, kg/kg.

$C_{hj}$  = the organic HAP content of solvent  $j$ , expressed as a weight-fraction, kg/kg.

$H_L$  = the monthly average, as-applied, organic HAP content of all solids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, kg/kg.

$M_i$  = the mass of ink or other material,  $i$ , applied in a month, kg.

$M_j$  = the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material,  $j$ , applied in a month, kg.

$p$  = the number of different inks, coatings, varnishes, adhesives, primers, and other materials applied in a month.

$q$  = the number of different solvents, thinners, reducers, diluents, or other non-solids-containing materials applied in a month.

7. **Permit Fee:** Construction permit fees are based on the project's potential emissions of greater than 100 tons per year and subject to a NESHAP.

8. **Insignificant Activities:** NA