

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

## Air Permit Review

**Permit Issue Date: TBD**

**Region:** Mooresville Regional Office  
**County:** Catawba  
**NC Facility ID:** 1800184  
**Inspector's Name:** Jim Hafner  
**Date of Last Inspection:** 04/29/2010  
**Compliance Code:** 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
<b>Applicant (Facility's Name):</b> Plastic Packaging Inc  <b>Facility Address:</b> Plastic Packaging Inc 1246 Main Avenue SE Hickory, NC 28602  <b>SIC:</b> 2673 / Bags: Plastics, Laminated And Coated <b>NAICS:</b> 326111 / Plastics Bag Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<b>Application Number:</b> 1800184.10A <b>Date Received:</b> 05/21/2010 <b>Application Type:</b> Modification <b>Application Schedule:</b> PSD <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 04691/T19 <b>Existing Permit Issue Date:</b> 03/26/2010 <b>Existing Permit Expiration Date:</b> 03/31/2011
Edward Sievers Plant Manager (828) 286-1356 P.O. Box 2029 Hickory, NC 28603	Edward Sievers Plant Manager (828) 286-1356 P.O. Box 2029 Hickory, NC 28603	Edward Sievers Plant Manager (828) 286-1356 P.O. Box 2029 Hickory, NC 28603	
<b>Review Engineer:</b> Joseph Voelker  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____		<b>Comments / Recommendations:</b> <b>Issue</b> 04691/T20 <b>Permit Issue Date:</b> TBD <b>Permit Expiration Date:</b>	

## I Reason for Application:

Plastics Packaging's (PP) current permit requires compliance with three PSD avoidance limits for VOCs. To simplify compliance, allow for operational flexibility and allow the facility to respond quickly to market changes, PP is requesting to obtain a single plant-wide applicability limitation (PAL) for VOCs as allowed under 15A NCAC 2D.0530 and 40CFR 51.666 "Prevention of significant deterioration of air quality."

It will be shown that the PAL permit condition will apply a facility-wide emission limit on VOCs on a 12-month total basis. Specific monitoring requirements will be placed into the permit condition to cover each type of VOC emission source.

It will also be shown that the assumed DRE of the drying ovens on each of the presses have been deemed unsubstantiated and will no longer be allowed until justified.

## II Chronology

*Only critical path related events are presented*

Date	Description
May 21, 2010	Incomplete application was received in the RCO; additional copies of application are needed.
June 7, 2010	Adequate copies received
July 7, 2010	<p>Joe Voelker sent the Permittee (consultant) an email addressing the following:</p> <ol style="list-style-type: none"> <li>1. Consistent with a previously issued PAL permit and what we believe to be consistent with the rule, here is what the PAL limit should be (upon final verification). See the attached spreadsheet. At the time of the PAL application, these new source PTEs include their respective PSD avoidance conditions.</li> <li>2. Are there any other VOC emitting sources at the facility? I see there are VOC storage tanks. The PAL would encompass all PAL pollutant sources.</li> </ol>
July 9, 2010	<p>Joe Voelker sent the Permittee (consultant) an email addressing the following:</p> <p><b><u>HAP/TAP</u></b></p> <p>It appears that there were disproportionate increases in emissions of MDI and ethyl acetate from 2008 to 2009 based on a simple comparison of the throughput as provide in the operating scenario. Why is this?</p> <p>The ultimate question I am driving at is what is the real PTE for HAPs and TAPs facility-wide?</p> <p>Based on the last data I have readily available (application 09C), there was no facility-wide PTE estimate for MDI (form D1).</p> <p>Please provide a facility-wide HAP/TAP PTE and supporting info as well. Please summarize on form D1.</p> <p><b><u>facility-wide VOCs and criteria pollutant s</u></b></p> <p>Please provide a facility-wide VOC and criteria pollutant estimate and supporting info as well. (I alluded to this in the previous email attached.) Please summarize on form D1. This will be useful for the renewal app as well.</p>
August 4, 2010	Information requested July 9, 2010 received via email. It was deemed incomplete.
August 12, 2010	Information requested July 9, 2010 received via email. It was deemed complete
August 18, 2010	Conversation occurred between Christine Brenk and Joe Voelker. Ms. Brenk stated that the room the presses are currently located is not substantially the same as the room the 1995 press DRE tests were conducted

Date	Description
August 19, 2010	Conversation among Don van der vaart, William Willets and Joe Voelker occurred. The topic of discussion was the DRE of the drying ovens at the subject facility. The drying ovens on the current presses have never been tested to demonstrate the assumed DREs in the current permit. The Permittee claims these presses are of similar design to those that have been tested in the past. Two presses were tested in 1995 at the subject facility. The room the presses were located in at the time was deemed a total enclosure. The room in which the current presses are located is the same room, but it has been modified (enlarged). It was agreed that the assumption of a total enclosure is no longer accepted and moving forward the DRE of the ovens will not be allowed until validated.

### III Facility Description

As described in the recent compliance inspection conducted by Jim Hafner of the WSRO on 04/29/2010:

This facility performs flexographic printing of polyethylene and polypropylene plastic packaging of various products manufactured by other industries. The facility previously manufactured plastic packaging for the textile industry but now most of their business is for consumer goods. The facility is certified to manufacture food grade plastic packaging.

Based upon review of the emissions inventory, the primary emitted pollutant are VOCs. The following table is a summary of CY 2008 and 2009 emission inventories.

Pollutant	CY 2009	CY 2008	Emission Rate
CO	0.34	0.03	Tons per year
NO <sub>x</sub>	0.4	0.04	Tons per year
TSP	0.03	NR	Tons per year
PM10	0.03	NR	Tons per year
PM2.5	0.01	NR	Tons per year
SO <sub>2</sub>	NR	NR	Tons per year
VOC	171.02	123.79	Tons per year
Largest Single HAP (MDI)	6960.41	8.82	Pounds per year
Total HAP	7798.32	966.31	Pounds per year
Largest Single TAP Ethyl Acetate (141-78-6)	32593.91	5428.60	Pounds per year

Based on the submitted Form D1, the facility claims no emissions of MDI. In subsequent email discussion (see email 8/12/2010), the facility claims that based upon manufacturer information (low vapor pressure, etc), the estimated potential emissions of MDI would be less than 1 pound per year. The fact that the facility may need to revise their previous emissions inventory is beyond the scope of this review.

Based on Form D1, the total PTE for HAP is less than 1 tpy. Ethyl Acetate is not a HAP but is a TAP and contributes to the total VOC emission.

The following emission sources are currently operating at the facility.

#### Insignificant activities

Emission Source ID	Emission Source Description
IES-1	Mixing Station
IES-2, IES-3 & IES-4	Three solvent storage tanks (4,000 gallon capacity, 4,000 gallon capacity, and 2,000 gallon capacity, respectively)

**Permitted Emission Sources**

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>PSD Avoidance Group One including:</b>			
Press 12 <b>CAM</b>	59 inches Wide Web Flexographic Press with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	CD1.1 and CD1.2 <i>(optional)</i>	natural gas-fired pilot burner (10 million Btu per hour heat input rate, catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger
Press 13 <b>CAM</b>	59 inches Wide Web Flexographic Press with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)		
<b>PSD Avoidance Group Two including:</b>			
Press 14 <b>CAM</b>	35 inches wide web flexographic press with eight printing stations and one natural gas-fired drying oven (2.4 million Btu per hour heat input capacity)	CD1.1 and CD1.2 <i>(optional)</i>	natural gas-fired pilot burner (10 million Btu per hour heat input rate), catalytic fume oxidizer (manganese dioxide catalyst) with a heat exchanger
Laminator-5	Solventless Laminator	NA	NA
<b>PSD Avoidance Group Three including:</b>			
Laminator-14	Laminator, including a natural gas-fired dryer (1.0 million Btu per hour maximum heat input)	NA	NA

Note that each press has an integral gas fired dryer. The presses are also routed to Catalytic oxidizers. These oxidizers have not been utilized for many years. They have to date only been necessary to comply with the various PSD avoidance conditions. The allowance of the inherent DRE on the dryers (34.9%) has increased the margin of compliance with the PSD avoidance conditions.

Note that the Laminator -14, even though it has a dryer has not claimed a DRE.

The PSD avoidance limitations are as follows:

- In order to avoid applicability of this regulation, the above emission sources (ID Nos. Press 12 and Press 13) shall discharge into the atmosphere less than 149.7 tons of VOCs per consecutive 12-month period. [15A NCAC 2D .0530]
- In order to avoid applicability of this regulation, the above emission sources (ID No. Press 14 and Laminator-5) shall discharge into the atmosphere less than 77.7 tons of VOCs per consecutive 12-month period. [15A NCAC 2D .0530]
- In order to avoid applicability of this regulation, the laminator (ID No. Laminator-14) shall discharge into the atmosphere less than 132.7 tons of VOCs per consecutive 12-month period. [15A NCAC 2D .0530]

**IV Regulatory Review**

A review of the regulation will address relevant sections only.

**40 CFR51.166 Prevention of significant deterioration of air quality.**

(w) *Actuals PALs.*

*The plan shall provide for PALs according to the provisions in paragraphs (w)(1) through (15) of this section.*

**(1) Applicability.**

- (i) *The reviewing authority may approve the use of an actuals PAL for any existing major stationary source if the PAL meets the requirements in paragraphs (w)(1) through (15) of this section. The term “PAL” shall mean “actuals PAL” throughout paragraph (w) of this section.*
- (ii) *Any physical change in or change in the method of operation of a major stationary source that maintains its total source-wide emissions below the PAL level, meets the requirements in paragraphs (w)(1) through (15) of this section, and complies with the PAL permit:*
  - ( a ) *Is not a major modification for the PAL pollutant;*
  - ( b ) *Does not have to be approved through the plan's major NSR program; and*
  - ( c ) *Is not subject to the provisions in paragraph (r)(2) of this section (restrictions on relaxing enforceable emission limitations that the major stationary source used to avoid applicability of the major NSR program).*
- (iii) *Except as provided under paragraph (w)(1)(ii)(c) of this section, a major stationary source shall continue to comply with all applicable Federal or State requirements, emission limitations, and work practice requirements that were established prior to the effective date of the PAL.*

Paragraph (1) describes why the PAL is appealing to PP. The PAL simply offers much greater operational flexibility.

**(2) Definitions.**

*The plan shall use the definitions in paragraphs (w)(2)(i) through (xi) of this section for the purpose of developing and implementing regulations that authorize the use of actuals PALs consistent with paragraphs (w)(1) through (15) of this section.*

*When a term is not defined in these paragraphs, it shall have the meaning given in paragraph (b) of this section or in the Act.*

- (i) .... (xi)

Paragraph (2) is simply definitions to terms used specifically in Section (w) of 40 CFR 51.166. No further explanation needed.

**(3) Permit application requirements.**

*As part of a permit application requesting a PAL, the owner or operator of a major stationary source shall submit the following information in paragraphs (w)(3)(i) through (iii) of this section to the reviewing authority for approval.*

- (i) *A list of all emissions units at the source designated as small, significant or major based on their potential to emit. In addition, the owner or operator of the source shall indicate which, if any, Federal or State applicable requirements, emission limitations, or work practices apply to each unit.*
- (ii) *Calculations of the baseline actual emissions (with supporting documentation). Baseline actual emissions are to include emissions associated not only with operation of the unit, but also emissions associated with startup, shutdown, and malfunction.*
- (iii) *The calculation procedures that the major stationary source owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(13)(i) of this section.*

The Permittee has supplied the information in I, ii, iii above. Each paragraph will be discussed individually below.

- (i) *A list of all emissions units at the source designated as small, significant or major based on their potential to emit*

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Designation per 40CFR 51.166(w)(2)</b>
Press 12	59 inches Wide Web Flexographic Press with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	Major
Press 13	59 inches Wide Web Flexographic Press with ten printing stations and a natural gas-fired bake oven (2.4 million Btu per hour heat input capacity)	Major
Press 14	35 inches wide web flexographic press with eight printing stations and one natural gas-fired drying oven (2.4 million Btu per hour heat input capacity)	Major

Laminator-5	Solventless Laminator	Small
Laminator-14	Laminator, including a natural gas-fired dryer (1.0 million Btu per hour maximum heat input)	Major

*In addition, the owner or operator of the source shall indicate which, if any, Federal or State applicable requirements, emission limitations, or work practices apply to each unit.*

All applicable requirements for these sources are described in the facilities existing TV permit. No additional discussion is necessary.

*(ii) Calculations of the baseline actual emissions (with supporting documentation). Baseline actual emissions are to include emissions associated not only with operation of the unit, but also emissions associated with startup, shutdown, and malfunction.*

Baseline actual emissions, for these sources is defined in 40 CFR 51.166(b), but is superceded by the definition at 15A NCAC 2D .0530.

The baseline period is any consecutive 24- month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division (may be up to ten years but was not chosen by the Permittee). In this case, the baseline period was chosen to be August 2005 through July 2007. Based on the reports used for the annual emissions inventories, the baseline emissions of VOCs for this period was 227.35 tpy. Startup, shutdown and malfunction emissions were not calculated or included explicitly. However, it will be shown that the methodology used to calculate the PAL limit renders this point moot.

*(iii) The calculation procedures that the major stationary source owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(13)(i) of this section.*

The Permittee intends on utilizing the existing monitoring methodology used for PSD avoidance. That is the VOC emissions are determined by multiplying the total amount of each type of VOC-containing material consumed during the month by the VOC content of the material multiplied by destruction efficiency factors (DRE) associated with the recirculation of the VOC laden airstream from the dryer through the combustion zone of the dryer. The DRE will be discussed further elsewhere.

#### **(4) General requirements for establishing PALs.**

- (i) The plan allows the reviewing authority to establish a PAL at a major stationary source, provided that at a minimum, the requirements in paragraphs (w)(4)(i)(a) through (g) of this section are met.*
  - (a) The PAL shall impose an annual emission limitation in tons per year, that is enforceable as a practical matter, for the entire major stationary source. For each month during the PAL effective period after the first 12 months of establishing a PAL, the major stationary source owner or operator shall show that the sum of the monthly emissions from each emissions unit under the PAL for the previous 12 consecutive months is less than the PAL (a 12-month average, rolled monthly). For each month during the first 11 months from the PAL effective date, the major stationary source owner or operator shall show that the sum of the preceding monthly emissions from the PAL effective date for each emissions unit under the PAL is less than the PAL.*
  - (b) The PAL shall be established in a PAL permit that meets the public participation requirements in paragraph (w)(5) of this section.*
  - (c) The PAL permit shall contain all the requirements of paragraph (w)(7) of this section.*
  - (d) The PAL shall include fugitive emissions, to the extent quantifiable, from all emissions units that emit or have the potential to emit the PAL pollutant at the major stationary source, regardless of whether the emissions unit or major stationary source belongs to one of the source categories listed in paragraph (b)(1)(iii) of this section.*
  - (e) Each PAL shall regulate emissions of only one pollutant.*
  - (f) Each PAL shall have a PAL effective period of 10 years.*
  - (g) The owner or operator of the major stationary source with a PAL shall comply with the monitoring, recordkeeping, and reporting requirements provided in paragraphs (w)(12) through (14) of this section for each emissions unit under the PAL through the PAL effective period.*
- (ii) At no time (during or after the PAL effective period) are emissions reductions of a PAL pollutant that occur during the PAL effective period creditable as decreases for purposes of offsets under §51.165(a)(3)(ii) of this chapter unless the level of the PAL is reduced by the amount of such emissions reductions and such reductions would be creditable in the absence of the PAL.*

The Permittee is requesting a PAL for VOC only. The PAL limit will be calculated per (w)(6). All other requirements under (w)(4) will be met and discussed as necessary below.

**(5) Public participation requirements for PALs.**

*PALs for existing major stationary sources shall be established, renewed, or increased, through a procedure that is consistent with §§51.160 and 51.161 of this chapter. This includes the requirement that the reviewing authority provide the public with notice of the proposed approval of a PAL permit and at least a 30-day period for submittal of public comment. The reviewing authority must address all material comments before taking final action on the permit.*

The procedure addressed in 51.150 and 51.161 are similar as the public participation requirements under TV as well as those found in the PSD rule itself at 40 CFR 51.1566(q). In short, the draft permit, permit review and application will be made available for public comment, as well to the EPA affected states and other interested parties.

**(6) Setting the 10-year actuals PAL level.**

- (i) *Except as provided in paragraph (w)(6)(ii) of this section, the plan shall provide that the actuals PAL level for a major stationary source shall be established as the sum of the baseline actual emissions (as defined in paragraph (b)(47) of this section) of the PAL pollutant for each emissions unit at the source; plus an amount equal to the applicable significant level for the PAL pollutant under paragraph (b)(23) of this section or under the Act, whichever is lower. When establishing the actuals PAL level, for a PAL pollutant, only one consecutive 24-month period must be used to determine the baseline actual emissions for all existing emissions units. However, a different consecutive 24-month period may be used for each different PAL pollutant.*

*Emissions associated with units that were permanently shut down after this 24-month period must be subtracted from the PAL level. The reviewing authority shall specify a reduced PAL level(s) (in tons/yr) in the PAL permit to become effective on the future compliance date(s) of any applicable Federal or State regulatory requirement(s) that the reviewing authority is aware of prior to issuance of the PAL permit. For instance, if the source owner or operator will be required to reduce emissions from industrial boilers in half from baseline emissions of 60 ppm NO<sub>x</sub> to a new rule limit of 30 ppm, then the permit shall contain a future effective PAL level that is equal to the current PAL level reduced by half of the original baseline emissions of such unit(s).*

- (ii) *For newly constructed units (which do not include modifications to existing units) on which actual construction began after the 24-month period, in lieu of adding the baseline actual emissions as specified in paragraph (w)(6)(i) of this section, the emissions must be added to the PAL level in an amount equal to the potential to emit of the units.*

As mentioned above the baseline period was chosen to be August 2005 through July 2007. Based on the reports used for the annual emissions inventories the baseline emissions of VOCs for this period was 227.35 tpy

All the VOC emission sources present in the baseline period have since been removed. Therefore the the PAL will be based on the potential to emit for the “newly constructed units.” These units are currently subject to PSD avoidance limits. The definition of potential to emit under 40CFR51.166(b) applies and it states:

51.166(b)(4)

*Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.*

Therefore the potential to emit for these VOC sources are their current PSD avoidance limits. Attachment A shows the calculation but essentially the limit of 401 tpy is equal to the summation of the three PSD avoidance limits, plus the potential to emit of the other VOC emitting sources plus 40 tpy (the significance level for VOCs).

**(7) Contents of the PAL permit.**

*The plan shall require that the PAL permit contain, at a minimum, the information in paragraphs (w)(7)(i) through (x) of this section.*

- (i) *The PAL pollutant and the applicable source-wide emission limitation in tons per year.*  
 (ii) *The PAL permit effective date and the expiration date of the PAL (PAL effective period).*

- (iii) *Specification in the PAL permit that if a major stationary source owner or operator applies to renew a PAL in accordance with paragraph (w)(10) of this section before the end of the PAL effective period, then the PAL shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the reviewing authority.*
- (iv) *A requirement that emission calculations for compliance purposes include emissions from startups, shutdowns and malfunctions.*
- (v) *A requirement that, once the PAL expires, the major stationary source is subject to the requirements of paragraph (w)(9) of this section.*
- (vi) *The calculation procedures that the major stationary source owner or operator shall use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(3)(i) of this section.*
- (vii) *A requirement that the major stationary source owner or operator monitor all emissions units in accordance with the provisions under paragraph (w)(13) of this section.*
- (viii) *A requirement to retain the records required under paragraph (w)(13) of this section on site. Such records may be retained in an electronic format.*
- (ix) *A requirement to submit the reports required under paragraph (w)(14) of this section by the required deadlines.*
- (x) *Any other requirements that the reviewing authority deems necessary to implement and enforce the PAL.*

Paragraph (7) simply states what the permit requires. The permit will be drafted to meet these requirements. Appropriate regulatory references will be included in the permit as well. No additional comment is needed here.

#### **(8) PAL effective period and reopening of the PAL permit.**

*The plan shall require the information in paragraphs (w)(8)(i) and (ii) of this section.*

- (i) ***PAL effective period.*** *The reviewing authority shall specify a PAL effective period of 10 years.*
- (ii) ***Reopening of the PAL permit.***

*( a ) During the PAL effective period, the plan shall require the reviewing authority to reopen the PAL permit to:*

- ( 1 ) Correct typographical/calculation errors made in setting the PAL or reflect a more accurate determination of emissions used to establish the PAL;*
- ( 2 ) Reduce the PAL if the owner or operator of the major stationary source creates creditable emissions reductions for use as offsets under §51.165(a)(3)(ii) of this chapter; and*
- ( 3 ) Revise the PAL to reflect an increase in the PAL as provided under paragraph (w)(11) of this section.*

*( b ) The plan shall provide the reviewing authority discretion to reopen the PAL permit for the following:*

- ( 1 ) Reduce the PAL to reflect newly applicable Federal requirements (for example, NSPS) with compliance dates after the PAL effective date;*
- ( 2 ) Reduce the PAL consistent with any other requirement, that is enforceable as a practical matter, and that the State may impose on the major stationary source under the plan; and*
- ( 3 ) Reduce the PAL if the reviewing authority determines that a reduction is necessary to avoid causing or contributing to a NAAQS or PSD increment violation, or to an adverse impact on an AQRV that has been identified for a Federal Class I area by a Federal Land Manager and for which information is available to the general public.*

*( c ) Except for the permit reopening in paragraph (w)(8)(ii)( a )( 1 ) of this section for the correction of typographical/calculation errors that do not increase the PAL level, all reopenings shall be carried out in accordance with the public participation requirements of paragraph (w)(5) of this section.*

Paragraph (8) specifies the effective period and reopening requirements and is self-explanatory. It does not have a direct bearing on the drafting of a permit condition. No additional comment is needed.

#### **(9) Expiration of a PAL**

*Any PAL that is not renewed in accordance with the procedures in paragraph (w)(10) of this section shall expire at the end of the PAL effective period, and the requirements in paragraphs (w)(9)(i) through (v) of this section shall apply.*

- (i) *Each emissions unit (or each group of emissions units) that existed under the PAL shall comply with an allowable emission limitation under a revised permit established according to the procedures in paragraphs (w)(9)(i)( a ) and ( b ) of this section.*
  - ( a ) *Within the time frame specified for PAL renewals in paragraph (w)(10)(ii) of this section, the major stationary source shall submit a proposed allowable emission limitation for each emissions unit (or each group of emissions units, if such a distribution is more appropriate as decided by the reviewing authority) by distributing the PAL allowable emissions for the major stationary source among each of the emissions units that existed under the PAL. If the PAL had not yet been adjusted for an applicable requirement that became effective during the PAL effective period, as required under paragraph (w)(10)(v) of this section, such distribution shall be made as if the PAL had been adjusted.*
  - ( b ) *The reviewing authority shall decide whether and how the PAL allowable emissions will be distributed and issue a revised permit incorporating allowable limits for each emissions unit, or each group of emissions units, as the reviewing authority determines is appropriate.*
- (ii) *Each emissions unit(s) shall comply with the allowable emission limitation on a 12-month rolling basis. The reviewing authority may approve the use of monitoring systems (source testing, emission factors, etc.) other than CEMS, CERMS, PEMS or CPMS to demonstrate compliance with the allowable emission limitation.*
- (iii) *Until the reviewing authority issues the revised permit incorporating allowable limits for each emissions unit, or each group of emissions units, as required under paragraph (w)(9)(i)( b ) of this section, the source shall continue to comply with a source-wide, multi-unit emissions cap equivalent to the level of the PAL emission limitation.*
- (iv) *Any physical change or change in the method of operation at the major stationary source will be subject to major NSR requirements if such change meets the definition of major modification in paragraph (b)(2) of this section.*
- (v) *The major stationary source owner or operator shall continue to comply with any State or Federal applicable requirements (BACT, RACT, NSPS, etc.) that may have applied either during the PAL effective period or prior to the PAL effective period except for those emission limitations that had been established pursuant to paragraph (r)(2) of this section, but were eliminated by the PAL in accordance with the provisions in paragraph (w)(1)(ii)(c) of this section.*

Paragraph (9) specifies what must happen if the PAL is not renewed and is self-explanatory. It does not have a direct bearing on the drafting of a permit condition. No additional comment is needed.

#### **(10) Renewal of a PAL.**

- (i) *The reviewing authority shall follow the procedures specified in paragraph (w)(5) of this section in approving any request to renew a PAL for a major stationary source, and shall provide both the proposed PAL level and a written rationale for the proposed PAL level to the public for review and comment. During such public review, any person may propose a PAL level for the source for consideration by the reviewing authority.*
- (ii) *Application deadline*  
*The plan shall require that a major stationary source owner or operator shall submit a timely application to the reviewing authority to request renewal of a PAL. A timely application is one that is submitted at least 6 months prior to, but not earlier than 18 months from, the date of permit expiration. This deadline for application submittal is to ensure that the permit will not expire before the permit is renewed. If the owner or operator of a major stationary source submits a complete application to renew the PAL within this time period, then the PAL shall continue to be effective until the revised permit with the renewed PAL is issued.*
- (iii) *Application requirements.*  
*The application to renew a PAL permit shall contain the information required in paragraphs (w)(10)(iii) ( a ) through ( d ) of this section.*
  - ( a ) *The information required in paragraphs (w)(3)(i) through (iii) of this section.*
  - ( b ) *A proposed PAL level.*
  - ( c ) *The sum of the potential to emit of all emissions units under the PAL (with supporting documentation).*
  - ( d ) *Any other information the owner or operator wishes the reviewing authority to consider in determining the appropriate level for renewing the PAL.*
- (iv) *PAL adjustment.*  
*In determining whether and how to adjust the PAL, the reviewing authority shall consider the options outlined in paragraphs (w)(10)(iv) ( a ) and ( b ) of this section. However, in no case may any such adjustment fail to comply with paragraph (w)(10)(iv)( c ) of this section.*

- ( a ) *If the emissions level calculated in accordance with paragraph (w)(6) of this section is equal to or greater than 80 percent of the PAL level, the reviewing authority may renew the PAL at the same level without considering the factors set forth in paragraph (w)(10)(iv)( b ) of this section; or*
- ( b ) *The reviewing authority may set the PAL at a level that it determines to be more representative of the source's baseline actual emissions, or that it determines to be appropriate considering air quality needs, advances in control technology, anticipated economic growth in the area, desire to reward or encourage the source's voluntary emissions reductions, or other factors as specifically identified by the reviewing authority in its written rationale.*
- ( c ) *Notwithstanding paragraphs (w)(10)(iv) ( a ) and ( b ) of this section:*
  - ( 1 ) *If the potential to emit of the major stationary source is less than the PAL, the reviewing authority shall adjust the PAL to a level no greater than the potential to emit of the source; and*
  - ( 2 ) *The reviewing authority shall not approve a renewed PAL level higher than the current PAL, unless the major stationary source has complied with the provisions of paragraph (w)(11) of this section (increasing a PAL).*

(v) *If the compliance date for a State or Federal requirement that applies to the PAL source occurs during the PAL effective period, and if the reviewing authority has not already adjusted for such requirement, the PAL shall be adjusted at the time of PAL permit renewal or title V permit renewal, whichever occurs first.*

Paragraph (10) specifies the renewal process and is self-explanatory. The process involves an automatic reevaluation of the PAL based on the sources actual emissions. It does not have a direct bearing on the drafting of a permit condition No additional comment is needed.

#### **(11) Increasing a PAL during the PAL effective period**

(i) *The plan shall require that the reviewing authority may increase a PAL emission limitation only if the major stationary source complies with the provisions in paragraphs (w)(11)(i) ( a ) through ( d ) of this section.*

- ( a ) *The owner or operator of the major stationary source shall submit a complete application to request an increase in the PAL limit for a PAL major modification. Such application shall identify the emissions unit(s) contributing to the increase in emissions so as to cause the major stationary source's emissions to equal or exceed its PAL.*
- ( b ) *As part of this application, the major stationary source owner or operator shall demonstrate that the sum of the baseline actual emissions of the small emissions units, plus the sum of the baseline actual emissions of the significant and major emissions units assuming application of BACT equivalent controls, plus the sum of the allowable emissions of the new or modified emissions unit(s), exceeds the PAL. The level of control that would result from BACT equivalent controls on each significant or major emissions unit shall be determined by conducting a new BACT analysis at the time the application is submitted, unless the emissions unit is currently required to comply with a BACT or LAER requirement that was established within the preceding 10 years. In such a case, the assumed control level for that emissions unit shall be equal to the level of BACT or LAER with which that emissions unit must currently comply.*
- ( c ) *The owner or operator obtains a major NSR permit for all emissions unit(s) identified in paragraph (w)(11)(i) ( a ) of this section, regardless of the magnitude of the emissions increase resulting from them (that is, no significant levels apply). These emissions unit(s) shall comply with any emissions requirements resulting from the major NSR process (for example, BACT), even though they have also become subject to the PAL or continue to be subject to the PAL.*
- ( d ) *The PAL permit shall require that the increased PAL level shall be effective on the day any emissions unit that is part of the PAL major modification becomes operational and begins to emit the PAL pollutant.*

(ii) *The reviewing authority shall calculate the new PAL as the sum of the allowable emissions for each modified or new emissions unit, plus the sum of the baseline actual emissions of the significant and major emissions units (assuming application of BACT equivalent controls as determined in accordance with paragraph (w)(11)(i) ( b ) of this section), plus the sum of the baseline actual emissions of the small emissions units.*

(iii) *The PAL permit shall be revised to reflect the increased PAL level pursuant to the public notice requirements of paragraph (w)(5) of this section.*

Paragraph (11) specifies how the PAL limit can be increased, which involves obtaining a major NSR permit for those units contributing to an increase in emissions. It does not have a direct bearing on the drafting of a permit condition. No additional comment is needed.

#### **(12) Monitoring requirements for PALs —**

(i) *General requirements.*

- ( a ) Each PAL permit must contain enforceable requirements for the monitoring system that accurately determines plantwide emissions of the PAL pollutant in terms of mass per unit of time. Any monitoring system authorized for use in the PAL permit must be based on sound science and meet generally acceptable scientific procedures for data quality and manipulation. Additionally, the information generated by such system must meet minimum legal requirements for admissibility in a judicial proceeding to enforce the PAL permit.
- ( b ) The PAL monitoring system must employ one or more of the four general monitoring approaches meeting the minimum requirements set forth in paragraphs (w)(12)(ii) ( a ) through ( d ) of this section and must be approved by the reviewing authority.
- ( c ) Notwithstanding paragraph (w)(12)(i) ( b ) of this section, you may also employ an alternative monitoring approach that meets paragraph (w)(12)(i) ( a ) of this section if approved by the reviewing authority.
- ( d ) Failure to use a monitoring system that meets the requirements of this section renders the PAL invalid.
- (ii) **Minimum performance requirements for approved monitoring approaches.** The following are acceptable general monitoring approaches when conducted in accordance with the minimum requirements in paragraphs (w)(12)(iii) through (ix) of this section:
  - ( a ) **Mass balance calculations for activities using coatings or solvents;**
  - ( b ) CEMS;
  - ( c ) CPMS or PEMS; and
  - ( d ) **Emission factors.**
- (iii) **Mass balance calculations.** An owner or operator using mass balance calculations to monitor PAL pollutant emissions from activities using coating or solvents shall meet the following requirements:
  - ( a ) Provide a demonstrated means of validating the published content of the PAL pollutant that is contained in or created by all materials used in or at the emissions unit;
  - ( b ) Assume that the emissions unit emits all of the PAL pollutant that is contained in or created by any raw material or fuel used in or at the emissions unit, if it cannot otherwise be accounted for in the process; and
  - ( c ) Where the vendor of a material or fuel, which is used in or at the emissions unit, publishes a range of pollutant content from such material, the owner or operator must use the highest value of the range to calculate the PAL pollutant emissions unless the reviewing authority determines there is site-specific data or a site-specific monitoring program to support another content within the range.
- (iv) CEMS. An owner or operator using CEMS to monitor PAL pollutant emissions shall meet the following requirements:
  - ( a ) CEMS must comply with applicable Performance Specifications found in 40 CFR part 60, appendix B; and
  - ( b ) CEMS must sample, analyze, and record data at least every 15 minutes while the emissions unit is operating.
- (v) CPMS or PEMS. An owner or operator using CPMS or PEMS to monitor PAL pollutant emissions shall meet the following requirements:
  - ( a ) The CPMS or the PEMS must be based on current site-specific data demonstrating a correlation between the monitored parameter(s) and the PAL pollutant emissions across the range of operation of the emissions unit; and
  - ( b ) Each CPMS or PEMS must sample, analyze, and record data at least every 15 minutes, or at another less frequent interval approved by the reviewing authority, while the emissions unit is operating.
- (vi) **Emission factors.** An owner or operator using emission factors to monitor PAL pollutant emissions shall meet the following requirements:
  - ( a ) All emission factors shall be adjusted, if appropriate, to account for the degree of uncertainty or limitations in the factors' development;
  - ( b ) The emissions unit shall operate within the designated range of use for the emission factor, if applicable; and
  - ( c ) If technically practicable, the owner or operator of a significant emissions unit that relies on an emission factor to calculate PAL pollutant emissions shall conduct validation testing to determine a site-specific emission factor within 6 months of PAL permit issuance, unless the reviewing authority determines that testing is not required.
- (vii) A source owner or operator must record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods is specified in the PAL permit.
- (viii) Notwithstanding the requirements in paragraphs (w)(12)(iii) through (vii) of this section, where an owner or operator of an emissions unit cannot demonstrate a correlation between the monitored parameter(s) and the PAL

*pollutant emissions rate at all operating points of the emissions unit, the reviewing authority shall, at the time of permit issuance:*

*( a ) Establish default value(s) for determining compliance with the PAL based on the highest potential emissions reasonably estimated at such operating point(s); or*

*( b ) Determine that operation of the emissions unit during operating conditions when there is no correlation between monitored parameter(s) and the PAL pollutant emissions is a violation of the PAL.*

*(ix) Re-validation. All data used to establish the PAL pollutant must be re-validated through performance testing or other scientifically valid means approved by the reviewing authority. Such testing must occur at least once every 5 years after issuance of the PAL.*

The VOC emitting sources consist of:

1. Storage tanks

VOC emissions are calculated utilizing the TANKS emission estimation software. The Permittee estimates the annual VOC emissions from the storage tanks to be less than 1 ton per year. The permit will allow the Permittee to calculate monthly VOC emissions using TANKS or simply dividing the annual PTE by 12. This is acceptable in this case given the small contribution from the storage tanks to the facility wide PTE of VOC.

2. Combustion sources

Currently the only VOC combustion emissions are associated with the VOC generated from the combustion of natural gas in the dryers (drying ovens). These are estimated by utilizing AP-42 emission factor for the combustion of natural gas.

The monitoring required for the VOCs emitted as a result of combustion will be general enough to allow to account for additional combustion sources in the future ( e.g., emergency generators). Although, all scenarios cannot be foreseen, it is straight forward enough to account for additional combustion sources at this time.

The Permittee estimates the annual VOC emissions from combustion to be less than 1 ton per year. The permit will allow the Permittee to calculate monthly VOC emissions using emission DAQ approved (AP-42) factors or simply dividing the annual PTE by 12. This is acceptable in this case given the small contribution from combustion to the facility wide PTE of VOC.

Note that the destruction of VOCs by the dryers is accounted for in a separate monitoring condition.

3. Material Handling, Mixing and Cleaning Emissions

These types of operations are typical of coating and printing operations. Historically, the Permittee has accounted for these emissions in the estimated of the press or the laminator emissions. To date, at least for the presses, this has involved accounting for a DRE of 34.9%. The assumption being that all VOC emissions are captured by the exhaust system for the press and hence pass through the dryers. This was probably a reasonable assumption in the past. Note that during the 1995 testing to establish the press DREs, the room met the definition of a total enclosure, and hence had a capture efficiency assumed to be 100%..

However, based on conversations with the consultant, the configuration of the room containing the presses has been modified since the DRE testing was conducted and hence the assumption of 100 percent capture efficiency for VOC sources by the press exhaust systems is now suspect.

Specific monitoring will be introduced at this time for these operations to account for the likelihood of less than 100 % capture by the press exhaust systems when the operations are performed nearby or in the same room as well as for these operations that occur elsewhere at the facility.

The permit will also allow for these emissions to be accounted for in press emissions if it is a reasonable assumption to do so.

4. Presses and laminators

These sources are by far the largest contributors to the VOC emissions from the facility. With the exception of Laminator-14, all VOC emissions resulting from the operation of these sources have accounted for a DRE of 34.9%. As discussed in Section II Chronology, this assumption is no longer accepted by the DAQ.

The monitoring condition will account for the variable of DRE for the dryers and oxidizers as well as capture efficiency, however, will be defined as 0% until the permit is modified to demonstrate that they are otherwise.

Some language from the rule will be inserted into the permit condition to ensure that the monitoring requirements of 51.1566(w)(12) are met. These conditions will have the appropriate regulatory reference.

**(13) Recordkeeping requirements.**

- (i) *The PAL permit shall require an owner or operator to retain a copy of all records necessary to determine compliance with any requirement of paragraph (w) of this section and of the PAL, including a determination of each emissions unit's 12-month rolling total emissions, for 5 years from the date of such record.*
- (ii) *The PAL permit shall require an owner or operator to retain a copy of the following records, for the duration of the PAL effective period plus 5 years:*
  - ( a ) *A copy of the PAL permit application and any applications for revisions to the PAL; and*
  - ( b ) *Each annual certification of compliance pursuant to title V and the data relied on in certifying the compliance.*

Paragraph (13) addresses recordkeeping requirements. These requirements will be placed into the PAL permit condition with the appropriate regulatory references. Specific recordkeeping requirement associated with the monitoring requirements will also be addressed.

#### **(14) Reporting and notification requirements**

*The owner or operator shall submit semi-annual monitoring reports and prompt deviation reports to the reviewing authority in accordance with the applicable title V operating permit program. The reports shall meet the requirements in paragraphs (w)(14)(i) through (iii) of this section.*

##### *(i) Semi-annual report.*

*The semi-annual report shall be submitted to the reviewing authority within 30 days of the end of each reporting period. This report shall contain the information required in paragraphs (w)(14)(i)( a ) through ( g ) of this section.*

- ( a ) *The identification of owner and operator and the permit number.*
- ( b ) *Total annual emissions (tons/year) based on a 12-month rolling total for each month in the reporting period recorded pursuant to paragraph (w)(13)(i) of this section.*
- ( c ) *All data relied upon, including, but not limited to, any Quality Assurance or Quality Control data, in calculating the monthly and annual PAL pollutant emissions.*
- ( d ) *A list of any emissions units modified or added to the major stationary source during the preceding 6-month period.*
- ( e ) *The number, duration, and cause of any deviations or monitoring malfunctions (other than the time associated with zero and span calibration checks), and any corrective action taken.*
- ( f ) *A notification of a shutdown of any monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system, and whether the emissions unit monitored by the monitoring system continued to operate, and the calculation of the emissions of the pollutant or the number determined by method included in the permit, as provided by paragraph (w)(12)(vii) of this section.*
- ( g ) *A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.*

##### *(ii) Deviation report*

*The major stationary source owner or operator shall promptly submit reports of any deviations or exceedance of the PAL requirements, including periods where no monitoring is available. A report submitted pursuant to §70.6(a)(3)(iii)(B) of this chapter shall satisfy this reporting requirement. The deviation reports shall be submitted within the time limits prescribed by the applicable program implementing §70.6(a)(3)(iii)(B) of this chapter. The reports shall contain the following information:*

- ( a ) *The identification of owner and operator and the permit number;*
- ( b ) *The PAL requirement that experienced the deviation or that was exceeded;*
- ( c ) *Emissions resulting from the deviation or the exceedance; and*
- ( d ) *A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.*

##### *(iii) Re-validation results.*

*The owner or operator shall submit to the reviewing authority the results of any re-validation test or method within three months after completion of such test or method.*

Paragraph (14) addresses reporting requirements. These requirements will be placed into the PAL permit condition with the appropriate regulatory references as necessary. Deviation reporting is covered in all TV permits in the General Conditions so only a brief reference will be made in the PAL condition.

#### **(15) Transition requirements.**

- (i) No reviewing authority may issue a PAL that does not comply with the requirements in paragraphs (w)(1) through (15) of this section after the Administrator has approved regulations incorporating these requirements into a plan.
- (ii) The reviewing authority may supersede any PAL which was established prior to the date of approval of the plan by the Administrator with a PAL that complies with the requirements of paragraphs (w)(1) through (15) of this section.

Paragraph (15) addresses the effect of regulation promulgation on an existing PAL. NC already has a plan (SIP). It does not have a direct bearing on the drafting of a permit condition. No additional comment is needed.

## V. Changes Implemented in Revised Permit

Existing Condition No.	New Condition No.	Changes
Cover letter	Same	Updated, dates and other relevant information for this modification
Insignificant Activities List	Same	<ul style="list-style-type: none"> <li>Added VOC PAL descriptor to affected equipment</li> </ul>
Permit page 1	Same	Added asterisked language stating <i>“Effective and expiration dates for the Actuals Plantwide Applicability Limitations (Actuals PAL) portion of this permit may differ from these dates.”</i>
Table of Contents	Same	Added reference to Section 2.3
Equipment List	Same	<ul style="list-style-type: none"> <li>Removed descriptors referencing “PSD Avoidance Groups”</li> <li>Added VOC PAL descriptor to affected equipment</li> </ul>
2.1.A. Table	Same	Removed reference to 2Q .0317 Added reference to 2D .0530 PAL
2.1.A.3	NA	Removed PSD Avoidance condition
2.1.A.4	2.1A.3.	Renumbered permit
2.1.B. Table	Same	Removed reference to 2Q .0317 Added reference to 2D .0530 PAL
2.1.B.3	NA	Removed PSD Avoidance condition
2.1.A.4	2.1A.3.	Renumbered permit
2.1.C. Table	Same	Removed reference to 2Q .0317 Added reference to 2D .0530 PAL
2.1.B.3	NA	Removed PSD Avoidance condition
2.1.A.4	2.1A.3.	Renumbered permit
NA	2.3	Added condition for Actuals PAL for VOC
General Conditions	Same	Revised to be consistent with version 3.2.2. Changes were limited to: <ul style="list-style-type: none"> <li>Removing condition OO, which was the green house gas reporting rule requirement. It was determined that it was not a required condition under TV permitting rules.</li> </ul>

## VI. Public Notice

TBD

## VII. Recommendations

TBD