

Air Permit Review

Permit Issue Date:

Region: Fayetteville Regional Office
County: Montgomery
NC Facility ID: 6200061
Inspector's Name: Robert Kennedy
Date of Last Inspection: 01/23/2008
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): Unilin Flooring N.V. Facility Address: Unilin Flooring N.V. 149 Homanit Road Mt Gilead, NC 27306 SIC: 2493 / Reconstituted Wood Products NAICS: 321219 / Reconstituted Wood Product Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 2D.1111, 2D .0501, .0504, .0521, 0515, .0524 NSPS: Subpart Db NESHAP: MACT DDDD PSD: na PSD Avoidance: yes NC Toxics: yes 112(r): Other:		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 6200061.07B and .08E Date Received: 09/24/2007 and 08/04/2008 Application Type: Modification Application Schedule: TV-Minor/Significant Existing Permit Data Existing Permit Number: 08803/T10 Existing Permit Issue Date: 08/11/2008 Existing Permit Expiration Date: 04/30/2012		
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Review Engineer: Joseph Voelker Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 08803/T09 Permit Issue Date: MM/DD/YYYY Permit Expiration Date: April 30, 2012		

I. Introduction and Purpose of Application

Unilin Flooring N.V. (Unilin) owns and operates a thin high-density fiberboard (HDF) plant at the address indicated in the document header. Unilin is submitting permit applications to request the following:

1. The Permittee would like to permit a mesh pad elimination system between the wet scrubber and the RTO as well as a new fan after the RTO to assist with the pressure loss due to the new mist elimination system. The facility had received permission to construct without a permit per a letter dated July 17, 2008. (App No. 6200061.07E) It will be shown that this device will not be considered an emission control device for air quality purposes.
2. The Permittee would like to lower the RTO temperature in order to reduce operating costs. This has implications for compliance with the PSD avoidance condition as well as compliance with the Case-by-Case MACT. (App No. 6200061.07E)
3. Remove condition 2.1.A.1 that contains operating restrictions during startup when the facility is bypassing the RTO (ID No CD-RTO) and scrubber (CD-SCB). (App No. 6200061.07B)
4. Revise the 2D .1100 condition to reflect a permitted change in operation (i.e. , the operation of the plant when the RTO and scrubber are bypassed, hereafter known as operation in the "bypass mode") and hence emissions of TAPs (including an increase) which requires a modeling demonstration per 2Q .0706. Note also that the Permittee was issued an NOV for TAP emissions as determined by a source test that exceeded the allowable emission rates in the air permit. (See Chronology Section II)

5. Include a routine control device maintenance exemption condition in the permit (RCDME) as allowed in MACT Subpart DDDD. (App No. 6200061.07B). For this facility this means operation in the “bypass mode.” The inclusion of this exemption in the permit has implications with numerous applicable regulations.

II. Chronology

Date	Description
September 24, 2007	A TV permit application (deemed complete) was received.
September 27, 2007	An acknowledgement letter was sent to Guenter Heyen, CEO.
December 13, 2007	JMV sent an email to Dale Overcash requesting information regarding NSPS Subpart Db SSM procedures referenced in the permit application cover letter.
December 14, 2007	JMV sent an email to Dale Overcash requesting information regarding the lack of phenol emissions modeling in the 2004 by pass stack scenario.
February 7, 2008	<p>JMV sent Bob Pierce an email requesting additional information regarding:</p> <ul style="list-style-type: none"> ▪ The Board Breaking Operations (ES-F-09) ▪ Unpermitted miscellaneous grinding operations (“mobile” board breaker) ▪ Revised equipment descriptors in general* ▪ MACT DDDD applicability ▪ Compliance with 2D .1100 and 2Q .0705
February 12, 2008	JMV, John Evans, Don van der Vaart met with Dale Overcash to discuss information requested in the February 7, 2008 email. In the meeting the DAQ instructed Unilin to conduct PM-10 modeling at the bypass stack to ensure PM-10 increment compliance during any routine control device maintenance event as allowed under Subpart DDDD. Don V. agreed that the use of Jordan Lumber property line for demonstrating compliance was acceptable for Unilin.
March 24, 2008	An email was received from Dale Overcash regarding information requested on February 7, 2008. The modeling demonstrations for TAPS and PM10 were not included.
April 22, 2008	Don van der Vaart, John Evans, William Willets, Joe Voelker and Dale Overcash (consultant for Permittee) discussed the PM10 modeling requested by this office to show compliance with PM10 in the various by pass scenarios. Because of property line issues, the modeling submitted was not deemed valid. The modeling was returned and the application is still on “Hold” until a compliance demonstration is submitted.
June 10, 2008	The FRO issued a NOV for an exceedance of the 2D .1100 permitted emission limits for phenol and acrolein.
June 19, 2008	Modeling discussed on April 22, 2008 was submitted to this office. The modeling included TAP modeling to reflect the TAP emission rates discussed in the June 10, 2008 NOV.
July 08, 2008	A Notice of Intent to Construct request was received in the RCO.
July 17, 2008	<p>The DAQ sent a letter to Unilin allowing them to construct equipment prior to receipt of an air permit as allowed in N.C.G.S. 143-215.108A(b). The request described the following equipment:</p> <ol style="list-style-type: none"> 1. The construction of a mesh pad elimination system downstream of the wet scrubber (CD-SCRB) and upstream of the regenerative thermal oxidizer (CD-RTO). 2. The construction of a fan downstream of CD-RTO.
August 4, 2008	Modeling submitted on June 19, 2008 was reviewed and a memo was issued from Jerry Freeman of the AQAB stating “On a source-by-source basis, the modeling did demonstrate compliance with the Class II Increments and with the NC Acceptable Ambient Levels (AAL).”
August 4, 2008	Application no. 6200061.08E received in the RCO.
October 3, 2008	Draft permit and review sent to FRO for comment: Draft permit and review sent to Permittee for comment.

Date	Description
October 7, 2008	Comments on the permit draft received from Permittee via Dale Overcash, consultant. No substantive changes were made as a result of the comments. However, see the October 24, 2008 entry.
October 6 and 7, 2008	Comments from the FRO were received via email. The most notable comment was that the FRO recommended that the Permittee request in writing the RTO temperature and inlet and outlet VOC concentrations to be used in the PSD avoidance condition. JMV concurred.
October 22, 2008	A letter from the Permittee signed by the RO was received requesting the RTO temperature and inlet and outlet VOC concentrations to be used in the PSD avoidance condition.
October 24, 2008	Email received from the consultant regarding the DRAFT 2D.0501 condition requiring PM10 testing and remodeling if the PM emission rate exceeds 12 pounds per hour. Because of other PM testing requirements elsewhere in the permit, the Permittee must modify stack EP-11 to accommodate the testing. Because of the increased height, the Permittee has resubmitted PM10 (and toxics) to show that the facility can demonstrate compliance with the PM10 increment assuming the PM10 emissions are equal to the allowable PM emission rate under 2D .0515, which is 44 pounds per hour. As a result PM10 testing is altogether unnecessary. See section IV for further discussion.
November 3, 2008	Memo received from Jerry Freeman of the AQAB stating to the effect that modeling as discussed above (October 24, 2008) demonstrated compliance with the PM10 increment and the AAL guidelines on a source-by-source basis.
October, XX 2008	Public Notice for permit modification was published in XXX on MMDDYYYY.
November XX, 2008	Public comment period ended. No public comments were received.

III. Modification Description

Item 1 - Mesh pad mist elimination system and blower

Unilin would like to install and operate a mesh pad elimination system (MPES) downstream of the existing scrubber (CD-SCRB) and upstream of the RTO (CD-RTO).

The existing scrubber utilizes atomized water sprays to remove PM from the airstream prior to entering the RTO. The system is currently designed with a chevron style mist eliminator that functions to remove the atomized water droplets from the air stream before they reach the RTO.

According to the application, the droplet carryover creates two problems: First, the drops contain PM that the scrubber was designed to remove that contributes to a reduction in the RTO media life. Second the water reacts with salts on the RTO media beams and ductwork to cause a form of corrosion called chloride embrittlement. This corrosion attacks the RTO media beam and ductwork resulting in premature failure.

Although an overall increase in PM removal is anticipated, the purpose of this device is not for enhanced pollutant control and hence will not be considered a control device in the context of air permitting.

The new mist eliminator will be inserted between the scrubber and the RTO. The chevron mist eliminator will remain intact with the scrubber. As the new mist eliminator will add pressure drop a new blower must be added to maintain the required gas flow. This blower will be placed in series with the existing air blower. The existing air blower will remain in place as a backup unit. The details are unclear with respect to the actual duct configuration but the exhaust point of the system will remain unchanged. Given that the facility's performance is dependent on the gas flow and is monitored, it is anticipated that the flow rate after the modification will be substantially similar to the current airflow. Thus, no compliance issues with any applicable regulations are expected.

Item 2 – Lower the RTO temperature

For compliance purposes with respect to PSD avoidance as well as the Case By Case MACT, the Permittee is required to maintain a three-hour average firebox temperature of 1500°F. The Permittee would like to lower the temperature to reduce operational costs.

The Permittee has conducted source testing to demonstrate that they can achieve compliance with the 90% DRE of HAP as required in the Case-by-Case MACT. That testing has not been submitted to the DAQ for review and

approval. However, it is expected that the testing will be approved. Given the long lead-time for reviews and approval, waiting on the review is not practical in this situation. Therefore, a target temperature will be placed into the permit with a caveat which states that this temperature is subject to change upon final approval.

The Permittee has another active permit application .07A that was to address removing some start up restrictions conditions in the permit and upon being subject to MACT Subpart DDDD have a routine control device maintenance exemption (RCDME) placed into the permit. Given that the RCDME is a feature of Subpart DDDD and the compliance date for the MACT for Unilin was October 1, 2007, the permit needed to have the enforceable Subpart DDDD language placed into the permit as well. Thus, the final result will be an enforceable MACT Subpart DDDD condition with the lower requested RTO temperature and the Case-by-Case MACT condition removed.

This lower temperature with the appropriate caveats as discussed above will be placed into the PSD avoidance condition and the new DDDD condition.

Item 3 - Remove operating restrictions during startup as presented in condition 2.1.A.1.

The Permittee would like to have a condition removed from the permit that was a holdover from when the facility was considered a PSD major source. As can be seen in the Permitting History in Section VI below the facility submitted a permit application in 2004 to reclassify itself from a PSD major a PSD minor source. At the time the facility was operating under permit revision R03. Revision R03's stipulation A.10 contained the PSD requirements, included the BACT limits (a), testing requirements (b), operational limits (c), recordkeeping/reporting requirements (d) and (e), and start-up restrictions (f).

In the end, the facility was reclassified as a PSD minor source and was issued permit Revision R04 with a PSD avoidance condition. Condition 10 of permit revision R03 was removed in its entirety EXCEPT for the start-up restrictions (f), which reads as follows:

f. Start-Up Restrictions - As part of the PSD required modeling demonstration the Permittee modeled start-up conditions for the heating plant (ID Nos. ES-HO) venting from the flyash collector (bypassing the RTO controls) and refiner operation (bypassing the flash-tube dryer and RTO). The permittee shall comply with the following restrictions:

- (i) Start-up for the boiler (bypassing the RTO control device) shall not to exceed 12 hours per twenty four (24) hour period.*
- (ii) Start-up while charging the refiner (bypassing the flashtube dryer and RTO control device) while venting to the start-up cyclone shall not exceed one (1) hour per twenty-four hour period.*
- (iii) For all start-ups the Permittee shall record the number of hours the boiler (ID No ES-HP) and the refiner are operated in the start-up bypass mode. These records shall be maintained by the Permittee for a minimum of two (2) years and made available to the Division upon request.*

In order to remove these restrictions the DAQ instructed Unilin (see Chronology February 12, 2008) to conduct PM-10 modeling at the bypass stack to ensure PM-10 increment compliance during any routine control device maintenance event as allowed under Subpart DDDD (another requested modification to the air permit). Don V. agreed that the use of Jordan Lumber property line for demonstrating compliance was acceptable for Unilin.

The Permittee submitted modeling for three scenarios: normal operation, bypass operation and startup operation. For this condition to be removed only the start-up scenario must be considered. The other modeling scenarios will be considered elsewhere in this review.

In addition to implications with the PM 10 increment, the facility needed to demonstrate compliance with the NC Toxics rules in these alternative-operating scenarios (just normal and bypass mode). It will be shown the modeling submitted on June 2008 addressed compliance with 2D .1100.

Item 4 - Revise the 2D .1100 condition to reflect a permitted change in operation

Given the facility wished to operate in a configuration (bypass of the RTO) that would result in an increase in TAPs, the facility was required to perform toxics modeling. This demonstration was also necessary as the facility received an NOV in June 2008 for exceedance of the allowable emission rates in the current permit for acrolein and phenol during normal operation (as discovered in the results of the recent source testing).

Item 5 - Include a routine control device maintenance exemption condition in the permit (RCDME) as allowed in MACT Subpart DDDD

40 CFR 63.2251 allows for an exemption from the required compliance options and operating requirements during routine control device maintenance periods if the Permittee follows the procedures in 40 CFR 63.2251. The Permittee has satisfied these requirements. See regulatory review for further discussion/

IV. Regulatory Review

Item 1 - Mesh pad mist elimination system and blower

Given that mist eliminator will not be used as mean to demonstrate compliance with any regulations, is not necessary to do so, nor is expected to have a negative impact with respect to the performance of the control systems or result in an increase in emissions, no regulatory review will be necessary.

The mist eliminator will exist in the permit only as a part of the descriptor for the scrubber, the control device that generates the water mist.

Item 2 – Lower the RTO temperature

The lowering of the RTO temperature affects compliance with the following three regulations:

15A NCAC 2D .1112: 112(g) CASE-BY- CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

This condition will be removed as described in Section III Item 2 above.

15A NCAC 2D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

As discussed in Section III, this condition will be modified to include enforceable conditions, one of which is the maintenance of a three hour average firebox temperature determined in the performance testing required by DDDD. Although the data has not been submitted nor approved by the DAQ, it is anticipated that it will demonstrate compliance with the emission limitations of DDDD at some temperature lower than the current 1500°F. At the time of this review, this value is expected to be in the 1200°F range.

The main requirements of Subpart DDDD are essentially the same as those in the Case By Case MACT condition with the exception of explicit monitoring recordkeeping and reporting requirements. The Permittee has supplied a table that addresses each paragraph of the MACT with respect to applicability. This table is Attachment A in the review. Attachment B is a review of the MACT applicability to the facility, which would be cumbersome to include here.

15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

This condition contains the following language:

Monitoring Requirements [15A NCAC 2Q .0508(f)]

- d. Each calendar month, the Permittee shall calculate the VOC emissions for the previous month and the previous 12-month period to ensure compliance with Section 2.2 D.1.a above.
- i. Monthly VOC emission, in tons, shall be calculated as follows:

$$E_{VOC} = [(21.8 \times t_{RTO}) + (218 \times t_{WORTO})] \times 1/2000$$

Where: E_{VOC} = number of tons of VOC emissions per month

21.8 = pounds of VOC per hour (average inlet emission rate from RTO source test on March 13, 2003) assuming 90% VOC control efficiency

t_{RTO} = hours per month when RTO (**ID No. CD-RTO**) is not bypassed and RTO (**ID No. CD-RTO**) temperature is greater than or equal to 1500°F (hourly block average temperature)

218.0 = pounds of VOC per hour (from RTO source test on March 13, 2003) assuming no VOC control

t_{WORTO} = hours per month when RTO (ID No. CD-RTO) is bypassed or hourly periods when the RTO (ID No. CD-RTO) temperature is less than 1500°F (hourly block average temperatures) including hourly RTO (ID No. CD-RTO) periods of start-up, shutdown, and malfunction

Thus, it is based on source test data from 2003. The following three values will be revised:

1. 21.8 = pounds of VOC per hour (average inlet emission rate from RTO source test on March 13, 2003) assuming 90% VOC control efficiency
2. 218.0 = pounds of VOC per hour (from RTO source test on March 13, 2003) assuming no VOC control
3. firebox temperature of 1500 °F

Since the final values will not be known for sure until the data is submitted and reviewed by the AQAB, the revised condition will read as follows:

Monitoring Requirements [15A NCAC 2Q .0508(f)]

- d. Each calendar month, the Permittee shall calculate the VOC emissions for the previous month and the previous 12-month period to ensure compliance with Section 2.2 D.1.a above.
 - i. Monthly VOC emission, in tons, shall be calculated as follows:

$$E_{VOC} = [(T_o \times t_{RTO}) + (T_i \times t_{WORTO})] \times 1/2000$$

Where: E_{VOC} = number of tons of VOC emissions per month

T_o = 26.95 pounds of VOC per hour (average RTO outlet emission rate determined from source test on August 2008). This value may be revised administratively pending final review of the source test report by the DAQ.

t_{RTO} = hours per month when RTO (ID No. CD-RTO) is not bypassed and the RTO (ID No. CD-RTO) temperature is greater than or equal to **1206°F** (hourly block average temperature). The hourly block average temperature may be revised administratively pending final review of the source test report by the DAQ.

T_i = 320.44 pounds of VOC per hour (average RTO inlet emission rate determined from source test on August 2008). This value may be revised administratively pending final review of the source test report by the DAQ.

t_{WORTO} = hours per month when RTO (ID No. CD-RTO) is bypassed or hourly periods when the RTO (ID No. CD-RTO) temperature is less than **1206°F** (hourly block average temperatures), including hourly RTO (ID No. CD-RTO) periods of start-up, shutdown, and malfunction. The hourly block average temperature may be revised administratively pending final review of the source test report by the DAQ.

Item 3 - Remove operating restrictions during startup as presented in condition 2.1.A.1.

Applicable regulations

15A NCAC 2D .0501: COMPLIANCE WITH EMISSION CONTROL STANDARDS

PM-10 modeling

The Permittee submitted modeling to the AQAB for three operating scenarios: normal operation, bypass operation and startup operation. For this condition to be removed only the start-up scenario must be considered. The other modeling scenarios will be considered elsewhere in this review. The maximum impact was determined to be 99.9% of the PM-10 increment **during the start-up scenario.** The main contributor to the PM-10 emissions during start up is the emissions from the energy system start up stack. The Permittee had only an engineering estimate of what that value should be. The number was based on an AP-42 uncontrolled emission factor subsequently being controlled by an 85% efficient, multi-cyclone. This emission rate is approximately 20% of the emission rate that would be predicted by the appropriate controlled AP-42 emission factor. However, upon review it was approved. All other inputs are consistent with submitted application data.

Based on the approval of this modeling, the start up requirements in condition 2.1.A.1 will be removed from the air permit.

Item 4 - Revise the 2D .1100 condition to reflect a permitted change in operation

Applicable regulations

15A NCAC 2Q .0711: TOXIC AIR POLLUTANT EMISSIONS LIMITATION REQUIREMENT

The current condition has four TAPs being emitted below the TPER are that are not subject to 2Q .0700 permitting requirements. Only styrene was reported in the application. A quick review of AP42 suggests these other TAPs are present but would be expected to be below the TPERs. This condition will remain unchanged.

15A NCAC 2Q .0705: EXISTING FACILITIES AND SIC CALLS

Because the facility burns adulterated fuel (rejected boards and other wood waste that contains the resins) its last MACT will be the yet to be promulgated boiler MACT. As such, a demonstration concurrent with the compliance date of DDDD is not necessary. If DDDD **was** the last MACT for 2Q .0705 purposes, the modeling reviewed elsewhere in this review would satisfy the requirements. No change to this condition will be made.

15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS

This condition will be revised to include the revised TAP emission rates as described in the permit application. Given the large margin of compliance for the three modeled TAPs no M/R/R will be included in the air permit. See the discussion below.

TAP modeling

Given that the facility wishes to operate in an operating scenario that will result in the emissions of TAPs not previously considered (magnitude and dispersion parameters) Unilin was required to submit updated TAP modeling for compliance with 2D .1100. The modeling submitted satisfies a facility-wide demonstration of all TAPs. A table of the emission rates used in the model is included in Section 4 of the application. Note also that the facility's allowable emission rate of acrolein and phenol requested increased substantially based on RTO stack test data in March 2008. As of this date, this data has not been approved by the AQAB but should give a relative sense of the margin of compliance. The following table compares the acrolein and phenol stack test determined emission rate and the emission rates used in the revised modeling analysis for **NORMAL operation from the RTO stack**.

Pollutant	Source test determined emission rate, lb/hr	Modeled emission rate, lb/hr	% of AAL
acrolein	1.15	36.0	95
phenol	7.00	448	98

Note that acrolein is also emitted from the board cooling area during normal operation whereas phenol is only emitted from the RTO. Clearly, the margin of compliance is so great that one would not expect any issues with respect to compliance with the AAL guidelines for acrolein and phenol during normal operation.

During **by-pass operation** a table for acrolein and phenol is as follows:

Pollutant	Modeled emission rate, lb/hr	% of AAL
acrolein	313.7	95
phenol	3725.4	96

The Permittee did not supply the basis for these numbers but essentially they would represent the inlet conditions to the RTO (which is what the bypass scenario represents) if operating at 85% efficiency. One would not expect any issues with respect to compliance with the AAL guidelines for acrolein and phenol during bypass operation

With respect to formaldehyde, preliminary data from the March 2008 testing indicates an emission rate of approximately **5 lb/hr** from the RTO stack and **44 lb/hr** on the inlet. The modeled emission rate from the RTO outlet during normal operation was **69.4 lb/hr** with a maximum impact of 91% of the AAL guideline. Thus if this stack test emission rate is representative of the operation in general, the RTO would not need to provide any DRE for the facility to comply with the AAL guideline.

For the bypass scenario the modeled emission rate was **580.4 lb/hr** and a maximum impact of 98% of the AAL guideline. Assuming the 44 lb/hr on the RTO inlet determined in the source test is representative of the operation in

general and would represent a maximum formaldehyde emission rate that would be bypassed, the facility has demonstrated compliance with the formaldehyde AAL guideline by a large margin.

NO M/R/R will be placed into the permit given the wide compliance margin.

Item 5 - Include a routine control device maintenance exemption condition in the permit (RCDME) as allowed in MACT Subpart DDDD

Applicable regulations

15A NCAC 2D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

A condition addressing this regulation and the applicable MACT regulation for the facility, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products will be placed into the permit and will contain the RCDME per 40 CFR 63.2251. Given that the facility is explicitly requesting this exemption and is aware of the operating limitations, recordkeeping and reporting requirements, compliance with this regulation is expected with respect to the RCDME.

Per 40 CFR 63.2251(b)

(1) If the control device is used to control a green rotary dryer, tube dryer, rotary strand dryer, or pressurized refiner, then the routine control device maintenance exemption must not exceed 3 percent of annual operating uptime for each process unit controlled.

The RCDME will manifest itself in the Subpart DDDD condition in various locations, primarily to indicate exemptions or special information needed for recordkeeping and reporting. In addition, the following two operating requirements will be placed into the permit:

- The emission limitations in d. do not apply during times when control device maintenance covered under the approved routine control device maintenance exemption (per application 6200061.07B) is performed. The Permittee must minimize emissions to the greatest extent possible during these routine control device maintenance periods. [40 CFR 63.2251]
- Operation of the process units controlled as described in d. during periods of routine control device maintenance as requested in application no. 6200061.07B must not exceed 3 percent of annual operating uptime for each process unit controlled. [40 CFR 63.2251]

15A NCAC 2D .0501: COMPLIANCE WITH EMISSION CONTROL STANDARDS

PM-10 modeling

As a result of this request the Permittee was required to do PM-10 increment modeling during the by pass scenario (see the Chronology Section) to show that the PM-10 NAAQS increment was being protected. In addition to the PM-10 increment issue compliance with the applicable PM and opacity standards is uncertain during these bypass periods.

Initially, the modeling was not accepted by the DAQ because of the uncertainty associated with emission rate of 12 lb/hr of PM10 from the by-pass stack. Instead of denying the RCDME on this basis, a testing requirement was placed into the DRAFT permit to require the Permittee to test the bypass stack during the bypass-operating scenario for PM-10 to validate the PM-10 rate modeled. However, upon reviewing the DRAFT permit, the Permittee realized stack testing would be required for PM as well for compliance with other regulations on the bypass stack EP-11 (see Chronology). This would require a modification to the stack (raising it 20 feet). The Permittee decided to remodel for PM-10 increment and found that compliance with the PM10 increment could be met at an emission rate of 44 pounds per hour, equivalent to the 2D .0515 allowable PM rate, for which source testing is required elsewhere in the permit. Since the Permittee is able to demonstrate compliance with the PM10 increment assuming all PM emissions are PM10 that will be verified by source testing, no additional PM10 testing is necessary.

Thus, the 2D .0501 condition will be removed entirely.

15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

Since the facility will be bypassing the RTO during the RCDME, it will have uncontrolled VOC/HAP/TAP emissions during that time. This condition accounts for scenarios when the facility is operating without the RTO. It is expected that this RCDME will in effect result in an increase in actual VOC/HAP/TAP emissions since it allows the process to run for periods of time without any control. However, the facility will be required to monitor the emissions on a monthly and rolling 12 month basis. It is expected that the facility will not have problems meeting the 130 tpy VOC limit and hence compliance with this regulation.

15A NCAC 2D .0504: PARTICULATES FROM WOOD BURNING INDIRECT HEAT EXCHANGERS

The RCDME is allowed under the MACT which addresses HAP emissions explicitly, however it causes potential compliance issues with the subject PM standard because of the bypass of the scrubber and RTO, both of which contribute to the PM removal efficiency. As discussed elsewhere the facility has only engineering estimates of the RTO bypass stack (EP11). However, given that NSPS Subpart Db is more constraining, source testing for PM will not be required in the 2D .0504 condition.

The Permit condition will be revised to allow the PM emissions to be solely controlled by the multicyclone (and optional SNCR to be consistent with existing language) during periods of RCDME.

15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

This regulation in this case (since NSPS Subpart Db also applies) applies only to the heating plant during periods of NG combustion. Currently there are no M/R/R requirements. None will be necessary during the RCDME period. Thus, no changes will be made to this existing condition.

15A NCAC 2D .0524: NEW SOURCE PERFORMANCE STANDARDS

NSPS Subpart Db applies to the heating plant. During the bypass operating scenario, the emissions from the heating plant will be commingled with the emissions from the dryer and refiner as during normal operation, except that the emissions will not be routed to the scrubber and RTO.

Given the level of uncertainty (have never been determined) of the heating plant's PM emissions when not routed through the scrubber and RTO, the Permittee will be required to test for compliance with the NSPS Subpart Db PM standard before being allowed to operate in the bypass scenario.

In addition, the monitoring requirements of Subpart Db will also be imposed on the heating plant during the bypass scenario. In other words, COMs will be required on the bypass stack, in addition to all of the other NSPS Subpart Db requirements.

Note that since it is possible for the facility to operate the heating plant without the refiner, dryer and board press and PM testing requirement will be necessary in the 2D .0515 condition. See discussion below.

15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

This regulation applies to the dryer, press and refiner (**ID Nos. ES-DRY, ES-BP, and ES-RFN**). The maximum allowable emission rate per this rule is effectively constrained by the PSD avoidance maximum process rates of 36 oven dried tons of fiber per hour (24-hour block averaging period). Thus the maximum allowable emission rate is **41.6 lb/hr of PM**.

To date there is no source data to support compliance with this regulation without the scrubber and RTO. The only way to test compliance with this regulation during the bypass mode is to test the bypass stack with the heating plant also running. Note that the plant must also test this commingled gas stream to validate the PM-10 emission rate used in the PM-10 increment modeling anyway.

NSPS, NESHAP, PSD and CAM Applicability

See the discussions in Section IV for discussion.

V. Changes to Existing Title V Air Permit No. 08803T10

Existing Condition No.	Changes
Cover Letter	Updated, permit revision numbers, issue and effective dates
ALL	Removed reference to PART I as TV permits will no longer contain a PART II.
Equipment list	<ul style="list-style-type: none"> Removed all footnotes regarding previous 502(b)(10) changes, minor modifications per 2Q.0515 and significant modifications per 2Q .0501(c)(2). The footnotes would be unnecessary after the permit had been through the EPA/State/Public review process. Changed the descriptor for CD-SCRB to read as follows: one aqueous-assisted fiber removal chamber with or without the appurtenant mesh pad-type mist eliminator,
2.1.A.1	Removed the entire condition as described in the review.
2.1.A.2.c and condition f (new)	Modified the 2D .0504 PM standard condition by the addition of condition f, that allows the PM emissions to not be controlled by the one aqueous-assisted fiber removal chamber (ID No. CD-SCRB), and one natural gas/No. 2 fuel oil-fired regenerative thermal oxidizer (ID No. CD-RTO) during the RCDME.
2.1.A.5	This condition was modified to : <ul style="list-style-type: none"> Remove the language in c.i. which states “as a condition of issuance of Permit 08803T11”. This language is unnecessary. Add a testing condition during the bypass operation mode (c.ii.) Add monitoring on the bypass stack (including COMs) (d.iv.) Added recordkeeping on the bypass stack (e.iv.)
2.1B applicable regulation table	Removed the Case-by-Case MACT reference
2.1.B.2	Modified the 2D .0515 PM standard condition by the addition of: <ul style="list-style-type: none"> Testing requirements for the bypass stack, condition e, that allows the PM emissions to not be controlled by the one aqueous-assisted fiber removal chamber (ID No. CD-SCRB), and one natural gas/No. 2 fuel oil-fired regenerative thermal oxidizer (ID No. CD-RTO) during the RCDME.
2.1.B.3(c)	Modified the 2D .0521 condition to allow compliance with the 2D .0521 monitoring requirements during the bypass operating scenario by complying with the NSPS Subpart Db monitoring requirements (2.1.A.5.d.iv.).
2.1.B.4	Removed the Case-by-Case MACT condition as the facility is now subject to MACT DDDD.
2.2.B.2	Revised the MACT condition to include enforceable conditions.
2.2.C.1	Revised the 2D .1100 condition based on the revised modeling submitted with this application. No M/R/R required given the margin of compliance.
2.2.D.1	Revised the PSD avoidance condition to reflect the requested lower RTO temperature and inlet and outlet RTO VOC emission rates based on the August 2008 source test with provisions to administratively modify the final values if necessary upon the final review of the source test report.
PART II	Removed PART II as TV permits will no longer contain a PART I or PART II.

VI. Compliance History

During the last inspection conducted by Robert Kennedy on 1/23/2008, Unilin appeared to be operating in compliance with applicable air regulations and permit stipulations. Below is a summary of the last five years' compliance history.

Date	Notes from five year compliance history section from recent compliance inspection report
02/08/02	FRO issued an NOV/NRE for open burning of construction debris.
07/12/02	FRO issued an NOV/NRE for failure to conduct initial source test on time.
08/14/02	FRO issued an NOV/NRE for failure to install opacity monitor prior to stack testing.
10/25/02	FRO issued an NOV/NRE for failure to meet emissions and performance standards.

Date	Notes from five year compliance history section from recent compliance inspection report
01/29/03	FRO issued an NOV/NRE for failure to meet permit standards of demonstrating compliance for PM10 and HAP emissions, and opacity by COM.
11/17/03	FRO issued an NOV for operation the board production line without the primary control device (RTO) for over five days.
07/13/04	FRO issued an NOV/NRE for operation of the board production line without their primary control device (RTO).
06/10/2008	FRO issued an NOD for RTO Operation Below the Minimum Block Average Temperature, and an NOV for Excessive Phenol and Acrolein Emissions

VII. Permit History

Permit No.	Issuance Date	Description (taken from permit reviews verbatim)
T10	August 11, 2008	The purpose of this application is to open up the permit to correct and incorporate suggestions from the Fayetteville Regional Office that were made after the permit T09 was issued. A draft of T09 was not submitted to the FRO prior to issuance and their comments warranted opening the permit.
T09	July 3, 2008	Unilin is submitting a permit application to request an alternative operating scenario that would allow them to conduct performance testing on CD-RTO at lower temperatures than allowed in the current permit. The primary driver for this testing is to reduce the consumption of natural gas and hence the operational cost of the control device. The permit application will be processed as the first part of the two part 2Q .0501(c)2 significant modification process in accordance with 15A NCAC 2Q .0504.
T08	02/28/2008	Unilin Flooring N.V. (Unilin) owns and operates a thin high-density fiberboard (HDF) plant at the address indicated in the document header. Unilin is submitting a permit application to request the construction and operation of a modification to its wood flake delivery system. The permit application will be processed as a minor modification in accordance with 15A NCAC 2Q .0515.
T07	08/27/07	Unilin is submitting a permit application to request the addition of a second board breaker and associated conveyor (ID No. F-09). Per the Permittee's request the permit application will be processed in accordance with the section 502(b)(10) procedures listed in 15A NCAC 2Q .0523.
T06	05/08/2007	This first time Title V Air Permit Application Review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the DRAFT Title V operating permit. The primary source of information used to construct the DRAFT permit is the above referenced air permit application.
R05	09/23/2005	This permit application is a request to allow natural gas firing capability for the existing heating plant (ID No. ES-HP). DAQ will revise the current "state permit" - the 2Q .0300 permit, for this change. It should be noted here that there is a separate Title V application (6200061.04A) currently being reviewed by DAQ. Because this permit revision (6200061.05A) can be processed quicker than the Title V application, the Permittee has specifically requested to revise the existing permit using the 2Q .0300 provisions.

R04	03/23/2004	<p>The following proposed permit modification, received on July 23, 2003, will be processed under Section 2Q. 0501(d)(1) which will require this proposed permit to be public noticed with review by EPA Region IV. The purpose of this application is summarized as follows:</p> <p>a. To re-permit the facility from a designation of PSD major to minor source, removing the BACT limits, and updating the applicable SIP requirements.</p> <p>b. To re-establish the 112(g) Case by Case MACT limitations under NCAC 2D .1112 using as a guide the proposed Plywood and Composite Wood Products [PCWP] NESHAP [40 CFR Part 63, Subpart DDDD].</p> <p>c. Not a part of the original application, a request to increase the permitted dried fiber throughput limit for the flash tube dryer [ID No. ES-DRY] from 33 to 36 tons per hour. See a discussion of this requested change in Section VI, Conclusion.</p> <p>d. In a letter dated February 26, 2004, Unilin has requested that with this modification the permit expiration date of November 30, 2004 be extended an additional two years. The rationale for this action is that this modification requires Unilin to submit a Title V application with 90 days of issuance of this permit. Receipt of the Title V application would therefore be toward the end of June, 2004. The applicant is concerned the Title V application with both the public and EPA reviews may not be issued prior to the scheduled expiration of this permit requiring a renewal of this permit. The DAQ supports this request.</p>
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VIII. Public Notice

TBD

IX. Comments and Conclusions

TBD

X. Recommendations

TBD