

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Winston-Salem Regional Office
County: Davidson
NC Facility ID: 2900076
Inspector's Name: Steve Moser
Date of Last Inspection: 11/02/2005
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): T I Industries Facility Address: T I Industries 40 West 12th Avenue Lexington, NC 27292 SIC: 2499 / Wood Products, Nec NAICS: 339999 / All Other Miscellaneous Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: N/A NSPS: N/A NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: MACT Avoidance (2Q .0317)
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 2900076.06A Date Received: 07/20/2006 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 05052/T20 Existing Permit Issue Date: 05/29/2003 Existing Permit Expiration Date: 12/31/2007
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Review Engineer: Fern Paterson Review Engineer's Signature: _____ Date: _____		Comments / Recommendations:	
		Issue 05052/T21 Permit Issue Date: _____ Permit Expiration Date: 12/31/2007	

I. Purpose of Application

T.I. Industries operates a wood/wood composite picture frame manufacturing facility in Lexington, Davidson County, North Carolina. Currently, T.I. Industries holds Title V Permit No. 05052T20. The permit authorizes operation of various woodworking operations, wood dryers, composite ("compo") and extrusion machines, and finishing operations. NOTE: The "compo" and extrusion machines are not currently housed at the permitted facility but shall not be removed from the permit.

T.I. Industries is seeking a significant modification to limit emissions of hazardous air pollutants (HAPs) to less than major source thresholds; thereby avoiding applicability of MACT Standards, including the Boiler MACT (40 CFR 63, Subpart DDDDD) and Plywood and Composite Wood MACT (40 CFR 63, Subpart DDDDD).

Mr. Steve Moser of the DAQ's Winston-Salem Regional Office provided an initial review of the permit application on August 24, 2006. Mr. Moser also reviewed the draft Permit No. 05052T21 and provided several comments via email on August 31, 2006. As a result of Mr. Moser's input, opacity monitoring requirements for the wood-fired boiler were revised, opacity monitoring requirements for the extrusion processes were removed entirely, and monthly inspection requirements were added to all processes involving the use of VOC-containing materials.

II. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Old Page(s)	New Page(s)	Section	Description of Change(s)
Cover	Cover	-	Amend permit revision numbers and issuance/effective dates.
Page 4	Page 4	Sec. 1 – Source Table	Remove asterisk and footnote for spray booth (ID No. ES-0033) regarding the Permit Shield. Emission unit will be covered under the permit shield upon issuance of the significant modification.
Page 5	Page 5	Sec. 2.1 A., Table	<ul style="list-style-type: none"> – Remove reference to odor requirements. – Add reference to existing TAP requirements.
Page 5	Page 5	<i>Former Sec. 2.1 A.1. c. (Remove)</i>	Remove testing requirement. <u>The boiler was tested for particulate matter on February 20, 2004 and the results have been submitted and approved.</u>
Page 6	N/A	<i>Former Sec. 2.1 A.4. (Remove)</i>	Remove odor requirements from the boiler. Odor issues are not expected to result from wood combustion at the boiler.
Page 6	Page 6	Sec. 2.1 A.3. c.	<ul style="list-style-type: none"> – Revise monitoring to allow three (3) days of missed observations. This is consistent with current DAQ protocol. – Remove requirement to establish “normal” visible emissions from the source. This task should be completed.
Page 7	Page 7	Sec. 2.1 B., Table	<ul style="list-style-type: none"> – Remove opacity/visible emission requirements (15A NCAC 2D .0521). – Revise regulatory basis of the PSD Avoidance Conditions from 15A NCAC 2D .0530 to 15A NCAC 2Q .0317. – Add reference to new HAP limitation/MACT Avoidance conditions.
Page 8	N/A	<i>Former Sec. 2.1 B.1. (Remove)</i>	Remove visible emission requirements from the source. This rule is applicable to industrial processes from which visible emissions can, “reasonable be expected to occur.” Visible emissions are not expected from extrusion process. This is consistent with the treatment of other extrusion processes throughout the State.
Page 9	Page 7	Sec. 2.1 B.1. d.	Change reporting requirement from quarterly to semiannual. This is consistent with current DAQ protocol.
Page 9	Page 7	Sec. 2.1 B.1. e.	Remove requirement to retain records for three years. <i>Per General Condition O, all records must be retained for a period of five years.</i>
Page 10	Page 9	Sec. 2.1 C.2. d.	Remove requirement to establish “normal” visible emissions from the source. This task should be completed.
Page 11	Page 10	Sec. 2.1 D., Table	<ul style="list-style-type: none"> – Add reference to state-enforceable odor requirement. – Add reference to new HAP limitation/MACT Avoidance conditions.
Page 12	Page 11	Sec. 2.1 D.2. c.	Remove requirement to establish “normal” visible emissions from the source. This task should be completed.
N/A	Page 11	Sec. 2.1 D.3. <i>(New Section)</i>	Add state-enforceable odor requirement.
N/A	Pages 12-13	Sec. 2.2 A.1. <i>(New Section)</i>	Add MACT Avoidance Conditions.
Page 15	Pages 13-14	Sec. 2.2 A.2.	<ul style="list-style-type: none"> – Move VOC Work Practice Requirement to new “Multiple Sources” Section that <i>does not include the wood waste boiler</i>. This rule does NOT apply to the boiler. – Add monitoring/recordkeeping/reporting requirements to the VOC work practice rules. This is consistent with current DAQ protocol.

Old Page(s)	New Page(s)	Section	Description of Change(s)
Page 17	Page 17	Sec. 2.2 C.1. d.	Remove requirement to retain records for two years. <i>Per General Condition O, all records must be retained for a period of five years.</i>
Page 17	Page 17	Sec. 2.2 C.1. e.	Change reporting requirement from quarterly to semiannual. This is consistent with current DAQ protocol.
Page 19	Page 20	General Condition I.B.	Update condition to be consistent with current DAQ protocol.
Page 20	Page 21	General Condition P.	Change compliance certification date from January 30th to March 1st to be consistent with current DAQ protocol.
Pages 26-28	N/A	Part II	Remove Part II from permit. All notifications required pursuant to Specific Condition Nos. 2, 3, and 4 should be completed.

III. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. On its latest inspection, conducted on November 2, 2005 by Mr. Steve Moser of the DAQ's Winston-Salem Regional Office (WSRO), the facility was found to be in compliance with all applicable requirements and to meet the proposed MACT Avoidance Conditions as detailed in the following regulatory review.

IV. Regulatory Review – Limitations for Multiple Emission Units:

- A. **Three Compo machines (ID Nos. ES-0080, ES-0082, and ES-0084);
Two extrusion machines (ID Nos. ES-0070 and ES-0072);
Twenty-one (21) filter-type spray booths installed on a picture frame finishing operation (ID Nos. ES-0003, ES-0005, ES-0007, ES-0009, ES-0011, ES-0013, ES-0015, ES-0017, ES-0019, ES-0021, ES-0027, ES-0031, ES-0033, ES-0050, ES-0052, ES-0054, ES-0056, ES-0058, ES-0060, ES-0062, and ES-0064); and
One steam-heated drying oven (ID No. 0023)**

1. 15A NCAC 2Q. 0317: AVOIDANCE CONDITIONS – LIMITATION TO AVOID BEING MAJOR FOR HAZARDOUS AIR POLLUTANTS [Avoidance of 15A NCAC 2D .1111]

T.I Industries is an existing major source of HAP. Potential sources of HAP include combustion, composite, and finishing operations, as summarized in the following table:

Emission Source(s)*	Potential Emissions Summary	
	Individual HAP	Combined HAP
Wood-Fired Boiler (14.4 MMBtu/hr) <i>Description: Potential HAP emissions from combustion. Use AP-42 emission factors to estimate potential emissions.</i>	<u>Largest Individual HAP Emissions:</u> HCl: 1.17 tpy Formaldehyde: 0.27 tpy Benzene: 0.26 tpy Acrolein: 0.25 tpy	Less than 2.5 tpy
Spray Booths and Drying Oven <i>Description: Potential volatile organic HAP (VHAP) from finishing operations. Assume all solvents in coatings are emitted.</i>	<u>Largest Individual HAP Emissions:</u> VHAP, including toluene, xylene, and ethylbenzene. Based on the composition of the coatings, potential emissions of any individual HAP could exceed 10 tpy.	Greater than 25 tpy

<p>Compo Machines and Extrusion Machines**</p> <p><i>Description: Potential VHAP emissions from composite operations. Assume all solvents in wood putties and composites are emitted.</i></p>	<p>Largest Individual HAP Emissions: VHAP, including toluene, xylene, and ethylbenzene. Based on the composition of the putties/composites, potential emissions of any individual HAP could exceed 10 tpy.</p>	<p>Greater than 25 tpy</p>
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* Wood drying kilns (**ID Nos. IKWD-1 through -6**) and small LPG-fired combustion sources also have the potential to emit small quantities of HAP. MACT avoidance limits shall be set slightly below the major source thresholds (10 tpy/25 tpy) to avoid having to track HAP emissions from these sources.

** The compo machines and extrusion machines are not currently housed or operated at the Lexington facility. However, the emission units shall remain in the permit, and be included in the MACT Avoidance conditions.

While T.I. Industries has the potential to emit HAP above the major source thresholds, the company opts to use coatings with low HAP-concentrations, and has reduced actual HAP emissions to well below 10 tpy for all individual HAPs and 25 tpy for all HAP combined. In 2005, T.I. Industry estimates that actual, facility-wide HAP emissions were less than 5 tons.

T.I. Industries is requesting federally-enforceable HAP emissions limitations to be classified as a “synthetic minor” source of HAP, and to avoid applicability of various MACT standards including the Plywood and Wood Composites MACT (63-Subpart DDDD) and the Boiler MACT (63-Subpart DDDDD). The MACT Avoidance emissions limitations are provided below:

a. INDIVIDUAL HAP EMISSIONS LIMITATION. Emissions of any individual HAP from the finishing and composite operations shall be limited to less than 9.5 tons for any consecutive 12-month period.

Explanation: As shown in the table above, potential emissions of all individual HAP from wood combustion are less than the 10-tpy major source threshold. Further, potential emissions of all volatile organic HAP (VHAP) that could also potentially be emitted from the finishing/composite operations are well below 0.5 tpy.¹ By limiting HAP emissions from the finishing/composite operations to less than 9.5 tpy (i.e., 10 tpy less 0.5 tpy), DAQ is ensuring that major source thresholds shall not be exceeded, and simplifies recordkeeping/monitoring/reporting requirements by removing combustion emissions from the limitation.

IF EMISSIONS OF ANY INDIVIDUAL HAP FROM THE AFFECTED FINISHING/COMPOSITE OPERATIONS EXCEED 9.5 TONS DURING ANY CONSECUTIVE 12-MONTH PERIOD, THE PERMITTEE SHALL BE DEEMED IN NON-COMPLIANCE WITH 15A NCAC 2D .1111.

b. COMBINED HAP EMISSIONS LIMITATION. Combined HAP emissions from the finishing and composite operations shall be limited to less than 22.5 tons for any consecutive 12-month period.

Explanation: As shown in the table above, potential combined HAP emissions from wood combustion are less than 2.5 tpy. By limiting HAP emissions from the finishing/composite operations to less than 22.5 tpy (i.e., 25 tpy less 2.5 tpy), DAQ is ensuring that major source thresholds shall not be exceeded, and simplifies recordkeeping/monitoring/reporting requirements by removing combustion emissions from the limitation.

IF EMISSIONS OF TOTAL, COMBINED HAP FROM THE AFFECTED FINISHING/COMPOSITE OPERATIONS EXCEED 22.5 TONS DURING ANY CONSECUTIVE 12-MONTH PERIOD, THE PERMITTEE SHALL BE DEEMED IN NON-COMPLIANCE WITH 15A NCAC 2D .1111.

Monitoring/ Recordkeeping

T.I. Industries will be required to monitor and record the monthly usage rates of all coatings at the finishing operations and wood putties at the composite operations, along with material characteristics including densities

¹ HCl is not a volatile organic HAP, and it is not anticipated that HCl emissions would result from composite or finishing operations.

and HAP concentrations. Once per calendar month, the Permittee shall be required to calculate (1) emissions of all individual HAP from the finishing/composite operations during the previous calendar month; and (2) 12-month rolling emissions of total, combined HAP.

V. Title V Permit History:

The following list provides a very brief summary of Title V permit revisions for this facility:

<u>Permit No.</u>	<u>Issuance Date</u>	<u>Description of Revision</u>
05052T18	September 2002	Initial Title V permit.
05052T19	March 2003	Per WSRO request, visible emission observation requirement for the wood-fired boiler (ID No. ES-1000) are increased from weekly to daily.
05052T20	May 2003	Authorization to install a new spray paint booth (ID No. ES-0033).

VI. Recommendations

The permit modification application for T.I. Industries of Lexington, Davidson County, North Carolina has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources.

Issue Permit No. 05052T21.