

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: **date, 2008**

Region: Mooresville Regional Office
County: Stanly
NC Facility ID: 8400016
Inspector's Name: Jim Westmoreland
Date of Last Inspection: 06/27/2007
Compliance Code: C/In Compliance With
 Procedural Reqr

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Facility Data | | | Permit Applicability (this application only) | | |
| Applicant (Facility's Name): IAC Albemarle, LLC. Facility Address: IAC Albemarle, LLC. 313 Bethany Road Albemarle, NC 28001 SIC: 2273 / Carpets And Rugs NAICS: 31411 / Carpet and Rug Mills Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V | | | SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other: | | |
| Contact Data | | | Application Data | | |
| Facility Contact | Authorized Contact | Technical Contact | Application Number: 8400016.07B Date Received: 11/19/2007 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 05825/T09 Existing Permit Issue Date: 11/26/2007 Existing Permit Expiration Date: 08/31/2008 | | |
| Gerald Safrit Plant Engineer (704) 983-8334 PO Box 580 Albemarle, NC 28002 | Todd Brandon Plant Manager (704) 983-8302 PO Box 580 Albemarle, NC 28002 | Don Edwards Technical Manager (704) 983-8317 PO Box 580 Albemarle, NC 28002 | | | |
| Review Engineer: Mark Cuilla Review Engineer's Signature: Date: date, 2008 | | | Comments / Recommendations: Issue 05825/T10 Permit Issue Date: date, 2008 Permit Expiration Date: date, 2013 | | |

I. Purpose of Application

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**05825T09**) was issued on **November 26, 2007**, and is currently scheduled to expire on **August 31, 2008**. The renewal application was received on **November 19, 2007**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewed permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewed permit has been issued or denied.

In addition to the renewal of this permit, the Permittee is requesting the following modifications/additions/deletions:

1. update the list of insignificant activities to add one 290 gallon diesel fuel storage tank;
2. remove coal and palletized wood from the list of available fuels for boilers (**ID Nos. ES-B1 and ES-B2**) and associated control devices (**ID Nos. CD-MC1 and CD-MC2**); and
3. add the Compliance Assurance Monitoring requirements as necessary.

II. Facility Description

The facility manufactures, dyes, and finishes automobile carpeting.

III. History/Background/Application Chronology

October 15, 1998 – Permit **05825R06** was issued as a State modification for the addition of one continuous dye range to the former Collins and Aikman.

September 4, 2003 – Permit **05825T07** was issued as a first time Title V permit to the former Collins and Aikman.

November 18, 2005 – Permit **05825T08** was issued as a Title V significant modification to add a MACT avoidance condition thus keeping the facility to levels below major source thresholds to the former Collins and Aikman.

November 19, 2007 – Permit application **8400016.07B** was received for the renewal of the existing Title V permit. The application was deemed complete for processing.

November 26, 2007 – Permit **05825T09** was issued as a Title V ownership and name change.

August 29, 2008 – DRAFT permit sent to Permittee, Regional Office, and Title V Coordinator for comment prior to public notice and EPA review.

date, 2008 – DRAFT permit sent to 30-day public notice and 45-day EPA review.

IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

| Page(s) | Section | Description of Change(s) |
|------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment | Insignificant activities | -amended permit revision number -added ID Nos. where needed -added source per Permittee request |
| Cover | - | -amended permit revision numbers and all dates -corrected facility mailing address |
| All | Header | -amended permit revision number |
| 3-4 | Equipment table | -removed reference to coal and pelletized wood from B1 and B2 -removed associated control devices CD-1MC and CD-2MC -verified CD-BH1 square footage size -clarified description of CD-CB1 and CD-AB1 |
| - | 2.1 A (old) | -separated Section into two (one each for B1-B2 and B3) for clarity |
| 4-5 | 2.1 A (new) | -modified equipment description to remove fuel types -created Section for B1-B2 with appropriate permit conditions for remaining fuel types -removed unnecessary permit conditions associated with removed fuel types |

| Page(s) | Section | Description of Change(s) |
|---------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | 2.1 B (table) | -modified equipment description -created Section for B3 with appropriate permit conditions for each fuel type -added appropriate conditions for clarity |
| 6-8 | 2.1 B.1-2 | -added ID Nos. and updated shell language |
| 8-9 | 2.1 B.3 | -added permit condition for visible emissions |
| 9-12 | 2.1 B.4 | -simplified BACT condition by combining testing language and reorganizing existing testing requirements -added testing requirement dates for new permit term -added ID Nos. and updated shell language |
| 13-14 | 2.1 B.5 | -added permit condition for CAM |
| 15 | 2.1 C 2.1 C.1.a 2.1 C.1.b 2.1 C.1.c 2.1 C.2.a | -renumbered Section -updated shell language -corrected cross reference -updated shell language -updated shell language |
| 16 | 2.1 C.2.b 2.1 C.2.c 2.1 C.3.b 2.1 C.3.c 2.1 D | -corrected cross reference -updated shell language -corrected cross reference -updated shell language -renumbered paragraph and amended equipment description |
| 17 | 2.1 D.1.a 2.1 D.1.b 2.1 D.1.c | -updated shell language -corrected cross reference -updated shell language and added ID Nos. |
| 18 | 2.1 D.2.b 2.1 D.2.c | -corrected cross reference -updated shell language |
| 19 | 2.1 D.3.b 2.1 D.3.c 2.1 D.3.d | -corrected cross reference -updated shell language and added ID Nos. -updated shell language |
| 20 | 2.2 A (table) | -clarified emission limits |
| 22 | 2.2 A.4.a 2.2 A.4.b 2.2 A.4.c | -clarified emission limits -added ID Nos. -updated shell language |
| 23 | 2.2 A.5 | -updated shell language and added ID Nos. -added paragraph for CAM nonapplicability for specified sources |
| 24-34 | General Conditions | -updated shell conditions with V2.19 |

The following table indicates the modifications to ESM as a result of this permit renewal:

| Current Description | Change resulting from permit renewal |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Boiler #1 (77 million Btu per hour industrial boiler; Primarily fires #2 fuel oil and natural gas but is capable of burning coal and pelletized wood waste; ID No. ES-B1) | <i>One natural gas/No. 2 fuel oil-fired boiler (77 million Btu per hour maximum heat input capacity; Boiler #1; ID No. ES-B1)</i> |
| Boiler #2 (77 million Btu per hour industrial boiler; Primarily fires #2 fuel oil and natural gas but is capable of burning coal and pelletized wood waste; ID No. ES-B2) | <i>One natural gas/No. 2 fuel oil-fired boiler (77 million Btu per hour maximum heat input capacity; Boiler #2; ID No. ES-B2)</i> |

| Current Description | Change resulting from permit renewal |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| One multicyclone (60 nine-inch diameter tubes; ID No. CD-MC1) | <i>End-dated per Permittee request</i> |
| One multicyclone (60 nine-inch diameter tubes; ID No. CD-MC2) | <i>End-dated per Permittee request</i> |
| Jet Pulse bag house (13,000 square feet of filter area; ID No. CD-BH-1) | <i>One jet pulse bagfilter (13,500 square feet of filter area; ID No. CD-BH-1)</i> |
| NA | <i>One 290 gallon diesel fuel tank (ID No. I-6.2)</i> |

V. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
15A NCAC 2D .0504, Particulates from Wood burning Indirect Heat Exchangers
15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 2D .0521, Control of Visible Emissions
15A NCAC 2D .0530, Prevention of Significant Deterioration
15A NCAC 2D .0958, Work Practice Standards for Sources of Volatile Organic Compounds
15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 2Q .0317, Avoidance Conditions (for 15A NCAC 2D .1111, Maximum Achievable Control Technology)
15A NCAC 2Q .0711, Permit Requirements for Toxic Air Pollutants
15A NCAC 2Q .0512(a)(1)(B), Permit Shield for Nonapplicable Requirements

A regulatory review for these existing requirements will not be included in this document. However, for documenting permit history, it should be noted that the particulate emission limit of 0.24 pounds per hour (15A NCAC 2D .0503) was derived from the heat inputs of the original permitting of four boilers (**ID Nos. ES-B1 and ES-B2** at 77 million Btu per hour each, **ES-B3** at 117 million Btu per hour, and an **additional boiler**, now removed, at 50 million Btu per hour). The removal of any one of these from the original permitting does not reset the established emission limit.

As a result of this permit renewal, the following regulations have been added:

15A NCAC 2D .0614, Compliance Assurance Monitoring

As a result of this permit renewal, the following permit conditions have been deleted:

15A NCAC 2D .0504, Particulates from Wood Burning Indirect Heat Exchangers
15A NCAC 2Q .0508(p), Alternative Operating Scenarios

VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The current permit includes a permit shield for nonapplicable requirements (Section 2.2 A.5). The Permittee is shielded from applicability of 40 CFR 60, Subpart Db for its boiler (**ID No. ES-B3**). This shield does not apply to future modifications or changes in the method of operation of this boiler. It should be noted that as part of the significant modification to add the MACT avoidance language (see below), EPA noted that the subject boiler (**ID No. ES-B3**) was derated prior to NSPS applicability and requested that DAQ remove the NSPS avoidance condition. The permit condition was removed as requested and the permit shield was added. This permit renewal does not affect this status.

History note. The boiler was originally permitted as a 117 million Btu per hour coal-fired boiler. In order to avoid the applicability of Subpart Db, the Permittee requested that the boiler be limited to less than 100 million Btu per hour heat input rate. To ensure compliance with this requirement the Permittee was limited to a maximum feed water flow rate of less than 180 gallons per minute and a maximum steam load generated of less than 70,000 pounds of steam per hour.

NESHAPS/MACT – The Permittee is currently operating under a voluntary facility-wide emissions cap to remain classified as a Title III minor facility. To ensure compliance with the limitation, the Permittee is required to maintain monthly records of all coal fired in the facility’s boilers (note that with this renewal only **ES-B3** is allowed to fire coal). Monthly emissions of hydrochloric acid shall be calculated from the chlorine content of the coal. Also to ensure compliance with the limitation, the Permittee is required to maintain monthly records of all dyes and coatings processed in its ranges (**ID Nos. ES-CRD1, ES-CRD2, ES-CDR3, ES-CR1, ES-D6, ES-RR4, and RS-RD**). Monthly emissions of hazardous air pollutants shall be determined by calculation of the HAP content of the material and the quantity of material used. Semi-annual reports of the monitoring and recordkeeping activities are required to be submitted. This permit renewal does not affect this status.

PSD – The facility currently operates under two separate PSD conditions. Boiler No. 3 (**ID No. ES-B3**) is required to meet the following “Best Available Control Technology” limitations:

- Sulfur Dioxide – 1.5 pounds per million Btu
- Particulate Matter – 0.05 pounds per million Btu
- Nitrogen Oxides – 0.6 pounds per million Btu
- Flourides – 0.0064 pounds per million Btu
- Sulfuric Acid – 0.021 pounds per million Btu
- Opacity – 20 percent.

Storage silos (**ID Nos. ES-CS1 and ES-AS1**) are required to meet the following “Best Available Control Technology” limitation:

- Particulate Matter – 0.001 pounds per hour each.

This permit renewal does not affect this status; continued compliance is expected.

112(r) – The facility is not currently subject to the 112(r) “Prevention of Accidental Releases” requirements because it does not store any chemicals in amounts greater than the applicability threshold.

CAM – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-control emissions above the major source threshold, and use a control device to meet an applicable standard. The following table indicates the current equipment/control device relationships:

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------|
| Boilers | | | |
| ES-B3 (BACT) | One coal/No. 2 fuel oil-fired spreader stoker boiler (99.5 million Btu per hour maximum heat input capacity; Primarily fires bituminous coal with sulfur content less than 1%; Boiler #3) | CD-BH-1 | One jet pulse bagfilter (13,500 square feet of filter area) |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|------------------------------------|------------------------------|-------------------------------------------------|
| Silos | | | |
| ES-CS1 (BACT) | One coal silo#1 | CD-CB1 | One bagfilter (18 square feet of surface area) |
| ES-AS1 (BACT) | One ash silo #1 | CD-AB1 | One bagfilter (9.7 square feet of surface area) |

In each case, the control equipment is installed for particulate control. The Permittee estimates potential uncontrolled particulate (PM₁₀) emissions from each source as follows:

Boiler (ID No. ES-B3) – Uncontrolled potential particulate emissions are based on maximum heat input rate of 99.5 million Btu per hour at coal heat value of 13,000 Btu per pound, and a stack test emission rate of 0.021 pounds of particulate matter per million Btu (after control). Assuming a bagfilter control efficiency of 98.8%, potential uncontrolled emissions are:

$$99.5 \times 0.021 \times 8760 / (1 - 0.988) / 2000 = 763 \text{ tons per year}$$

This total particulate amount is reasonable in comparison to the DAQ spreadsheets for coal combustion. That spreadsheet indicates the PM₁₀ portion to be approximately 221 tons per year. Therefore, CAM is applicable to this source.

Coal Silo (ID No. ES-CS1) – A review of the information presented as part of the initial Title V permit application indicates a maximum process rate from this source of 31,350 tons per year. The Permittee estimates that 2 pounds of particulate matter are emitted per ton of coal (Company Engineering Factor). This equates to 62,700 pounds of particulate matter per year (31.35 tons per year). Therefore, CAM is not applicable to this source. It should be noted that this total differs from what was presented for this source in the Title V renewal application. The Permittee estimated emissions from this source using the maximum gross heat input rate of the subject boiler, coal heating value per pound, and the particulate emission factor above. The Permittee estimated uncontrolled particulate emissions from this source at 33.5 tons per year. CAM is not applicable using both approaches, although DAQ feels that the maximum process rate usage is more reasonable method of calculation.

Coal Ash Silo (ID No. ES-AS1) – A review of the information presented as part of the initial Title V permit application indicates a maximum process rate from this source of 1,570 tons per year. The Permittee estimates that 30 pounds of particulate matter (10 pounds during ash transfer and 20 pounds during silo loading) are emitted per ton of ash (Company Engineering Factor). This equates to 47,100 pounds of particulate matter per year (23.55 tons per year). Therefore, CAM is not applicable to this source. It should be noted that this total differs from what was presented for this source in the Title V renewal application. The Permittee estimated emissions from this source using the maximum gross heat input rate of the subject boiler, coal heating value per pound, and the particulate emission factor above. The Permittee estimated uncontrolled particulate emissions from this source at 22.6 tons per year. CAM is not applicable using both approaches, although DAQ feels that the maximum process rate usage is more reasonable method of calculation.

The following language has been incorporated into the renewed permit as Section 2.1 B.5 for CAM applicability to the coal-fired boiler:

5. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING

a. *Per 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following.*

b. **Background**

i. Emission Unit. *One coal/No. 2 fuel oil-fired spreader stoker boiler (ID No. ES-B3)*

ii. Applicable Regulation, Emission Limit, and Control Device.

A. Emission Limits/Regulations.

(1) *0.24 pounds per million Btu heat input per 15A NCAC 2D .0503*

(2) *0.05 pounds per million Btu heat input per 15A NCAC 2D .0530*

(3) *20% opacity per 15A NCAC 2D .0521 and 15A NCAC 2D .0530*

B. Control Technology. *One jet pulse bagfilter (ID No. CD-BH-1)*

c. **Monitoring Approach**. *The key element of the monitoring approach for particulate matter, including parameters to be monitored, parameter ranges and performance criteria are presented in the following table.*

| | Indicator 1 |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I. <i>Indicator</i> <i>Measurement Approach</i> | <i>Triboelectric signal.</i> <i>A triboelectric monitor is installed at the baghouse exhaust. An alarm will sound when the signal remains over a preset limit for the selected period of time (delay) to indicate a possible broken filter bag.</i> |
| II. <i>Indicator Range</i> <i>QIP Threshold</i> | <i>An excursion is defined as a triboelectric signal greater than 208 for a period exceeding 309 seconds. However, routine operation may warrant adjustments to this level. Periods of adjustments will be noted in the CAM logbook.</i> <i>None selected</i> |

| | | Indicator 1 |
|----------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>III. Performance Criteria</i> | | |
| <i>A. Date Representativeness</i> | | <i>The data are collected at the emission point – the probe located inside the baghouse exhaust duct. The triboelectric signal can be proportional to the amount of particulate in the exhaust under constant conditions; variables such as particulate diameter, particle charge, and velocity can affect the correlation.</i> |
| <i>B. Verification of Operational Status</i> | | <i>NA</i> |
| <i>C. QA/QC Practices</i> | | <i>The triboelectric monitor has an automated check for electronic drift and dust buildup. The dust buildup check has an alarm point. Periodically, to account for seasonal or other effects and to help ensure continuous compliance, the facility may collect sensor data and adjust the system’s set points based on a statistical analysis of the data; a report of an analysis that results in change in the rolling average, the set point, or the alarm delay will be maintained on site for a period of five-years and be noted in the semi-annual summary reports below.</i> |
| <i>D. Monitoring Frequency</i> | | <i>The triboelectric signal is monitored continuously when the boiler/baghouse are operating.</i> |
| <i>Data Collection Procedures</i> | | <i>The monitor collects one-second data that is processed by the controller to produce one-minute averages that are archived on a computer as a historical data record.</i> |
| <i>Averaging Periods</i> | | <i>The averaging period for the set point is 10-seconds. However, as shown above, this may be periodically adjusted.</i> |

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

- d. *The Permittee shall submit a summary report of all monitoring activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.*

In addition to adding the specific CAM language for this source, Section 2.2 A.5, Permit Shield for Non-applicable Requirements, has been modified to add Paragraph b. as follows to indicate that CAM has been determined not to apply to the silos as noted above:

5. Permit Shield for Nonapplicable Requirements

- b. Pursuant to 15A NCAC 2Q .0512(a)(1)(B) “Permit Shield and Application Shield,” with the issuance of this permit (**05825T10**), the following stipulation of non-applicability has been made:
 - i. 15A NCAC 2D .0614 does not apply to these sources (**ID Nos. ES-CS1 and ES-AS1**) because each source’s potential pre-control emissions do not exceed the major source thresholds for that pollutant [40 CFR 64.2(a)(3)]. Therefore, CAM has been determined to not be applicable to these specific sources or their associated control devices.

VII. Facility Wide Air Toxics

The Permittee is currently subject to Toxic Permit Emission Rates (TPERs) per 15A NCAC 2Q .0711 for acetaldehyde, 1,4-Dioxane, and formaldehyde. A permit to emit any of these pollutants is required prior to exceeding the TPERs. The Permittee is required to keep records of operational information demonstrating that the TPERs are not being exceeded. This permit renewal does not affect this status.

VIII. Facility Emissions Review

There is no change in emissions for this renewal.

The following table represents the latest years emission inventory from the facility:

| Pollutant(s) | 2006 Actual Emissions (tpy) | 2007 Actual Emissions (tpy) |
|------------------|-----------------------------|-----------------------------|
| CO | 40.03 | 38.74 |
| NO _x | 85.06 | 66.74 |
| PM ₁₀ | 3.08 | 2.91 |
| SO ₂ | 200.85 | 140.04 |
| VOC | 92.34 | 94.70 |
| Total HAP/TAP | 5.88 | 5.56 |

IX. Stipulation Review

Mooresville Regional Office did not present any required stipulation modifications. They did note that BACT applies and that CAM should be addressed. They did recommend issuance of the renewed permit and requested a DRAFT prior to issuance.

X. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. South Carolina is an affected State and Mecklenburg and Forsyth Counties are affected Local Programs within 50 miles of this facility.

XI. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this renewal.

A consistency determination was not required for this renewal.

MRO recommends issuance of the permit and was presented with a DRAFT permit prior to notice and issuance (see Section III of this Document).

RCO concurs with MRO's recommendation to issue the renewed air permit.