

Facility Name: **Shaw Industries Group, Inc. Plant 04**

City: Dalton

County: Whitfield

AIRS #: 04-13-313-00084

Application #: 16500

Date SIP Application Received: November 28, 2005

Date Title V Application Received: N/a

Permit No: 2273-313-0084-V-01-5

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and operate and Section 502(b)(10) change to the Part 70 source. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1), 391-3-1-.03(2), and 391-3-1-.03(10). of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the permit and is presented in the same general order as the permit amendment. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

I. Facility Description

A. Existing Permits

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
2273-313-0084-V-01-0	03/18/02	X	
2273-313-0084-V-01-1	04/17/03	X	
2273-313-0084-V-01-2	04/17/03	X	
2273-313-0084-V-01-4	02/03/05	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
2273-313-0084-V-01-0	Initial Title V Permit
2273-313-0084-V-01-1	Revision to PSD Avoidance conditions for SO2 emissions from boilers
2273-313-0084-V-01-2	Adding flexibility to burn propane as a backup fuel in process heaters and dryers
2273-313-0084-V-01-4	Construction/operation of three open spray tower wet scrubbers to control emissions from three existing coal-fired boilers (Replaced Amendment No. 2273-313-0084-V-01-3 due to changes made after public comment period)

B. Regulatory Status

1. PSD/NSR/RACT

This facility is a major source under PSD because it has potential to emit of PSD-regulated pollutants greater than 250 tpy; it is not one of the 28 named source categories under PSD.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes	X		
PM ₁₀	Yes	X		
SO ₂	Yes	X		
VOC	Yes	X		
NO _x	Yes	X		
CO	Yes	X		
TRS	No			
H ₂ S	No			
Individual HAP	Yes			X
Total HAPs	Yes			X

II. Proposed Modification

A. Description of Modification

The purpose of the project is to replace major components of the existing Kuster dyeline (source code CD03) and install a new high efficiency water heater (new source code WH01) for rinsing dyed carpet.

For CD03, Shaw will replace the existing natural gas and propane fired 14 MMBtu/hr zone dryer with a more efficient 20.6 MMBtu/hr dryer and extend the length of both the dye application area and dryer section. Fuel types for the dryer will remain the same.

The water heater, WH01, will be natural gas fired with a heat input rate of 50 MMBtu/hr and will be used to more quickly respond to process demands for hot water for rinsing dyed carpet.

B. Emissions Change

The PTE shown in Table 4 for NO_x is for the combined modified dyeline and new water heater burning natural gas exclusively (dyeline has propane backup). The water heater will be installed with low NO_x burners as a voluntary reduction action (no credit is being taken since performance data for the unit is not available). The water heater will not be installed with propane backup. Since heat transfer efficiency will be improved versus normal boiler technology, actual overall NO_x emissions from the plant are expected to remain the same or decrease in the future.

Table 4: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Actual Emissions Increase (Decrease) (tpy)	Potential Emissions Increase (Decrease) (tpy)
PM	Yes	0	0
PM ₁₀	Yes	0	0
SO ₂	Yes	0	0
VOC	Yes	4	7
NO _x	Yes	18	25
CO	Yes	0	0
TRS	No	N/a	N/a
H ₂ S	No	N/a	N/a
Individual HAP	Yes	0	0
Total HAPs	Yes	0	0

C. Title I Modification

- PSD/NSR Applicability

This facility is a major source under PSD because it has potential to emit of PSD-regulated pollutants greater than 250 tpy, but it is not one of the 28 named source categories under PSD. However, the proposed increase in

emissions for NOx and VOC do not exceed PSD significance levels, so this modification does not trigger PSD or NSR applicability or review.

- NSPS Modification

This modification does not involve a physical change or change in the method of operation to an existing emissions unit or affected source that would result in that unit becoming subject to NSPS. The addition of a new NSPS emissions unit or affected source does not qualify as a Title I modification, but the new water heater is not subject to NSPS Subpart Dc (See Section IV.C of this document for further explanation).

- NESHAP Modification

This modification is not subject to any NESHAP (Part 61) provisions. MACT Rules (Part 63) do not have modification provisions, and this modification does not include any MACT requirements.

III. Facility Wide Requirements

None applicable for this modification.

IV. Regulated Equipment Requirements

A. Brief Process Description

Plant #4 manufactures tufted carpet by tufting nylon, polyester or polypropylene yarn through a polypropylene primary backing, dyeing the carpet, applying a coating to the primary backing, applying a secondary backing when called for and shearing the finished carpet. Yarn is not produced at Plant 4. It is delivered to the plant, stored in the plant, and used when required. Plant 4 has 11 atmospheric dye becks, which are used on a limited basis (listed in application as a insignificant sources based on emission levels), two Kuster continuous dye ranges polyester and nylon carpets and one continuous dye range for scouring polypropylene carpets. After the carpet is dyed, a stain blocker is applied, then a scotch guard is applied. Finally, a latex backing is applied to the carpet; the carpet is sheared, rolled up, and marked for storage or delivery. The latex backing contains styrene and 1,3 butadiene. Lint from the shearing process is controlled by exhausting part of the lint laden air stream through a multiclone collector located outside and the other part of the line through a bag filter located inside the building. Steam required for the processes is provided by five boilers; two natural gas/No. 2 fuel oil fired boilers (source codes BL07 and BL08) and three coal fired boilers (source codes BL04, BL05 and BL06), which are equipped with multiclone ash collection with 94 % collection efficiency (source codes PC01-03).

B. Equipment List for the New or Modified Process(es)

Emission Units		Specific Li mitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
WH01	Water Heater	391-3-1-.02(2)(b), 391-3-1-.02(2)(d), 391-3-1-.02(2)(g)	3.2.11, 3.4.6	None	None

C. Equipment & Rule Applicability

Emission and Operating Caps –

No new emission and operating caps were added through this modification.

Applicable Rules and Regulations -

40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This NSPS is potentially applicable to the new water heater since it will be built after June 9, 1989, and has a heat input capacity within the range of 10 to 100 MMBtu/hr. However, Shaw provided an EPA guidance document (June 1996 Applicability Determination #9700033 from EPA Region IV to North Carolina Dept. of Environment, Health, and Natural Resources) that states: “Facilities are not subject to Subpart Dc if heat transfer occurs as the result of direct contact between combustion gases and the material being heated.” The direct contact hot water heater being installed at Shaw Plant 04 fits this description and, therefore, is not subject to the regulation or any of its rules.

Georgia Rule 391-3-1-.02(2)(d) (Rule (b) is subsumed)

The new water heater burns natural gas and fits the definition of “fuel-burning equipment”. The visible emissions limit in Rule (d) is more stringent, so it subsumes the limit in Rule (b).

Rule(d) also contains the limit for particulate matter emissions from fuel-burning equipment.

Georgia Rule 391-3-1-.03(2)(c) (Rule (g) is subsumed)

The operating permit allows certain fuels, and the applicant stated that the water heater would only burn natural gas (no propane backup proposed). Natural gas contains less than 2.5% sulfur, by weight, as required by Rule (g), so Rule (g) is subsumed in allowing only natural gas to be burned in the water heater.

All state rules and regulations that currently apply to the existing carpet dyeline CD03 will continue to apply after the modification.

D. Compliance Status

The facility is operating in compliance with all applicable air quality rules and regulations.

E. Operational Flexibility

None applicable.

F. Permit Conditions

New Condition No. 3.2.11 was added to allow only natural gas as fuel for the new water heater (Rule (g) subsumed). New Condition No. 3.4.6 was added to include Georgia Rules (b) and (d) as they apply to WH01.

V. Testing Requirements (with Associated Record Keeping and Reporting)

None applicable for this modification.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

None applicable for this modification.

VII. Other Record Keeping and Reporting Requirements

None applicable for this modification.

VIII. Specific Requirements

A. Operational Flexibility: Not applicable.

B. Alternative Requirements: Not applicable.

C. Insignificant Activities: Not applicable.

D. Temporary Sources: Not applicable.

E. Short-Term Activities: Not applicable.

F. Compliance Schedule/Progress Reports:

The facility is operating in compliance with all applicable air quality rules and regulations.

G. Emissions Trading: Not applicable.

H. Acid Rain Requirements: Not applicable.

I. Prevention of Accidental Releases: Not applicable.

J. Stratospheric Ozone Protection Requirements: Not applicable.

K. Pollution Prevention: Not applicable.

L. Specific Conditions

This facility might or might not have emission units subject to Sections 8.18, 8.19, 8.20, 8.21, 8.22, 8.23, 8.24, and 8.25 which would qualify as generic emission units under Section 4.20 or the Title V Application. This type of emission unit typically does not get specifically identified in Parts 2.0 or 3.0 of the Title V Permit. Therefore, Sections 8.18 through 8.25 are included in the Title V Permit to ensure that emission units which are allowed to be listed in Section 4.20 or the application have all applicable requirements included in the Title V Permit (See White Paper #1 on Generic Grouping of Emissions Units and Activities). If the facility does not have any such emission units at the time of initial permit issuance, these conditions are still needed because they allow the facility to add any such emission unit(s) without having to reopen or amend the permit.