

PUBLIC NOTICE

April 6, 2015

PROPOSED APPROVAL FOR PERMIT TO CONSTRUCT FOR MODIFICATIONS AT THE R. J. REYNOLDS TOBACCO COMPANY TOBACCOVILLE FACILITY PURSUANT TO SEC. 3D-0530 OF THE FORSYTH COUNTY AIR QUALITY TECHNICAL CODE, ENTITLED “PREVENTION OF SIGNIFICANT DETERIORATION”

R. J. Reynolds Tobacco Company has applied to the Forsyth County Office of Environmental Assistance and Protection for approval to construct and operate tobacco manufacturing equipment at its Tobacoville Facility in Tobacoville, North Carolina. The application was submitted pursuant to Sec. 3D-0530 of the Forsyth County Air Quality Technical Code, entitled *Prevention of Significant Deterioration*.

Forsyth County Office of Environmental Assistance and Protection has reviewed the application and has made a preliminary determination that the facility can be constructed in compliance with all applicable federal and county air quality requirements. Notice is hereby given to the public for an opportunity to review and comment on the preliminary determination drafted by this Office. Emissions of volatile organic compounds will be controlled using Best Available Control Technology as determined by this Office according to U.S. EPA guidelines. Compliance with the National Ambient Air Quality Standards and the PSD increment has been demonstrated. No significant impacts on soils, vegetation, or visibility are expected from the operation of the facility.

This Office will issue a final determination with the final Air Quality Permit in accordance with the conditions of the draft permit, unless there is a public response which results in a different decision or significant change in the permit.

Additional information regarding the preliminary determination may be obtained from the Forsyth County Office of Environmental Assistance and Protection, 201 N. Chestnut Street, Winston-Salem, North Carolina, 27101. Telephone: (336) 703-2440. Persons desiring to comment on these proceedings or who request a public hearing must write to Mr. Minor Barnette, Director, on or before May 6, 2015.

Peter B. Lloyd, Ph.D., P.E., Manager
Compliance Assistance and Permitting Division

**Pre-Construction Review
and
Preliminary Determination**

for

R.J. Reynolds Tobacco Company
Tobacoville Facility
Tobacoville, NC

Prepared by
The Forsyth County Office of Environmental Assistance and Protection
April 6, 2015

Technical Contacts:

Robert O. Russ - Project Coordinator and Compliance Review/Permit
Peter B. Lloyd - Internal Review

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Appendix A - R. J. Reynolds Tobacco Company PSD Air Permit Application

A1: Initial Application Received 11-25-2014

A2: Revised Application Received 1/2/2015

A3: Local Air Toxics Modeling Demonstration

Appendix B - Draft Permit: DFRAFT 00745-TV-33

Appendix C - Correspondence

Appendix D - Supplemental Information

Appendix E - Public Notice and Related Correspondence

1. SUMMARY

On November 25, 2014, R. J. Reynolds Tobacco Company (RJRT) submitted to the Forsyth County Office of Environmental Assistance and Protection (Office), for its review and approval, an air permit application proposing to modify its cigarette manufacturing facility in Tobaccoville, Forsyth County, North Carolina. On December 19, 2014, RJRT submitted a revised application that included some added information and more refined analysis. Both applications were prepared by the URS Corporation operating out of Greenville, South Carolina and Morrisville, North Carolina. The application is for a permit to construct. RJRT plans to submit a separate application for a Title V operating permit at a later date - within 12 months after beginning operation of the modified facility.

RJRT, the second largest tobacco company in the United States, is a wholly owned subsidiary of Reynolds American, Inc. (RAI). In July 2014, RAI and Lorillard, Inc. (Lorillard) announced an agreement for RAI to acquire Lorillard, the third largest manufacturer of cigarettes in the United States. Cigarette manufacturing operations will be consolidated to RJRT's Tobaccoville facility. Most current Lorillard cigarette products differ from current RJRT cigarette products in that the Lorillard cigarettes use alcohol-based flavorings while the current RJRT cigarette products do not. The purpose of the proposed modification project is to facilitate the manufacturing of Lorillard cigarette brands at the RJRT Tobaccoville facility.

The RJRT Tobaccoville facility was originally permitted in 1983 subject to Prevention of Significant Deterioration (PSD) regulations. The facility's current permit, 00745-TV-32, includes controls or work practices defined as Best Available Control Technology (BACT) requirements for PM and VOC.

The facility is a Part 70 major source with uncontrolled potential emissions of PM₁₀, sulfur dioxide (SO₂), carbon monoxide (CO), volatile organic compounds (VOC) and nitrogen oxides (NO_x) being greater than 100 tons per year (100 TPY). The facility is a synthetic minor area source with respect to Part 63 Hazardous Air Pollutants (HAPs). The facility's permit includes language limiting total combined HAP emissions to no more than 25 tons for any 12-month period and limiting individual HAP emissions to no more than 10 tons for any 12-month period.

1.1 The Proposed Project

The proposed modification project consists of the following primary activities which are described in more detail in Section 4 of this report:

- Adding two new casing drums using volatile flavorings (ES-14);
- Modifying six top dressing drums to use ethanol-based flavorings (ES-15);
- Addition of new and replacement of some filter making equipment resulting in increased capacity (ES-18); and
- Addition of new and replacement of some cigarette making equipment resulting in increased capacity (ES-19).

1.2 PSD Applicability

The applicant compared the changes in emissions from the facility as a result of manufacturing Lorillard products to the PSD significant emissions thresholds to determine which pollutants

would require permitting under the PSD program. The proposed project includes modifying several existing emissions units and debottlenecking other emission units resulting in changes to the emissions of VOC, PM, SO₂, CO, and NO_x. As is explained in more detail later in this document in Section 6.2, the proposed project was determined to be subject to PSD permitting requirements for the pollutant VOC. Forsyth County, North Carolina, was re-designated to an attainment area for the 8-hour ozone standard on April 15, 2008. The RJRT Tobaccoville facility is subject to processing under Rule 3D .0530 "Prevention of Significant Deterioration" and all other applicable rules of the Forsyth County Air Quality Control Ordinance and Technical Code as well as any applicable federal regulations.

As part of the PSD regulations, in order to obtain an air permit, the applicant must:

- Conduct an ambient air quality analysis to demonstrate that emissions from the proposed project will not violate the allowable PSD ambient air increments nor the National Ambient Air Quality Standards (NAAQS);
- Analyze impacts to soils, vegetation, and visibility;
- Determine that there will be no adverse impact on any PSD Class I area;
- Facilitate adequate public participation including a 30-day public comment period; and
- Apply the best available control technology (BACT) on a case-by-case basis to each emission source that will emit any amount of a significant pollutant, in this case VOC.

1.3 Proposed BACT

The applicant's BACT selection approach for VOC involved analysis of five groups of VOC sources at the Tobaccoville facility. This analysis is described in more detail in Sections 6.7 through 6.11 of this report.

1. New Final Casing Drums - The applicant has proposed that these emissions be uncontrolled with a BACT VOC emissions limit of 0.954 lb/hr due to the lack of any control technologies that were both technically and economically viable

2. New Conveyors for ES-1, ES-10, ES-14 and ES-21 - Due to the lack of any control technologies that were both technically and economically viable, the applicant has proposed that these emissions sources be uncontrolled with BACT VOC emissions limits of 0.60 lb/hr for the ES-1 conveyors, 0.20 lb/hr for the ES-10 conveyors, 0.45 lb/hr for the ES-14 conveyors, and 0.05 lb/hr for the ES-21 conveyors.

3. Top Dressing Drums and Hooded Conveyors Immediately Downstream (Ethanol-Based Top Dressing Materials) - The applicant has proposed that these emissions be controlled by a thermal incinerator to achieve an emission limit of 0.54 lb VOC/ton tobacco on an ethanol basis, based on 98% control of evaporative losses from ethanol-based processes. The applicant proposes monitoring the combustion temperature within the thermal incinerator to demonstrate compliance with the BACT limit. The final selection of the thermal incinerator technology has not yet been established. *NOTE: The proposed BACT for manufacturing current RJRT tobacco products is the use of non-ethanol-based top dressing materials in the top dressing drums (ES-15), consistent with the 1983 BACT determination for Tobaccoville.*

4. Fugitive Ethanol and VOC Emissions - Due to the lack of any control technologies that were both technically and economically viable, the applicant proposed "no control" as BACT for fugitive ethanol and VOC emissions. The low overall fugitive VOC concentration combined with very high air flow rates in the collection ductwork contributed to no cost effective control technology being found.

5. Insignificant Activities - The applicant identified several VOC sources with very low exhaust air flow rates and minimal VOC emission rates. These sources and their corresponding VOC emissions at maximum production capacity are as follows:

- Modified casing preparation area mix tanks (F-13) = 0.0051 tpy each (primarily propylene glycol),
- New casing preparation area day tanks (F-13) = 0.0033 tpy each (primarily propylene glycol),
- New ingredient mixing and storage area mix tank (F-23) = 0.043 tpy (ethanol),
- New ingredient mixing and storage area hold tank (F-23) = 0.031 tpy (ethanol)
- New ingredient mixing and storage area tote filling (F-23) = 0.029 (ethanol), and
- Two new ethanol storage tanks (F-19 and F-20) = 0.06 tpy each,

Due to the lack of any control technologies that were both technically and economically viable, the applicant proposed "no control" for BACT for these insignificant sources that have negligible emissions.

1.4 BACT Proposal Approved

Based on the information included in the application and on staff research of the U.S. Environmental Protection Agency's (EPA) RACT/BACT/LAER Clearinghouse database (RBLC), as well as other sources of information including other state regulatory agencies, the Director of the Forsyth County Office of Environmental Assistance and Protection has determined BACT for VOC to be as proposed by the applicant.

Subsequent to the review of the PSD construction application and independent research, this Office has made a preliminary determination that the proposed project will comply with all applicable regulations in the Forsyth County Air Quality Technical Code and Control Ordinance including the PSD requirements. Therefore, this Office intends to issue an air permit for the construction of the proposed modification at the RJRT Tobaccoville facility as described herein with the specific permit conditions and emissions limits as included in the draft permit. The draft air permit can be found in Appendix B of this preliminary determination document. This Office plans to issue a construction permit for the modification as proposed pending comments from the public and EPA following a 30-day comment period. At a later date, RJRT plans to submit a related Title V permit application for a Title V operating permit.

2. APPLICANT

The applicant's name and mailing address are as follows:

Johnny K. Cagigas, Vice President of Manufacturing
R. J. Reynolds Tobacco Company
P.O. Box 2959
Winston-Salem, NC 27101

3. PROJECT LOCATION

The proposed modification project will be constructed at the RJRT cigarette manufacturing facility in Tobaccoville, North Carolina. The facility's main entrance is located at the intersection of Doral Drive, South Main Street, and Big Oaks Drive at latitude N 36.255878, and longitude W 80.367934. The facility includes a 2 million square foot technologically advanced cigarette manufacturing plant (Building 851) and a utility plant (Building 854) with three boilers. The facility is situated on a 610 acre landscaped and wooded site. A topographic map of the site and surrounding area can be found in Appendix A of the permit application.

4. PROJECT DESCRIPTION

According to the construction permit application, proposed construction of the project is scheduled to begin in April 1, 2015. RJRT hopes that the completion of construction and subsequent start of operation are will occur as soon as possible after the start of construction, but the exact dates are currently unknown. Once the construction permit is issued, the applicant can begin construction immediately. As stated in the permit application as revised in December 2015, the permit modification will consist of the air emission sources described below.

Table 4-1 - Summary of Changes

	Building 851 ES number																	
	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	21
No Change		x	x															
Equipment Change	x								x				x	x		x	x	x
Increase Throughput	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

	Building 851 F number (Fugitives)						Bldg 854 (Boilers)			
	13	14	16	19	20		23	1	2	3
New				x	x			x		
Equipment Change	x	x	x							
Increase Throughput	x	x	x	x	x			x	x	x

A more detailed description of the modifications to each emission unit is presented in the following sections. A simplified process flow diagram for the project is included in Appendix B of the application.

4.1 ES-1 Tobacco Strip Receiving and Blending

Tobacco strip receiving and blending (ES-1) will be modified by adding conveyors to increase operational flexibility. The conveyor transfer points will be collected (hooded) and routed to a new dust collector for PM control, similar to the existing hoods and dust collectors in ES-1. For the purposes of obtaining the construction permit, all new conveyors are being initially permitted as emission unit ES-22.

The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-1 will remain unchanged after completion of this project.

4.2 ES-2 Reconstituted Tobacco Input

This equipment (reconstituted tobacco input, ES-2) has been physically removed from the Tobaccoville facility.

4.3 ES-3 Recovered Tobacco Input – Regular

Recovered tobacco input – regular (ES-3) will not be modified. There are no anticipated throughput changes to ES-3 to manufacture Lorillard products.

4.4 ES-4 Recovered Tobacco Silo Discharge – Regular

Recovered tobacco silo discharge – regular (ES-4) will not be modified. There are no anticipated throughput changes to ES-4 to manufacture Lorillard products.

4.5 ES-5 Recovered Tobacco Input – Menthol

Recovered tobacco input – menthol (ES-5) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-5 will remain unchanged after completion of this project.

4.6 ES-6 Recovered Tobacco Silo Discharge – Menthol

Recovered tobacco silo discharge – menthol (ES-6) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-6 will remain unchanged after completion of this project.

4.7 ES-7 Recovered Tobacco Conveying

Recovered tobacco conveying (ES-7) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-7 will remain unchanged after completion of this project.

4.8 ES-8 Processed and Recovered Tobacco Input

Processed and recovered tobacco input (ES-8) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-8 will remain unchanged after completion of this project.

4.9 ES-9 Processed Tobacco Conveying

Processed tobacco conveying (ES-9) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-9 will remain unchanged after completion of this project.

4.10 ES-10 Expanded Tobacco Conveying

Expanded tobacco conveying (ES-10) will be modified by adding conveyors to increase operational flexibility. The conveyor transfer points will be collected (hooded) and routed to a new dust collector for PM control, similar to the existing hoods and dust collectors in ES-10. For

the purposes of obtaining the construction permit all new conveyors are being initially permitted as emission unit ES-22.

The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-10 will remain unchanged after completion of this project.

4.11 ES-11 Tobacco Strip Conveying and Blending

Tobacco strip conveying and blending (ES-11) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-11 will remain unchanged after completion of this project.

4.12 ES-12 Tobacco Strip Conveying and Storage

Tobacco strip conveying and storage (ES-12) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-12 will remain unchanged after completion of this project.

4.13 ES-13 Tobacco Strip Conveying to C&D Area

Tobacco strip conveying to the Casing and Drying Area (C&D Area, ES-13) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-13 will remain unchanged after completion of this project.

4.14 ES-14 Tobacco Strip Casing and Drying

Tobacco strip casing and drying (ES-14) will be modified by adding conveyors to increase operational flexibility and adding two new casing drums to facilitate production of Lorillard cigarette brands. The conveyor transfer points will be collected (hooded) and routed to a new dust collector for PM control, similar to the existing hoods and dust collectors in ES-14. For the purposes of obtaining the construction permit all new conveyors are being initially permitted as emission unit ES-22.

The flavorings used on the casing drums will contain some volatiles to allow production of Lorillard cigarette brands. The exhaust streams from each new casing drum will be collected and passed through a roto-clone to reduce particulate and volatile emissions, similar to the existing casing drums and roto-clones in ES-15. For the purposes of obtaining the construction permit the new casing drums are being initially permitted as emission unit ES-22.

The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-14 prior to the new casing drums will remain unchanged after completion of this project.

4.15 ES-15 Tobacco Casing, Cutting and Storage

Tobacco casing, cutting and storage (ES-15) will be modified to allow the six top dressing drums to apply tobacco flavorings formulated using alcohol in addition to the flavorings currently being used at the facility. The Lorillard top-dressings are formulated with either ethanol or rum. If casing is applied to Lorillard products in the casing drums of ES-15, mono propylene glycol is used. Also for Lorillard products, glycerin is added in these casing drums when tobacco is cut for the DIET process.

Each top dressing drum, weigh scale, and associated conveyors (up to the cut filler storage wall) are currently covered to suppress menthol fumes and prevent dust from contaminating the finished tobacco in this area of the building. The existing covers will be replaced with tighter covers and ethanol fumes will be collected for safety reasons (potentially explosive mixture of ethanol and air). New fans will be installed to collect approximately 30% more air by volume from the covers. The collected vent gases will be treated using thermal oxidization to control emissions of ethanol (VOC) prior to discharge into the ambient air. The thermal oxidizer(s) will be natural gas fired with propane backup.

For the purposes of obtaining the construction permit the application of ethanol-based top dressing materials are being initially permitted as emission unit ES-23.

The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-15 will remain unchanged after completion of this project.

4.16 ES-16 Cut Tobacco Silo Discharge

Cut tobacco silo discharge (ES-16) will not be modified. The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-16 will remain unchanged after completion of this project.

4.17 ES-18 Filter Making

Filter making (ES-18) will be modified by replacing existing filter makers with higher capacity filter makers to support manufacturing Lorillard products. The new filter makers will have an additional exhaust system to remove tow dust and airborne plasticizer prior to recirculating the air within the room. Filter adhesives used to manufacture Lorillard products will be applied using the existing equipment.

The annual process throughput (sticks per year) will increase to manufacture Lorillard products. The maximum hourly production (meters/minute) rate for ES-18 will increase after completion of this project.

4.18 ES-19 Cigarette Making

Cigarette making (ES-19) will be modified by replacing six heat removal dust collectors and increasing the air flow to the feed dust collectors to support the cigarette machines. New tipping and seam adhesives to support Lorillard products will be applied through the existing equipment.

The annual process throughput (sticks per year) will increase to manufacture Lorillard products. The maximum hourly production (cigarettes per minute) rate for ES-19 will increase after completion of this project.

4.19 ES-21 Tobacco Expansion Process

The tobacco expansion process (ES-21) will be modified by adding conveyors to create additional operating flexibility in expanded tobacco conveying (ES-10) for the Lorillard products. The conveyor transfer points will be collected (hooded) and routed to a new dust collector, similar to the existing hoods and dust collectors in ES-21. For the purposes of obtaining the construction permit all new conveyors are being initially permitted as emission unit ES-22.

Additional casing materials will be applied in tobacco casing, cutting and storage (ES-15) to allow manufacturing the Lorillard DIET blends. The portion of these casing materials that may volatilize during the tobacco expansion process is expected to be destroyed in the DIET incinerator.

The annual process throughput (tons of dry tobacco per year) will increase to manufacture Lorillard products. The maximum hourly production rate for ES-21 will remain unchanged after completion of this project.

4.20 F-13 Casing Preparation Area

The casing preparation area (F-13) will be modified to prepare Lorillard casing materials. The new final casing drums (ES-14) will require additional pounds of casing materials from the casing preparation area. The maximum hourly production rate for F-13 will remain unchanged after completion of this project.

4.21 F-14 Top Dressing Input System

The top dressing input system (F-14) will be modified to allow segregated tote unloading stations with explosion-proof safety equipment for the ethanol-based Lorillard top dressing materials. The top dressing input system is an insignificant source.

4.22 F-16 Packing Equipment

The packing equipment (F-16) will be modified to match the increased cigarette production. The annual process throughput (sticks per year) will increase to manufacture Lorillard products. The maximum hourly production rate (cigarettes per minute) for F-16 will increase after completion of this project to match cigarettes manufactured in ES-19.

4.23 ES-854-8-1, ES-854-8-2 and ES-854-8-3 Steam Boilers 5, 6 and 7 respectively

The three steam boilers at Tobaccoville (Boilers 5, 6, and 7) will not be modified. The natural gas usage will increase in proportion to the cigarette production increase associated with manufacturing the Lorillard products. The increased natural gas usage was estimated by

applying the average cubic feet of natural gas per ton of production through ES-15 during the baseline period to the projected Lorillard production volume through ES-15.

4.24 ES-22 New Final Casing Drums and New Conveyors

To increase transparency for the purposes of this construction permit application, the new casing drums in ES-14 and the new conveyors in ES-1, ES-10, ES-14, and ES-21 were assigned a temporary emission unit number ES-22. During the Title V operating permit application process following construction, RJRT intends to incorporate these sources into the emission units as described in the previous sections.

4.25 ES-23 New Ethanol-based and Rum-based Top Dressing Materials

To increase transparency for the purposes of this construction permit application, the new ethanol-based and rum-based top dressing materials were assigned a temporary emission unit number ES-23. Both alcohol-based top dressing materials are referred to as ethanol-based top dressing materials throughout the application. During the Title V operating permit application process following construction RJRT intends to incorporate these sources into the emission units as described in the previous sections.

4.26 F-19 and F-20 New Ethanol Storage Tanks

Two new 10,000 gallon ethanol storage tanks will be constructed to store ethanol required for manufacturing Lorillard top dressing materials. The emissions from each storage tank are insignificant.

4.27 F-23 New Ingredient Mixing and Storage

A new ingredient mixing and storage (IMS) area will be constructed to prepare the alcohol-based top dressing materials with the appropriate safety precautions. The emissions from IMS are insignificant.

4.28 Rum Storage

The original application received on 11/25/2014 included the addition of two new 2,000 gallon rum storage tanks (F-21 and F-22) to store rum required for manufacturing Lorillard top dressing materials. In the revised application (received 12/19/2014) the two new 2,000 gallon rum storage tanks are not included. Emission sources F-21 and F-22 are not included in the revised application. The revised application states that rum will be supplied in smaller portable totes or 55 gallon drums. The emissions from each storage tank are insignificant.

5. EMISSIONS ESTIMATES

5.1 New Emission Sources

The maximum emissions from the new conveyors in ES-22 were estimated based on the Title V emission factors at the maximum production rate. The maximum emissions from the new final casing drums in ES-22 were estimated based on the design production capacity and emission factors from Lorillard. The ethanol emissions from the top dressing drums in ES-23 and the residual ethanol released as an indoor fugitive emission in ES-23 were estimated using a mass balance assuming all the applied ethanol is released from the tobacco.

Tobacco products are regulated by the U.S. Food and Drug Administration (FDA) and any changes to product formulations must receive approval from the FDA. This effectively limits the application of final casing materials in the ES-22 final casing drums and ethanol-based top dressing materials in ES-23 to the Lorillard products only.

The maximum emissions for the two new ethanol storage tanks (F-19 and F-20), the new ethanol tanks in F-23, and the F-13 tanks for Lorillard casing materials using propylene glycol were estimated using the USEPA TANKS Program.

The emissions calculated for each new emission source using this approach are presented in Appendix C and Appendix D of the PSD permit application.

5.2 Modified Emission Sources

For the modified emission units ES-18, ES-19, F-13, F-14, and F-16 the emission factors used for the current Title V operating permit were used to estimate the baseline emissions in conjunction with the actual production during the baseline period. Similarly, the projected actual emissions were estimated using the projected actual production along with the Title V permit emission factors.

A summary of the RJRT emission factors for each emission unit from the most recent Title V operating permit application can be found in Appendix C of the PSD permit application. The emissions calculated for each modified emission unit using this approach are also presented in Appendix C and Appendix D of the application.

5.3 Debottlenecked Emission Sources

For the debottlenecked sources the emission factors used for the current Title V operating permit were used to estimate the baseline emissions in conjunction with the actual production during the baseline period. Similarly, the projected actual emissions were estimated using the projected actual production along with the Title V permit emission factors.

A summary of the RJRT emission factors for each emission unit from the most recent Title V operating permit application can be found in Appendix C of the PSD permit application. The

emissions calculated for each emission unit using this approach are presented in Appendix D of the application.

5.4 Particulate Matter Emission Factors

The existing RJRT emission factors for particulate matter (PM) were used for estimating emissions from the new and modified equipment, as well as the projected actual increase in tobacco throughput through other “debottlenecked” equipment.

There is no expected change in PM emission factors from manufacturing Lorillard products because the PM emissions are primarily a function of the unique arrangement of process equipment and control devices at the RJRT Tobaccoville facility.

5.5 Volatile Organic Compound Emission Factors

The RJRT and Lorillard VOC emission factors were evaluated for each type of emission source with emission factors available in Appendix C of the application. The RJRT VOC emission factor for the conditioning drums in ES-01 is nearly 90% higher than the corresponding Lorillard VOC emission factor. Similarly, the RJRT VOC emission factor for DIET (ES-21) is approximately 75% higher than the corresponding Lorillard VOC emission factor.

The RJRT VOC emission factors for the dryers in ES-14 and ES-15 are remarkably similar to the Lorillard VOC emission factors. The RJRT VOC emission factors for tobacco dryers are 2% lower for ES-14 and 6% higher for ES-15. These differences are within the margin of error when developing emission factors using stack test data and making adjustments for sampling methods and analyses. Although some differences exist in the RJRT and Lorillard casing materials applied to the tobacco ahead of these dryers, the primary difference is where in the process casing materials using propylene glycol and glycerin are applied to the tobacco. The expected presence of high amounts of tobacco volatiles also contributes to the emission factors being essentially identical.

The VOC emissions from conveyors and other equipment are also expected to be similar based on the influence of the tobacco volatiles. Therefore, the existing RJRT VOC emission factors were used to estimate VOC emissions from all equipment except the top dressing drums in ES-15.

The VOC emissions from the top dressing drums in ES-15 are influenced by the tobacco volatiles and the top dressing materials. The Lorillard top dressing materials include formulations using ethanol and rum, two volatile materials not currently used at the Tobaccoville facility. The principle Lorillard product is also a mentholated cigarette.

Excluding the ethanol and rum, the Lorillard VOC emission factor is approximately double the RJRT VOC emission factor from the top dressing drums. As a conservative assumption, the VOC emissions from increased tobacco throughput will be calculated using the uncontrolled RJRT VOC emission factor, and the additional VOC emissions when producing mentholated Lorillard products will be calculated using the Lorillard VOC emission factor.

The VOC emissions from the ethanol and rum applied in the top dressing drums were calculated as a mass balance, assuming all the ethanol and rum are released from the tobacco after application of the top dressing. To address safety concerns when applying flammable ethanol based materials in the top dressing drums, the drums and conveyors immediately downstream will be collected and controlled using a thermal oxidizer. The current conveyor hoods will be replaced with new hoods designed to increase the airflow by 30% to ensure capture of the ethanol fumes and mitigate the risk of a fire or explosion.

Data from Brown and Williamston (a company purchased by RJRT in 2004) was used to calculate the ethanol concentration in the tobacco at the conveyor downstream of the top dressing drum. RJRT assumes that a conservative percentage of the applied ethanol will be captured from the top dressing drums and downstream covered conveyors and controlled using the thermal oxidizer. The remaining uncaptured ethanol will be conveyed into the ES-15 storage silos, where RJRT expects most of the remaining ethanol to volatilize. The residual ethanol remaining with the tobacco will volatilize in ES-19.

5.6 Fuel Combustion Emission Factors

The emission factors for the combustion of natural gas in the boilers, and natural gas and propane in the new incinerator, were taken from the U.S. EPA's AP-42 "Compilation of Air Pollutant Emission Factors" document, Fifth Edition, Volume 1, Chapter 1.

6. BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

6.1 Overview of PSD Regulations

Forsyth County is designated attainment for all pollutants; therefore, New Source Review (NSR) for nonattainment areas does not apply to this proposed modification. The basic goal of the PSD regulations, contained in the Code of Federal Regulations 40 CFR 51.166, is to ensure that the air quality in clean (i.e. attainment) areas does not significantly deteriorate while maintaining a margin for future industrial growth. The PSD regulations focus on industrial facilities, both new and modified, that create large increases in the emission of certain pollutants. The EPA promulgated final regulations governing PSD in the Federal Register published August 7, 1980. These regulations are contained in the Forsyth County Air Quality Control Ordinance and Technical Code Rule 3D .0530.

Under PSD requirements, all major modifications to major stationary sources are required by the Clean Air Act to obtain an air pollution permit prior to construction. This process of preconstruction review and approval by the permitting authority of the application for an air permit is called "new source review" (NSR). A "major stationary source" is defined as any one of 28 named industrial source categories, listed in 40 CFR 51.166(b), which has the potential to emit 100 tons per year or more of any regulated pollutant, or any other stationary source which has the potential to emit 250 tons per year or more of any PSD regulated pollutant.

The RJRT Tobacconville facility is a "major stationary source" because it is a stationary source which has the potential to emit 250 tons per year or more of a PSD regulated pollutant. The RJRT Tobacconville facility has been a major PSD facility since it was originally permitted in 1983. The current permit, 00745-TV-32 includes BACT requirements for PM and VOC

Because the proposed facility is considered a major stationary source, each pollutant with a "potential to emit" greater than the pollutant's significance level is subject to PSD review and must meet certain review requirements. "Potential to emit" is the maximum capacity of a stationary source to emit a pollutant under its physical and operational design, including any physical or operational limitation on the capacity of the source to emit a pollutant, provided the limitation or the effect on emissions is practically enforceable. PSD emissions calculations are based on worst-case annual operating hours of 8,760 hours per year. A significant "net emissions increase" is defined as an emission increase greater than the "significance levels" as listed in 40 CFR 51.166 (23)(l), as amended by an EPA letter of March 11, 1991 "NSR Program Transitional Guidance."

A major portion of the PSD review requires a separate BACT analysis be performed for each regulated pollutant that exceeds the PSD significance levels. BACT is defined in 40 CFR 51.166(b)(12) as follows:

"an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the reviewing authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the

reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.”

6.2 PSD Applicability Analysis

As described earlier, the proposed modification project includes modifying several existing emissions units and debottlenecking other emission units resulting in changes to the emissions of VOC, PM/PM10, SO₂, CO and NO_x. The applicant performed a PSD applicability analysis to determine which regulated pollutants would be subject to this review.

The changes in emissions from the facility as a result of manufacturing Lorillard products were compared to the significant emission thresholds to determine which pollutants would require permitting under the Prevention of Significant Deterioration (PSD) program. The proposed project includes modifying several existing emission units and debottlenecking other emission units. For this project the hybrid applicability test prescribed in 40 CFR 51.166 was used to assess PSD applicability.

For the modified emission units ES-18, ES-19, and F-16, the actual to projected actual emissions were established. The baseline emissions for these emission units are based on the average production during the 24-month period between January 2011 and December 2012. Production information for that 24-month period is shown in the confidential copy of the permit application in Appendix D, Page D-4. The projected actual emissions for these emission units are the baseline RJRT production plus the projected future production of Lorillard products.

The production that each unit could have accommodated during the baseline period and that is also unrelated to the proposed project is allowed to be excluded from the projected increase under FCAQTC Rule 3D .0530(u)(3) and 40 CFR 51.166(b)(40)(ii)(c). However, for the sake of simplicity, the exclusion of such production was not considered by the applicant in this application.

For emission unit F-14 emission factors are expressed in pounds of pollutant per ton of tobacco so ES-15 production is used.

As a conservative assumption, the baseline RJRT production was assumed to remain unchanged over the next ten-years. As reported in the 2013 Annual Report by Reynolds American, Inc. (the parent company of RJRT), the overall U.S. cigarette market has experienced an average decline of approximately 3.5 percent for each of the previous three years for which data was available (2011 – 2013). Also reported by Reynolds American, the RJRT market share contracted slightly (0.5 percent) between 2011 and 2012.

As a conservative assumption, the Lorillard production was assumed to increase by approximately 15 percent over the next ten years. As noted in the July 15, 2014 presentation regarding the Lorillard acquisition, shipments of the No. 1 Lorillard brand Newport have increased approximately 7.5 percent over the preceding ten years (2002 to 2012).

The emissions increases from debottlenecked emission units (ES-5, ES-6, ES-7, ES-8, ES-9, ES-11, ES-12, ES-13, and ES-16) were calculated following the same methodology for modified emission units. For the emission units ES-1, ES-10, ES-14, ES-15, and ES-21 the debottlenecked portion of the emissions was also calculated using the above methodology, as outlined in 40 CFR 51.166. For the natural gas usage in the steam boilers, the increase was estimated by applying the average cubic feet of natural gas per ton of production through ES-15 during the baseline period to the projected Lorillard production volume through ES-15.

As an additional conservative assumption, the proposed new casing drums and new conveyors in ES-1, ES-10, ES-14, and ES-21 were treated as new units at the appropriate maximum emission rates based on the projected future Lorillard production. The application of ethanol-based top dressing materials in the top dressing drums (ES-15) also followed this methodology. Small additional amounts of VOC from new ethanol storage tanks (F-19 and F-20), a new ingredient mixing and storage area (F-23), and preparing Lorillard casing materials in F-13 were also included. No baseline emissions were included for the new equipment.

To increase transparency for the purposes of this construction permit application, the new casing drums and new conveyors in ES-1, ES-10, ES-14, and ES-21 were assigned a temporary emission unit number ES-22. Similarly, the emissions attributable to ethanol-based top dressing materials were assigned emission unit ES-23.

Detailed emission calculation tables used to determine PSD applicability are included in Appendix D of the application. A PSD applicability summary of pollutant emissions can be found in Table 4.1 of the application and is repeated below in Table 6.1. **The data summary indicates that VOC is the only pollutant that is subject to PSD review for this modification.** This analysis is described more fully in larger tables in the confidential copy of the permit application in Appendix D, Pages D-1 through D-3.

**Table 6.1
Project Emissions Summary (tpy)**

Emission Unit(s)	VOC	PM/PM10*	SO₂	NO_x	CO
MODIFIED and DEBOTTLENECKED EMISSIONS					
Bldg 851-1 & Bldg 854-8 Baseline Emissions**	114.26	10.23	2.12	27.85	24.15
Bldg 851-1 & Bldg 854-8 Projected Emissions**	170.86	15.26	3.32	41.30	35.86
Increase in Emissions –	56.60	5.03	1.20	13.45	11.71
POTENTIAL NEW EMISSIONS					
ES-22 Final Casing Drums and New Conveyors	8.65	2.30	N/A	N/A	N/A
ES-23 Ethanol-based Top Dressings	62.22	0.33	0.03	6.70	3.68
F-19 through F-23 New Storage Tanks and IMS	0.25	N/A	N/A	N/A	N/A
Potential New Emissions	71.12	2.63	0.03	6.70	3.68
PROJECT SUMMARY					
Change In Emissions	127.72	7.66	1.23	20.15	15.39
PSD Threshold	40	15/10	40	40	100
Is Change Significant?	YES	NO	NO	NO	NO

- * For the purposes of PSD applicability to the proposed modification only, all PM emissions were assumed to be equal to PM₁₀ and PM_{2.5}.
- ** Building 851-1 houses the facility's cigarette manufacturing activities, and building 854-8 houses the facility's three boilers.

6.3 BACT Technology Analysis

Under the provisions of the PSD program, the applicant is required to find the BACT that will provide the maximum degree of emissions reduction for each pollutant subject to the regulation considering costs, environmental, and energy impacts. This Office would then specify an emissions limitation for the source that reflects the maximum degree of reduction achievable for each subject regulated pollutant. For this project, a BACT analysis is required for the pollutant VOC. This section addresses BACT for each emissions unit triggering BACT requirements.

The application of BACT applies to each new or modified emission unit at which a net emission increase of a PSD significant pollutant would occur. The application of BACT is not required for non-modified emission units, or modified units whose emissions of significant PSD pollutants do not have a net increase as a result of the project. The following emission units are subject to BACT for VOC emissions due to the proposed project:

- The new final casing drums (ES-14),
- Six modified top-dressing drums (ES-15),
- Existing storage silos (ES-15),
- Modified filter making, cigarette making, and packing operations (ES-18, ES-19, and F-16 respectively),
- Four new conveyor systems (ES-1, ES-10, ES-14 and ES-21),
- Modified casing preparation area mix tanks (F-13),
- New casing preparation area day tanks (F-13),
- New ingredient mixing and storage area mix tank (F-23),
- New ingredient mixing and storage area hold tank (F-23),
- New ingredient mixing and storage area tote filling (F-23),
- Two new ethanol storage tanks (F-19 and F-20).

The existing storage silos in ES-15 are a modified unit due to the change in the method of operation associated with usage of ethanol-based flavoring.

6.4 Control Technology Descriptions

Emission control technologies potentially applicable for the removal or destruction of VOCs from an air stream were initially evaluated by the applicant based upon technical feasibility. Technologies determined to be technically infeasible were excluded from further evaluation. Control technologies evaluated, as discussed below, included oxidation, adsorption, biofiltration, scrubbers, and condensation.

6.4.1 Oxidation

Thermal oxidation is the process of oxidizing combustible materials by raising the temperature of the material above its auto-ignition point in the presence of oxygen, and maintaining it at high temperature for sufficient time to complete the combustion process. Recuperative thermal

oxidizers may incorporate shell and tube heat exchange systems, while regenerative thermal oxidizers utilize a bed (often made of ceramic material) to recover heat from the exhaust gases. Afterburners, or direct flame units, do not utilize heat exchange as part of the equipment design. Typical VOC control efficiencies range from 90 to 99.9 percent.

Catalytic oxidation is a control technique which uses a catalyst bed to increase the oxidation reaction rate thus enabling conversion at lower reaction temperatures than in thermal incinerator units. Catalysts typically used for VOC incineration include platinum, palladium and mixed metal oxides. Catalytic oxidation is best suited to systems with lower exhaust volumes, when there is little variation in the type and concentration of VOC, and where catalyst poisons or other fouling contaminants are absent. In comparison to thermal oxidation, operating costs are lower due to lower auxiliary fuel usage while the capital costs are generally higher. Typical VOC control efficiencies range from 95 to 99 percent.

6.4.2 Wet Scrubbers

Wet scrubbers involve the use of packed columns or trays to facilitate contact between either a water or chemical solution to facilitate the preferential absorption of pollutants from the air stream to scrubbing solution for collection, treatment, and disposal. Scrubbers are commonly employed for use in controlling low dust loadings or inorganic vapors. Absorption (scrubbing) may be used for gaseous streams containing high VOC concentrations, especially for water soluble compounds such as methanol, ethanol, and isopropanol.

When using absorption as the primary control technique for organic vapors, the EPA recognizes that spent scrubbing solutions must be easily regenerated or disposed of in an environmentally acceptable manner. Furthermore, organic vapor control applications may require long contact times, high liquid-gas ratios, and tall absorption towers. Although removal efficiencies vary by pollutant, a properly designed wet scrubber for water soluble compounds are often capable of achieving control efficiencies greater than 90 percent for volatile organic compounds.

The effectiveness of scrubbing (absorption) varies depending on the characteristics of the gas stream and pollutant being controlled. Ethanol is very soluble in water, making scrubbing a possible control technology. However, ethanol has a high vapor pressure (40 mm Hg) and corresponding low boiling point (173°F) and low flash point (55°F). As a result, scrubbing is generally not effective for pollutants like ethanol that have significant evaporative potential at ambient temperatures.

Tobacco volatiles and casing materials are also very soluble in water. However, unlike ethanol, tobacco volatiles and casing materials have low vapor pressures (<0.1 mm Hg), high boiling points (>350°F), and high flash points (>200°F) that make scrubbing a potentially viable and effective control technology.

6.4.3 Adsorption

Adsorption involves the physical binding of pollutant on the surface of a granule, bead, or crystal of adsorbent material, generally activated carbon. The applicability of adsorption is largely dependent upon the affinity of particular pollutants for adsorption and the volatility of the pollutant (e.g., volatile compounds present in warm exhausts tend to re-volatilize resulting in potential flammability concerns). Removal efficiencies vary by pollutant, however, most adsorption systems have VOC control efficiencies between 87.5 and 97 percent.

Regenerable adsorption systems consist of multiple absorbent vessels with a portion of the units receiving gas vapors while organics in the remaining units are removed using steam or pressure. Regenerable systems require additional control technologies (oxidation, condensation, etc.) to manage the concentrated air stream.

Non-regenerable systems involve the use of adsorption beds which collect VOC's until breakthrough occurs. The non-regenerable adsorption bed (typically a carbon drum) is then removed from service and replaced while the spent material is shipped offsite for recovery or disposal. Non-regenerable systems are utilized for processes with low air flow or VOCs that are difficult to desorb.

6.4.4 Biofiltration

Biofiltration is the use of microbes to consume pollutants from a contaminated air stream. As the emissions flow through the bed media, pollutants are absorbed by moisture on the bed media and come into contact with microbes. Microbes reduce pollutant concentrations by consuming and metabolizing pollutants. During the digestion process, enzymes in the microbes convert compounds into energy, CO₂ and water. Material that is indigestible is left over and becomes residue.

Limitations to the use of biofiltration (bioreactors) are based upon sustaining the microbe environment including temperature control, moisture levels, acidity, and maintaining adequate nutrient levels. Biofilter control efficiency is largely dependent upon the type of compounds being digested by bacteria in the biofilter and upon residence time. Properly designed biofiltration systems generally achieve control efficiencies ranging from 70 percent to 90 percent, depending upon compounds being controlled and other site-specific conditions.

6.4.5 Condensation

Condensation is a process in which an emission stream having organic vapors is cooled using a coolant to facilitate the phase change of the vapors to a liquid. Condensation systems are typically used on vapor streams having high VOC concentrations and typically achieve control efficiencies between 50 and 90 percent. For systems in which non-condensable gases (e.g., air) are not present, condenser control efficiency may be nearly 100 percent. Condensers are generally not applicable to moist streams containing highly volatile compounds requiring heat exchangers operating at or below the freezing temperature of water.

6.4.6 Concentration

Concentration is a process in which control technologies are utilized in series to first concentrate the organic vapors from a dilute stream followed by a second control technology for treatment. Traditional methods of concentrating dilute gas streams involve the use of carbon adsorption or condensation to collect the organic vapors and thereby increase the concentration in the collected stream which is then treated - typically using oxidation.

6.5 Summary of Existing Control Technology Determinations

The applicant searched the EPA Reasonable Available Control Technology (RACT)/Best Available Control Technology (BACT)/Lowest Achievable Emission Rate (LAER) Clearinghouse and contacted several state agencies for control technology determinations from tobacco facilities.

6.5.1 R. J. Reynolds – Tobaccoville, North Carolina

The RACT/BACT/LAER Clearinghouse (RBLC) contains a 1983 BACT determination for VOC emissions from cigarette manufacturing at the RJRT facility located in Tobaccoville, North Carolina (RBLC ID NC-0027). BACT was established as use of non-ethanol based flavorings.

6.5.2 Philip Morris – Chesterfield, Virginia

The RBLC contains two 1987 BACT determinations for VOC emissions from tobacco material processing, an adsorbent regenerator, and a conveyor at the Philip Morris Park 500 facility located in Chesterfield, Virginia (RBLC ID's VA-0080 and VA-0083). BACT for tobacco material processing was established as a scrubber with 90 percent control efficiency. BACT for the adsorbent regenerator process, and conveyor were established as afterburners with 99 percent control efficiency.

The applicant contacted the Virginia Department of Environmental Quality (Virginia DEQ). Virginia DEQ indicated that the Philip Morris Park 500 facility never achieved successful commercial operation, and in 1989 the permit was amended, and the scrubber and afterburners were removed. The Virginia DEQ refused to provide any additional information about the Park 500 facility and stated all information after 1987, including the current facility permit, is considered confidential. Therefore, the applicant excluded the Philip Morris Park 500 BACT determination from further consideration.

6.5.3 Brown and Williamson – Macon, Georgia

The applicant discovered that a BACT determination was established by the Georgia Environmental Protection Division for Brown and Williamson (B&W) in Macon, Georgia. The BACT limitation was part of a 1994 Consent Order related to a 1982 plant expansion. The Consent Order established BACT as “(a) incineration of VOC emissions ... with at least 90% destruction efficiency; or (b) alternative technology (including but not limited to source reduction) at any plant location(s), that produces the same or greater reduction in annual tonnage of VOC emissions on an overall, plant-wide basis as would be achieved under provision 2(a) above.” The sources requiring 90% control included tobacco dryers, flavoring cylinders, and fugitive emissions from finished tobacco storage.

B&W selected source reduction as an alternative technology that reduced VOC emissions by the amount required in the Consent Order. Oxidation (incineration) was never implemented by B&W for the tobacco dryers, the flavoring applicators, or the tobacco storage fugitive emissions, and the required destruction efficiency was never demonstrated. Therefore, the applicant excluded the B&W BACT determination from further consideration.

6.5.4 Philip Morris – Richmond, Virginia

The applicant discovered that a RACT determination was made by the Virginia DEQ for the Philip Morris Manufacturing Center in Richmond, Virginia. The RACT determination was part of a 1994 Consent Agreement related to VOC emissions within the Richmond ozone non-attainment area (1-hour standard). The RACT determination included tobacco drying, flavoring cylinders, and fugitive emissions from tobacco flavoring.

RACT for the after-cut dryers and flavoring cylinders at the tobacco manufacturing center was established as the use of two oxidizers with a destruction efficiency of at least 95 percent. RACT for fugitive emissions from tobacco flavoring was no control.

6.6 Summary of North Carolina Tobacco Facilities

In addition to the BACT and RACT control technology determinations described above, Philip Morris, Lorillard, and Liggett operate tobacco manufacturing facilities in North Carolina.

6.6.1 Philip Morris – Concord, North Carolina

Philip Morris operates a tobacco manufacturing facility near Concord, North Carolina. As part of a facility expansion in the 1990's, the facility installed two oxidizers to control emission from the tobacco dryers and flavoring cylinders and avoid PSD permitting requirements.

6.6.2 Lorillard – Greensboro, North Carolina

The Lorillard Tobacco Company operates a tobacco manufacturing facility in Greensboro, North Carolina. The facility installed two packed tower scrubbers to control VOC emissions from the top dressing cylinders and avoid PSD permitting requirements. After encountering significant difficulties operating the scrubber system, source testing was conducted without the scrubbers operating to demonstrate uncontrolled emissions were below the PSD threshold. The North Carolina Department of Environment and Natural Resources designated the scrubbers as voluntary equipment and allowed the facility to take the scrubbers out of service.

6.6.3 Liggett – Mebane, North Carolina

The Liggett Group operates a tobacco manufacturing facility in Mebane, North Carolina. The facility does not operate any VOC controls on any tobacco dryers or other tobacco conditioning equipment, top flavoring applicators, or fugitive emissions.

6.7 BACT Analysis for the New Final Casing Drums

Volatile organic flavorings dissolved in propylene glycol will be applied to tobacco that will be used to manufacture former Lorillard products in the new final casing drums.

6.7.1 Oxidation

Due to the presence of combustible organics present in the gas streams, oxidizers are considered technically feasible for the final casing drums. There are a variety of oxidizer designs that could theoretically be applied to this process. Possible oxidation technologies considered in this BACT analysis are:

- Standard thermal oxidation (no heat recovery),
- Recuperative thermal oxidation (moderate heat recovery of 30 to 50 percent), and
- Regenerative thermal oxidation (as much as 95% heat recovery).

6.7.2 Scrubbers

The cigarette manufacturing industry has not used scrubbers to control VOC emissions from application of casing materials. The Lorillard facility in North Carolina attempted to use scrubbers to control volatile emissions from the top dressing cylinders, but the technology never functioned properly and was eventually abandoned.

The volatiles in the casing materials are expected to be highly soluble in water, and have lower vapor pressures and higher boiling points than ethanol used in top dressing materials. In addition, recent scrubber designs using trays and packing made from newer composite materials and thermoplastic resins have improved performance and reliability. Due to the low organic concentrations present in the gas stream, a packed bed is considered the most appropriate of the wet scrubbing technologies currently available and was considered technically feasible for this application.

It should be noted that particulate matter from the final casing drums will be controlled by a wet roto-clone scrubber, which will remove particulate matter using primarily centrifugal force. The exhaust stream from the roto-clone is considered to be the baseline emission level. The roto-clone will remove some VOC, However, due to the short residence time and limited air/water mixing, for conservatism the applicant assumed that no VOC is removed by the roto-clone in the BACT analysis.

6.7.3 Adsorption

The cigarette manufacturing industry has not used adsorption to control VOC emissions from the application of casing materials. Regenerative adsorption systems rely on desorbing the VOC and using oxidation or condensation to destroy/remove VOCs from the concentrated gas stream. However, tobacco volatiles in the emission stream will have a high affinity for binding to the adsorbent material which may result in clogging of the adsorption system. Non-regenerative adsorption systems are not practical for the concentrations requiring, and may require replacement of the activated carbon several times per week. Therefore, adsorption is not considered technically feasible.

6.7.4 Biofiltration

The cigarette manufacturing industry has not used biofilters to control VOC emissions from application of casing materials. Biofilters require a stable nutrient load from the incoming

exhaust stream to maintain the biological activity of the microbes and digest organic compounds efficiently. The casing drums will be operated intermittently, making maintenance of a stable incoming exhaust stream infeasible. Therefore, biofiltration is not considered a technically feasible option.

6.7.5 Condensation

The cigarette manufacturing industry has not used condensers to control VOC emissions from casing materials. Due to the relatively low VOC concentrations present in the exhaust stream and high flow rate of non-condensable gases that will keep trace volatiles from condensing, condenser controls are not applicable. Even if one were to contemplate use of condenser operating at very low temperatures, the moisture present in the stream would cause freezing on heat exchange surface, rendering the condenser ineffective. Therefore, condensation is not considered technically feasible.

6.7.6 Concentration

The cigarette manufacturing industry has not used concentration to control VOC emissions from application of casing materials. Concentration is a process in which control technologies are utilized in series to first concentrate the organic vapors from a dilute stream followed by a second control technology for treatment. Traditional methods of concentrating dilute gas streams involve the use of carbon adsorption or condensation to collect the organic vapors and thereby increase the concentration in the collected stream. Due to limitations associated with adsorption and condensation described above, concentration is not considered technically feasible.

6.7.7 Ranking of Technologies and Economic Impacts Analysis

As discussed earlier, both wet scrubbing technology and thermal incineration are feasible. For this stream, control efficiencies of greater than 90 percent are feasible. The applicant used a control efficiency of 98 percent in this application for standard and recuperative oxidation and 95 percent for regenerative oxidation (to account for loss of control during the cycling between beds). An efficiency of 95 percent was also attributed to wet scrubbing.

The cost evaluation for thermal oxidation control of the final casing drums is presented in the application in Appendix F, Table F-1. Cost effectiveness of the technologies range from approximately \$82,500 per ton to approximately \$207,000 per ton of VOC removal, well above levels considered cost effective. The cost evaluation for packed bed scrubbing control of the casing drums is also presented in the application in Appendix F, Table F-1. Cost effectiveness of the technology is approximately \$191,000 per ton of VOC removal, well above level considered cost effective.

6.7.8 Applicant's Selection for BACT

The applicant's proposed BACT for the new final casing drums is the uncontrolled emission rate of 0.954 lb/hr because there are no applicable or otherwise cost effective controls. The imposition of an annual emission rate limit is unnecessary since the BACT evaluation was based on continuous operation.

6.7.9 Agency's Decision for BACT

This Office concurs with the applicant's proposed BACT for the new final casing drums.

6.8 BACT Analysis for the New Conveyors

Volatile organic compounds will also be emitted from four new tobacco conveyor systems with enclosed capture points routed to four separate exhaust systems. Each system will be comprised of conveyors routed to a common exhaust duct with a flowrate of approximately 10,000 standard cubic feet per minute. The proposed new conveyor systems are as follows:

- New ES-1 Conveyors,
- New ES-10 Conveyors,
- New ES-14 Conveyors, and
- New ES-21 Conveyors.

6.8.1 Oxidation

Due to the presence of combustible organics present in the gas streams, oxidizers are considered technically feasible for the conveyors. There are a variety of oxidizer designs that could theoretically be applied to this process. Possible oxidation technologies considered in this BACT analysis are:

- Standard thermal oxidation (no heat recovery),
- Recuperative thermal oxidation (moderate heat recovery of 30 to 50 percent), and
- Regenerative thermal oxidation (as much as 95% heat recovery).

6.8.2 Scrubbers

The cigarette manufacturing industry has not used scrubbers to control VOC emissions from conveyor exhausts. However, the volatiles in the materials being conveyed are expected to be highly soluble in water, and have lower vapor pressures and higher boiling points than ethanol used in top dressing materials. In addition, recent scrubber designs using trays and packing made from newer composite materials and thermoplastic resins have improved performance and reliability. Due to the low organic concentrations present in the gas stream, a packed bed is considered the most appropriate of the wet scrubbing technologies currently available and was considered by the applicant to be technically feasible for this application.

6.8.3 Adsorption

The cigarette manufacturing industry has not used adsorption to control VOC emissions from conveyor exhausts. Regenerative adsorption systems rely on desorbing the VOC and using oxidation or condensation to destroy the concentrated gas stream. However, tobacco volatiles in the emission stream will have a high affinity for binding to the adsorbent material which may result in clogging of the adsorption system. Non-regenerative adsorption systems are not

practical for the concentrations requiring treatment, and may require replacement of the activated carbon several times per week. Therefore, adsorption is not considered technically feasible.

6.8.4 Biofiltration

The cigarette manufacturing industry has not used biofilters to control VOC emissions from conveyor exhausts. Biofilters require a stable nutrient load from the incoming exhaust stream to maintain the biological activity of the microbes and digest organic compounds efficiently. The conveyors will be operated intermittently, making maintenance of a stable incoming exhaust stream infeasible. Therefore, biofiltration is not considered a technically feasible option.

6.8.5 Condensation

The cigarette manufacturing industry has not used condensers to control VOC emissions from conveyor exhausts. Due to the relatively low VOC concentrations present in the exhaust stream, and high flow rate of non-condensable gases that will keep trace volatiles from condensing, condenser controls are not applicable. Even if one were to contemplate use of a condenser operating at very low temperatures, the moisture present in the stream would cause freezing on the heat exchange surface, rendering the condenser ineffective. Therefore, condensation is not considered technically feasible.

6.8.6 Concentration

The cigarette manufacturing industry has not used concentration to control VOC emissions from conveyor exhausts. Concentration is a process in which control technologies are utilized in series to first concentrate the organic vapors from a dilute stream followed by a second control technology for treatment. Traditional methods of concentrating dilute gas streams involve the use of carbon adsorption or condensation to collect the organic vapors and thereby increase the concentration in the collected stream. Due to limitations associated with adsorption and condensation described above, concentration is not considered technically feasible.

6.8.7 Ranking of Technologies and Economic Impacts Analysis

As discussed earlier, both wet scrubbing technology and thermal incineration are feasible. A control efficiency of 98 percent was used in this application for standard and recuperative oxidation and 95 percent for regenerative oxidation (to account for loss of control during the cycling between beds). A high efficiency of 95 percent was also attributed to wet scrubbing.

The cost evaluation for thermal oxidation control of the conveyor systems is presented in the application in Appendix F, Table F-2. Cost effectiveness of the technologies range from approximately \$120,000 per ton to approximately \$1,492,000 per ton of VOC removal, well above levels considered cost effective. The cost evaluation for packed bed scrubbing control of the casing drums and conveyor systems is also presented in the application in Appendix F, Table F-2. Cost effectiveness of the technology ranges from approximately \$278,000 per ton to approximately \$3,457,000 per ton of VOC removal, well above levels considered cost effective.

6.8.8 Applicant's Selection for BACT

The BACTs proposed by the applicant for the new ES-1, ES-10, ES-14, and ES-21 conveyors are the uncontrolled emission rates of 0.60, 0.20, 0.45 and 0.05 lb/hr, respectively, because there are no applicable or otherwise cost effective controls. Imposition of an annual emission rate limit is unnecessary since the BACT evaluation was based on continuous operation.

6.8.9 Agency's Decision for BACT

This Office concurs with the applicant's proposed BACT for the new ES-1, ES-10, ES-14, and ES-21 conveyors.

6.9 BACT Analysis for the Top Dressing Drums – Ethanol-based Top Dressing Materials (ES-23)

The ethanol contained in the Lorillard top dressings will rapidly evaporate into the air space within the top dressing drums and above the immediately downstream conveyors. Ethanol is a highly flammable vapor and must be managed according to fire safety guidelines. According to the applicant's proposal, the existing conveyor covers will be upgraded and the exhaust volumes from the top dressing drums and covered conveyors will be increased by approximately 30% to ensure adequate collection of ethanol vapors to mitigate the potential dangers associated with a flammable or explosive atmosphere within the Tobaccoville facility.

6.9.1 Oxidation

The Philip Morris tobacco company in Richmond, Virginia has installed two thermal oxidizers for RACT control of VOC emissions from flavoring cylinders where ethanol is applied to the tobacco. Similarly, Philip Morris operated a tobacco manufacturing facility in Concord, North Carolina using oxidizers to control VOC emissions from flavoring cylinders.

Based upon the air stream composition from the top dressing drums and the use of the technology within the industry, thermal oxidizers are considered technically feasible.

6.9.2 Scrubbers

The cigarette manufacturing industry has not successfully employed scrubbers to control VOC emissions from application of ethanol-based flavorings. The Lorillard facility in North Carolina

attempted to use scrubbers for this purpose, but the technology never functioned properly and was eventually abandoned.

Although recent scrubber designs using trays and packing made from newer composite materials and thermoplastic resins have improved performance and reliability, ethanol has a high vapor pressure and low flash point that reduces the effectiveness of scrubbing. In addition, wastewater from the Tobaccoville facility is discharged to a POTW with no pre-treatment. Without facilities for pre-treatment of the spent scrubber liquid, the ethanol would re-volatilize in the sewer or at the POTW due to its high vapor pressure and low flash point, creating a potential safety hazard and moving instead of reducing emissions. The facility wastewater discharge permit specifically prohibits ethanol in the discharge, presumably for this reason. Therefore, scrubbers are not considered technically feasible for controlling ethanol emissions.

6.9.3 Adsorption

The cigarette manufacturing industry has not used adsorption to control VOC emissions from application of ethanol-based flavorings. Regenerative adsorption systems rely on desorbing the VOC and using oxidation or condensation to destroy the concentrated gas stream. However, ethanol is difficult to desorb, and tobacco volatiles in the emission stream will have a high affinity for binding to the adsorbent material which may result in clogging of the adsorption system. Non-regenerative adsorption systems are not practical for the high concentrations requiring treatment, and may require replacement of the activated carbon several times per week. Therefore, adsorption is not considered technically feasible.

6.9.4 Biofiltration

The cigarette manufacturing industry has not used biofilters to control VOC emissions from application of ethanol-based flavorings. Biofilters require consistent loading to maintain the microbes and remove organic compounds efficiently. The top dressing drums are capable of processing many different blends of tobacco, manufactured with many different flavorings. The blends of tobacco manufactured depend on market conditions, and blends using ethanol-based flavorings may not be manufactured in similar quantities throughout the year. Variations in organic loadings due to market conditions may result in highly variable control efficiencies, and at certain times insufficient nutrients to support the microbial community within the biofilter. Therefore, biofiltration is not considered a technically feasible option.

6.9.5 Condensation

The cigarette manufacturing industry has not used condensers to control VOC emissions from application of ethanol-based flavorings. Condensers require large refrigeration units or chillers to cool the air stream, also condensing large amounts of water, tobacco volatiles, and ethanol in the air stream. The condensed water would freeze to the coils, and tobacco volatiles would foul them, reducing control effectiveness.

In addition, condensation would also create large volumes of wastewater from the collected condensate. Wastewater from the Tobaccoville facility is discharged to a POTW with no pre-treatment. Without facilities for pre-treatment of the collected condensate, the ethanol will re-volatilize in the sewer or at the POTW, creating a potential safety hazard and moving instead of reducing emissions. The facility wastewater discharge permit specifically prohibits ethanol in

the discharge, presumably for this reason. Therefore, condensers are not considered technically feasible.

6.9.6 Concentration

The cigarette manufacturing industry has not used concentration to control VOC emissions from application of ethanol-based flavorings. Concentration is a process in which control technologies are utilized in series to first concentrate the organic vapors from a dilute stream followed by a second control technology for treatment. Traditional methods of concentrating dilute gas streams involve the use of carbon adsorption or condensation to collect the organic vapors and thereby increase the concentration in the collected stream. Due to limitations associated with adsorption and condensation described above, concentration is not considered technically feasible.

9.6.7 Ranking of Technologies and Economic Impacts Analysis

The applicant considered Incineration and wet scrubbing as feasible for this process. The applicant's search of the RBLC did not yield any insight for required control efficiencies for any processes analogous to the top dressing drums. As indicated previously, only the Philip Morris facility operates an incinerator on its analogous flavorings process and was required to meet a 95 percent control efficiency. Nevertheless, it is generally recognized that standard incineration is capable of achieving higher destruction efficiencies than 95 percent. The most analogous regulatory requirement for a similar type stream contemplated at the time of submission of this application is the requirement to achieve a minimum of 98 percent destruction efficiency under the EPA's Hazardous Organic NESHAP for Process Vents, promulgated under 40 CFR Part 63 Subpart F. The 98 percent control efficiency was found by EPA to be "maximum achievable control technology" in accordance with the strict guidelines of the Clean Air Act. RJR has assumed that 98 percent efficiency is reasonably achievable in this BACT analysis for standard and recuperative thermal oxidation technologies. According to the experience of URS Corporation (the contractor hired by RJRT to assist with the application) regenerative oxidation is generally only guaranteed up to 95 percent due to the brief amount of time between regenerative bed cycling that exhaust is not combusted,. A 95 percent control efficiency was also considered possible with the use of wet scrubbing.

The cost impacts analysis for thermal oxidation controls and wet scrubbing is presented in the application in Appendix F, Table F-3. As shown, standard thermal oxidation technology is the most cost effective of all control options evaluated at \$627/ton of VOC removal, which is clearly cost effective.

6.9.8 Applicant's Selection for BACT

The applicant's proposed BACT emission limit for manufacturing the Lorillard tobacco products using ethanol-based top dressing materials in the top dressing drums and downstream conveyors (ES-23) is 0.54 lb VOC/ton tobacco on an ethanol basis, which is based on 98 percent control of evaporative losses from ethanol-based flavoring processes. RJRT proposes monitoring the combustion temperature within the thermal incinerator to demonstrate compliance with the BACT limit. The final selection of the thermal incineration technology has not been established.

As noted in earlier, in the 1983 BACT for Tobaccoville the use of non-ethanol-based materials was considered BACT. Today, tobacco products are regulated by the U.S. Food and Drug Administration (FDA) and any changes to product formulations must receive prior approval from the FDA. This effectively limits the application of ethanol-based top dressing materials to the Lorillard products only. This also effectively prohibits the use of ethanol-based top dressing materials in RJRT products without prior approval from the FDA.

The applicant's proposed BACT for manufacturing existing RJRT tobacco products is use of non-ethanol-based top dressing materials in the top dressing drums (ES-15), consistent with the 1983 BACT determination for Tobaccoville.

6.9.9 Agency's Decision for BACT

This Office concurs with the applicant's proposed BACT for manufacturing the Lorillard tobacco products using ethanol-based top dressing materials in the top dressing drums and downstream conveyors (ES-23). This Office agrees that incineration at 98% efficiency is BACT based on 98 percent control of evaporative losses from ethanol-based flavoring processes. The control efficiency of 98 percent will be a permit condition.

6.10 BACT Analysis for Fugitive Ethanol and VOC Emissions

The residual ethanol that remains on the tobacco following the top dressing drums and covered downstream conveyors (ES-23) will be emitted as fugitive ethanol emissions inside the building. Most of the residual ethanol will be released from the storage silos in ES-15, and a small amount will be released from the cigarette makers in ES-19.

The building air surrounding the ES-15 storage silos is withdrawn with the tobacco being transferred to the cigarette production floor by the ES-16 pneumatic conveying system. The ES-16 pneumatic conveying system motive air is then returned to the ES-15 storage silos following re-conditioning through four "air washers" or released through the cigarette production floor exhausts depending on environmental conditions.

In addition to fugitive residual ethanol from ES-23, fugitive VOC will be released from the modified cigarette production floor (ES-18 filter making, ES-19 cigarette making and F-16 packing).

The cigarette production floor exhausts through four exhaust points. Flows range from approximately 90,100 scfm to 138,000 scfm. For purposes of this BACT evaluation, the applicant conservatively assumed that the combined air flow rate of approximately 440,000 scfm could be controlled by applicable control technologies. These high volume, low concentration VOC streams are not controlled at any other cigarette manufacturing facilities.

6.10.1 Oxidation

The cigarette manufacturing industry has not used oxidation to control fugitive VOC emissions from ethanol-based tobacco flavorings. Oxidation is generally not viable for low concentration, high air flow VOC streams because control efficiencies are lowered and large amounts of auxiliary fuel are required. Furthermore, the large amount of auxiliary fuel required would

generate significant emissions of nitrogen oxides, a pre-cursor to ground-level ozone, in an area where ozone formation is NO_x limited.

In addition, proper storage conditions could no longer be maintained in the ES-15 storage silos because the air washers are not capable of re-conditioning the high temperature exhaust from oxidizers for re-circulation inside the building, or conditioning outside replacement air during the winter and summer seasons.

Despite the limitations described above, oxidation is theoretically feasible. Due to the large volumes of air being discharged and the associated high thermal heat input needed for thermal oxidation, use of thermal oxidation with heat recovery is needed. Only regenerative thermal oxidation was considered by the applicant in the BACT analysis due to the high flow rates associated with each of the four exhausts from the cigarette manufacturing production floor (the lowest exhaust flow rate is 82,700 cfm, well above applicability of recuperative oxidation technology).

6.10.2 Scrubbers

The cigarette manufacturing industry has not used scrubbers to control fugitive VOC emissions from ethanol-based tobacco flavorings. Scrubbers for low concentration, high air flow VOC streams require very large volumes of water to achieve the necessary air-liquid contact, and only transfer the pollutant to another environmental media.

Although recent scrubber designs using trays and packing made from newer composite materials and thermoplastic resins have improved performance and reliability, ethanol has a high vapor pressure and low flash point that reduces the effectiveness of scrubbing. In addition, wastewater from the Tobaccoville facility is discharged to a POTW with no pre-treatment. Without facilities for pre-treatment of the spent scrubber liquid, the ethanol will re-volatilize in the sewer or at the POTW due to its high vapor pressure and low flash point, creating a potential safety hazard and simply relocating instead of reducing emissions. The facility wastewater discharge permit specifically prohibits ethanol in the discharge, presumably for this reason. Therefore, scrubbers are not considered technically feasible.

6.10.3 Adsorption

The cigarette manufacturing industry has not used adsorption to control fugitive VOC emissions from ethanol-based tobacco flavorings. Regenerative adsorption systems rely on desorbing the VOC and using oxidation or condensation to destroy the concentrated gas stream. However, ethanol is difficult to desorb, and using oxidation or condensation to destroy the ethanol after it has been desorbed is not technically feasible. Non-regenerative adsorption systems are not practical for the high volume of building air requiring treatment, and would require replacement of the activated carbon several times per week. Therefore, adsorption is not considered technically feasible.

6.10.4 Biofiltration

The cigarette manufacturing industry has not used biofilters to control fugitive VOC emissions from any production processes. Biofilters require consistent loading to maintain the microbes and remove organic compounds efficiently. Due to the very low VOC concentration within the

building exhausts, it is possible that with the addition of appropriate supplemental nutrients that an environment stable enough to operate can be maintained within the biofiltration bed to make the biofiltration feasible.

6.10.5 Condensation

The cigarette manufacturing industry has not used condensers to control fugitive VOC emissions from tobacco storage and cigarette production operations. Condensers for low concentration, high air flow VOC streams require very large refrigeration units or chillers to cool the air, condensing large amounts of water, tobacco volatiles, and the ethanol in the air stream. The condensed water would freeze to the coils, and tobacco volatiles would foul them, reducing control effectiveness.

In addition, condensation would also create large volumes of wastewater from the collected condensate. Wastewater from the Tobaccolville facility is discharged to a POTW with no pre-treatment. Without facilities for pre-treatment of the collected condensate, the ethanol will re-volatilize in the sewer or at the POTW, creating a potential safety hazard and simply relocating instead of reducing emissions. The facility wastewater discharge permit specifically prohibits ethanol in the discharge, presumably for this reason. Therefore, condensers are not considered technically feasible.

6.10.6 Concentration

The cigarette manufacturing industry has not used concentration to control fugitive ethanol from tobacco storage or fugitive VOC from cigarette production operations.

Concentration is a process in which control technologies are utilized in series to first concentrate the organic vapors from a dilute stream followed by a second control technology for treatment. Traditional methods of concentrating dilute gas streams involve the use of carbon adsorption or condensation to collect the organic vapors and thereby increase the concentration in the collected stream. Due to limitations associated with adsorption and condensation described above, concentration is not considered technically feasible.

6.10.7 Ranking of Technologies and Economic Impacts Analysis

As discussed earlier, both thermal incineration and biofiltration were considered by the applicant to be technically feasible in this evaluation. A control efficiency of 95 percent for regenerative thermal oxidation was considered by the applicant to be appropriate in this evaluation due to the loss of control during switching between heat exchange media beds. Control efficiencies of biofiltration controls are very site-specific, but typically range from 70 to 90 percent removal efficiency. The applicant used an efficiency of 80 percent in this application.

The cost evaluation for thermal oxidation control of the fugitive ethanol emissions from ES-23, fugitive ethanol from the top dressing areas (F-14 and F-19 through F-23), and fugitive VOC emissions from the modified casing preparation area (F-13) and modified cigarette making floor (ES-18, ES-19 and F-16) is presented in the application in Appendix F, Table F-4. Cost effectiveness was estimated to be approximately \$19,700 per ton of VOC removal, which is considered cost prohibitive. The cost evaluation for biofiltration control is presented in the application in Appendix F, Table F-5. The biofiltration costs used by the applicant are based

upon information provided by Process Combustion Corporation (PCC) in December 2014. The information from PCC is included as an attachment to the application. Cost effectiveness was estimated to be approximately \$10,230 per ton of VOC removal, which is considered cost prohibitive.

6.10.8 Applicant's Selection for BACT

There are no technically and economically viable control technologies to control emissions from these sources and, accordingly, the applicant's proposed BACT for these sources is "no control."

6.10.9 Agency's Decision for BACT

This Office concurs with the applicant's proposed BACT for these sources that BACT is "no control."

6.11 BACT Analysis for Insignificant Activities

Ethanol, rum and other organic chemicals are stored and mixed prior to application onto tobacco for subsequent processing. These chemicals are stored and used in modest quantities such that emissions are negligible and well below insignificant activity levels. These sources and corresponding VOC emissions at proposed maximum production capacity are as follows:

- Three modified casing preparation area mix tanks (F-13) = 0.0051 tpy each (primarily propylene glycol),
- Four new casing preparation area day tanks (F-13) = 0.0033 tpy each (primarily propylene glycol),
- New ingredient mixing and storage area mix tank (F-23) = 0.043 tpy (ethanol),
- New ingredient mixing and storage area hold tank (F-23) = 0.031 tpy (ethanol)
- New ingredient mixing and storage area tote filling (F-23) = 0.029 (ethanol), and
- Two new ethanol storage tanks (F-19 and F-20) = 0.06 tpy each,

6.11.1 Applicant's Selection for BACT

The flow rates from process vessels associated with operations identified above are very small and well below the applicability range of the pollution control options discussed earlier in the BACT evaluations. For example, packed bed scrubbers have a lower applicability limit of 500 cfm, which is well above the flow rates from sources identified above, which would not be expected to exceed approximately 15 cfm at any given time (i.e., during batch filling operations).

At the request of the Office of Environmental Assistance and Protection, the applicant investigated the use of VOC control via activated carbon canisters. Use of activated carbon in canisters or drums connected to certain types of low flow VOC sources such as those identified above is theoretically possible by the applicant. However, ethanol is not a good candidate for carbon control having insufficient mass to generate sufficient Van der Waals forces necessary for making ethanol a good candidate for carbon control. According to activated carbon

adsorption literature, the lowest molecular weight considered acceptable for making carbon control a good candidate is 50 and ethanol has a molecular weight of 46 g/mol.¹ The fact that carbon is not a suitable adsorbent for ethanol was also confirmed by a leading manufacturer of carbon technologies.²

Although trace emission levels of propylene glycol will be emitted from the process, it is technically feasible to for carbon removal at very high efficiencies of 99% for a low flow application such as the casing preparation mix tanks. Based on information provided by Calgon Corporation, they would recommend use of a metal drum filled with 180 pounds of activated carbon through which mix tank exhaust air would flow through the carbon adsorption drum. Based on information provided by Calgon, during active filling operations the carbon would have a 432 hr life span (180 lb charge / 10 lb/day usage rate * 24 hrs/day continuous operation basis). The potential emission calculations for the casing preparation area are based on continuous usage, so each drum would only last 432 hrs/year. The cost of each drum is approximately \$1,000 and the resulting cost effectiveness of control is calculated as follows:

$$\text{Cost effectiveness} = (\$1,000 * 8,760 \text{ hrs}/432 \text{ hrs}) / (0.0153 \text{ ton/yr} * 0.99) = \$133,873/\text{ton}^3$$

This cost effectiveness value does not include other costs that when combined together are significantly higher than the purchase cost of the carbon drum, such as engineering/installation, periodic testing to ensure that the carbon is working as designed, and disposal costs. Since the base cost of \$133,873/ton is well above levels considered prohibited, carbon control of emissions from the modified casing preparation area is considered cost prohibitive.

In summary, the addition of pollution controls is impracticable due to the technical infeasibility of carbon control for ethanol emissions and prohibitive cost effectiveness of carbon control on the modified casing preparation area. Due to the negligible emission levels associated with these sources, RJRT proposed that the BACT for these sources be “no control.”

6.11.2 Agency's Decision for BACT

This Office concurs with the applicant's proposed BACT for these sources that BACT is “no control.”

¹ Activated Carbon Adsorption for Treatment of VOC Emissions, Austin Shepherd, Carbtrol Corporation, May 2001. <http://www.carbtrol.com/voc.pdf> (Attached in Appendix C)

² Email correspondence from Hamilton, Brandon, Calgon Corporation, and Sullivan, Joe, URS Corporation, December 18, 2014. (Included in Appendix C)

³ All costing assumption provided via conversation between Hamilton, Brandon, Calgon Corporation and Sullivan, Joe, URS Corporation. December 18, 2014.

7. AIR QUALITY IMPACT ANALYSIS

The PSD permitting regulations require an evaluation of air quality impacts from the proposed project. The proposed project is subject to PSD permitting requirements for the pollutant VOC. The pollutant VOC has no air dispersion modeling requirements.

The facility is located approximately 140 kilometers east-northeast of the Linville Gorge Wilderness Class I Area in North Carolina, and approximately 165 kilometers south-southwest of the James River Face Wilderness Class I Area in Virginia.

The PSD pollutant from this project is VOC, which is composed of tobacco volatiles and ethanol. There are no known Air Quality Related Values (AQRVs) related to ethanol or VOCs. In the Southeast, naturally occurring VOCs are already present in large quantities from trees and other vegetation. EPA has determined ground-level ozone formation in the Southeast is NOX limited, primarily due to the abundance of naturally emitted VOCs.

VOCs in general are not expected to participate in the formation of any secondary atmospheric pollutants like sulfates and nitrates, which potentially impair visibility or contribute to formation of regional haze. Therefore, no air dispersion modeling analyses are required by the PSD permitting regulations.

This Office agrees that no further air quality analysis is required.

8. ADDITIONAL ANALYSIS

The PSD permitting regulations require an evaluation of additional impacts on growth, soils and vegetation, and visibility from the proposed project. The proposed project is subject to PSD permitting requirements for the pollutant VOC.

8.1 Growth

The applicant states that the proposed changes to the facility will not result in any significant growth. The site has been operating for over twenty-five years. The proposed modifications may return employment to earlier levels, but is not expected to add significantly to new employment at the site. Similarly, the secondary emissions associated with shipments to and from the site are expected to return to previous levels. Therefore, the applicant does not expect significant growth impacts from the proposed project.

This Office agrees that there should be no impact from growth as a result of this modification.

8.2 Soils and Vegetation

The PSD pollutant from this project is VOC, which is composed of tobacco volatiles and ethanol. EPA has determined ground-level ozone formation in the Southeast is NO_x limited, primarily due to the abundance of naturally emitted VOCs. Therefore, the applicant does not expect the proposed project to result in significant formation of any secondary atmospheric pollutants like ground-level ozone, which potentially damage or impair the normal growth of vegetation or the soil in which they grow.

This Office agrees that there should be no impact on the soil or vegetation as a result of this modification.

8.3 Visibility

The PSD pollutant from this project is VOC, which is composed of tobacco volatiles and ethanol. The applicant states that VOCs in general are not expected to participate in the formation of any secondary atmospheric pollutants like sulfates and nitrates, which potentially impair visibility, or visibly appear in the exhaust from vents at the facility.

This Office agrees that the increase in VOC should have no impact on the visibility.

9. COMPLIANCE CERTIFICATION/REGULATORY REVIEW

Major modifications to major stationary sources are required by the Clean Air Act to obtain an air pollution permit before commencing construction. This Office has promulgated air pollution control requirements under Subchapters 3D and 3Q of the Forsyth County Code entitled Air Pollution Control Requirements and Air Quality Permits respectively, which govern the construction and operation of air emission sources. The new source review requirements within these regulations have been approved by the U.S. EPA as Forsyth County's Local Implementation Plan (LIP). The applicable regulatory requirements that must be met for the construction of the proposed modification at the RJRT Tobaccoville facility include federal Prevention of Significant Deterioration (PSD) regulations as implemented by this Office.

9.1 Hazardous Air Pollutant (HAP) Analysis

The facility has been and will continue to be a synthetic minor area source with respect to Part 63 Hazardous Air Pollutants (HAPs). The facility's permit includes language limiting total combined HAP emissions to no more than 25 tons for any 12-month period and limiting individual HAP emissions to no more than 10 tons for any 12-month period.

At the request of this Office, the applicant provided a table of facility-wide HAP emissions as part the December 2014 permit application revisions/addendum. The table is presented in Attachment B of the December 2014 submittal. The table indicates that the emissions of two HAPs have the potential to exceed 10 tons for any 12-month period: Glycol Ethers at 12.35 TPY and Vinyl Acetate at 53.08 TPY. The facility also has the potential to exceed 25 tons for any 12-month period for total HAPs combined. However, actual emissions of HAPs have historically been much lower than the 10/25 TPY major source thresholds. In CY2013 vinyl acetate emissions were less than 1 TPY, glycol ether emissions were less than 0.1 TPY, and the emissions of all HAPs combined was less than 7.5 TPY.

9.2 Forsyth County Office of Environmental Assistance and Protection Air Pollution Regulations

In addition to the PSD requirements, this Office has promulgated air pollution control requirements under Subchapters 3D and 3Q of the Forsyth County Code. Under the BACT requirements of the PSD regulations, all BACT emission limits must, at a minimum, comply with any applicable standard of performance under the Forsyth County Local Implementation Plan (LIP). Each of the proposed BACT limits are well below the allowable limits and therefore in compliance with any of the other standards imposed by the LIP.

9.2.1 Forsyth County Code - Rule 3D .0515 (Particulate Matter from Industrial Sources)

The new final casing drums, new conveyors, and modified top dressing drums using ethanol-based materials are subject to Rule 3D .0515 of the Forsyth County Air Quality Technical Code (FCAQTC). The allowable particulate matter emissions will increase slightly for ES-18, ES-19, and F-16 as a result of this modification. Based on a review by this Office of the particulate matter emissions and associated process rates indicates that the facility's emissions sources will be in compliance with the particulate matter standard in Rule 3D .0515.

9.2.2 Forsyth County Code - Rule 3D .0516 (Sulfur Dioxide from Combustion Sources)

The proposed incineration of ethanol-based top dressings is subject to Rule 3D .0516 of the FCAQTC. The allowable sulfur dioxide emissions from combustion sources are 2.3 pounds per million Btu. Based on the fuels to be used in the incinerator (natural gas with propane as a back-up fuel), compliance with Rule 3D .0516 is expected.

9.2.3 Forsyth County Code - Rule 3D .0521 (Visible Emissions from Industrial Sources)

The new final casing drums, new conveyors, and modified top dressing drums using ethanol-based materials are subject to Rule 3D .0521. The allowable visible emissions are 20 percent opacity for sources constructed after July 1, 1971. The use of fabric filter control devices for particulate matter sources assures compliance with Rule 3D .0521.

9.2.4 Forsyth County Code - Rule 3D .0530 (Prevention of Significant Deterioration)

Compliance with PSD requirements is discussed elsewhere in this document.

9.2.5 Forsyth County Code - Rule 3D .0531 (Non-Attainment New Source Review)

Forsyth County was re-designated to an attainment area for the 8-hour ozone standard on April 15, 2008. Therefore, Rule 3D .0531 does not apply to this project.

9.2.6 Forsyth County Code - Rule 3D .0958 (Volatile Organic Compounds Work Practice Standards)

The use and application of VOC containing materials are closed loop systems with VOC emissions captured and controlled. Therefore, the final casing drums and top dressing drums are not subject to Rule 3D .0958.

9.2.7 Forsyth County Code - Section 3D .1100 (Toxic Air Pollutant Standards)

The proposed project will result in increased emissions or changes in emissions of several North Carolina toxic air pollutants (NCTAPs). Air dispersion modeling for was submitted by the applicant under a separate cover. The results of the modeling demonstration show compliance with the local air toxics regulations.

9.2.8 Forsyth County Code - Section 3D .1200 (Incinerators)

The proposed incineration of ethanol-based top dressings is exempt from Section 3D .1200 because all oxidation/incineration is of process emissions, which are exempt under Rule 3D .1201(c)(1).

9.2.9 Forsyth County Code - Section 3D .1400 (NOx Control)

The proposed incineration of ethanol-based top dressings is exempt from Section 3D .1400 because all oxidation/incineration is of process emissions, which are exempt under Rule 3D .1402(h)(2).

9.2.10 Forsyth County Code - Rule 3Q .0516 (Title V Significant Modification Procedures)

RJRT is submitting this revised Title V permit application as a significant modification to the Title V permit under the prevention of significant deterioration (PSD) program. The appropriate Forsyth County permit application forms are contained in Appendix E of the application.

10. CONCLUSION

In summary, the RJRT permit application for a permit to construct the proposed modification at the RJRT Tobaccoville facility has been reviewed by this Office. Based on this review, it has been determined that the emission sources in the proposed project will meet all applicable air quality regulations. A copy of the draft permit is located in Appendix B. The permit conditions related to this construction project are located in Part II of the permit.

APPENDIX A

R. J. Reynolds Tobacco Company
Tobaccoville facility
PSD AIR PERMIT
APPLICATION

A1: Initial Application Received 11-25-2014

A2: Revised Application Received 1/2/2015

A3: Local Air Toxics Modeling Demonstration

APPENDIX B

Draft Permit: DRAFT 00745-TV-33

APPENDIX C

Correspondence

APPENDIX D

Supplemental Information

APPENDIX E

Public Notice and Related Correspondence

OFFICE OF ENVIRONMENTAL ASSISTANCE AND PROTECTION

FORSYTH COUNTY GOVERNMENT CENTER
201 NORTH CHESTNUT STREET
WINSTON-SALEM, NC 27101-4120

PERMIT TO OPERATE
AIR QUALITY CONTROL
CLASS: Title V

PERMIT NUMBER	EFFECTIVE DATE	EXPIRATION DATE	RENEWAL DUE
DRAFT 00745-TV-33	TBD	November 27, 2012	February 27, 2012

Facility Name: R.J. Reynolds Tobacco Company - Tobaccoville
Mailing Address: P.O. Box 2959
City, State, ZIP Code: Winston-Salem, NC 27102

Facility Location: RJR Moore Road
City: Tobaccoville, NC

In accordance with the provisions set forth in the Forsyth County Air Quality Technical Code and Chapter 3 of the Forsyth County Code, "Air Quality Control", the facility identified above is authorized to operate, as outlined in Part I, "Air Quality Title V Operation Permit", the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations contained within this permit.

The permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete air quality permit application to the Forsyth County Office of Environmental Assistance and Protection and received an Air Quality Permit, except as provided in this permit or in accordance with applicable provisions of the Forsyth County Air Quality Technical Code.

This permit supersedes all previous permits issued to the permittee by the Forsyth County Environmental Affairs Department or Forsyth County Office of Environmental Assistance and Protection.

Peter B. Lloyd, Ph.D., P.E., Manager
Compliance Assistance & Permitting Division

DATE:

R. J. Reynolds Tobacco Company
Air Quality Permit # DRAFT 00745-TV-33
Zzzz XX, 2015

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**Part I
SECTION 1
PERMITTED EQUIPMENT AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S)**

1.1 Equipment List and Applicable Conditions

Building 851-1 Cigarette Manufacturing

Applicable Permit Section	Applicable Standards							CAM			non-CAM		Visible Emissions	
	PM	PM	max.	PM	SO2	SO2	VOC	Fabric Filter	Fume Incin.	Visual Observ.	Fabric Filter	Wet Scrubber	3.5(A)	3.5(B) NSPS Dc
	3.3(A)	3.3(B)	lb/hr	3.3(B)	3.4(A)	3.4(B)	3.7	(1), (4)	(2), (4)	(3), (4)	(1), (3), (4)	(2), (3), (4)		

ES#	Emission Source	CD#	Controls	EP#	Emission Point									
Building 851-1 Cigarette Manufacturing														
1	Strip Receiving/Blending		x	45.0	x	102	x		x		9	x		
							103	x		x		10	x	
							104	x		x		8	x	
							70				x	21/21A	x	
							82				x	12/12A	x	
							84,85,86				x	6/6A	x	
							87,88				x	5/5A	x	
							89				x	1/1:2A	x	
							90				x	5/5A	x	
							91				x	4/4:47A	x	
					95				x	2/1:2A	x			
					105				x	47/4:47A	x			
2	Reconstituted Tobacco Input		x	35.4	x	87				x	5/5A	x		
										x	16/16A	x		
							100				x	18	x	
							101				x	17	x	
5	Recovered Tobacco Input (Menthol)		x	11.2	x	67				x	24/24E	x		
							92				x	16/16A	x	
6	Recovered Tobacco Silo Discharge (Menthol)		x	17.9	x	67				x	24/24E	x		
7	Recovered Tobacco Conveying		x	17.9	x	67				x	24/24E	x		
							77	x		x	24	x		
							79				x	24	x	
							71,72,73,74				x	24/24A 24B/24C 24D	x	

ES#	Applicable Permit Section	Applicable Standards						CAM			non-CAM		Visible Emissions				
		PM	PM	PM	SO2	SO2	VOC	Fabric Filter	Fume Incin.	Visual Observ.	Fabric Filter	Wet Scrubber	3.5(A)	3.5(B)			
		3.3(A)	3.3(B)	max.	3.3(B)	3.4(A)	3.4(B)	3.7	3.6(B)	3.6(B)	3.6(B)	3.6(A)	3.6(A)	3.5(A)	3.5(B)		
		(1)	lb/hr	(2)				(1), (4)	(2), (4)	(3), (4)	(1), (3), (4)	(2), (3), (4)		NSPS Dc			
ES#	Emission Source	CD#	Controls		EP#	Emission Point											
8	Processed & Recovered Tobacco Input		x	16.5				67				x		24/24E	x		
								80	x		x			24	x		
								92				x		16/16A	x		
9	Processed Tobacco Conveying		x	27.9				66				x		51	x		
								67				x		24/24E	x		
10	Expanded Tobacco Conveying		x	28.4	x			63				x		25	x		
								71,72,73,74				x		24/24A 24B/24C 24D	x		
11	Tobacco Strip Conveying/Blending		x	46.3	x			68,70				x		21/21A	x		
								87,88,90				x		5/5A	x		
								89	x		x			1/1:2A	x		
								95				x		1/1:2A	x		
								91				x		4/4:47A	x		
						105				x		47/4:47A	x				
12	Tobacco Strip Conveying/Storage		x	47.4	x			68				x		21/21A	x		
								69,70				x		22/22A, 21/21A	x		
								71,72,73,74				x		24/24A 24B/24C 24D	x		
								107				x		37	x		
13	Tobacco Strip Conveying to Casing/Drying		x	30.5	x			107				x		37	x		
								112				x		36	x		
14	Tobacco Strip Casing/Drying		x	26.3	x			70				x		21/21A	x		
								107				x		37	x		
								112				x		36	x		
								108	x		x			34	x		
								109	x		x			35	x		
								128					x		43	x	
								129					x		40	x	
						N/A							38,39, 41,42	x			

ES#	Emission Source	Applicable Standards						CAM			non-CAM		Visible Emissions		
		PM	PM	PM	SO2	SO2	VOC	Fabric Filter	Fume Incin.	Visual Observ.	Fabric Filter	Wet Scrubber	3.5(A)	3.5(B)	
		3.3(A)	3.3(B)	max.	3.3(B)	3.4(A)	3.4(B)	3.7							NSPS Dc
Applicable Permit Section	(1)	lb/hr	(2)				(1),(4),(5)	(2),(4),(5)	(3),(4),(5)	(1), (3), (4)	(2), (3), (4)				
ES#	Emission Source	CD#	Controls					EP#	Emission Point						
15	Tobacco Casing/Cutting/Storage		x	45.2	x						x		32/32A	x	
											x		31/31A	x	
											x		30/30A	x	
											x		29/29A	x	
				50-53, 55, 57, 59, 61							x		23	x	
				54, 56, 58, 60	x			x					23	x	
				71-74							x		24/24A 24B/24C 24D	x	
				119, 120, 121, 122								x	20	x	
				123, 124, 125, 126								x	23	x	
		N/A									26	x			
16	Cut Tobacco Silo Discharge		x	43.6	x						x		32/32A	x	
											x		31/31A	x	
											x		30/30A	x	
											x		29/29A	x	
18	Filter Making		x	25.2	x			x			x		29/29B	x	
											x		32/32B	x	
											x		30/30B	x	
											x		31/31B	x	
19	Cigarette Making		x	45.7	x						x		29	x	
											x		29	x	
											x		32	x	
											x		32	x	
											x		31	x	
				25-27, 30, 131	x			x					31	x	
				8,9,11,12							x		30	x	
		28, 29, 31, 32	x			x					30	x			

ES#	Emission Source	Applicable Standards							CAM			non-CAM		Visible Emissions			
		PM	PM	PM	SO2	SO2	VOC	Fabric Filter	Fume Incin.	Visual Observ.	Fabric Filter	Wet Scrubber	3.5(A)	3.5(B) NSPS Dc			
Applicable Permit Section		3.3(A)	3.3(B)	max.	3.3(B)	3.4(A)	3.4(B)	3.7									
		(1)	lb/hr	(2)					(1), (4)	(2), (4)	(3), (4)	(1), (3), (4)	(2), (3), (4)				
ES#	Emission Source	CD#							Controls					EP#	Emission Point		
Building 851-9 R & D																	
1	Blending & Conditioning		x	3.82					N/A						1		
2	Casing & Drying		x	5.38				x	N/A						2,3,4	x	
3	Casing & Cutting		x	8.4					N/A						7,8,9,11,12	x	
									1			x			10	x	
									2			x			13	x	
4	Smokeless Processing		x	4.94					N/A						6	x	
5	Making & Packing							x	N/A						Fugitive		
6	Waste Grinding		x	2.13					4, 5				x		14	x	
7	Glass Preparation Process		x	1.15					6, 7				x		15	x	
8	Carbon Unloading & Storage		x	12.05					8, 9				x		16	x	
9	Carbon & Tobacco Milling/Mixing		x	4.3					8, 9				x		16	x	
10	Heat Source Processing & Making		x	1.7					10, 11				x		17	x	
11	Cigarette Making Line 1		x	4.37				x	12				x		18	x	
									13				x		19	x	
									13				x		19	x	
									14				x		20	x	
12	Glass Fiberizer Lines 1&2								N/A						22	x	
13	OFP Dryer		x	11.06					15				x		21	x	

Note:

The "x" denotes the applicable conditions in Sections 3.3 - 3.7.

1.2 Operating Conditions Not Covered Under the Permit Shield

The following specific conditions have been revised or added to this permit following procedures other than the Significant Modification procedures in Section 3Q .0500 of the Forsyth County Air Quality Control Ordinance and Technical Code. As required under Rule 3Q .0512 Permit Shield and Application Shield, a permit shield is not provided for these new or revised permit requirements. During the next Significant Modification as defined in Rule 3Q .0516 or renewal of this permit, the Title V permit applications for the new and revised permit requirements listed below will also be processed according to the Significant Modification procedures and then a permit shield will be extended at that time.

Source ID	Source Description	Unshielded Operating Conditions	Effective Date
ES-15-851-1 (CD-61-851-1)	Tobacco Casing, Cutting and Storage: Added CD-61-851-1 (serving EP-23-851-1) which had been inadvertently omitted from the permit.	Part I: condition 3.5(A) and condition 3.6(A)(1), (3) and (4)	January 9, 2012 (Permit #00745-TV-30)
Facility-wide	Facility-wide	Part I: condition 2.0	January 9, 2012 (Permit #00745-TV-30)
F-13-851-1	Casing Preparation Area: Added F-13-851-1 which had been inadvertently omitted from the permit.	Part I: condition 3.7	January 9, 2012 (Permit #00745-TV-30)
ES-19-851-1 (CD-131-851-1 & CD-31-851-1)	Switched control of three Cigarette Makeres from CD-31-851-1 to reinstalled CD-131-851-1.	No Part I conditions changed. (CD-131-851-1 had been inadvertently left on the permit after it had been removed from use in December 2009.)	July 6, 2012 (Permit #00745-TV-31)
ES-854-8-4	Emergency Generator, 3,210 HP, Diesel-fired, 19.92 mmBtu/hr	Part I, conditions 3.8, 2.53 and 2.55	July 18, 2013 (Permit #00745-TV-32)
ES-8-851-1	Processed & Recovered Tobacco Input	No conditions unshielded, just the equipment itself	July 18, 2013 (Permit #00745-TV-32)
ES-9-851-1	Processed Tobacco Conveying	No conditions unshielded, just the equipment itself	July 18, 2013 (Permit #00745-TV-32)
ES-21-851-1	Tobacco Expansion Process	No conditions unshielded, just the equipment itself	July 18, 2013 (Permit #00745-TV-32)
ES-854-8-1, ES-854-8-2, ES-854-8-3	Three boilers	Part I, conditions 3.10, 3.9, 3.3, 3.4, 3.5, 2.51, 2.52, 2.53, 2.54 and 2.55	July 18, 2013 (Permit #00745-TV-32)
Facility-wide	Facility-wide	Part I, conditions 3.1(A)(1) and (2)	Zzzz XX, 2015 (Permit #00745-TV-33)

SECTION 2 FACILITY GENERAL ADMINISTRATIVE CONDITIONS

2.1 **General Provisions** [Subchapter 3A and Rule 3Q .0508(i)(16)]

- A. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in Subchapters 3D and 3Q of the Forsyth County Air Quality Technical Code (FCAQTC).
- B. The terms, conditions, requirements, limitations and restrictions set forth in this permit are binding and enforceable pursuant to Subchapter 3A of the Forsyth County Air Quality Ordinance (FCAQO), including assessment of civil and/or criminal penalties. This permit is valid only for the specific processes and operations applied for and indicated in the air quality permit application. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and enforcement action by this Office.
- C. This permit is not a waiver of or approval of any other permits that may be required for other aspects of the facility which are not addressed in this permit.
- D. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore. This permit does not allow the permittee to cause pollution in contravention of local laws or rules, unless specifically authorized by an order from the Director, or to cause pollution in contravention of state laws or rules.
- E. Terms and conditions contained herein shall be enforceable by this Office, the U.S. EPA and citizens of the United States as defined in the federal Clean Air Act, except those identified as **Locally Enforceable Only** requirements which are enforceable by this Office.
- F. Any stationary installation which will reasonably be expected to be a source of pollution shall not be operated, maintained or modified without the appropriate and valid permits issued by this Office, unless the source is exempted by rule. This Office may issue a permit only after it receives reasonable assurance that the installation will not cause pollution in violation of any of the applicable requirements.
- G. In addition to the authority found in Rules 3D. 0501 and 3Q .0508(i)(16), any deviation from the monitoring provisions of this permit may result in a request by this Office to submit data on rates of emissions in order to demonstrate compliance with any applicable regulation.

2.2 Permit Availability [Rules 3Q .0507(k), .0508(i)(16), .0508(i)(9) and .0110]

The permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of this Office or the U.S. EPA upon request.

2.3 Submissions [Rules 3Q .0507(c), .0508(i)(16) and .0104]

All documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required to be sent to this Office by this permit shall be submitted to the Forsyth County Office of Environmental Assistance and Protection, Forsyth County Government Center, 201 N. Chestnut Street, Winston-Salem, NC 27101-4120.

2.4 Severability Clause [Rule 3Q .0508(i)(2)]

The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any specific circumstance, is challenged, the application of the provision in question to other circumstances, as well as the remainder of this permit's provisions, shall not be affected.

2.5 Duty to Comply [Rule 3Q .0508(i)(3)]

The permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2.6 Need to Halt or Reduce Activity Not a Defense [Rule 3Q .0508(i)(4)]

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2.7 Permit Shield [Rule 3Q .0512(a)]

- A. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
- B. A permit shield shall not alter or affect:
 - 1. the power of the Forsyth County Board of Commissioners, Director, or Governor under NCGS 143-215.3(a)(12) or the U.S. EPA under Section 303 of the federal Clean Air Act;
 - 2. the liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
 - 3. the applicable requirements under Title IV of the Clean Air Act; or

4. the ability of the Director or the U.S. EPA under Section 114 of the federal Clean Air Act to obtain information to determine compliance of the facility with its permit.
- C. A permit shield shall not apply to any change made at a facility that does not require a permit or to any permit revision made under Rule 3Q .0523.
- D. A permit shield shall not extend to minor permit modifications made under Rule 3Q .0515.

2.8 Circumvention [Rules 3D .0502 and 3Q .0508(i)(16)]

No person shall circumvent any permitted air pollution control device, or allow the emissions of regulated air pollutants without the applicable air pollution control device operating properly. Unless otherwise specified by this permit, no permitted emission source may be operated without the concurrent operation of its associated air pollution control device(s) and appurtenances.

2.9 Good Air Pollution Control Practice [Rules 3D .0502 and 3Q .0508(i)(16)]

At all times, the equipment listed in *Section 1* shall be operated and maintained in a manner consistent with the design and emissions control as applied for in the application.

2.10 Reporting Requirements for Excess Emissions and Permit Deviations [Rules 3D .0535(f) and 3Q .0508(f)(2), 3Q .0508(i)(16) and 3Q .0508(g)]

“Excess Emissions” - means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections 3D .0500, .0900, .1200 or .1400; or by a permit condition; or that exceeds a **Locally Enforceable Only** emission limit established in a permit issued under Section 3Q .0700. (*Note: This definition applies where the NSPS does not further define excess emissions for an affected NSPS emissions source.*)

“Deviation” - means any action or condition not in accordance with the terms and conditions of this permit including those attributable to upset conditions.

- A. Sources subject to Rules 3D .0524, .1110 or .1111

Excess Emissions and Permit Deviations

1. If the source specific NSPS (3D .0524) or NESHAP (3D .1110 or .1111) defines "excess emissions", these shall be reported as prescribed in 3D .0524, .1110 or .1111.
2. If the source specific NSPS (3D .0524) or NESHAP (3D .1110 or .1111) does NOT define “excess emissions”, the permittee shall report excess emissions as deviations from permit requirements as prescribed in paragraph 3, below.
3. In addition to any specific NSPS or NESHAP reporting requirements the permittee shall upon becoming aware:

- (a) report to this Office any deviations from permit requirements by the next business day, unless an alternative reporting schedule is specifically provided in the permit, and
- (b) report in writing to this Office all deviations from permit requirements or any excess emissions within two business days, unless an alternative reporting schedule is specifically provided in the permit. The written report shall include the probable cause of such deviations and any corrective actions or preventative actions taken. Reports of all deviations from permit requirements shall be certified by a responsible official.

B. Sources NOT subject to Rules 3D .0524, 1110 or .1111

1. Excess Emissions Greater than Four Hours in Duration [3D .0535(f)]

The permittee shall report excess emissions greater than four hours in duration as prescribed in Rule 3D .0535(f) including, but not limited to the following:

- (a) Notify this Office of any such occurrence by 9:00 a.m. Eastern time of this Office's next business day of becoming aware of the occurrence as described in Rule 3D .0535(f)(1);
- (b) Notify this Office immediately when corrective measures have been accomplished; and
- (c) Submit, if requested, to this Office within 15 days after the request, a written report as described in Rule 3D .0535(f)(3).

2. Excess Emissions Less than Four Hours in Duration and Deviations [3Q .0508(f)]

The permittee shall report excess emissions less than four hours in duration and deviations from permit requirements as follows:

- (a) Report to this Office any excess emissions less than four hours in duration and any deviations from permit requirements quarterly, unless an alternative reporting schedule is specifically provided in the permit; and
- (b) Report in writing to this Office any excess emission less than four hours in duration or any deviations from permit requirements quarterly, unless an alternative reporting schedule is specifically provided in the permit. The written report shall include the probable cause of such excess emissions and deviations and any corrective actions or preventative actions taken. All reports of excess emissions and deviations from permit requirements shall be certified by a responsible official.

- C. Other Requirements under Rule 3D .0535 (Rule 3D .0535(g) is **Locally Enforceable Only**).

The permittee shall comply with all other requirements contained in Rule 3D .0535.

2.11 Emergency Provisions <40 CFR 70.6(g)>

The permittee shall be subject to the following provision with regard to emergencies:

- A. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the facility, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the facility to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
- B. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in paragraph C below are met.
- C. The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:
1. an emergency occurred and that the permittee can identify the cause(s) of the emergency;
 2. the permitted facility was at the time being properly operated;
 3. during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the standards, or other requirements in the permit; and
 4. the permittee submitted notice of the emergency to this Office within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, and steps taken to mitigate emissions, and corrective actions taken.
- D. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- E. This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

2.12 **Permit Fees** [Rules 3Q .0206(b), .0508(i)(10) and .0519(a)(4)]

If, within 30 days after being billed, the permittee fails to pay an annual permit fee required under Subchapter 3Q .0200 of the FCAQTC, the Director may initiate action to terminate this permit under Rule 3Q .0519 of the FCAQTC.

2.13 **Annual Emission Inventory Requirements** [Rule 3Q .0207]

The permittee shall report to the Director by June 30th of each year the actual emissions of each air pollutant listed in Rule 3Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form(s) as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

2.14 **Compliance Certification** <40 CFR 70.6(c)> [Rules 3Q .0508(n) and .0508(i)(16)]

By March 1st unless another date is established by the Director, the permittee shall submit to this Office and the U.S. EPA (**U.S. EPA Region 4, Air Enforcement Section, Mail Code: 4APT-AEEB, 61 Forsyth Street, S.W., Atlanta, GA 30303**) a compliance certification by a responsible official with all terms and conditions in the permit, including emissions limitations, standards, or work practices. The compliance certification shall comply with additional requirements as may be specified under Sections 114(a)(3) or 504(b) of the federal Clean Air Act. The compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports as applicable):

- A. the identification of each term or condition of the permit that is the basis of the certification;
- B. the status of compliance with the terms and conditions of the permit for the period covered by the certification, based on the methods or means designated in 40 CFR 70.6(c)(5)(iii)(B). The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR 64 occurred;
- C. whether compliance was continuous or intermittent;
- D. the identification of the method(s) or other means used by the owner and operator for determining the compliance status with each term and condition during the certification period; these methods shall include the methods and means required under 40 CFR Part 70.6(a)(3); and
- E. such other facts as the Director may require to determine the compliance status of the source.

2.15 Retention of Records [Rule 3Q .0508(f)]

The permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit.

2.16 NESHAP - Recordkeeping Requirement for Applicability Determinations <40 CFR 63.10(b)(3)> [Rule 3D .1111]

If the permittee determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants is not subject to a relevant standard or other requirement established under 40 CFR Part 63, the permittee shall keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source. This record shall include all of the information required under 40 CFR 63.10(b)(3).

2.17 Duty to Provide Information [Rule 3Q .0508(i)(9)]

- A. The permittee shall furnish to this Office, in a timely manner, any reasonable information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
- B. The permittee shall furnish this Office copies of records required to be kept by the permit when such copies are requested by the Director.

2.18 Duty to Supplement or Correct Application [Rule 3Q .0507(f)]

The permittee, upon becoming aware that any relevant facts were omitted from the application or that incorrect information was submitted with the application, shall promptly submit such supplementary facts or corrected information to this Office. The permittee shall also provide additional information necessary to address any requirements that become applicable to the source after the date a complete application was submitted but prior to release of the draft permit.

2.19 Certification by Responsible Official [Rule 3Q .0520]

A responsible official (as defined in 40 CFR 70.2) shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that, based on information and belief formed after reasonable inquiry, the statement and information in the document are true, accurate, and complete.

2.20 Inspection and Entry [Rule 3Q .0508(l)]

- A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized representatives of this Office to perform the following:

1. enter upon the permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
2. have access to and copy, at reasonable times, any records that must be kept under conditions of the permit;
3. inspect, at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
4. sample or monitor substances or parameters, at reasonable times and using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements.

Nothing in this condition shall limit the ability of the U.S. EPA to inspect or enter the premises of the permittee under Section 114 or other provisions of the Clean Air Act.

- B. No person shall obstruct, hamper or interfere with any such authorized representative while in the process of carrying out his official duties.

2.21 Averaging Times <40 CFR 70.6(a)(3)> [Rule 3Q .0508(f)]

Unless otherwise specified in *Section 3* of this permit for a specific emission standard or limitation, the applicable averaging period for determining compliance with an emission standard or limitation during compliance testing shall be based on the applicable U.S. EPA reference test method.

2.22 Compliance Testing [Rule 3D .0501(b)]

When requested by this Office for determining compliance with emission control standards, means shall be provided by the owner to allow periodic sampling and measuring of emission rates, including necessary ports, scaffolding and power to operate sampling equipment; and upon the request of this Office, data on rates of emissions shall be supplied by the permittee.

2.23 General Emissions Testing and Reporting Requirements [Rule 3Q .0508(i)(16)]

When required to conduct emissions testing under the terms of the permit:

- A. The permittee shall submit a sampling protocol to this Office at least 30 days prior to the scheduled test date.
- B. The permittee shall notify this Office of the specific test dates at least 10 days prior to the scheduled test date in order to afford this Office the opportunity to have an observer on-site during the sampling program.
- C. During all sampling periods, the permittee shall operate the emission source(s) under operating conditions approved by the Director or his delegate.
- D. The permittee shall submit one copy of the test report to this Office. The test report shall contain at a minimum the following information:
 1. a certification of the test results by sampling team leader and facility representative;

2. a summary of emissions results and text detailing the objectives of the testing program, the applicable state and federal regulations, and conclusions about the testing and compliance status of the emission source(s) as appropriate;
 3. a detailed description of the tested emission source(s) and sampling location(s) process flow diagrams, engineering drawings, and sampling location schematics as necessary;
 4. all field, analytical and calibration data necessary to verify that the testing was performed as specified in the applicable test methods;
 5. example calculations for at least one test run using equations in the applicable test methods and all test results including intermediate parameter calculations; and
 6. documentation of facility operating conditions during all testing periods and an explanation relating these operating conditions to maximum normal operation. If necessary, provide historical process data to verify maximum normal operation.
- E. This Office will review emission test results with respect to the specified testing objectives as proposed by the permittee and approved by this Office.

2.24 **Termination, Modification, and Revocation of the Permit** [Rule 3Q .0519]

The Director may terminate, modify, or revoke and reissue this permit if:

- A. the information contained in the application or presented in support thereof is determined to be incorrect;
- B. the conditions under which the permit or permit renewal was granted have changed;
- C. violations of conditions contained in the permit have occurred;
- D. the permit holder fails to pay fees required under Section 3Q .0200 within 30 days after being billed;
- E. the permittee refuses to allow the Director or his authorized representative upon presentation of credentials:
 1. to enter, at reasonable times and using reasonable safety practices, the permittee's premises in which a source of emissions is located or in which any records are required to be kept under terms and conditions of the permit;
 2. to have access, at reasonable times, to any copy or records required to be kept under terms and conditions of the permit;
 3. to inspect, at reasonable times and using reasonable safety practices, any source of emissions, control equipment, and any monitoring equipment or method required in the permit; or
 4. to sample, at reasonable times and using reasonable safety practices, any emission sources at the facility;

- F. the U.S. EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
- G. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of Chapter 3 of the Forsyth County Code.

2.25 Permit Reopenings, Modifications, Revocations and Reissuances, or Terminations
[Rule 3Q .0508(i)(5)]

The Director may reopen, modify, revoke and reissue, or terminate this permit for reasons specified in Rule 3Q .0517 or .0519. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition in this permit.

2.26 Permit Renewal [Rule 3Q .0508(e) and Rule 3Q .0513]

This permit is issued for a term not to exceed five years. Permits issued under Title IV of the Clean Air Act shall be issued for a fixed period of five years. This permit shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete renewal application is submitted at least nine months before the date of permit expiration. If the permittee or applicant has complied with Rule 3Q .0512(b)(1), this permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of this permit shall remain in effect until the renewal permit has been issued or denied.

2.27 Reopening for Cause [Rules 3Q .0517 and .0508(g)]

This permit shall be reopened and revised in accordance with Rule 3Q .0517 prior to its expiration date, for any of the following reasons:

- A. Additional applicable requirements become applicable to the facility with remaining permit term of three or more years.
- B. Additional requirements, including excess emissions requirements, become applicable to this source under Title IV of the Clean Air Act. Excess emissions offset plans for this source shall become part of this permit upon approval by the U.S. EPA.
- C. The Director or the U.S. EPA finds that a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
- D. The Director or the U.S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

2.28 Construction and Operation Permits [Sections 3Q .0100 and .0300]

A construction and operating permit shall be obtained by the permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of Sections 3Q .0100 and .0300.

2.29 Permit Modifications [Rules 3Q .0514, .0515, .0516, .0517, .0523 and .0524]

- A. Permit modifications may be subject to the requirements of Rules 3Q .0514, .0515, .0516 and .0524.
- B. Changes made pursuant to Rules 3Q .0523(a) and (b) do not require a permit modification.
- C. The permittee shall submit an application for reopening for cause in accordance with Rule 3Q .0517 if notified by this Office.
- D. To the extent that emissions trading is allowed under FCAQTC Subchapter 3D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to Rule 3Q .0523(c).

2.30 Insignificant Activities [Rules 3Q .0503 and .0508(i)(15)]

Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The permittee shall have available at the facility at all times and made available to an authorized representative of this Office upon request, documentation, including calculations if necessary, to demonstrate that an emission source or activity is insignificant.

2.31 Standard Application Form and Required Information [Rules 3Q .0505 and .0507]

The permittee shall submit applications and required information in accordance with the provision of Rules 3Q .0505 and .0507.

2.32 Property Rights [Rule 3Q .0508(i)(8)]

This permit does not convey any property rights of any sort, or any exclusive privileges.

2.33 Refrigerant Requirements (Stratospheric Ozone and Climate Protection) [Rule 3Q .0508(b)]

- A. If the permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR 82 Subpart A, Appendices A and B, the permittee shall service, repair, and maintain such equipment according to the work practices and personnel certification requirements, and the permittee shall use certified recycling and recovery equipment specified in 40 CFR 82 Subpart F.

- B. The permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR 82 Subpart F.
- C. The permittee shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the U.S. EPA or its designee as required.

2.34 Prevention of Accidental Releases - Section 112(r) [Rule 3Q .0508(h)]

If the permittee is required to develop and register a risk management plan pursuant to Section 112(r) of the federal Clean Air Act, then the permittee is required to register this plan in accordance with 40 CFR Part 68.

2.35 Title IV Allowances [Rule 3Q .0508(i)(1)]

The facility's emissions are prohibited from exceeding any allowances that the facility lawfully holds under Title IV of the Clean Air Act. This permit shall not limit the number of allowances held by the permittee, but the permittee may not use allowances as a defense to noncompliance with any other applicable requirement.

2.36 Air Pollution Alert, Warning or Emergency [Section 3D .0300]

Should the Director of this Office declare an Air Pollution Alert, Warning or Emergency, the permittee will be required to operate in accordance with the permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with the appropriate requirements specified in Section 3D .0300.

2.37 Registration of Air Pollution Sources [Rule 3D .0202]

The Director of this Office may require the permittee to register a source of air pollution. If the permittee is required to register a source of air pollution, this registration and required information shall be in accordance with Rule 3D .0202(b).

2.38 Ambient Air Quality Standards [Rule 3D .0501(e)]

In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in Rule 3D .0400 to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

2.39 Odor [Rule 3D .0522] *Locally Enforceable Only*

The permittee shall not cause or permit the emission of odors beyond the facility's property lines which are harmful, irritating or which unreasonably interfere with the use and enjoyment of any person's properties or living conditions, or any public properties or facilities. Such odors are prohibited by Rule 3D .0522. No violation shall be cited, provided that the best practical treatment, maintenance, and control of odor(s) currently available is used. This requirement does not apply to normal agricultural practices, nor to accidental emissions of odors which are not normally produced during routine operations and activities as determined by the Director.

2.40 Fugitive Dust Control Requirement [Rule 3D .0540]

The permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR 60, Appendix A), the owner or operator may be required to submit and implement a fugitive dust control plan as described in 3D .0540(f).

New Source Performance Standards (NSPS) General Provisions - Permit Conditions

Following are conditions found in the 40 CFR Part 60 NSPS General Provisions. The following conditions only apply to sources subject to a relevant standard of a subpart of 40 CFR Part 60 except when otherwise specified in a particular subpart or in a relevant standard.

2.41 NSPS - General Provisions <40 CFR 60 Subpart A> [Rule 3D .0524]

The permittee shall comply with all applicable requirements specified in the general provisions of the New Source Performance Standards (40 CFR 60 Subpart A) including but not limited to requirements concerning notifications, testing, monitoring, recordkeeping, modifications and reconstruction.

2.42 NSPS - Good Air Pollution Control Practice <40 CFR 60.11(d)> [Rule 3D .0524]

At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

2.43 NSPS - Circumvention <40 CFR 60.12> [Rule 3D .0524]

Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard under 40 CFR 60. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

2.44 **NSPS - Maintain Records - Startup/Shutdown/Malfunction** <40 CFR 60.7(b)> [Rule 3D .0524]

The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

2.45 **NSPS - Files Available for Inspection** <40 CFR 60.7(f)> [Rule 3D .0524]

The permittee shall maintain a file of all measurements, including, if applicable, performance test measurements and all other information required in 40 CFR 60 . This file shall be kept in a permanent form suitable for inspection and shall be retained at least two years following the date of such measurements, maintenance, reports, and records.

2.46 **NSPS - Performance Testing Facilities Provided by Permittee** <40 CFR 60.8(e)> [Rule 3D .0524]

For any performance testing, the permittee shall provide, or cause to be provided, performance testing facilities as follows:

- A. Sampling ports adequate for the applicable test methods. This includes:
 1. constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and
 2. providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
- B. Safe sampling platform(s) with safe access.
- C. Utilities for sampling and testing equipment.
- D. Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For purposes of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply.

**Compliance Assurance Monitoring for Major Stationary Sources (CAM) -
General Conditions - <40 CFR Part 64>**

Following are conditions based on the requirements found in 40 CFR Part 64. These conditions only apply to sources subject to the CAM requirements.

2.47 CAM - Proper Maintenance <40 CFR 64.7(b)> [Rule 3D .0614]

At all times, the permittee shall maintain the monitoring equipment, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

2.48 CAM - Continued Operation <40 CFR 64.7(c)> [Rule 3D .0614]

Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

2.49 CAM - Response to Excursions or Exceedances <40 CFR 64.7(d)> [Rule 3D .0614]

Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designed condition, or below the applicable emissions limitation or standard, as applicable.

Determination of whether the permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process. Based on the results of this determination, this Office may require the permittee to develop and implement a Quality Improvement Plan (QIP). The elements of a QIP are identified in 40 CFR 64.8(b).

2.50 CAM - Documentation of Need for Improved Monitoring <40 CFR 64.7(e)> [Rule 3D .0614]

After approval of the CAM plan, if the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify this Office and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conduction monitoring and collecting data, or the monitoring of additional parameters.

National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) General Conditions - [Rule 3D .1111]

Following are conditions found in the 40 CFR Part 63 NESHAP General Provisions. The following conditions only apply to sources subject to a relevant standard of a subpart of 40 CFR Part 63 except when otherwise specified in a particular subpart or in a relevant standard.

2.51 NESHAP - General Provisions <40 CFR 63 Subpart A> [Rule 3D .1111]

The permittee shall comply with all applicable requirements specified in the general provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR 63 Subpart A) including but not limited to requirements concerning notifications, testing, monitoring, recordkeeping, modifications, construction, and reconstruction.

2.52 NESHAP - Circumvention <40 CFR 63.4(b)> [Rule 3D .1111]

The permittee shall not build, erect, install, or use any article, machine, equipment or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere, the use of diluents to achieve compliance with a relevant standard for visible emissions, and the fragmentation of an operation such that the operation avoids regulation by a relevant standard.

2.53 NESHAP - Maintain Records <40 CFR 63.10(b)(2)> [Rule 3D .1111]

For affected sources, the permittee shall maintain relevant records of:

- A. the occurrence and duration of each startup, shutdown, or malfunction of operation;
- B. the occurrence and duration of each malfunction of the air pollution control equipment;
- C. all maintenance performed on the air pollution control equipment;
- D. actions taken during periods of startup, shutdown, and malfunction;
- E. all information necessary to demonstrate compliance with the affected source's startup, shutdown, and malfunction plan when all actions taken are consistent with the procedures specified in the plan;
- F. each period during which a CMS is malfunctioning or inoperative;
- G. all required measurement needed to demonstrate compliance with a relevant standard;
- H. all results of performance tests, CMS performance evaluations, and opacity and visible emission observations;
- I. all measurements as may be necessary to determine the conditions of performance tests and performance evaluations;
- J. all CMS calibration checks;
- K. all adjustments and maintenance performed on CMS;
- L. any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements if the source has been granted a waiver under 40 CFR 63.10(f);
- M. all emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test if the source has been granted such permission under 40 CFR 63.8(f)(6); and,
- N. all documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9.

2.54 NESHAP - Files Available for Inspection <40 CFR 63.10(b)(1)> [Rule 3D .1111]

The permittee shall maintain files of all information required by 40 CFR Part 63 recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site.

2.55 NESHAP - Performance Testing Facilities Provided by Permittee

<40 CFR 63.7(d)> [Rule 3D .1111]

For any performance testing for each new source and, at the request of the Director, for each existing source, the permittee shall provide performance testing facilities as follows:

- A. Sampling ports adequate for test methods applicable to the affected source. This includes:
 - 1. Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and
 - 2. Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
- B. Safe sampling platform(s).
- C. Safe access to sampling platform(s).
- D. Utilities for sampling and testing equipment.
- E. Any other facilities that the Director deems necessary for safe and adequate testing of a source.
- F. Unless otherwise specified in the applicable subpart, each performance test shall be conducted according to the requirements in 40 CFR 63.7.

SECTION 3 SPECIFIC LIMITATIONS AND CONDITIONS

The emission source(s) and associated air pollution control device(s) listed below are subject to the following specific terms, conditions, and limitations, including the monitoring recordkeeping, and reporting requirements to which those requirements apply:

3.1 Facility-Wide Emission Source Conditions

A. Prevention of Significant Deterioration (PSD) [Rule 3D .0530]

1. Best Available Control Technology for Volatile Organic Compounds

The permittee shall not use ethyl alcohol as a vehicle for introducing flavoring agents into tobacco except for limited use (trace amounts) at ES-15 and for use in the production of former Lorillard cigarette brands. This work practice standard has been determined to be Best Available Control Technology for emissions of volatile organic compounds at this facility.

2. Monitoring/Recordkeeping/Reporting [Rule 3Q .0508(f)]

The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the ethyl alcohol use limitations described above.

Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. [Rules 3D .0605 and 3D .1105]

3. Testing [Rule 3D .0501(b)]

If emissions testing is required by this Office or the U.S. EPA, or the permittee submits emissions testing to this Office in support of a permit application, the permittee shall perform such testing in accordance with the appropriate U.S. EPA reference method(s) as approved by this Office. The permittee may request approval from this Office for an alternate test method or procedure in writing.

B. Limitation to Avoid Being Major for Hazardous Air Pollutants [Rule 3D .1111, 3Q .0317(a)(5)]

In order to remain classified as an area source for hazardous air pollutants under Rule 3D .1111 and thereby avoid regulatory requirements of future NESHAP regulations, the facility must comply with the following:

1. Emission Limits -

- (a) Total HAP emissions from the facility shall not exceed 25 tons for any 12-month period.
- (b) Total vinyl acetate emissions from the facility shall not exceed 10 tons for any 12-month period.

2. Monitoring/Recordkeeping - [Rule 3Q .0508(f)]

Compliance with the limit specified in condition 3.1(B)(1) shall be demonstrated by the following:

- (a) the permittee shall maintain monthly records of all fuel and product throughputs necessary to calculate total HAP and vinyl acetate emissions using the formulas in Sections (b) and (c) below; and,
- (b) total vinyl acetate emissions shall be calculated at the end of each month for the previous 12-month period using the following formula:

$$E = \sum_{i=1}^{12} \sum_{j=1}^n W_j * C_j$$

E = 12-MONTH VINYL ACETATE EMISSIONS (POUNDS).
 W_j = MONTHLY USAGE IN POUNDS FOR GLUE j.
 C_j = VINYL ACETATE WEIGHT CONTENT IN GLUE j.
 i = MONTH 1 THROUGH 12.

- (c) If the vinyl acetate emissions exceed 8 tons/year on any monthly calculation, the 12-month total HAP emissions must be calculated for the same 12-month period using the following formula:

$$E = \sum_{i=1}^{12} 0.021 * P1i + 0.012 * P2i + 0.039 * P14i + 0.040 * P15i + 0.067 * P21i + 0.00184 * PNGi + 0.14 * PFOi + 1660 + Vi$$

E = 12-MONTH TOTAL HAP EMISSIONS (POUNDS).
 P1(i) = MONTHLY PRODUCT THROUGHPUT (TONS) FOR ES-01 IN MONTH i.
 P2(i) = MONTHLY PRODUCT THROUGHPUT (TONS) FOR ES-02 IN MONTH i.
 P14(i) = MONTHLY PRODUCT THROUGHPUT (TONS) FOR ES-14 IN MONTH i.
 P15(i) = MONTHLY PRODUCT THROUGHPUT (TONS) FOR ES-15 IN MONTH i.
 P21(i) = MONTHLY PRODUCT THROUGHPUT (TONS) FOR ES-21 IN MONTH i.
 PNG(i) = MONTHLY NATURAL GAS USAGES (MMBTU) FOR ES-854-8-(1,2,3) IN MONTH i.
 PFO(i) = MONTHLY #2 FUEL OIL USAGES (1000 GALLONS) FOR ES-854-8-(1,2,3) IN MONTH i.
 1660 = THE POTENTIAL HAP EMISSIONS (lbs) FROM ES-854-8-4, ES-(18,19,F17)-851-1 and ES-(1-3, 13)-851-9 (EXCLUDING VINYL ACETATE).
 Vi = MONTHLY VINYL ACETATE EMISSIONS (POUNDS) CALCULATED MONTHLY FOR ES-(18, 19, F16)-851-1 and ES-(5, 11)-851-9 IN SECTION 3.1(B)(2)(b) ABOVE.
 i = MONTHS 1 THROUGH 12.

3. Reporting - [Rule 3Q .0508(f)]

The permittee shall submit a semiannual report to this Office containing the following information:

- (a) total vinyl acetate emissions (tons) emitted each month and for each 12-month period ending on each month using the formula in Section 3.1(B)(2)(b) above; and,
- (b) if the vinyl acetate emissions exceed 8 tons for any 12-month period, the monthly and total 12-month emissions must be reported for the same 12-month period using the formula in Section 3.1(B)(2)(c) above.
- (c) The report shall be received by this Office by July 30th for the previous months of January through June, and by January 30th for the previous months of July through December.

3.2 Source Specific Emission Limits

A. ES-1-851-1 - Prevention of Significant Deterioration [Rule 3D .0530 and 3Q .0317]

1. Standard/Operation requirements for particulate matter and VOCs for ES-1 (851-1)

Annual VOC emissions shall not exceed 40 tons and PM annual emissions shall not exceed 25 tons. Compliance with these emission limits are demonstrated by limiting the throughput. Combined throughput rates shall not exceed 216,705 tons of tobacco (dry weight) per monthly rolling 12-month total in order to remain below the significant levels established for exemption from further regulation under Prevention of Significant Deterioration for particulate matter and VOC emissions.

2. Monitoring/Recordkeeping requirement [Rule 3Q .0508(f)]

The permittee shall maintain monthly and monthly rolling 12-month total records of tobacco throughput rates (dry weight) for ES-01. These records shall be maintained at the facility for a period of five years following the date of such record and shall be made available upon request to this Office.

3. Reporting requirement [Rule 3Q .0508(f)]

The permittee shall submit a report of the monitoring requirements to this Office by January 30th and July 30th for the preceding six-month period.

B. Building 851-9 - Prevention of Significant Deterioration [Rule 3D .0530 and 3Q .0317]

In order for the TV-29 modification to avoid PSD review the facility must comply with the following:

1. Emission Limits -

PM10 emissions from Building 851-9 shall not exceed 15 tons for any 12-month period.

2. Monitoring/Recordkeeping - [Rule 3Q .0508(f)]

Compliance with the limit specified in condition 3.1(B)(1) shall be demonstrated by the following:

- (a) the permittee shall maintain monthly records of all product throughputs necessary to calculate PM10 emissions using the following formula:

$$(1.59*A + 0.475*B + 0.0025*C + 0.0056*D + 4.3E-06*E + 0.01*F + 0.01*G) / 2000 = \text{PM10 monthly emissions in tons}$$

A = ES-1 monthly production in dry tons

B = ES-2 monthly production in dry tons

C = ES-4 monthly production in dry lbs

D = F-3 lbs tobacco processed

E = F-6 lbs filter tow processed

F = F-9 lbs tobacco processed

G = F-10 lbs tobacco processed

- (b) each month the 12-month total will be calculated
- (c) each 12-month total shall not exceed 8.3 tons of PM10 where
8.3 = 15 ton limit - potential PM10 emissions (6.7 tons) of ES-(3, 6-11, 13, F-7)

3. **Reporting - [Rule 3Q .0508(f)]**

- (a) The permittee shall submit a semiannual report to this Office which includes the total PM10 emissions (tons) emitted each month and for each 12-month period.
- (b) The report shall be received by this Office by July 30th for the previous months of January through June, and by January 30th for the previous months of July through December.

C. **Building 851-9 - Prevention of Significant Deterioration [Rule 3D .0530 and 3Q .0317]**

In order for the TV-29 modification to avoid PSD review the facility must comply with the following:

1. **Emission Limits -**

VOC emissions from Building 851-9 shall not exceed 40 tons for any 12-month period.

2. **Monitoring/Recordkeeping - [Rule 3Q .0508(f)]**

Compliance with the limit specified in condition 3.1(B)(1) shall be demonstrated by the following:

- (a) the permittee shall maintain monthly records of all product throughputs necessary to calculate VOC emissions using the following formula:

$$(2.32*A + 0.021*B + 8.47 \times 10^{-7} * C + 0.0305 * D + 1.96 * E + 0.001 * F + 0.015 * G + 4.3E-05 * H + I + 0.00123 * J + 0.00123 * K) / 2000 = \text{monthly VOC emissions (tons)}$$

A = ES-2 monthly production in dry tons

B = ES-4 monthly production in dry lbs.

C = ES-5 # of cigarettes produced in month

D = ES-12 monthly production in lbs.

E = F-2 lbs inks used in process

F = F-3 lbs tobacco processed

G = F-5 lbs tobacco processed

H = F-6 lbs filter tow processed

I = VOC use (lbs) in F-8 (R&D) labs

J = F-9 lbs tobacco processed

K = F-10 lbs tobacco processed

- (b) each month the 12-month total will be calculated

- (c) each 12-month total shall not exceed 31.4 tons of VOC where
 $31.4 = 40 \text{ ton limit} - \text{potential VOC emissions (8.6 tons) of ES-(1, 3, 11)}$

3. **Reporting - [Rule 3Q .0508(f)]**

- (a) The permittee shall submit a semiannual report to this Office which includes the total VOC emissions (tons) emitted each month and for each 12-month period.
- (b) The report shall be received by this Office by July 30th for the previous months of January through June, and by January 30th for the previous months of July through December.

D. **Building 851-9 - Prevention of Significant Deterioration [Rule 3D .0530 and 3Q .0317]**

In order for the TV-29 modification to avoid PSD review the facility must comply with the

1. **Emission Limits -**

PM emissions from Building 851-9 shall not exceed 25 tons for any 12-month period.

2. **Monitoring/Recordkeeping - [Rule 3Q .0508(f)]**

Compliance with the limit specified in condition 3.1(B)(1) shall be demonstrated by the following:

- (a) the permittee shall maintain monthly records of all product throughputs necessary to calculate PM emissions using the following formula:

$$(1.99*A + 0.493*B + 0.0031*C + 0.007*D + 5.3E-06*E + 0.01*F + 0.01*G) / 2000 = \text{PM monthly emissions in tons}$$

- A = ES-1 monthly production in dry tons
 B = ES-2 monthly production in dry tons
 C = ES-4 monthly production in dry lbs
 D = F-3 lbs tobacco processed
 E = F-6 lbs filter tow processed
 F = F-9 lbs tobacco processed
 G = F-10 lbs tobacco processed

- (b) each month the 12-month total will be calculated
- (c) each 12-month total shall not exceed 17.7 tons of PM where
 $17.7 = 25 \text{ ton limit} - \text{potential PM emissions (7.3 tons) of ES-(3, 6-11, 13, F-7)}$

3. **Reporting - [Rule 3Q .0508(f)]**

- (a) The permittee shall submit a semiannual report to this Office which includes the total PM emissions (tons) emitted each month and for each 12-month period.

- (b) The report shall be received by this Office by July 30th for the previous months of January through June, and by January 30th for the previous months of July through December.

3.3 Particulate Emission Limits

A. Particulates from Fuel Burning Indirect Heat Exchangers [Rule 3D .0503]

1. **Particulate allowable emission rate [Rule 3D .0503]** - Emissions of particulate matter from emission sources designated in Section 1.1 shall not exceed the allowable emission rate calculated by the equation $E=1.09 * Q^{-0.2594}$; where E = allowable emission limit for particulate matter in lb/million Btu, and Q =maximum heat input in million Btu/hr of all fuel burning indirect heat exchangers, determined according to Rule 3D .0503(c).

Emission Source ID	Value of Q	Particulate Emission Limit (E)
ES-854-8-1	1256 million Btu/hr	0.17 lb/million Btu
ES-854-8-2	1256 million Btu/hr	0.17 lb/million Btu
ES-854-8-3	1256 million Btu/hr	0.17 lb/million Btu

2. **Monitoring/Recordkeeping/Reporting requirement [Rule 3Q .0508(f)]** - No monitoring/recordkeeping/reporting is required for the specific purpose of demonstrating compliance with the above standard because the fuels being combusted are natural gas and No. 2 fuel oil which inherently meet this standard. However, the permittee shall maintain the appropriate records for raw material usage and/or production rates in order to calculate the emissions data needed to fulfill the requirements for condition 2.13 entitled Annual Emission Inventory Requirements.

B. Particulates from Industrial Processes

1. **Control of Particulates from Miscellaneous Industrial Processes - [Rule 3D .0515]**

Emissions for particulate matter from emission sources designated in Section 1.1 shall not exceed the allowable emission rate calculated with the equation $E = 4.10(P)^{0.67}$ calculated to three significant figures for process rates up to 30 tons/hr, or with the equation $E = 55.0(P)^{0.11} - 40$ calculated to three significant figures for process rates greater than 30 tons/hr; where E equals the maximum allowable PM emission rate in lb/hr, and P equals the process rate in tons/hr. Accordingly, the potential emission rate from this equipment shall at no time exceed the emission rates based on maximum production.

2. **Control of Particulates from Processes Subject to BACT - [Rule 3D .0530]**

Total particulate matter emissions from emission sources designated in Section 1.1 shall be controlled by a properly operated and maintained fabric filters or wet scrubbers where such controls are present. This control strategy has been determined to be Best Available Control Technology.

3.4 Sulfur Dioxide Emission Limits

A. NSPS for Sulfur Dioxide [Rule 3D .0524]

1. **NSPS-Sulfur dioxide allowable emission rate [40 CFR 60.42c(d, i)] [Rule 3D .0524]** - Emissions of sulfur dioxide from emission sources designated in Section 1.1 shall not exceed 0.50 lbs. per million Btu heat input. Compliance with this standard shall be continuously demonstrated by combusting only natural gas or No. 2 fuel oil with a maximum sulfur content of 0.5% by weight, as certified by the fuel supplier for this facility. This standard and the fuel oil sulfur limit apply at all times, including periods of startup, shutdown, and malfunction.
2. **Monitoring [Rule 3Q .0308(a)(1)]** - Approved fuels for the boilers are natural gas and No. 2 fuel oil. Any change in fuel type for the boilers must receive prior approval from the Office of Environmental Assistance and Protection.
3. **Recordkeeping requirement [40 CFR 60.48c(f), (g) and (i)] [Rule 3D .0524]** - The permittee shall maintain the following records for a period of five years following the date of such record.
 - (a) For each shipment of No. 2 fuel oil, the permittee shall obtain and maintain a written statement from the fuel supplier that certifies that all the fuel oil included in the shipment complies with the American Society for Testing and Materials (ASTM) specifications for No. 2 fuel oil. This written statement shall also include the name of the company supplying the fuel.
 - (b) The permittee shall record and maintain records of the amount of No. 2 fuel oil and the amount of natural gas combusted during the reporting period.
4. **Reporting requirement [40 CFR 60.48c(e), (g) and (j)] [Rule 3D .0524]** - The permittee shall submit a semiannual report to this Office no later than January 30th for the period July through December, and no later than July 30th for the period January through June. Each report shall include the following items:
 - (a) The calendar dates covered in the reporting period.
 - (b) The amount of fuel oil and the amount of natural gas combusted during the reporting period. If no fuel oil or natural gas was combusted during the reporting period, a written statement signed by the permittee certifying that fact shall be provided to satisfy this reporting requirement for the given fuel.
 - (c) If fuel oil was combusted during the reporting period, a written statement signed by the permittee certifying that all of the fuel oil combusted during the reporting period is represented by the fuel supplier certifications submitted for the current reporting period or by previously submitted fuel supplier certifications.

B. Sulfur Dioxide Emissions from Combustion Sources [Rule 3D .0516]

1. **Standard [Rule 3D .0516]** - Emissions of sulfur dioxide from emission sources designated in Section 1.1 shall not exceed 2.3 lb/MMBtu input.
2. **Monitoring/Recordkeeping/Reporting requirement [Rule 3Q .0508(f)]** - No monitoring/recordkeeping/reporting is required for the specific purpose of demonstrating compliance with the above standard because the fuel being combusted is No. 2 fuel oil or natural gas. The maximum sulfur content of No. 2 fuel oil is 0.5 % by weight which ensures compliance with the sulfur dioxide standard. However, the permittee shall maintain the appropriate records for raw material usage and/or production rates in order to calculate the emissions data needed to fulfill the requirements for condition 2.13 entitled Annual Emission Inventory Requirements.

3.5 Control of Visible Emissions

A. Non-NSPS

1. **Standard [Rule 3D .0521(d)]** - Visible emissions from emission sources designated in Section 1.1 shall not exceed 20% opacity when averaged over a six-minute period with the following exceptions:
 - (a) No six-minute period exceeds 87% opacity;
 - (b) No more than one six-minute period exceeds 20% opacity in any hour; and
 - (c) No more than four six-minute periods exceed 20% opacity in any 24-hour period.
2. **Monitoring/Recordkeeping/Reporting requirement [Rule 3Q .0508(f)]** - No monitoring/recordkeeping/reporting is required for the specific purpose of demonstrating compliance with the above standard for all fuel combustion sources because the fuels being combusted are natural gas and No. 2 fuel oil which inherently meet this standard. However, the permittee shall maintain the appropriate records for raw material usage and/or production rates in order to calculate the emissions data needed to fulfill the requirements for condition 2.13 entitled Annual Emission Inventory Requirements.

B. NSPS Sources

1. **Standard [40 CFR 60.43c(c) (Subpart Dc)] [Rule 3D .0524]** - Visible emissions from emission sources designated in Section 1.1 shall not exceed 20% opacity when averaged over a six-minute period, except for one six-minute period per hour of not more than 27% opacity. This standard shall apply at all times, except during periods of startup, shutdown, or malfunction.
2. **Monitoring/Recordkeeping/Reporting requirement [Rule 3Q .0508(f)]** - No monitoring/recordkeeping/reporting is required for the specific purpose of demonstrating compliance with the above standard for all fuel combustion sources because the fuels being combusted are natural gas and No. 2 fuel oil which inherently meet this standard. However, the permittee shall maintain the appropriate records for raw material usage and/or production rates in order to calculate the emissions data needed to fulfill the requirements for condition 2.13 entitled Annual Emission Inventory Requirements.
3. **Monitoring/Recordkeeping/Reporting requirement [Rule 3Q .0508(f)]** - For all non-fuel burners, Section 3.6 satisfies this requirement.

3.6 PM - Periodic Monitoring/Recordkeeping/Reporting

A. Non-CAM [Rule 3Q .0508(f)]

1. **Periodic monitoring for equipment controlled by fabric filters** - Particulate matter emissions from emission sources designated in Section 1.1 shall be controlled during all periods of operation. To ensure the optimum efficiency of the control devices, the permittee shall perform inspections and maintenance in a manner and frequency consistent with good practice for minimizing emissions. At a minimum, an annual internal inspection of the fabric filters' structural integrity and operation shall be performed.
2. **Periodic monitoring for equipment controlled by wet scrubbers** - Particulate matter emissions from emission sources designated in Section 1.1 shall be controlled during all periods of operation. To ensure that optimum control efficiency is maintained, the permittee shall perform inspections and preventative maintenance in a manner consistent with good practice for minimizing emissions. The inspection and maintenance requirement must include the following:
 - (a) an annual visual internal inspection of the wet scrubbers' structural integrity and operation;
 - (b) the permittee shall maintain and operate low water pressure switches for each wet scrubber and an interlock system that shuts the process down during a low-flow condition.
3. **Recordkeeping requirement** - A log shall be maintained on-site with the dates of inspection and maintenance activities, inspection results, and maintenance performed.
4. **Reporting requirement** - The permittee shall submit a summary report of the monitoring requirements to this Office by January 30th and July 30th for each preceding six-month period.

B. Compliance Assurance Monitoring (CAM) [Rule 3D .0614, 40 CFR Part 64]

1. **Monitoring-Fabric Filter Inspection & Maintenance** - To ensure the optimum efficiency of the control devices as designated in Section 1.1, the permittee shall perform inspections and maintenance in a manner and frequency consistent with good practice for minimizing emissions. Inspection and maintenance must include the following:
 - (a) An annual visual internal inspection of the fabric filters' structural integrity and operation.
 - (b) Upon evidence of a problem, an investigation shall be initiated and maintenance activities, required to correct the problem, shall be scheduled and performed. The investigation and corrective action shall be conducted as expeditiously as practicable in accordance with good air pollution control practice for minimizing emissions.

- (c) Only trained maintenance personnel will perform inspection and maintenance.
- (d) An excursion shall be defined as failure to perform inspections and preventative maintenance on at least an annual basis or failure to perform repairs to correct abnormal occurrences in a timely manner.

2. **Monitoring-Fume Incinerator [Rule 3D .0614, 40 CFR Part 64]**

To ensure the optimum efficiency of the fume incinerator (CD-130) the permittee shall perform the following monitoring and recordkeeping activities:

- (a) all waste gas and particulate matter emissions resulting from the sublimation loop shall be vented to the fume incinerator at all times the process is in operation. At no time shall this waste stream bypass the incinerator except for periods of malfunction/breakdown; and
- (b) the incinerator combustion chamber shall operate at an air temperature of no less than 650 F and no more than 1750 F; and
- (c) the incinerator shall be equipped with a temperature gauge situated to monitor the air temperature in the combustion chamber. The temperature gauge shall be checked and calibrated as required and in accordance with the manufacturer's written instruction; and
- (d) the temperature shall be monitored continuously while the process is operating and averaged every 15 minutes to ensure proper combustion chamber operation. The temperature data shall be collected by the incinerator operating system and kept in a log (written or electronic form), maintained on site and made available for inspection upon request by this Office; and
- (e) an excursion shall be defined as an incinerator combustion chamber temperature reading below 650 F or above 1750 F. Upon detection, the process shall be shut down and an investigation into the cause of the excursion shall be initiated; and
- (f) the cause of any excursion, results of the investigation and any corrective action taken, as well as other supporting information, shall be documented in a log (written or electronic form), maintained on site and made available for inspection upon request by this Office. The log shall include the date of the investigation, the inspectors name and any corrective actions performed as a result of the investigation.

3. **Monitoring-Visual Stack Observations** - In order to demonstrate compliance with the CAM plan for control devices identified in Section 1.1, the permittee shall perform visual stack observations. As a minimum, the visual stack observation program shall include the following:

- (a) Visible emissions from each stack shall be monitored once per "operational day" for each plant operational day for the presence of visible emissions. An "operational day" begins at 8:00 AM and ends at 7:59 AM the following day.

- (b) The presence of any visible emissions shall trigger an investigation to determine the cause and, if applicable, corrective action. The investigation and corrective action shall be conducted as expeditiously as practicable in accordance with good air pollution control practice for minimizing emissions. The visual observation shall be repeated as soon as practicable after the investigation and completion of any corrective action to verify that the visible emissions are no longer present. If the visible emissions are present after the investigation and corrective action has been taken, the emissions shall be considered an excursion.
 - (c) Observers shall receive on-the-job training pertaining to visual observations and what constitutes an excursion.
4. **Recordkeeping** - Records of the monitoring required under 3.6(B)(1,2,3, and 4) shall be maintained on-site, made available to Office personnel, that include the following:
- (a) Maintenance of fabric filters - dates of inspections and maintenance activities; results of investigations and corrective actions taken; names of persons conducting activities; records of employee on-the-job training for inspection and maintenance.
 - (b) Maintenance of fume incinerator- the cause of any excursion; results of the investigation and any corrective action taken; the date of any investigation; the inspectors name; any corrective actions performed as a result of the investigation.
 - (c) Visual observations - date/time of each observation; person performing observation; results of observation (visible emissions present or absent); results of investigation and corrective action if visible emissions are present; records of employee on-the-job training for visual observations.
5. **Reporting requirement** - The permittee shall submit a summary report of all monitoring requirements in this section to this Office by January 30th and July 30th for each preceding six-month period.

3.7 Work Practices for Sources of Volatile Organic Compounds [Rule 3D .0958]

- A. **Work practice standards [Rule 3D .0958(c) and 3Q .0508(aa)]** - For equipment designated in Section 1.1 the permittee shall:
1. store all material, including waste material, containing volatile organic compounds in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use,
 2. clean up spills as soon as possible following proper safety procedures,
 3. store wipe rags in closed containers,
 4. not clean sponges, fabric, wood, paper products, and other absorbent materials, unless volatile organic compound emissions are captured and controlled,
 5. drain solvents used to clean supply lines and other coating equipment into containers designed for closure, and close containers immediately after each use,
 6. clean mixing, blending, and manufacturing vats and containers by adding cleaning solvent, closing the vat or container before agitating the cleaning solvent. The spent cleaning solvent shall then be poured into a closed container.
- B. **Monitoring/Recordkeeping requirements [Rule 3Q .0508(f)]** - To ensure compliance with the work practice standards specified in condition 3.7(A) the permittee shall perform weekly inspections at each affected emissions source to verify compliance with the work practices and identify any deviations. The results of the inspections and any deviations shall be recorded in a log (written or electronic form), maintained on site and made readily available upon request by a representative of this Office. The log shall contain the following:
1. the date and time of each inspection;
 2. the results of each inspection; and
 3. all deviations from required work practice standards and the corrective actions taken.
- C. **Alternative VOC work practice monitoring/recordkeeping requirements for ES-(18, 19, F-13, F-16)-851-1 and ES-(5, 6)-851-9 [Rule 3D .0958(c) and 3Q .0508(aa)]** - The permittee may perform documented annual employee training as an alternative monitoring/recordkeeping compliance method for the work practice requirements specified in condition 3.7(A). To ensure compliance with this requirement the permittee shall:
1. train all personnel involved in operation of the above equipment, at least annually, in accordance with the reasons, procedures and importance of VOC work practice methods. All personnel shall be trained prior to being involved in the operation; and
 2. maintain records on site demonstrating that the annual training program is in place. These records shall be made available for inspection upon request by this Office and shall include, but not be limited to:

- (a) an up-to-date list of personnel involved in operation of the above equipment and documentation of successful completion of both initial and annual training including dates of the training sessions; and,
 - (b) an outline of the subjects covered in the initial and annual training for each group of personnel.
- D. **Reporting requirements [Rule 3D .0508(f)(2)]** - The permittee shall submit a summary report of the monitoring requirements specified in condition 3.7(B) and (C) to this Office by January 30th and July 30th for each preceding six-month period. This report shall contain the total number of weeks in which the work practice standards weekly inspection was not made during the reporting period. The report shall also include which monitoring/recordkeeping method was selected during the reporting period to demonstrate compliance with condition 3.7(A) and the date of a switch being made from one compliance method to the other.

3.8 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ)

Specific emission source permit conditions for ES-854-8-4:
(Emergency Generator, 3,210 HP, Diesel-fired, 19.92 mmBtu/hr)

FCAQTC Rule 3D .1111 "National Emission Standards for Hazardous Air Pollutants"- For **ES-854-8-4**, the permittee shall comply with all applicable provisions, including the maintenance and recordkeeping requirements contained in FCAQTC Rule 3D .1111, as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)", including Subpart A "General Provisions." The permittee shall comply with the definition of emergency stationary RICE in 40 CFR 63.6675 and the following stationary RICE provisions. **<40 CFR Part 63, Subpart ZZZZ> [Rule 3D .1111]**

A. **Maintenance and Work Practices** – Pursuant to 40 CFR 63.6603(a), 63.6625(e), (f), and (h) and 63.6640(f) the permittee shall comply with the following:

1. Change the oil and filter every 500 hours of operation or annually, whichever comes first. The permittee has the option to utilize an oil analysis program as provided in 40 CFR 63.6625(i) in order to extend the specified oil change requirement.
2. Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
3. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
4. Operate and maintain the engine and control device (if any) according to the manufacturer's emission related written instructions or maintenance plan developed by the permittee that minimizes emissions from the engine to the extent practicable.
5. Install a non-resettable hour meter if one is not already installed.
6. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
7. If the engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedules required in Sections A.1. through 3., above, or if performing the management practice on the required schedules would otherwise pose an unacceptable risk under federal, state or local law, the management practices can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice shall be performed as soon as possible after the emergency has ended or the unacceptable risk has abated. The Permittee shall report any failure to perform the management practice on the schedule required and the federal, state, or local law under which the risk was deemed unacceptable.

8. At all times the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to this Office which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
- B. Operation** – The permittee shall operate the emergency generator in accordance with 40 CFR 63. 6640(f), and the following conditions. If the permittee fails to operate the emergency generator according to these requirements, the emergency generator will not be considered an emergency engine and must meet all requirements for non-emergency engines.
1. There is no time limit on the use of the emergency generator in emergency situations.
 2. The permittee may operate the engine for any combination of the purposes specified in Sections B.1.a. through b. below for a maximum of 100 hours per calendar year.
 - a. The engine may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission authority or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of the engine beyond 100 hours per calendar year.
 - b. The engine may operate for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergency or other authorized entity as determined by the Reliability Coordinator has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP– 002–3.
 - c. The engine may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

3. Pursuant to 40 CFR 63.6640(f)(4), the engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Section B.2. Except as provided in Sections a. and b. below, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - a. Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for the facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.
 - b. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if ALL of the following conditions are met:
 - i. The engine is dispatched by the local balancing authority or local transmission or distribution system operator.
 - ii. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - iii. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - iv. The power is provided only to the facility itself or to support the local transmission and distribution system.
 - v. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

4. At all times the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to this Office which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

- C. **Fuel Requirements** – Pursuant to 40 CFR 63.6604(b), beginning January 1, 2015, an emergency engine that operates for the purposes specified in Section B.3.b. above or operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Sections B.2.b. or c. shall use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel. Any existing diesel fuel purchased prior to January 1, 2015 may be used until depleted. The diesel fuel requirements of 40 CFR 80.510(b) are shown below:

Sulfur content	15 ppm maximum.
Cetane index or Aromatic content	A minimum cetane index of 40; or A maximum aromatic content of 35 volume percent.

- D. **Recordkeeping** – Pursuant to 40 CFR 63.6655(d), (e) and (f), the permittee shall keep records for at least five (5) years showing:
1. The engine was operated and maintained according to the manufacturer’s emission related operation and maintenance instructions or the permittee’s maintenance plan which must provide for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
 2. If applicable, the parameters that are analyzed as part of the oil analysis program, the results of the analysis, and the oil changes for the engine.
 3. The hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for purposes specified in Sections B.2.b. or c., or B.3.b. above, then the permittee shall keep records of the notification of the emergency situation, and the date, start time and end time of the engine operation for these purposes.

- E. **Reporting** – Pursuant to 40 CFR 63.6650(h), if the engine operates for the purposes specified in Section B.3.b. above, or operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Sections B.2.b. or c. above, the permittee shall submit an annual report to this Office. The first annual report shall be submitted no later than March 31, 2016 and cover calendar year 2015. Subsequent annual reports shall be submitted by March 31 of each year and cover the previous calendar year.

The annual report must also be submitted electronically to EPA through the specific NESHAP Subpart ZZZZ reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX). However, if the reporting form specific to NESHAP Subpart ZZZZ is not available in CEDRI at the time that the report is due, the written report shall be submitted to EPA at the appropriate address listed in 40 CFR 63.13.

EPA Region IV
Director, Air, Pesticides and Toxics Management Division
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-3104

The annual report shall contain the following information:

1. Company name and address where the engine is located.
2. Date of the report and beginning and ending dates of the reporting period.
3. Engine site rating and model year for each engine.
4. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
5. Hours operated for the purposes specified in Sections B.2.b or c. above, including the date, start time, and end time for engine operation.
6. Number of hours the engine is contractually obligated to be available for the purposes specified in Sections B.2.b or c. above.
7. Hours spent for operation for the purpose specified in Section B.3.b. above including the date, start time, and end time for engine operation. The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
8. If there were no deviations from the fuel requirements in Section C. above that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.
9. If there were deviations from the fuel requirements in Section C. that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

3.9 Specific emission source permit condition for the following three boilers:

ES-854-8-1: Tobaccoville Boiler #5

ES-854-8-2: Tobaccoville Boiler #6

ES-854-8-3: Tobaccoville Boiler #7

Limitation on the use of No. 2 fuel oil - Except as provided in condition **3.10**, to avoid the applicability of 3D .1111, 40 CFR Part 63, Subpart JJJJJJ, the permittee shall not combust No. 2 fuel oil except during periodic testing not to exceed 48 hours per calendar year per boiler, gas supply emergencies, or periods of gas curtailment pursuant to a contract with the natural gas supplier. For each boiler, the permittee shall maintain records of the dates No. 2 fuel oil is combusted, the amount of No. 2 fuel oil combusted on each date, and the purpose for combusting No. 2 fuel oil on each date. **[Rules 3Q .0308(a)(1) and .0317]**

3.10 National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (Subpart JJJJJJ)

Specific emission source permit conditions for the following three boilers:

- ES-854-8-1: Tobaccoville Boiler #5
- ES-854-8-2: Tobaccoville Boiler #6
- ES-854-8-3: Tobaccoville Boiler #7

Upon start-up for a boiler with No. 2 fuel oil usage beyond the limitations in condition **3.9**, for that boiler the permittee shall comply with all applicable requirements of 40 CFR Part 63, Subpart JJJJJJ, National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources, including the applicable requirements of 40 CFR Part 63, General Provisions as specified in Table 8 to Subpart JJJJJJ. **<40 CFR 63, Subpart JJJJJJ> [Rule 3D .1111]**

- A. **Notification requirement** - Within 30 days after becoming subject to 40 CFR Part 63 Subpart JJJJJJ, the permittee shall notify this Office of the change. The notification must identify:
1. The name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, were physically changed, or took a permit limit, and the date of the notice.
 2. The date upon which the fuel switch, physical change, or permit limit occurred.
- The permittee shall demonstrate compliance with 40 CFR Part 63 Subpart JJJJJJ within 180 days after becoming subject to this rule.
- B. **Tune-up requirements** - As required under 40 CFR 63.11214(b), the permittee shall conduct an initial boiler tune-up according to the requirements in 40 CFR 63.11223(b) no later than March 21, 2014 or 180 days after becoming subject to 40 CFR Part 63 Subpart JJJJJJ, whichever is later. Subsequent biennial tune-ups shall be conducted no more than 25 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.
- C. **Energy assessment requirement** - As required under 40 CFR 63.11214(c), the permittee shall conduct a one-time energy assessment no later than March 21, 2014 or 180 days after becoming subject to 40 CFR Part 63 Subpart JJJJJJ, whichever is later. The energy assessment must be performed by a qualified energy assessor according to the requirements in Table 2 to Subpart JJJJJJ of Part 63. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this section satisfies the energy assessment requirement.
- D. **Biennial compliance certification report** - The permittee shall prepare a biennial compliance report as required under 40 CFR 63.11225(b). The first report shall be prepared March 1, 2015 or by March 1 of the year following the initial tune-up required in condition **3.10.B**, whichever is later. Subsequent reports shall be prepared March 1st of every other year. The report shall include the following information:

1. Company name and address.
2. Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart.
3. If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.

The permittee shall submit the report to this Office if requested by this Office, or no later than March 15 of the reporting year if any deviations from the applicable requirements occurred during the reporting period.

E. Recordkeeping requirements - The permittee shall maintain the following records:

1. Copies of all required notifications and reports submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status as required under 40 CFR 63.10(b)(2)(xiv).
2. Records of tune-ups required in condition **3.10.B** and 40 CFR 63.11214(b) identifying each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned as required under 40 CFR 63.11225(c)(2)(i).
3. A copy of the energy assessment required in condition **3.10.C** and 40 CFR 63.11214(c).
4. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment as required under 40 CFR 63.11225(c)(4).
5. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a) as required under 40 CFR 63.1225(c)(5), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

Records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). As specified in 40 CFR 63.10(b)(1), each record must be kept for 5 years following the date of each recorded action. Records must be kept onsite for at least 2 years after the date of each recorded action and may be kept off site for the remaining 3 years.

F. Reporting requirements - The permittee shall submit the following reports:

1. Initial Notification according to the requirements of 40 CFR 63.9(b) and 40 CFR 63.11225(a)(2) no later than January 20, 2014 or within 120 days after becoming subject to 40 CFR Part 63 Subpart JJJJJJ, whichever is later.

2. Notification of Compliance Status according to the requirements of 40 CFR 63.9(h) and 40 CFR 63.11225(a)(4) for the initial tune-up required in condition **3.10.B** and 40 CFR 63.11214(b) no later than July 19, 2014 or 120 days after the applicable compliance date, whichever is later. The notification must also be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written Notification of Compliance Status must be submitted to the Administrator at the appropriate address listed in 40 CFR 63.13 and to this Office.
3. Notification of Compliance Status according to the requirements of 40 CFR 63.9(h) and 40 CFR 63.11225(a)(2) for the energy assessment required in condition **3.10.C** and 40 CFR 63.11214(c) no later than July 19, 2014 or 120 days after the applicable compliance date, whichever is later.
4. The Biennial Compliance report required in condition **3.10.D** and 40 CFR 63.11225(b) if any deviations from the applicable requirements occurred during the reporting period no later than March 15 of the reporting year.

SECTION 4 CONTROL OF TOXIC AIR POLLUTANTS - LOCALLY ENFORCEABLE ONLY

The entire facility is subject to Subchapter 3D .1100 of the FCAQTC for the toxic air pollutants listed. This section is locally enforceable only. All the emission sources and their associated air pollution control device(s) are subject to the following specific terms, conditions, and limitations, including the monitoring recordkeeping, and reporting requirements to which those requirements apply.

4.1. Facility-Wide Toxic Air Pollutant Conditions

- A. **Permit Requirements for Toxic Air Pollutants and Control of Toxic Air Pollutants [Section 3D .1100]**
1. **Other and Future air toxic requirements** - Specification of a listed toxic air pollutant (TAP) in this permit does not excuse the permittee from complying with the requirements of Sections 3D .1100 and 3Q .0700 of the FCAQTC with regard to any other listed TAP emitted from the regulated facility, nor does this permit exempt the permittee from compliance with any future air toxic regulations promulgated pursuant to the requirements of the Clean Air Act. [Sections 3D. 1100 and 3Q. 0700]
 2. **De minimis limits** - Total facility-wide emissions of the following pollutants shall not exceed their respective de minimis emissions limits as shown in Rule 3Q .0711 unless a modeling demonstration is first approved by this Office which shows that the emissions of the subject TAPs from the facility will not adversely affect human health. This demonstration shall be in accordance with the requirements set forth in Section 3D .1100 and 3Q. 0700 of the FCAQTC. This demonstration must be made with an up-to-date version of a U.S. EPA approved computer model or, upon approval by this Office, calculated using the results of a previous modeling analysis showing compliance with the acceptable ambient levels for the pollutants listed below. [Section 3Q .0700]

Pollutant (CAS Number)	De minimis level
acetaldehyde (75-07-0)	6.8 lb/hr
1,3-butadiene (106-99-0)	12 lb/yr
carbon disulfide (75-15-0)	3.9 lb/day
chloroform (67-66-3)	290 lb/yr
cresol (1319-77-3)	0.56 lb/hr
1,4-dioxane (123-91-1)	12 lb/day
methyl ethyl ketone (78-93-3)	78 lb/day and 22.4 lb/hr
phenol (108-95-2)	0.24 lb/hr
styrene (100-42-5)	2.7 lb/hr
toluene (108-88-3)	98 lb/day and 14.4 lb/hr
trichlorofluoromethane (75-69-4)	140 lb/hr
xylene (1330-20-7)	57 lb/day and 16.4 lb/hr

3. **Dispersion modeling emission limits** - Combined emissions of the following TAPs from all sources not exempted by 3Q .0702(a) and (b) at this facility shall not exceed the emission rates listed below. Dispersion modeling (using AERMOD - version 04300, performed in March, 2006 and using AEROMOD - version 09292, performed in March, 2011) and approved by this Office, demonstrated that the permitted emissions of the TAPs listed in the table below from this facility impacted the surrounding ambient air at levels below the acceptable ambient levels (AALs) specified in Rule 3D .1104 of the FCAQTC. The emission rates listed below shall be used as a basis for certifying that any future modifications or changes in the methods of operation will result in ambient impacts below these AALs. In no case shall actual emissions resulting from changes or modifications exceed any of the following emission rates without first applying for and receiving a permit. [Section 3D .1100]

Pollutant (CAS Number)	Maximum facility-wide emission rate	Model Version - Date
Acetic acid (64-19-7)	60.30 lb/hr	09292 - April 2011
Acrolein (107-02-8)	0.36 lb/hr and 3169.23 lb/yr	09292 - April 2011
Ammonia (7664-41-7)	37.72 lb/hr	09292 - April 2011
Arsenic and inorganic arsenic compounds	9.4 lb/yr	04300 - March 2006
Benzene (71-43-2)	1094.92 lb/yr	09292 - April 2011
Beryllium (7440-41-7)	7.1 lb/yr	04300 - March 2006
Cadmium (7440-43-9)	7.1 lb/yr	04300 - March 2006
Non-specific chromium (VI) compounds, as chromium (VI) equivalent	7.1 lb/yr	04300 - March 2006
Ethylene oxide (75-21-8)	131.75 lb/yr	09292 - April 2011
Fluorides	0.07 lb/hr and 1.7 lb/day	04300 - March 2006
Formaldehyde (50-00-0)	0.64 lb/hr	09292 - April 2011
Hydrogen chloride (7647-01-1)	0.19 lb/hr	04300 - March 2006
Mercury, aryl and inorganic compounds	0.019 lb/day	04300 - March 2006
Nickel, soluble compounds, as nickel	0.019 lb/day	04300 - March 2006

4. **Monitoring/recordkeeping/reporting requirement** -The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rates specified in permit conditions 4.1(A)(2) and (3). At a minimum these records shall include data sufficient to calculate monthly averaged emission rates (in pounds per hour of emission source operation) for TAPs with 1-hour or 24-hour emission limits and yearly emission rates (in pounds per calendar year) for TAPs with annual emission limits.

Copies of these records shall be retained by the permittee for a period of two years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. [Rules 3D .0605 and 3D .1105]

PART II

AIR QUALITY CONSTRUCTION PERMIT

The permittee is hereby authorized to construct air emission source(s) and associated air pollution control device(s) listed in Part II, Section 1 of this permit, in accordance with the associated air quality permit application(s) received, including all plans, specifications, previous applications, and other supporting data, all of which are filed with this Office and are incorporated in Part II of this Air Quality Permit.

SECTION 1

PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S)

A. Tobacco Conveyor Configuration and Control Project Equipment

Emission Source ID #	Emission Source Description	Control Device Description
Building 851-1		
ES-8-851-1 (TV32)	Processed & Recovered Tobacco Input	Fabric filters: CD-67, CD-92
ES-9-851-1 (TV32)	Processed Tobacco Conveying	Fabric filters: CD-66, CD-67
ES-21-851-1 (TV32)	Tobacco Expansion Process	Fabric filters: CD-63, CD-67, CD-92

B. Process Modification Project Equipment to Facilitate Manufacturing of Former Lorillard Cigarette Brands

Emission Source ID #	Emission Source Description	Control Device Description
Building 851-1		
ES-22-851-1 (TV-33)	Final Casing Drums & Conveyors	Wet Scrubbers: CD-X(1-2)-851-1 Fabric Filters: CD-X(3-6)-851-1
ES-23-851-1 (TV-33)	Ethanol-Based Top Dressing Materials	Thermal Incinerator: CD-X7-851-1
ES-19-851-1 (TV-33)	Cigarette Making	Fabric Filters: CD- (4,5,8,9,11,12,24,25,28,29,31,32) -851-1

ES-18-851-1 (TV-33)	Filter Making	Fabric Filters: CD-(113-116)-851-1
F-13-851-1 (TV-33)	Casing Preparation Area	N/A (Fugitive)
F-16-851-1 (TV-33)	Packing Equipment	N/A (Fugitive)

**SECTION 2
GENERAL CONDITIONS**

This section describes terms and conditions applicable to the construction of the air emission source(s) and associated air pollution control device(s) listed in Part II Section 1. Unless otherwise specified herein all references to the "permit" in this section apply only to Part II of the permit.

A. General Provisions

1. This permit is nontransferable by the permittee. Future owners and operators must obtain a new air quality permit from this Office.
2. This issuance of this permit in no way absolves the permittee of liability for any potential civil penalties which may be assessed for violations of State law which have occurred prior to the issuance date of this permit.
3. A violation of any term or condition of Part II of this permit shall subject the permittee to enforcement pursuant to Forsyth County Air Quality Control Ordinance and Technical Code, including assessment of civil and/or criminal penalties.

B. Submissions

(REPORTS, TEST DATA, MONITORING DATA, NOTIFICATIONS, AND REQUESTS FOR RENEWAL)

Unless otherwise approved by this Office, two copies of all documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required by this permit shall be submitted to this Office.

C. Part II Renewal Request

The permittee shall request renewal of the emission source(s) and associated air pollution control device(s) listed in Part II Section 1 at the same time as specified in Part I, condition 2.26 of this permit.

D. Annual Fee Payment

The permittee shall pay all fees in accordance with Forsyth County Air Quality Control Ordinance and Technical Code Subchapter 3Q .0200 and in conjunction with Part I, condition 2.12 of this permit.

E. Reporting Requirements

Any of the following that would result in new or increased emissions from the emission source(s) listed in Part II Section 1 must be reported to the Director:

1. changes in the information submitted in the application;
2. changes that modify equipment or processes; or
3. changes in the quantity or quality of materials processed.

If appropriate, modifications to the permit may then be made by this Office to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.

F. Termination, Modification, and Revocation of the Permit

The Director may terminate, modify, or revoke and reissue this permit if:

1. the information contained in the application or presented in support thereof is determined to be incorrect;
2. the conditions under which the permit or permit renewal was granted have changed;
3. violations of conditions contained in the permit have occurred; or
4. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of Forsyth County Air Quality control Ordinance and Technical Code.

G. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow this Office, or an authorized representative to perform the following:

1. enter the permittee's premises where the permitted facility is located or emissions related activity is conducted, or where records are kept under the conditions of the permit;
2. have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
3. inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
4. sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements at reasonable times.

SECTION 3 SPECIFIC LIMITATIONS AND CONDITIONS

The air emission source(s) and associated air pollution control device(s) listed in Part II Section 1 are subject to the following specific terms, conditions, and limitations, including the monitoring, record keeping, and reporting requirements as specified herein:

- A. Any air emission sources or control devices authorized to construct in Part II Section 1 must be constructed and maintained in accordance with the provisions contained herein. The permittee shall comply with applicable Forsyth County Air Quality Control Ordinance and Technical Code regulations.
- B. The permittee shall operate the air emission sources and control devices listed in Part II Section 1 Condition A in accordance with provisions contained in Part I of this permit. If a provision listed in Part II conflicts with a provision of Part I, the Permittee shall comply with the provision listed in Part II.

C. ***Tobacco Conveyor Configuration and Control Project (Building 851-1):***

ES-8-851-1, ES-9-851-1 and ES-21-851-1

Initially permitted in permit #00745-TV-32.

- 1. **30-Day Notification From Start-up** - The permittee shall notify this Office of the actual start-up date of the completed project within 30 days after such date. This notification is to enable this Office to plan an inspection to verify compliance with any applicable standards. **[Rule 3A. 0103(a)]**
- 2. **Commencement of Construction** - If construction/modification of this equipment has not commenced by January 18, 2015 (18 months after the effective date of permit 00745-TV-32), or construction activities lapse for a period of 18 months after construction has commenced, the permittee shall reapply to this Office and obtain a permit to construct before commencing or resuming construction. **[Rule 3Q .0308(a)]**

D. ***Process Modification Project to facilitate manufacturing of former Lorillard cigarette brands at the Tobaccoville facility.***

Initially permitted in permit #00745-TV-33.

ES-22-851-1: Final Casing Drums & Conveyors

Wet Scrubbers: CD-X(1-2)-851-1

Fabric Filters: CD-X(3-6)-851-1

ES-23-851-1: Ethanol-Based Top Dressing Materials

Thermal Incinerator: CD-X7-851-1

ES-19-851-1: Cigarette Making

Fabric Filters: CD-(4,5,8,9,11,12,24,25,28,29,31,32)-851-1

ES-18-851-1: Filter Making

Fabric Filters: CD-(113-116)-851-1

F-13-851-1: Casing Preparation Area, (Fugitive)***F-16-851-1: Packing Equipment, (Fugitive)***

1. **30-Day Notification From Initial Start-up** - The permittee shall notify this Office of the initial date on which any part of this project begins operation within 30 days after such date. **[Rule 3A. 0103(a)]**
2. **Due Date for Title V Operating Permit Application** - The permittee shall submit a permit application in accordance with Section 3Q .0500 with 12 months of commencing operation of any part of this project. **[Rule 3Q .0504(d)]**
3. **30-Day Notification From Start-up of Completed Project** - The permittee shall notify this Office of the actual start-up date of the completed project within 30 days after such date. This notification is to enable this Office to plan an inspection to verify compliance with any applicable standards. **[Rule 3A. 0103(a)]**
4. **Commencement of Construction** - If construction/modification of this equipment has not commenced by Zzzzz XX, 2016 (18 months after the effective date of permit 00745-TV-33), or construction activities lapse for a period of 18 months after construction has commenced, the permittee shall reapply to this Office and obtain a permit to construct before commencing or resuming construction. **[Rule 3Q .0308(a)]**

E. Prevention of Significant Deterioration (PSD). Best Available Control Technology (BACT) for Volatile Organic Compounds (VOCs) [Rule 3D .0530]

1. **New Final Casing Drums (Part of ES-22)** - The permittee shall limit the uncontrolled VOC emission rate from the final casings drums to no more than 0.954 lb/hr.

Monitoring/recordkeeping/reporting requirement - The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rate described above. At a minimum these records shall include data sufficient to calculate the applicable hourly averaged uncontrolled VOC emission rate.

Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

2. **New Conveyor Systems (Part of ES-22)** - The permittee shall limit the uncontrolled hourly VOC emission rate from the following conveyor systems to no more than:

0.60 lb/hr for the new conveyor system serving ES-1,

0.20 lb/hr for the new conveyor system serving ES-10,

0.45 lb/hr for the new conveyor system serving ES-14, and

0.05 lb/hr for the new conveyor system serving ES-21.

Monitoring/recordkeeping/reporting requirement - The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rates described above. At a minimum these records shall include data sufficient to calculate the applicable hourly averaged uncontrolled VOC emission rates.

Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

3. **Manufacture of former Lorillard products using ethanol-based top dressing materials in the top dressing drums and downstream conveyors (ES-23)** - The permittee shall limit the VOC emission rate from this emission source to no more than 0.54 lb VOC per ton of tobacco on an ethanol basis based on at least 98% control of the evaporative losses from ethanol-based flavoring processes.

The permittee shall control the VOC emissions by means of a thermal incinerator (CD-X7-851-1). To ensure the optimum efficiency of the thermal incinerator (CD-X7-851-1), the permittee shall perform the following operational, monitoring and recordkeeping activities:

- (a) the incinerator combustion chamber shall operate at an air temperature of no less than 1500 °F unless a revised minimum temperature has been established in accordance with condition 3(E)(3)(f) below;
- (b) the incinerator shall be equipped with a temperature gauge situated to monitor the air temperature in the combustion chamber. The temperature gauge shall be checked and calibrated as required and in accordance with the manufacturer's written instruction;
- (c) the temperature shall be monitored continuously while any of the associated processes are operating and averaged on a rolling 15-minute average basis to ensure proper combustion chamber operation. The temperature data shall be collected by the incinerator operating system and kept in a log (written or electronic form), maintained on site and made available for inspection upon request by this Office;
- (d) compliance with condition 3(E)(3)(a) above shall be based upon a rolling 15-minute average of the incinerator combustion chamber temperature. Upon detection of a 15-minute average combustion chamber temperature below the minimum established in condition 3(E)(3)(a), the process shall be shut down and an investigation into the cause of the low temperature shall be initiated;

- (e) the cause of any low 15-minute average combustion chamber temperature event, results of the investigation and any corrective action taken, as well as other supporting information, shall be documented in a log (written or electronic form), maintained on site and made available for inspection upon request by this Office. The log shall include the date of the investigation, the inspectors name and any corrective actions performed as a result of the investigation.
4. **Initial Performance Testing** - The permittee shall conduct an initial performance test to verify that the VOC emission rate from ES-23 is no more than 0.54 lb VOC per ton of tobacco on an ethanol basis and that the thermal incinerator (CD-X7-851-1) achieves at least 98% control of the evaporative losses from ethanol-based flavoring processes. This initial performance testing shall be performed within 180 days of the start-up of ES-23. This performance testing may be conducted with the thermal incinerator combustion chamber temperature operating at less than 1500 °F in order to demonstrate that the incinerator is capable of achieving the requirements of condition 3(E)(3) at the lower temperature. The testing shall be conducted in accordance with Section 3D .2600 of the FCAQTC. For the performance testing, the following conditions apply: [Rule 3D .0614 and Section 3D .2600]
- (a) **Obligation** – The permittee shall perform any required test at his own expense. [Rule 3D .2602(a)]
- (b) **Means to allow sampling and measurement** – The permittee shall provide sampling ports, pipes, lines, or appurtenances for the collection of samples and data required by the test procedure; scaffolding and safe access to the sample and data collection locations; and light, electricity, and other utilities required for sample and data collection. [Rule 3D .2602(e)]
- (c) **Test methods** – Testing shall be conducted in accordance with FCAQTC Section 3D .2600 except as may be otherwise required in FCAQTC Rules 3D .0524, 3D .0912, 3D .1110, 3D .1111, 3D .1415 or a permit condition specific to the emissions source. Requests to use an alternative test method or procedure must be made in writing at least 45 days prior to the test and approved by this Office. Alternatives to test methods or procedures specified for emissions sources subject to test requirements under 40 CFR 60, 40 CFR 61 or 40 CFR 63, may require approval by the U.S. EPA. [Rules 3D .2601, .2602(i) and 3Q .0308(a)(1)]
- (d) **Process rate** – The owner or operator of the source shall ensure that the equipment or process being tested is operated at the production rate that best fulfills the purpose of the test. [Rule 3D .2602(g)]
- (e) **Protocol** – The permittee shall arrange for air emission testing protocols to be provided to the Director prior to air pollution testing. Testing protocols are not required to be pre-approved prior to air pollution testing. Emission testing protocols must be submitted at least 45 days before conducting the test for pre-approval prior to testing if requested by the permittee. [Rule 3D .2602(c)]

- (f) Notification – The permittee shall notify this Office at least 15 days before beginning the test so that a representative of this Office may be present to observe the test. [Rule 3D .2602(d)]
- (g) Emissions test report – The final air emission test report shall be submitted to this Office not later than 30 days after sample collection. The permittee may request an extension to submit the final test report if the extension request is a result of actions beyond the control of the permittee. Unless otherwise specified in the applicable permit or during the course of the protocol review, the results of the tests shall be expressed in the same units as the emission limits given in the rule for which compliance is being determined. [Rule 3D .2602(f) & (h)]

Monitoring/recordkeeping/reporting requirement - The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rate described above. At a minimum these records shall include data sufficient to calculate the applicable VOC emission rate on an hourly basis.

Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

- 5. **Cigarette Production Floor Fugitives (ES-18, ES-19, F-16, ES-23)** - The permittee shall limit the combined uncontrolled VOC emission rate from these emission sources to no more than 271.81 tons per monthly rolling 12-month total.

Monitoring/recordkeeping/reporting requirement - The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rate described above. At a minimum these records shall include data sufficient to calculate the combined uncontrolled VOC emission rate from these emission sources on a monthly and monthly rolling 12-month total basis.

Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

F. PM - Monitoring/Recordkeeping/Reporting for Sources Listed in Part II, Section 1, Condition B.

1. **Monitoring for equipment controlled by fabric filters: ES-18-851-1, ES-19-851-1, ES-22-851-1** - Particulate matter emissions from emission sources designated in Part II, Section 1, Condition B shall be controlled during all periods of operation by the applicable fabric filters designated in Part II, Section 1, Condition B. To ensure the optimum efficiency of the control devices, the permittee shall perform inspections and maintenance in a manner and frequency consistent with good practice for minimizing emissions. At a minimum, an annual internal inspection of the fabric filters' structural integrity and operation shall be performed.
2. **Monitoring for equipment controlled by wet scrubbers: ES-22-851-1** - Particulate matter emissions from emission sources designated in Part II, Section 1, Condition B shall be controlled during all periods of operation by the applicable wet scrubbers designated in Part II, Section 1, Condition B. To ensure that optimum control efficiency is maintained, the permittee shall perform inspections and preventative maintenance in a manner consistent with good practice for minimizing emissions. The inspection and maintenance requirement must include the following:
 - (a) an annual visual internal inspection of the wet scrubbers' structural integrity and operation;
 - (b) the permittee shall maintain and operate low water pressure switches for each wet scrubber and an interlock system that shuts the process down during a low-flow condition.
3. Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.
4. If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

G. Particulate Emissions from Miscellaneous Industrial Processes for Sources Listed in Part II, Section 1, Condition B - [Rule 3D .0515]

Emissions for particulate matter from emission sources designated in Part II, Section 1, Condition B shall not exceed the allowable emission rate calculated with the equation $E = 4.10(P)^{0.67}$ calculated to three significant figures for process rates up to 30 tons/hr, or with the equation $E = 55.0(P)^{0.11} - 40$ calculated to three significant figures for process rates greater than 30 tons/hr; where E equals the maximum allowable PM emission rate in lb/hr, and P equals the process rate in tons/hr. Accordingly, the potential emission rate from this equipment shall at no time exceed the emission rates based on maximum production.

H. Sulfur Dioxide Emissions for Combustion Sources Listed in Part II, Section 1, Condition B - [Rule 3D .0516]

Emissions of sulfur dioxide from the thermal incinerator (CD-X7-851-1) designated in Part II, Section 1, Condition B shall not exceed 2.3 lb/MMBtu input. Monitoring and recordkeeping is not required to ensure compliance with this standard.

I. Visible Emissions for Sources Listed in Part II, Section 1, Condition B - [Rule 3D .0521(d)]

Visible emissions from emission sources designated in Part II, Section 1, Condition B shall not exceed 20% opacity when averaged over a six-minute period with the following exceptions:

1. No six-minute period exceeds 87% opacity;
2. No more than one six-minute period exceeds 20% opacity in any hour; and
3. No more than four six-minute periods exceed 20% opacity in any 24-hour period.

Monitoring and recordkeeping is not required to ensure compliance with this standard.

J. Work Practices for Sources of Volatile Organic Compounds Listed in Part II, Section 1, Condition B - [Rule 3D .0958]

This Rule applies to all facilities that use volatile organic compounds as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar uses or that mix, blend, or manufacture volatile organic compounds, or emit volatile organic compounds as a product of chemical reactions. This Rule does not apply to architectural or maintenance coating, or sources subject to 40 CFR Part 63, Subpart JJ.

1. **Work practice standards - [Rule 3D .0958(c) and 3Q .0508(aa)]** - For equipment listed in Part II, Section 1, Condition B the permittee shall:
 - (a) store all material, including waste material, containing volatile organic compounds in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use,
 - (b) clean up spills as soon as possible following proper safety procedures,
 - (c) store wipe rags in closed containers,
 - (d) not clean sponges, fabric, wood, paper products, and other absorbent materials, unless volatile organic compound emissions are captured and controlled,
 - (e) drain solvents used to clean supply lines and other coating equipment into containers designed for closure, and close containers immediately after each use,
 - (f) clean mixing, blending, and manufacturing vats and containers by adding cleaning solvent, closing the vat or container before agitating the cleaning solvent. The spent cleaning solvent shall then be poured into a closed container.

2. **Monitoring/Recordkeeping requirements - [Rule 3Q .0508(f)]** - To ensure compliance with the work practice standards specified in Condition 3(I)(1) above, the permittee shall perform weekly inspections at each affected emissions source to verify compliance with the work practices and identify any deviations. The results of the inspections and any deviations shall be recorded in a log (written or electronic form), maintained on site and made readily available upon request by a representative of this Office. The log shall contain the following:
 - (a) the date and time of each inspection;
 - (b) the results of each inspection; and
 - (c) all deviations from required work practice standards and the corrective actions taken.

3. **Alternative VOC work practice monitoring/recordkeeping requirements for sources of volatile organic compounds listed in Part II, Section 1, Condition B - [Rules 3D .0958(c) and 3Q .0508(aa)]** - The permittee may perform documented annual employee training as an alternative monitoring/recordkeeping compliance method for the work practice requirements specified in Condition 3(I)(1) above. To ensure compliance with this requirement the permittee shall:
 - (a) train all personnel involved in operation of the above equipment, at least annually, in accordance with the reasons, procedures and importance of VOC work practice methods. All personnel shall be trained prior to being involved in the operation; and
 - (b) maintain records on site demonstrating that the annual training program is in place. These records shall be made available for inspection upon request by this Office and shall include, but not be limited to:
 - (i) an up-to-date list of personnel involved in operation of the above equipment and documentation of successful completion of both initial and annual training including dates of the training sessions; and,
 - (ii) an outline of the subjects covered in the initial and annual training for each group of personnel.

4. Copies of these records shall be retained by the permittee for a period of five years after the date on which the record was made.

5. If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

K. Permit Requirements for Toxic Air Pollutants and Control of Toxic Air Pollutants [Section 3D .1100]

This section is locally enforceable only. All the emission sources designated in Part II, Section 1, Condition B and their associated air pollution control device(s) are subject to the following specific terms, conditions, and limitations, including the monitoring recordkeeping, and reporting requirements to which those requirements apply.

1. **Other and Future air toxic requirements** - Specification of a listed toxic air pollutant (TAP) in this permit does not excuse the permittee from complying with the requirements of Sections 3D .1100 and 3Q .0700 of the FCAQTC with regard to any other listed TAP emitted from the regulated facility, nor does this permit exempt the permittee from compliance with any future air toxic regulations promulgated pursuant to the requirements of the Clean Air Act. **[Sections 3D. 1100 and 3Q. 0700]**

2. **De minimis limits** - Total facility-wide emissions of the following pollutants shall not exceed their respective de minimis emissions limits as shown in Rule 3Q .0711 unless a modeling demonstration is first approved by this Office which shows that the emissions of the subject TAPs from the facility will not adversely affect human health. This demonstration shall be in accordance with the requirements set forth in Section 3D .1100 and 3Q. 0700 of the FCAQTC. This demonstration must be made with an up-to-date version of a U.S. EPA approved computer model or, upon approval by this Office, calculated using the results of a previous modeling analysis showing compliance with the acceptable ambient levels for the pollutants listed below. **[Section 3Q .0700]**

Pollutant (CAS Number)	De minimis level
acetaldehyde (75-07-0)	6.8 lb/hr
arsenic and inorganic arsenic compounds	0.053 lb/yr
benzo(a)pyrene (50-32-8)	2.2 lb/yr
beryllium (7440-41-7)	0.28 lb/yr
cadmium (7440-43-9)	0.37 lb/yr
carbon disulfide (75-15-0)	3.9 lb/day
chloroform (67-66-3)	290 lb/yr
cresol (1319-77-3)	0.56 lb/hr
1,4-dioxane (123-91-1)	12 lb/day
n-hexane (110-54-3)	23 lb/day
manganese and compounds	0.63 lb/day
methyl ethyl ketone (78-93-3)	78 lb/day and 22.4 lb/hr
mercury, aryl and inorganic compounds	0.013 lb/day
nickel, soluble compounds, as nickel	0.013 lb/day
phenol (108-95-2)	0.24 lb/hr
toluene (108-88-3)	98 lb/day and 14.4 lb/hr
trichlorofluoromethane (75-69-4)	140 lb/hr
xylene (1330-20-7)	57 lb/day and 16.4 lb/hr

3. **Dispersion modeling emission limits** - Combined emissions of the following TAPs from all sources not exempted by 3Q .0702(a) and (b) at this facility shall not exceed the emission rates listed below. Dispersion modeling (using AERMOD - version 14134, performed in November 2014) and approved by this Office, demonstrated that the permitted emissions of the TAPs listed in the table below from this facility impacted the surrounding ambient air at levels below the acceptable ambient levels (AALs) specified in Rule 3D .1104 of the FCAQTC. The emission rates listed below shall be used as a basis for certifying that any future modifications or changes in the methods of operation will result in ambient impacts below these AALs. In no case shall actual emissions resulting from changes or modifications exceed any of the following emission rates without first applying for and receiving a permit. **[Section 3D .1100]**

Pollutant (CAS Number)	Maximum facility-wide emission rate	Model Version - Date
acetic acid (64-19-7)	490.24 lb/hr	AERMOD (version 14134) - November 2014
acrolein (107-02-8)	3.32 lb/hr	
ammonia (7664-41-7)	375.79 lb/hr	
benzene (71-43-2)	2,167.74 lb/yr	
ethylene oxide (75-21-8)	759.53 lb/yr	
formaldehyde (50-00-0)	29.73 lb/hr	
hydrogen chloride (7647-01-1)	246.41 lb/hr	

4. **Monitoring/recordkeeping/reporting requirement** -The permittee shall maintain updated records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the emission rates specified in permit conditions 3(K)(2) and (3). At a minimum these records shall include data sufficient to calculate monthly averaged emission rates (in pounds per hour of emission source operation) for TAPs with 1-hour or 24-hour emission limits and yearly emission rates (in pounds per calendar year) for TAPs with annual emission limits.

Copies of these records shall be retained by the permittee for a period of two years after the date on which the record was made.

If requested by an agent of this Office, the permittee shall readily supply copies of these records at the time of inspection. Likewise, the permittee shall submit copies of the records upon request by this Office. **[Rules 3D .0605 and 3D .1105]**

Attachment 1
Insignificant Activities List

As provided in Rule 3Q .0503(7) and (8), certain air emission sources are considered insignificant activities and are not listed on the permit. However, insignificant activities because of size or production rate [3Q .0503(8)] are required to be listed in the initial permit application and with each request for renewal. The following list summarizes the insignificant activities provided in the Title V permit application. Insignificant activities are not exempted from any applicable requirement or from demonstrating compliance with any applicable requirement.

Emission Source ID.	Emission Source Description
ES-854-8-(5,6)	No. 2 Fuel Oil Storage Tanks
F-1-851-1	Adhesive Bulk Storage Tank (TK 13033)
F-2-851-1	Adhesive Bulk Storage Tank (TK 13032)
F-3-851-1	Plasticizer Bulk Storage Tank (TK 13031)
F-4-851-1	Plasticizer Bulk Storage Tank (TK 13029)
F-5-851-1	Plasticizer Bulk Storage Tank (TK 13030)
F-6-851-1	Plasticizer Bulk Storage Tank (TK 13028)
F-7-851-1	Liquid Casing Material Storage Tank (TK 13027)
F-8-851-1	Liquid Casing Material Storage Tank (TK 13025)
F-9-851-1	Liquid Casing Material Storage Tank (TK 13023)
F-10-851-1	Liquid Casing Material Storage Tank (TK 13026)
F-11-851-1	Liquid Casing Material Storage Tank (TK 13024)
F-12-851-1	Liquid Casing Material Storage Tank (TK 13022)
F-14-851-1	Top-Dressing Input System
F-15-851-1	Adhesive Input System
F-17-851-1	Case Labeling
ES-45-851-1	Propane vaporizer used in the transfer of propane from storage tanks to DIET Area fume incinerator (0.24 MMBtu/hr)
F-2-851-9	Smokeless Pouching and Packing
F-3-851-9	Tobacco Expansion Process
F-5-851-9	(2) Tobacco Processing "B"
F-6-851-9	Filter making
F-7-851-9	Housekeeping-Vacuum
F-8-851-9	R&D labs
F-9-851-9	Process D - milled tobacco & flavoring in granulator
F-10-851-9	Process C - smokeless tobacco processing
N/A	Various maintenance activities.
N/A	Fire Pump, 235 HP, Diesel-fired
ES-3-851-1	Recovered Tobacco Input (Regular)
ES-4-851-1	Recovered Tobacco Silo Discharge (Regular)

ES-9-851-1	Processed Tobacco Conveying
N/A	CFA Operation (Building 851-1)
N/A	VUSE Packaging Assembly
ES-3-851-1	Recovered Tobacco Input (Regular)
ES-4-851-1	Recovered Tobacco Silo Discharge (Regular)
IS-5--851-1	Menthol shorts silo fill 851-1
854-8-ES7	10,000 gallon day tank (No. 2 fuel oil)
F-14-851-1	Top Dressing Input System
F-19-851-1	10,000 gallon ethanol storage tank
F-20-851-1	10,000 gallon ethanol storage tank
F-23-851-1	Ingredient Mixing and Storage