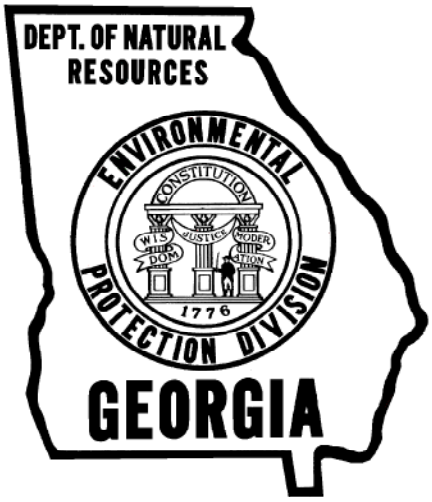
Revision to
Georgia's State Implementation Plan
To Incorporate The Requirements of
Clean Air Act Section 182(b)(2)(A)
For the Group III Control Techniques Guidelines

****October 20, 2011****



State of Georgia
Department of Natural Resources
Environmental Protection Division
Air Protection Branch

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EXECUTIVE SUMMARY

Clean Air Act (CAA) Section 182(b)(2)(A) provides that for certain nonattainment areas, States must revise their State Implementation Plans (SIPs) to include reasonably available control technology (RACT) for each category of volatile organic compound (VOC) sources covered by a control techniques guidelines (CTG) document issued between November 15, 1990, and the date of attainment. In addition, Section 182(b)(2) requires that a CTG issued between November 15, 1990, and the date of attainment include the date by which States subject to Section 182(b) must submit SIP revisions in response to the CTG.

EPA addressed source categories of VOC emissions in accordance with CAA Section 183(e) on October 9, 2007, by amending 40 CFR Part 59 Subpart A Section 59.1 for Consumer and Commercial Products, Group III [72 FR 57215]: Control Techniques Guidelines in Lieu of Regulations for Paper, Film, and Foil Coatings; Metal Furniture Coatings; and Large Appliance Coatings.

States with moderate or above ozone nonattainment areas as of that date were required to submit SIP revisions to EPA addressing these requirements on or before October 7, 2009.

Source categories covered under the "Group III" heading are:

- Paper, film and foil coatings;
- Metal furniture coatings; and
- Large appliance coatings.

Georgia EPD undertook the task of reviewing existing VOC control measures for industry groups covered by the federal 2007 Group III CTGs using the Group III CTGs and EPA's Blue Book.[1] The location of the industry groups for this study are those located in the current 20-county Atlanta 8-hour ozone moderate non-attainment area consisting of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding and Walton counties. Each CTG contains applicability, emission limitation, compliance methods, and monitoring guidelines.

[1] Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations-Clarification to Appendix D of November 24, 1987 Federal Register, May 25, 1988, EPA Ozone/Carbon Monoxide Program Branch, Air Quality Management Division, Office of Air Quality Planning and Standards.

Georgia has adopted the Group III CTGs as follows:

CTG Category	**Changes to the Georgia Rules**	**Adoption Date**	**Compliance Date**
Paper, Film and Foil Coatings	Amended 391-3-1-.02(2)(w) "VOC Emissions from Paper Coating"	1/25/2012	1/1/2015
Metal Furniture Coatings	Amended 391-3-1-.02(2)(y) "VOC Emissions from Metal Furniture Coating"	1/25/2012	1/1/2015
Large Appliance Coatings	Amended 391-3-1-.02(2)(z) "VOC Emissions from Large Appliance Coating"	1/25/2012	1/1/2015

Georgia is submitting this Group III CTG SIP revision, in accordance with CAA Section 182(b)(2)(A), that addresses the changes to existing VOC control measures in Georgia Chapter 391-3-1.

It is important to note that the State of Georgia did not rely on the reduction of VOCs as part of its control strategy for the attainment of the National Ambient Air Quality Standards (NAAQS) for 8-hour ozone. Anthropogenic VOCs are overwhelmed by biogenic VOCs in the Southeast, resulting in NOx limited ozone formation as detailed in the Atlanta 8-hour Ozone Attainment Demonstration submitted to EPA on October 21, 2009.

1.0 REGULATORY BACKGROUND

1.1 Atlanta Ozone Nonattainment Area

Under the former 1-hour ozone National Ambient Air Quality Standard (NAAQS), the previous 13-county Atlanta ozone nonattainment area, consisting of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale Counties, was classified as a severe nonattainment area. As a part of the nonattainment designation, Georgia EPD implemented control measures for ozone precursors VOC and NOx that fulfilled the purposes of Section 182(b)(2) for the 1-hour ozone NAAQS. These control measure provisions are still in place as part of the approved 1-hour ozone metro Atlanta maintenance plan.

On April 30, 2004 the Atlanta nonattainment area was initially designated as a marginal nonattainment area under the 1997 8-hour ozone NAAQS and expanded from the original 13-county area to a 20-county area by adding Barrow, Bartow, Carroll, Hall, Newton, Spalding and Walton counties. Atlanta was reclassified as a moderate nonattainment area on March 6, 2008.

As presented in the Atlanta 8-hour Ozone Attainment Demonstration submitted to EPA on October 21, 2009, Georgia EPD has demonstrated that the Atlanta Nonattainment area does not rely on VOCs to meet attainment for ozone and is considered a NOx-limited area due to overwhelming naturally occurring biogenic VOCs.

The analyses of ozone, NO, and NOx data using the ozone M.A.P.P.E.R. program showed that ozone formation in Atlanta is generally transitional to NOx-limited, but when the results were binned according to the daily maximum 8-hour ozone, ozone formation was strongly NOx-limited on days of elevated ozone. An analysis of weekend/weekday differences in ozone concentration also indicates a generally NOx-limited regime, with ozone formation becoming more NOx-limited in recent years compared to the late 1990s.

These findings are generally in agreement with several studies of the trends and limiting factors for ozone formation in Atlanta. Pun et al. (2003)[2] investigated the weekly patterns of ozone in Atlanta and found elevated midweek concentrations compared to weekends, with stronger weekly patterns in later years (1995-1999 compared to 1986-1990), concluding that the availability of NOx drives the weekly ozone cycle in Atlanta. Analyzing various aircraft measurements, Sillman et al. (1997)[3] conclude that Atlanta ozone is mostly NOx-limited, using various indicator ratios.

[2] Pun, B. K., C. Seigneur, and W. White (2003). Day-of-week behavior of atmospheric ozone in three U.S. cities. J. Air & Waste Management Assoc. 53, 789-801.

[3] Sillman, S., D. He, C. Cardelino, and R. E. Imhoff (1997). The use of photochemical indicators to evaluate ozone-NOx-hydrocarbon sensitivity: Case studies from Atlanta, New York, and Los Angeles. J. Air & Waste Management Assoc., 47, 1030-1040.

1.2 Clean Air Act Section 182(b)(2) Requirements

Section 182(b)(2) of the Clean Air Act (CAA) requires that a federal Control Technique Guideline (CTG) issued between November 15, 1990, and the date of attainment include the date by which States subject to Section 182(b) must submit SIP revisions in response to the CTG to include reasonably available control technology (RACT) for each category of volatile organic compound (VOC) sources covered by a CTG.

RACT is defined as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economical feasibility (44 FR 53762; September 17, 1979). Documents useful in establishing RACT include Control Techniques Guidelines (CTGs), Alternative Control Technique guidance (ACT), Maximum Achievable Control Technology (MACT) standards, New Source Performance Standards (NSPS), and Best Available Control Technology (BACT) determinations. RACT requirements are included in the CAA to assure that significant source categories at major sources of ozone precursor emissions are controlled to a "reasonable" extent, but not necessarily to BACT levels expected of new major sources or major modifications to existing major sources or to MACT required for major sources of hazardous air pollutants.

EPA addressed the Group III source categories with promulgation of a "Notice of Final Determination and Availability of Final Control Techniques Guidelines" October 9, 2007 [72 FR 57215]. States with ozone nonattainment areas classified as moderate or above as of that date were required to submit SIP revisions to EPA addressing these requirements on or before October 7, 2009. Source categories covered under the "Group III" heading are:

- Paper, film and foil coatings;
- Metal furniture coatings; and
- Large appliance coatings.

1.3 Conclusion

Georgia EPD undertook the task of reviewing existing VOC control measures for industry groups covered by the federal 2007 Group III CTGs. This SIP revision contains a chapter for each Group III CTG.

2.0 PAPER, FILM AND FOIL COATINGS

2.1 Regulatory Background - Federal

Paper, film and foil coating refers to a coating process that applies a continuous layer of coating material across essentially the entire width or any portion of a web substrate (web coating), in order to provide a covering, finish, or functional or protective layer to a substrate; to saturate a substrate for lamination; or to provide adhesion between two substrates for lamination.

There have been three federal actions that affect paper, film, and foil, coating operations prior to 2007. In May 1977, EPA issued a CTG document (1977 CTG) for the paper, film, and foil coating industries.[4] Then, in October of 1983, EPA promulgated a national new source performance standard for pressure sensitive tape and label surface coating operations, *40 CFR Part 60 Subpart RR – Standards of Performance* (NSPS*) for Pressure Sensitive Tape and Label Surface Coating Operations* which is included in the paper, film and foil coating source category. After this, in December of 2002, EPA promulgated a national emission standard for web coating industries, *40 CFR Part 63 Subpart JJJJ -National Emission Standards for Hazardous Air Pollutants* (NESHAP*): Paper and Other Web Coating*.

2.2 Regulatory Background - State

Georgia EPD implemented Georgia Rule 391-3-1-.02(2)(w) "VOC Emissions from Paper Coating" [a.k.a. Georgia Rule (w)] to fulfill the VOC RACT requirements for the 1-hour ozone NAAQS. Georgia Rule (w) was based on the 1977 federal CTG. This CTG addressed surface coating for many different industry categories in addition to paper coating.

2.3 Does the Existing Georgia 1-hour Ozone RACT fulfill the 8-hour Ozone RACT for this Industry Sector?

In September 2007, EPA issued an updated CTG (2007 CTG) document for controlling VOC emissions from paper, film and foil coating operations. The following tables compare the recommendations under the 2007 CTG and the existing state rule used to regulate the category.

[4]Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks. Publication No. EPA-450/2-77-008. U.S. EPA, May 1977.

Applicability: Table 2.3.1 specifies the existing VOC emission applicability thresholds for paper, film and foil coating:

Table 2.3.1 VOC Emission Applicability Thresholds – Paper, Film, and Foil Coating

Atlanta Metro Area of Concern	Georgia Rule (w) Applicability Threshold VOC (tpy)	2007 CTG Recommended Emission Threshold*	EPA Blue Book Recommendations	Revised Georgia Rule (w) Applicability Threshold VOC (tpy)
13-County	Actual: 15 lbs/day	Actual: 15 lbs/day before controls for work practice standards Potential: 25 tpy for individual lines for controls	PTE: 10 tpy Actual: 15 lbs/day	Actual: 15 lbs/day before controls for work practice standards Potential: 25 tpy for individual lines for controls, individual lines below 25 tpy subject to original Rule (w) limits
7-County	PTE: 100	Actual: 15 lbs/day before controls for work practice standards Potential: 25 tpy for individual lines for controls	PTE: 10 tpy Actual: 15 lbs/day	Actual: 15 lbs/day before controls for work practice standards Potential: 25 tpy for individual lines for controls, individual lines below 25 tpy subject to original Rule (w) limits at facilities above 100 tpy

*Note: 15 lbs/day of actual emissions before controls is the applicability threshold for the rule and results in a facility being subject to work practice standards for cleaning, cleaning material standards, and fountain solution standards. At the higher potential emission threshold of 25tpy from a coating line, EPA recommends control options.

"Appendix C -Regulatory Guidance" of the 1977 CTG recommends a small source cutoff limit, but does not specify what that limit should be, however in EPA's Blue Book, paper coating was listed as a source category for the recommended exemption level of 15 pounds per day of actual emissions. There are nine known affected owners/operators subject to Georgia Rule (w).

Emission Standards for Paper, Film, and Foil Coating: For facilities with actual emissions greater than 15 pounds per day, EPA recommends that the facility implement work practice standards for cleaning that include storing all VOC-containing cleaning materials and used shop towels in closed containers; ensuring that storage containers used for these materials are kept closed at all times except when accessing the containers; minimizing spills of the VOC-containing cleaning materials; conveying these materials from one location to another in closed containers or pipes; and minimizing VOC emissions from the cleaning processes associated with application, storage, mixing, and conveying equipment. This should be done by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

For surface coating lines with a potential to emit (PTE) of 25 tons of VOC per year, EPA recommends an overall VOC control efficiency of ninety percent. As an alternative to

the ninety percent control efficiency, the use of low-VOC content materials or a combination of materials and controls can be used. An overall 90 percent control efficiency is greater than the existing control requirements in Georgia Rule (w).

Table 2.3.2 compares the recommended control strategies of the 2007 federal CTG with the existing emission standards in Georgia Rule (w).

Table 2.3.2 Comparison Of The 2007 Federal CTG VOC Emission Standards for Paper, Film and Foil Coating with Existing Emission Standards in Georgia Rule (w)

Paper, Film, and Foil Coating Category	2007 federal CTG	Existing Georgia Rule (w)	More Stringent Limitation
Pressure sensitive tape and label surface coating	0.2 lbs VOC per lb of solids applied, or 0.067 lbs of VOC per lbs of coating applied	2.9 lbs per gallon of coating as applied solids equivalent limit: 4.79 lbs per gallon of coating solids	2007 CTG
Paper, Film and Foil Surface Coating (Not including Pressure Sensitive Tape and Label)	0.4 lbs VOC per lbs of solids applied, or 0.08 lbs of VOC per lbs of coating applied (equivalent to 2.06 lbs of VOC per gallon of coating applied).	2.9 lbs per gallon of coating as applied solids equivalent limit: 4.79 lbs per gallon of coating solids	2007 CTG

The CTG states that the general limits 0.4 lb VOC/lb solids applied and 0.08 lb VOC/lb coating applied limits are equivalent to 2.06 lb VOC/gallon of coating applied. This is more stringent than the Georgia Rule (w) limit of 2.9 lb VOC per gallon of coating applied. Therefore, the general VOC limits of the CTG are more stringent than Georgia Rule (w) limits. Since the pressure sensitive tape and label surface coating limits are more stringent than the general CTG limits, then the pressure sensitive tape and label limits are more stringent than the Georgia Rule (w) limits as well.

The emission standards of Georgia Rule (w) are applicable on a facility-wide basis, as opposed to a coating line basis. Thus, coating lines with potential VOC emissions below 25 tons per year will still be subject to the emission standards of Georgia Rule (w)

Compliance Methods: Facilities subject to the updated Georgia Rule (w) will be able to comply with the requirements of the rule by following the work practice standards spelled out in the rule. Those facilities with individual coating lines that have a potential to emit 25 tons per year or more will have the option of meeting a low VOC content coating or installing control equipment with the required control efficiency. Although not spelled out in the rule, control equipment can be used to meet the content coating emission limits.

Procedures for Testing and Monitoring: There are no revisions to Georgia EPD's PTM.

Conclusion: Georgia EPD adopted revisions to Georgia Rule (w) for the 20-county Atlanta ozone nonattainment area on January 25, 2012 with a compliance date of January 1, 2015.

Prior to January 1, 2015, paper, film, and foil coating facilities, including pressure sensitive tape and label coating facilities located in the original 13-county nonattainment area whose potential VOC emissions from theses activities are greater than or equal to 15 pounds per day will be subject to the original requirements of this rule. The original requirements will also apply for these types of facilities with potential VOC emissions greater than 100 tons per year that are located in the seven additional nonattainment counties.

Beginning on or after January 1, 2015, the rule revisions will apply to paper, film, and foil coating facilities, including pressure sensitive tape and label coating facilities within the entire 20-county nonattainment area with actual VOC emissions equal to or greater than 15 pounds per day before controls; while the original requirements continue to apply for these types of facilities located outside of the nonattainment counties with potential VOC emissions greater than 100 tons per year.

However, because the metro Atlanta area has attained the 1997 ozone NAAQS without these rules in place, if the area is re-designated attainment before January 1, 2015 and those counties continue to maintain the standard, the revisions will no longer apply. In the event that the 1997 ozone standard is violated in the specified nonattainment counties, the revised requirements will only be reinstated if they are determined to be a necessary measure to meet the requirements of the maintenance contingency plan.

3.0 METAL FURNITURE COATINGS

3.1 Regulatory Background - Federal

Metal furniture coatings refer to coatings on furniture with a metal substrate that serve a decorative, protective and/or functional purpose. Coatings protect the metal from corrosion by providing resistance to moisture, heat, and sometimes the outdoor elements.

There have been three federal actions that affect metal furniture coating operations prior to 2007. In May 1977, EPA issued a CTG document (1977 CTG) for the metal furniture coating industries.[5] Then, in October of 1982, EPA promulgated a national new source performance standard for metal furniture coatings, *40 CFR Part 60 Subpart EE – Standards of Performance* (NSPS*) for Surface Coating of Metal Furniture*. After this, in May of 2003, EPA promulgated a national emission standard for metal furniture coating operations, *40 CFR Part 63 Subpart RRRR - National Emission Standards for Hazardous Air Pollutants* (NESHAP*): Surface Coating of Metal Furniture*.

3.2 Regulatory Background - State

Georgia EPD implemented Georgia Rule 391-3-1-.02(2)(y) "VOC Emissions from Metal Furniture Coating" [a.k.a. Georgia Rule (y)] to fulfill the VOC RACT requirements for the 1-hour ozone NAAQS.

3.3 Does the Existing Georgia 1-hour Ozone RACT fulfill the 8-hour Ozone RACT for this Industry Sector?

In September 2007, EPA issued an updated CTG (2007 CTG) document for controlling VOC emissions from metal furniture coating operations. The following tables compare the recommendations under the 2007 CTG and the existing state rule used to regulate the category.

Applicability: Table 3.3.1 specifies the existing VOC emission applicability thresholds for this industry category.

Table 3.3.1 VOC Emission Applicability Thresholds – Metal Furniture Coating

Atlanta Metro Area of Concern	Georgia Rule (y) Applicability Threshold VOC (tpy)	2007 CTG Recommended Emission Threshold	Revised Georgia Rule (y) Applicability Threshold VOC
13-County	Actual: 15 lbs/day	Actual: 15 lbs/day before controls	Actual: 15 lbs/day before controls
7-County	PTE: 100	Actual: 15 lbs/day before controls	Actual: 15 lbs/day before controls

The 1977 CTG does not recommend an applicability limit, but in EPA's Blue Book, metal furniture coating was listed as a source category for the recommended exemption

[5]Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture. Publication No. EPA-450/2-77-032. U.S. EPA, December 1977.

level of 15 pounds per day of actual emissions. There are no known affected owners/operators subject to Georgia Rule (y).

Emission Standards for Metal Furniture Coating: For facilities with actual emissions greater than 15 pounds per day, EPA recommends that the facility implement work practice standards for both coating-related activities and cleaning materials. These work practice standards include storing all VOC-containing materials and used shop towels in closed containers; ensuring that storage containers used for these materials are kept closed at all times except when accessing the containers; minimizing spills of the VOC-containing materials; conveying these materials from one location to another in closed containers or pipes; and minimizing VOC emissions from all processes (coating and cleaning) associated with application, storage, mixing, and conveying equipment. The 2007 CTG also recommends that facilities use application techniques with a transfer efficiency equivalent to high volume low pressure (HVLP) or electrostatic spray application methods including flow/curtain applications, roll coating, dip coat applications, electrodeposition, brush coating, airless spraying, or air-assisted airless spray.

In addition to work practice standards for both coating and cleaning processes and the coating equipment standards, the 2007 CTG recommends the use of low-VOC content materials. Table 3.3.2 compares the emission limits recommended in the 2007 CTG to those in existing Georgia Rule (y) in units of pounds-per-gallon of coating. Table 3.3.3 compares the emission limits recommended in the 2007 CTG to those in existing Georgia Rule (y) in units of pounds per gallon of coating solids. Georgia EPD is adopting the more stringent VOC emission limit for each of the coating types.

Table 3.3.2 Comparison Of The 2007 Federal CTG VOC Emission Standards for Metal Furniture Coatings With Existing Emission Standards In Georgia Rule (y) In Lbs Per Gallon of Coating.						
Coating Type	Baked			Air-Dried		
	2007 CTG (lb/gallon)	Georgia Rule (y) (lb/gallon)	More Stringent	2007 CTG (lb/gallon)	Georgia Rule (y) (lb/gallon)	More Stringent
General, One-Component	2.3	3.0	2007 CTG	2.3	3.0	2007 CTG
General, Multi-Component	2.3	3.0	2007 CTG	2.8	3.0	2007 CTG
Extreme High Gloss	3.0	3.0	Same Limit.	2.8	3.0	2007 CTG
Extreme Performance	3.0	3.0	Same Limit.	3.5	3.0	GeorgiaRule (y)
Heat Resistant	3.0	3.0	Same Limit.	3.5	3.0	Georgia Rule (y)
Metallic	3.5	3.0	Georgia Rule (y)	3.5	3.0	Georgia Rule (y)
Pretreatment Coatings	3.5	3.0	Georgia Rule (y)	3.5	3.0	Georgia Rule (y)
Solar Absorbent	3.0	3.0	Same Limit.	3.5	3.0	Georgia Rule (y)

Table 3.3.3 Comparison Of The 2007 Federal CTG VOC Emission Standards for Metal Furniture Coatings With Existing Emission Standards In Georgia Rule (y) In Lbs Per Gallon of Coating Solids.						
Coating Type	Baked			Air-Dried		
	2007 CTG (lb/gallon coating solids)	Georgia Rule (y) (lb/gallon coating solids))	More Stringent?	2007 CTG (lb/gallon coating solids)	Georgia Rule (y) (lb/gallon coating solids)	More Stringent?
General, One-Component	3.3	5.06	2007 CTG	3.3	5.06	2007 CTG
General, Multi-Component	3.3	5.06	2007 CTG	4.5	5.06	2007 CTG
Extreme High Gloss	5.1	5.06	Same Limit*	4.5	5.06	2007 CTG
Extreme Performance	5.1	5.06	Same Limit*	6.7	5.06	Georgia Rule (y)
Heat Resistant	5.1	5.06	Same Limit*	6.7	5.06	Georgia Rule (y)
Metallic	6.7	5.06	Georgia Rule (y)	6.7	5.06	Georgia Rule (y)
Pretreatment Coatings	6.7	5.06	Georgia Rule (y)	6.7	5.06	Georgia Rule (y)
Solar Absorbent	5.1	5.06	Same Limit*	6.7	5.06	Georgia Rule (y)

*Note: The VOC content limit has an equivalent solids based limit, but the 2007 CTG and existing Georgia Rule (y) appear slightly different because of rounding in CTG calculations.

As an alternative to the use of low-VOC content materials, facilities have the option of add-on control with 90 percent overall control efficiency or a combination of materials and controls can be used to meet the VOC content limit required by the CTG.

Compliance Methods: Facilities subject to the updated Georgia Rule (y) will be able to comply with the requirements of the rule by following the work practice standards spelled out in the rule. Facilities will have the option of meeting the VOC content limits for coatings or installing control equipment with the required control efficiency. Although not spelled out in the rule, control equipment can be used to meet the content coating emission limits.

Procedures for Testing and Monitoring: There are no revisions to Georgia EPD's PTM.

Conclusion: Georgia EPD adopted revisions to Rule Georgia Rule (y) for the 20-county Atlanta ozone nonattainment area on January 25, 2012, with a compliance date of January 1, 2015.

Prior to January 1, 2015, metal furniture coating facilities located in the original 13-county nonattainment area whose potential VOC emissions from these activities are greater than or equal to 15 pounds per day will be subject to the original requirements of this rule. The original requirements will also apply for these types of facilities with potential VOC emissions greater than 100 tons per year that are located in the seven additional nonattainment counties.

Beginning January 1, 2015, the rule revisions will apply to metal furniture coating facilities within the entire 20-county nonattainment area with actual VOC emissions equal to or greater than 15 pounds per day before controls, while the original requirements continue to apply for these types of facilities located outside of the nonattainment counties with potential VOC emissions greater than 100 tons per year.

However, because the metro Atlanta area has attained the 1997 ozone NAAQS without these rules in place, if the area is re-designated attainment before January 1, 2015 and those counties continue to maintain the standard, the revisions will no longer apply. In the event that the 1997 ozone standard is violated in the specified nonattainment counties, the revised requirements will only be reinstated if they are determined to be a necessary measure to meet the requirements of the maintenance contingency plan.

4.0 LARGE APPLIANCE COATINGS

4.1 Regulatory Background - Federal

A large appliance part refers to any organic surface coated metal lid, door casing panel or other interior or exterior metal part or accessory that is assembled to form a large appliance product including ranges, ovens, microwave ovens, refrigerators, freezers, washers, dryers, dishwashers, water heaters, or trash compactors for household, commercial, or recreational use.

There have been three federal actions that affect large appliance coating operations prior to 2007. In December of 1977, EPA issued a CTG document (1977 CTG) for the large appliance coating industry.[6] Then, in October of 1982, EPA promulgated a national new source performance standard for large appliances, 40 CFR Part 60 Subpart SS – Standards of Performance (NSPS) for Industrial Surface Coating: Large Appliances. After this, in July of 2002, EPA promulgated a national emission standard, 40 CFR Part 63 Subpart NNNN - National Emission Standards for Hazardous Air Pollutants (NESHAP): Surface Coating of Large Appliances.

4.2 Regulatory Background - State

Georgia EPD implemented Georgia Rule 391-3-1-.02(2)(z) "VOC Emissions from Large Appliance Surface Coating" [a.k.a. Georgia Rule (z)] to fulfill the VOC RACT requirements for the 1-hour ozone NAAQS.

4.3 Does the Existing Georgia 1-hour Ozone RACT fulfill the 8-hour Ozone RACT for this Industry Sector?

In September 2007, EPA issued an updated CTG (2007 CTG) document for controlling VOC emissions from large appliance coating operations. The following tables compare the recommendations under the 2007 CTG and the existing state rule used to regulate the category.

[6]Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances. Publication No. EPA-450/2-77-034. U.S. EPA, December 1977.

Applicability: Tables 4.3.1 specifies the existing VOC emission applicability thresholds for industries covered under this CTG:

Table 4.3.1 VOC Emission Applicability Thresholds – Large Appliance Surface Coating			
Atlanta Metro Area of Concern	**Georgia Rule (z) Applicability Threshold VOC (tpy)**	**2006 CTG Recommended Emission Threshold**	**Revised Georgia Rule (z) Applicability Threshold VOC**
13-County	Actual: 15 lbs/day	Actual: 15 lbs/day before controls	Actual: 15 lbs/day before controls
7-County	PTE: 100	Actual: 15 lbs/day before controls	Actual: 15 lbs/day before controls

The 1977 CTG does not recommend an applicability limit, but in EPA's Blue Book, large appliance surface coating was listed as a source category for the recommended exemption level of 15 pounds per day of actual emissions. There are no known affected owners/operators subject to Georgia Rule (z).

Emission Standards:- For facilities with actual emissions greater than 15 pounds per day, EPA recommends that the facility implement work practice standards for both coating-related activities and cleaning materials. These work practice standards include storing all VOC-containing materials and used shop towels in closed containers; ensuring that storage containers used for these materials are kept closed at all times except when accessing the containers; minimizing spills of the VOC-containing materials; conveying these materials from one location to another in closed containers or pipes; and minimizing VOC emissions from all processes (coating and cleaning) associated with application, storage, mixing, and conveying equipment. The 2007 CTG also recommends that facilities use application techniques with a transfer efficiency equivalent to high volume low pressure (HVLP) or electrostatic spray application methods including flow/curtain applications, roll coating, dip coat applications, electrodeposition, brush coating, airless spraying, or air-assisted airless spray.

In addition to work practice standards for both coating and cleaning processes and the coating equipment standards, the 2007 CTG recommends the use of low-VOC content materials. Table 4.3.2 compares the emission limits recommended in the 2007 CTG to those in existing Georgia Rule (z) in units of pounds-per-gallon of coating. Table 4.3.3 compares the emission limits recommended in the 2007 CTG to those in existing Georgia Rule (z) in units of pounds-per-gallon of coating solids. Georgia EPD is adopting the more stringent VOC emission limit for each coating type.

Table 4.3.2 Comparison Of The 2007 Federal CTG VOC Emission Standards for Large Appliance Coatings With Existing Emission Standards In Georgia Rule (z) In Lbs Per Gallon of Coating.						
Coating Type	Baked			Air-Dried		
	2007 CTG (lb/gallon)	Georgia Rule (z) (lb/gallon)	More Stringent	2007 CTG (lb/gallon)	Georgia Rule (z) (lb/gallon)	More Stringent
General, One-Component	2.3	2.8	2007 CTG	2.3	2.8	2007 CTG
General, Multi-Component	2.3	2.8	2007 CTG	2.8	2.8	Same Limit
Extreme High Gloss	3.0	2.8	Georgia Rule (z)	2.8	2.8	Same Limit
Extreme Performance	3.0	2.8	Georgia Rule (z)	3.5	2.8	Georgia Rule (z)
Heat Resistant	3.0	2.8	Georgia Rule (z)	3.5	2.8	Georgia Rule (z)
Metallic	3.5	2.8	Georgia Rule (z)	3.5	2.8	Georgia Rule (z)
Pretreatment Coatings	3.5	2.8	Georgia Rule (z)	3.5	2.8	Georgia Rule (z)
Solar Absorbent	3.0	2.8	Georgia Rule (z)	3.5	2.8	Georgia Rule (z)

Table 4.3.3 Comparison Of The 2007 Federal CTG VOC Emission Standards for Large Appliance Coatings With Existing Emission Standards In Georgia Rule (z) In Lbs Per Gallon of Coating Solids.						
Coating Type	Baked			Air-Dried		
	2007 CTG (lb/gallon coating solids)	Georgia Rule (z) (lb/gallon coating solids))	More Stringent?	2007 CTG (lb/gallon coating solids)	Georgia Rule (z) (lb/gallon coating solids)	More Stringent?
General, One-Component	3.3	4.52	2007 CTG	3.3	4.52	2007 CTG
General, Multi-Component	3.3	4.52	2007 CTG	4.5	4.52	Same Limit*.
Extreme High Gloss	5.1	4.52	Georgia Rule (z)	4.5	4.52	Same Limit*.
Extreme Performance	5.1	4.52	Georgia Rule (z)	6.7	4.52	Georgia Rule (z)
Heat Resistant	5.1	4.52	Georgia Rule (z)	6.7	4.52	Georgia Rule (z)
Metallic	6.7	4.52	Georgia Rule (z)	6.7	4.52	Georgia Rule (z)
Pretreatment Coatings	6.7	4.52	Georgia Rule (z)	6.7	4.52	Georgia Rule (z)
Solar Absorbent	5.1	4.52	Georgia Rule (z)	6.7	4.52	Georgia Rule (z)

*Note: The VOC content limit has an equivalent solids based limit, but the 2007 CTG and existing Georgia Rule (y) appear slightly different because of rounding in CTG calculations.

As an alternative to the use of low-VOC content materials, facilities have the option of add-on control with 90 percent overall control efficiency or a combination of materials and controls can be used to meet the VOC content limit required by the CTG.

Compliance Methods: Facilities subject to the updated Georgia Rule (z) will be able to comply with the requirements of the rule by following the work practice standards spelled out in the rule. Facilities will have the option of meeting the VOC content limits for coatings, or installing control equipment with the required control efficiency. Although not spelled out in the rule, control equipment can be used to meet the content coating emission limits.

Procedures for Testing and Monitoring: There are no revisions to Georgia EPD's PTM.

Conclusion: EPD adopted revisions to Georgia Rule (z) for the 20-county Atlanta ozone nonattainment area on January 25, 2012, with a compliance date of January 1, 2015.

Prior to January 1, 2015, large appliance coating facilities located in the original 13-county nonattainment area whose potential VOC emissions from theses activities are greater than or equal to 15 pounds per day will be subject to the original requirements of this rule. The original requirements will also apply for these types of facilities with potential VOC emissions greater than 100 tons-per-year that are located in the seven additional nonattainment counties.

Beginning on or after January 1, 2015, the rule revisions will apply to large appliance coating facilities within the entire 20-county nonattainment area with actual VOC emissions equal to or greater than 15 pounds per day before controls; while the original requirements continue to apply for these types of facilities located outside of the nonattainment counties with potential VOC emissions greater than 100 tons per year.

However, because the metro Atlanta area has attained the 1997 ozone NAAQS without these rules in place, if the area is re-designated attainment before January 1, 2015 and those counties continue to maintain the standard, the revisions will no longer apply. In the event that the 1997 ozone standard is violated in the specified nonattainment counties, the revised requirements will only be reinstated if they are determined to be a necessary measure to meet the requirements of the maintenance contingency plan.

APPENDIX A

RULE LANGUAGE

APPENDIX B

REVISIONS TO GEORGIA'S *PROCEDURES FOR TESTING AND MONITORING AIR POLLUTANTS*

APPENDIX C

POTENTIALLY AFFECTED SOURCE LISTING