

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AGENDA ITEM REQUEST
for Proposed State Implementation Plan Revision

AGENDA REQUESTED: June 8, 2011

DATE OF REQUEST: May 20, 2011

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Joyce Spencer, 239-5017

CAPTION: Docket No. 2011-0083-SIP. Consideration for publication of, and hearing on, the proposed Houston-Galveston-Brazoria (HGB) Reasonably Available Control Technology (RACT) Analysis Update State Implementation Plan (SIP) Revision for the 1997 Eight-Hour Ozone Standard.

To conform to United States Environmental Protection Agency (EPA) rules and guidance, the proposed SIP revision would provide a volatile organic compounds RACT analysis update to include Control Techniques Guidelines (CTG) that have not yet been addressed in the HGB Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard, submitted to the EPA on April 6, 2010. The proposed revision would also incorporate concurrently proposed CTG-related rule revisions in 30 Texas Administrative Code Chapter 115, Subchapter E. (Lola Brown, John Minter) (Project No. 2010-028-SIP-NR)

Susana M. Hildebrand, P.E.

Chief Engineer

David Brymer

Division Director

Joyce Spencer

Agenda Coordinator

Copy to CCC Secretary? NO X YES ___

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** May 20, 2011

Thru: LaDonna Castañuela, Chief Clerk
Mark R. Vickery, P.G. Executive Director

From: Susana M. Hildebrand, P.E.
Chief Engineer

Docket No.: 2011-0083-SIP

Subject: Commission Approval for the Proposed Houston-Galveston-Brazoria (HGB) Reasonably Available Control Technology (RACT) Analysis Update State Implementation Plan (SIP) Revision for the 1997 Eight-Hour Ozone Standard
Project No. 2010-028-SIP-NR

Background and reason(s) for the SIP revision:

The purpose of this HGB RACT Analysis Update SIP Revision for the 1997 Eight-Hour Ozone Standard (HGB RACT Update SIP revision) is to provide the United States Environmental Protection Agency (EPA) a RACT analysis update to include Control Techniques Guidelines (CTG) that have not yet been addressed in the SIP for the HGB area and to incorporate concurrently proposed CTG-related rulemaking for the HGB area (Rule Project No. 2010-016-115-EN).

The eight-county HGB nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties) is classified as severe under the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS). For nonattainment areas classified as moderate and above, Federal Clean Air Act (FCAA), §182(b)(2) requires the state to submit a SIP revision that implements RACT for volatile organic compounds (VOC) emission sources addressed in a CTG document issued between November 15, 1990, and the area's attainment date. CTG documents provide information to assist states in determining RACT for specific emission sources and provide the EPA's RACT recommendations. FCAA, §183(e)(3) requires the EPA to regulate VOC emissions from consumer and commercial products by issuing national regulations or by issuing CTG documents in lieu of national regulations. The EPA issued 11 CTG documents between 2006 and 2008 with RACT recommendations for controlling VOC emissions from a variety of consumer and commercial products.

Of the 11 CTG documents, the commission has acted on four. On March 10, 2010, with the adoption of the Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision), the commission adopted portions of the Offset Lithographic and Letterpress

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Printing CTG recommendation and provided a negative declaration for the Flat Wood Paneling Coatings CTG, Fiberglass Boat Manufacturing Materials CTG, and Automobile and Light-Duty Truck Assembly Coatings CTG source categories. The commission determined that no sources meeting the applicability criteria recommended in these CTG documents were located in the HGB area.

Additionally, due to the EPA's concerns regarding federal enforceability, staff recommended withdrawing the two RACT recommendations for the Flexible Package Printing and the Paper, Film, and Foil Coatings CTG categories that were proposed on September 23, 2009. RACT determinations were not made for the following five CTG emission source categories at that time because additional research was necessary to determine the number of sources affected by the CTG recommendations, and the EPA had not formally responded to the state's request for clarification regarding the CTG recommendations: Industrial Cleaning Solvents; Large Appliance Coatings; Metal Furniture Coatings; Miscellaneous Industrial Adhesives; and Miscellaneous Metal and Plastic Parts Coatings. On March 17, 2011, the EPA issued a guidance memorandum entitled *Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings Categories* regarding the following three CTG categories: Large Appliance Coatings; Metal Furniture Coatings; and Miscellaneous Metal and Plastic Parts Coatings. Additional discussion regarding the EPA's guidance on these three CTG categories is provided in Appendix A: *Reasonably Available Control Technology Analysis*.

Seven CTG categories for the HGB area have pending RACT determinations to be submitted to the EPA. This proposed HGB RACT Update SIP revision would include the analyses and RACT determinations for these seven CTG source categories. If the EPA's recommended controls for a particular source category are determined by the executive director to be RACT and the commission adopts rules to implement RACT for that source category, adoption of this SIP revision would incorporate those rules into the SIP. The associated proposed rulemaking would revise 30 Texas Administrative Code Chapter 115, Subchapter E to implement RACT for the CTG emission source categories in the HGB area as required by FCAA, §172(c)(1) and §182(b)(2).

Scope of the proposed SIP revision:

Because this HGB RACT Update SIP revision focuses specifically on the seven CTG documents issued by the EPA from 2006 through 2008 that have not been addressed in the HGB AD SIP revision adopted March 10, 2010, the RACT analysis only provides an update to the HGB VOC RACT demonstration.

A.) Summary of what the SIP revision will do:

Although the FCAA requires the state to implement RACT, EPA guidance on RACT indicates that states may choose to implement the CTG recommendations, implement an alternative approach, or demonstrate that additional control for the CTG emission source category is not technologically or economically feasible in the area. This proposed SIP revision would provide a detailed RACT analysis update for the HGB area and incorporate

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any necessary rule revisions. The following CTG documents have been evaluated as part of the associated proposed rulemaking to determine if additional VOC controls are necessary to fulfill RACT requirements:

- Flexible Package Printing, Group II, issued in 2006;
- Industrial Cleaning Solvents, Group II, issued in 2006;
- Large Appliance Coatings, Group III, issued in 2007;
- Metal Furniture Coatings, Group III, issued in 2007;
- Paper, Film, and Foil Coatings, Group III, issued in 2007;
- Miscellaneous Industrial Adhesives, Group IV, issued in 2008; and
- Miscellaneous Metal and Plastic Parts Coatings, Group IV, issued in 2008.

B.) Scope required by federal regulations or state statutes:

This HGB RACT Update SIP revision contains the FCAA requirement that states must revise their SIPs for ozone nonattainment areas with moderate or higher classifications to include RACT, as applicable, for each category of VOC emission sources covered by a CTG document.

C.) Additional staff recommendations that are not required by federal rule or state statute:

None

Statutory authority:

The authority to propose and adopt SIP revisions is derived from the following sections of Texas Health and Safety Code, Chapter 382, Texas Clean Air Act (TCAA), §382.002, which provides that the policy and purpose of the TCAA is to safeguard the state's air resources from pollution; §382.011, which authorizes the commission to control the quality of the state's air; and §382.012, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air. This SIP revision is required by FCAA, §110(a)(1) and implementing rules in 40 Code of Federal Regulations Part 51.

Under the 1997 eight-hour ozone standard, the HGB area is required to meet the mandates of the FCAA, §172(c)(1) and §182(b)(2) and (f). Phase II of the EPA's implementation rule for the 1997 eight-hour ozone NAAQS published in the November 29, 2005, issue of the *Federal Register* (70 FR 71612), requires states containing areas classified as moderate nonattainment or higher to submit a SIP revision demonstrating that their current rules fulfill the RACT requirements for all CTG emission source categories.

Effect on the:

A.) Regulated community:

The affected regulated community would be those sources associated with the proposed rulemaking that would be incorporated in this SIP revision if adopted. Affected sources may be required to install control technologies or use reformulated products to meet the

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emission specifications, implement new work practices, or comply with additional monitoring and recordkeeping requirements.

B.) Public:

If the CTG rulemaking is adopted, the public could benefit from improved air quality due to lower ozone levels. However, there is a possibility that the economic impact to affected industries could be passed to consumers in the form of increased product costs.

C.) Agency programs:

If adopted, the CTG rules could increase the Office of Compliance and Enforcement workload when inspecting affected facilities to ensure that they meet additional requirements and could increase workloads for the Small Business and Environmental Assistance Division due to a likely impact on many small business owners.

Stakeholder meetings:

A CTG Stakeholder Group meeting was held on December 1, 2010, and informal comments were accepted until January 12, 2011, for the associated Chapter 115 rulemaking. See the executive summary memo for Rule Project No. 2010-016-115-EN for further information.

Potential controversial concerns and legislative interest:

Due to the broad applicability recommended in the Industrial Cleaning Solvents and Miscellaneous Industrial Adhesive CTG documents, the proposed rulemaking would likely impact many small businesses. The owners and operators of facilities required to comply with new emission limits may object to the proposed rules.

Will this SIP revision affect any current policies or require development of new policies?

No

What are the consequences if this SIP revision does not go forward? Are there alternatives to rulemaking?

There are no practical alternatives to this HGB RACT Update SIP revision.

The FCAA and the EPA require sources of VOC emissions in ozone nonattainment areas classified as moderate and above to implement RACT measures and require states to submit revisions to the SIP in response to any CTG document issued between 1990 and the area's date of attainment. States can adopt and implement the recommendations contained within the CTG documents if they are determined to be RACT, or they can adopt alternative approaches, but in either circumstance, the RACT analysis and any rule revisions must be submitted to the EPA for review and approval as part of the SIP. If a finding of failure to submit is issued by the EPA, states that do not submit RACT determinations within 18 months after such a finding could be subject to federal sanctions.

Commissioners

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EPA Region 6 has verbally indicated that the EPA is considering issuing a finding of failure to submit for states that have not submitted RACT determinations for the 11 consumer and commercial products CTG documents issued between 2006 and 2008. Additionally, failure to update the RACT analysis could jeopardize the approvability of the HGB AD SIP revision.

Key points in the proposal SIP revision schedule:

Anticipated proposal date: June 8, 2011

Anticipated Texas Register hearing notice publication date: June 24, 2011

Public hearing dates: July 18 and 22, 2011

Public comment period: June 24, 2011, through July 25, 2011

Anticipated adoption date: November 16, 2011

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REVISIONS TO THE STATE OF TEXAS AIR QUALITY
IMPLEMENTATION PLAN FOR THE CONTROL OF OZONE AIR
POLLUTION

HOUSTON-GALVESTON-BRAZORIA 1997 EIGHT-HOUR OZONE
STANDARD NONATTAINMENT AREA



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087

**HOUSTON-GALVESTON-BRAZORIA REASONABLY
AVAILABLE CONTROL TECHNOLOGY ANALYSIS UPDATE
STATE IMPLEMENTATION PLAN REVISION FOR THE
1997 EIGHT-HOUR OZONE STANDARD**

PROJECT NUMBER 2010-028-SIP-NR

Proposal
June 8, 2011

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EXECUTIVE SUMMARY

The eight-county Houston-Galveston-Brazoria (HGB) nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties) is currently classified as severe under the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS) of 0.08 parts per million (ppm) with an attainment date as expeditiously as practicable but no later than June 15, 2019. Texas was required to submit a state implementation plan (SIP) revision addressing the severe ozone nonattainment area requirements of the 1990 Federal Clean Air Act Amendments (FCAA) to the United States Environmental Protection Agency (EPA) by April 15, 2010.

On March 10, 2010, the Texas Commission on Environmental Quality (TCEQ) adopted two revisions to the Texas SIP for the HGB ozone nonattainment area. The Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision) includes a photochemical modeling analysis and a weight of evidence analysis to demonstrate attainment of the 1997 eight-hour ozone NAAQS by June 15, 2019. In addition, the HGB AD SIP revision incorporates revisions to 30 Texas Administrative Code Chapters 101 and 115, also adopted on March 10, 2010, which include the Mass Emissions Cap and Trade (MECT) Program Cap Integrity, the Highly Reactive Volatile Organic Compounds (HRVOC) Emissions Cap and Trade (HECT) Program Cap Reduction and Allowance Reallocation, and the Volatile Organic Compounds (VOC) Control Techniques Guidelines (CTG) Update. The HGB Reasonable Further Progress SIP Revision for the 1997 Eight-Hour Ozone Standard demonstrates that an 18% emissions reduction requirement will be met for the analysis period between 2002 through 2008 and an average of 3% per year emissions reduction between each of the milestone years 2008, 2011, 2014, 2017, and 2018.

For nonattainment areas classified as moderate and above, FCAA, §182(b)(2) requires states to submit a SIP revision that implements reasonably available control technology (RACT) for VOC emission sources addressed in a CTG document issued by the EPA between November 15, 1990, and the area's attainment date. CTG documents provide information to assist states in determining RACT for specific emission sources and provide the EPA's RACT recommendations. FCAA, §183(e)(3) requires the EPA to regulate VOC emissions from consumer and commercial products by issuing national regulations or by issuing CTG documents in lieu of national regulations. The EPA issued 11 CTG documents between 2006 and 2008 with RACT recommendations for controlling VOC emissions from a variety of consumer and commercial products.

Of the 11 CTG documents, the commission has acted on four. On March 10, 2010, with the adoption of the HGB AD SIP revision, the commission adopted portions of the Offset Lithographic and Letterpress Printing CTG recommendation and provided a negative declaration for the Flat Wood Paneling Coatings CTG, Fiberglass Boat Manufacturing Materials CTG, and Automobile and Light-Duty Truck Assembly Coatings CTG source categories. The commission determined that no sources meeting the applicability criteria recommended in these CTG documents were located in the HGB area. Additionally, due to the EPA's concerns regarding federal enforceability, staff recommended withdrawing the two RACT recommendations for the Flexible Package Printing Materials and the Paper, Film, and Foil Coatings CTG categories that were proposed on September 23, 2009. RACT determinations were not made for the following five CTG emission source categories at that time because additional research was necessary to determine the number of sources affected by the CTG recommendations and the EPA had not formally responded to the state's request for clarification regarding the CTG recommendations: Industrial Cleaning Solvents; Large Appliance Coatings; Metal Furniture Coatings; Miscellaneous Industrial Adhesives; and

Miscellaneous Metal and Plastic Parts Coatings. On March 17, 2011, the EPA issued a guidance memorandum entitled *Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings Categories* regarding the following three CTG categories: Large Appliance Coatings; Metal Furniture Coatings; and Miscellaneous Metal and Plastic Parts Coatings. Additional discussion regarding the EPA's guidance on these three CTG categories is provided in Appendix A: *Reasonably Available Control Technology Analysis*.

The following seven CTG categories for the HGB area have pending RACT determinations to be submitted to the EPA:

- Flexible Package Printing, Group II, issued in 2006;
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- Miscellaneous Industrial Adhesives, Group IV, issued in 2008; and
- Miscellaneous Metal and Plastic Parts Coatings, Group IV, issued in 2008.

This proposed SIP revision provides a RACT analysis update to include the seven CTG documents issued by the EPA from 2006 through 2008 that have not yet been addressed in the HGB AD SIP revision adopted on March 10, 2010, and incorporates CTG-related rulemaking concurrently being proposed for the HGB area (Rule Project No. 2010-016-115-EN).

If adopted, this HGB RACT Analysis Update SIP revision would include the analyses and RACT determinations for these seven CTG source categories. If the EPA's recommended controls for a particular source category are determined by the executive director to be RACT and the commission adopts rules to implement RACT for that source category, adoption of this SIP revision would incorporate those rules into the SIP. The associated proposed rulemaking would revise Chapter 115, Subchapter E, to implement RACT for the CTG emission source categories in the HGB area as required by FCAA, §172(c)(1) and §182(b)(2).

SECTION V: LEGAL AUTHORITY

General

The Texas Commission on Environmental Quality (TCEQ) has the legal authority to implement, maintain, and enforce the National Ambient Air Quality Standards (NAAQS) and to control the quality of the state's air, including maintaining adequate visibility.

The first air pollution control act, known as the Clean Air Act of Texas, was passed by the Texas Legislature in 1965. In 1967, the Clean Air Act of Texas was superseded by a more comprehensive statute, the Texas Clean Air Act (TCAA), found in Article 4477-5, Vernon's Texas Civil Statutes. The legislature amended the TCAA in 1969, 1971, 1973, 1979, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, and 2009. In 1989, the TCAA was codified as Chapter 382 of the Texas Health and Safety Code.

Originally, the TCAA stated that the Texas Air Control Board (TACB) is the state air pollution control agency and is the principal authority in the state on matters relating to the quality of air resources. In 1991, the legislature abolished the TACB effective September 1, 1993, and its powers, duties, responsibilities, and functions were transferred to the Texas Natural Resource Conservation Commission (TNRCC). With the creation of the TNRCC, the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the TNRCC is found in Chapters 5 and 7. Chapter 5, Subchapters A - F, H - J, and L, include the general provisions, organization, and general powers and duties of the TNRCC, and the responsibilities and authority of the executive director. Chapter 5 also authorizes the TNRCC to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the TNRCC enforcement authority. In 2001, the 77th Texas Legislature continued the existence of the TNRCC until September 1, 2013, and changed the name of the TNRCC to the Texas Commission on Environmental Quality (TCEQ). In 2009, the 81st Texas Legislature, during a special session, amended §5.014 of the Texas Water Code, changing the expiration date of the TCEQ to September 1, 2011, unless continued in existence by the Texas Sunset Act.

The TCAA specifically authorizes the TCEQ to establish the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general, comprehensive plan. The TCAA, Subchapters A - D, also authorize the TCEQ to collect information to enable the commission to develop an inventory of emissions; to conduct research and investigations; to enter property and examine records; to prescribe monitoring requirements; to institute enforcement proceedings; to enter into contracts and execute instruments; to formulate rules; to issue orders taking into consideration factors bearing upon health, welfare, social and economic factors, and practicability and reasonableness; to conduct hearings; to establish air quality control regions; to encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and to establish and operate a system of permits for construction or modification of facilities.

Local government authority is found in Subchapter E of the TCAA. Local governments have the same power as the TCEQ to enter property and make inspections. They also may make recommendations to the commission concerning any action of the TCEQ that affects their territorial jurisdiction, may bring enforcement actions, and may execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA and the rules or orders of the commission.

Subchapters G and H of the TCAA authorize the TCEQ to establish vehicle inspection and maintenance programs in certain areas of the state, consistent with the requirements of the Federal Clean Air Act; coordinate with federal, state, and local transportation planning agencies to develop and implement transportation programs and measures necessary to attain and maintain the NAAQS; establish gasoline volatility and low emission diesel standards; and fund and authorize participating counties to implement vehicle repair assistance, retrofit, and accelerated vehicle retirement programs.

Applicable Law

The following statutes and rules provide necessary authority to adopt and implement the state implementation plan (SIP). The rules listed below have previously been submitted as part of the SIP.

Statutes

All sections of each subchapter are included, unless otherwise noted.

TEXAS HEALTH & SAFETY CODE, Chapter 382

September 1, 2009

TEXAS WATER CODE

September 1, 2009

Chapter 5: Texas Natural Resource Conservation Commission

Subchapter A: General Provisions

Subchapter B: Organization of the Texas Natural Resource Conservation Commission

Subchapter C: Texas Natural Resource Conservation Commission

Subchapter D: General Powers and Duties of the Commission

Subchapter E: Administrative Provisions for Commission

Subchapter F: Executive Director (except §§5.225, 5.226, 5.227, 5.2275, 5.231, 5.232, and 5.236)

Subchapter H: Delegation of Hearings

Subchapter I: Judicial Review

Subchapter J: Consolidated Permit Processing

Subchapter L: Emergency and Temporary Orders (§§5.514, 5.5145, and 5.515 only)

Subchapter M: Environmental Permitting Procedures (§5.558 only)

Chapter 7: Enforcement

Subchapter A: General Provisions (§§7.001, 7.002, 7.0025, 7.004, and 7.005 only)

Subchapter B: Corrective Action and Injunctive Relief (§7.032 only)

Subchapter C: Administrative Penalties

Subchapter D: Civil Penalties (except §7.109)

Subchapter E: Criminal Offenses and Penalties: §§7.177, 7.179-7.183

Rules

All of the following rules are found in 30 Texas Administrative Code, as of the following latest effective dates:

Chapter 7: Memoranda of Understanding, §§7.110 and 7.119

December 13, 1996 and May 2, 2002

Chapter 19: Electronic Reporting

March 15, 2007

Chapter 35: Subchapters A-C, K: Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions

July 20, 2006

Chapter 39: Public Notice, §§39.201; 39.401; 39.403(a) and (b)(8)-(10); 39.405(f)(1) and (g); 39.409; 39.411 (a), (b)(1)-(6), and (8)-(10) and (c)(1)-(6) and (d); 39.413(9), (11), (12), and (14); 39.418(a) and (b)(3) and (4); 39.419(a), (b), (d), and (e); 39.420(a), (b) and (c)(3) and (4); 39.423 (a) and (b); 39.601-39.605	June 24, 2010
Chapter 55: Requests for Reconsideration and Contested Case Hearings; Public Comment, §§55.1; 55.21(a) - (d), (e)(2), (3), and (12), (f) and (g); 55.101(a), (b), and (c)(6) - (8); 55.103; 55.150; 55.152(a)(1), (2), and (6) and (b); 55.154; 55.156; 55.200; 55.201(a) - (h); 55.203; 55.205; 55.209, and 55.211	June 24, 2010
Chapter 101: General Air Quality Rules	May 12, 2011
Chapter 106: Permits by Rule, Subchapter A	May 12, 2011
Chapter 111: Control of Air Pollution from Visible Emissions and Particulate Matter	July 19, 2006
Chapter 112: Control of Air Pollution from Sulfur Compounds	July 16, 1997
Chapter 113: Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants	May 14, 2009
Chapter 114: Control of Air Pollution from Motor Vehicles	December 13, 2010
Chapter 115: Control of Air Pollution from Volatile Organic Compounds	February 17, 2011
Chapter 116: Permits for New Construction or Modification	March 3, 2011
Chapter 117: Control of Air Pollution from Nitrogen Compounds	May 12, 2011
Chapter 118: Control of Air Pollution Episodes	March 5, 2000
Chapter 122: §122.122: Potential to Emit	December 11, 2002
Chapter 122: §122.215: Minor Permit Revisions	June 3, 2001
Chapter 122: §122.216: Applications for Minor Permit Revisions	June 3, 2001
Chapter 122: §122.217: Procedures for Minor Permit Revisions	December 11, 2002
Chapter 122: §122.218: Minor Permit Revision Procedures for Permit Revisions Involving the Use of Economic Incentives, Marketable Permits, and Emissions Trading	June 3, 2001

SECTION VI: CONTROL STRATEGY

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 - Chapter 1: General (Revised)
 - Chapter 2: Anthropogenic Emissions Inventory (EI) Description (No change)
 - Chapter 3: Photochemical Modeling (No change)
 - Chapter 4: Control Strategies and Required Elements (Revised)
 - Chapter 5: Weight of Evidence (No change)
 - Chapter 6: Ongoing and Future Initiatives (No change)
 - 3. Beaumont-Port Arthur (No change)
 - 4. El Paso (No change)
 - 5. Regional Strategies (No change)
 - 6. Northeast Texas (No change)
 - 7. Austin Area (No change)
 - 8. San Antonio Area (No change)
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- 4.8 Monitoring Network (No change)
- 4.9 Contingency Plan (No change)
- 4.10 References (No change)
- Chapter 5: Weight of Evidence (No change)
- Chapter 6: Ongoing and Future Initiatives (No change)

LIST OF ACRONYMS

ACT	alternative control techniques
AD	attainment demonstration
BACT	best available control technology
CFR	Code of Federal Regulations
CTG	Control Techniques Guidelines
DMA	Marine Distillate Fuel A
DMX	Marine Distillate Fuel X
EPA	United States Environmental Protection Agency
FCAA	Federal Clean Air Act
HECT	Highly Reactive Volatile Organic Compound Emissions Cap and Trade Program
H-GAC	Houston-Galveston Area Council
HGB	Houston-Galveston-Brazoria
HRVOC	highly reactive volatile organic compounds
I/M	Inspection and Maintenance
LDAR	leak detection and repair
MACT	maximum achievable control technology
MECT	Mass Emissions Cap and Trade Program
mph	miles per hour
MVEB	motor vehicle emissions budget
NAAQS	National Ambient Air Quality Standard
NO _x	nitrogen oxides
ppm	parts per million
RACM	reasonably available control measures
RACT	reasonably available control technology
RFP	reasonable further progress
RVP	Reid vapor pressure
SB	Senate Bill
SIP	state implementation plan
TACB	Texas Air Control Board
TCAA	Texas Clean Air Act
TCEQ	Texas Commission on Environmental Quality (commission)
TERP	Texas Emission Reduction Plan
TNRCC	Texas Natural Resource Conservation Commission

tpy	tons per year
TxLED	Texas Low Emission Diesel
VMEP	Voluntary Mobile Emissions Reductions Program
VOC	volatile organic compounds

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CHAPTER 1: GENERAL

1.1 BACKGROUND

The *History of the Texas State Implementation Plan*, a comprehensive overview of the state implementation plan (SIP) revisions submitted to the United States Environmental Protection Agency (EPA) by the State of Texas, is available on the [Introduction to the SIP Web page](http://www.tceq.texas.gov/airquality/sip/sipintro.html#History) (<http://www.tceq.texas.gov/airquality/sip/sipintro.html#History>) on the Texas Commission on Environmental Quality ([TCEQ Web site](http://www.tceq.texas.gov/) (<http://www.tceq.texas.gov/>)).

1.2 INTRODUCTION

The Houston-Galveston-Brazoria (HGB) area presents a complex air pollution problem because of the nature of the emissions and meteorology of the area. The HGB area's hot, sunny climate, large urban population activities, and extensive, highly concentrated industrial complex provide the ingredients for ozone formation: sunlight, nitrogen oxides (NO_x), and volatile organic compounds (VOC). The Houston area's significant biogenic VOC emissions and complex meteorology, which includes land/sea breeze air parcel recirculation, complicate photochemical modeling. Economic and population growth continue to create air quality challenges for the HGB area. Despite these challenges, key ozone-targeting regulatory programs have reduced the number and magnitude of ozone exceedances, the area of exceedance, and the population exposed to exceedances of the ozone National Ambient Air Quality Standard (NAAQS).

Summaries of HGB area 1997 eight-hour ozone NAAQS SIP revisions, as well as information regarding this HGB Reasonably Available Control Technology Analysis Update SIP Revision for the 1997 Eight-Hour Ozone Standard (HGB RACT SIP revision) are provided.

1.2.1 One-Hour Ozone National Ambient Air Quality Standard (NAAQS) History (No change)

1.2.2 1997 Eight-Hour Ozone NAAQS History

In 1997, the EPA revised the health-based NAAQS for ozone, setting it at 0.08 parts per million (ppm) based on the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentrations measured at each monitor within an area. The final 1997 eight-hour ozone NAAQS was published in the *Federal Register* on July 18, 1997 (62 FR 38856), and became effective on September 16, 1997. On April 30, 2004, the EPA finalized nonattainment designations and promulgated the first phase of its implementation rule for the 1997 eight-hour ozone standard (69 FR 23951). These actions became effective on June 15, 2004. The EPA classified the HGB area as a moderate nonattainment area for the standard. The TCEQ was required to submit a SIP revision for the 1997 eight-hour ozone NAAQS to the EPA by June 15, 2007, and demonstrate attainment of the standard by June 15, 2010. In the November 29, 2005, issue of the *Federal Register* (70 FR 71612), the EPA published the second phase of the implementation rule for the 1997 eight-hour ozone NAAQS, which addressed the control obligations that apply to areas designated nonattainment for the standard.

The commission adopted the 1997 eight-hour ozone nonattainment area SIP revision and the reasonable further progress (RFP) SIP revision for the HGB area on May 23, 2007. These SIP revisions were the first step in addressing the 1997 eight-hour ozone standard in the HGB area. The TCEQ demonstrated reasonable further progress toward attaining the 1997 eight-hour ozone standard and committed to developing an HGB 1997 eight-hour ozone attainment demonstration SIP revision to attain the 1997 standard as expeditiously as practicable. On June 15, 2007, these two revisions to the Texas SIP and a letter from the governor of Texas requesting

that the HGB ozone nonattainment area be reclassified from a moderate nonattainment area to a severe nonattainment area were submitted to the EPA.

The EPA granted the governor's request to voluntarily reclassify the HGB ozone nonattainment area from a moderate to a severe nonattainment area for the 1997 ozone NAAQS in the October 1, 2008, issue of the *Federal Register* (73 FR 56983). The EPA set April 15, 2010, as the date for the state to submit a revised SIP addressing the severe ozone nonattainment area requirements of the Federal Clean Air Act (FCAA) (42 United States Code, §§7401 *et seq.*). The area's new attainment date for the 1997 eight-hour ozone standard is as expeditiously as practicable but no later than June 15, 2019.

1.2.2.1 May 23, 2007 (No change)

1.2.2.2 March 10, 2010

On March 10, 2010, the commission adopted two revisions to the Texas SIP for the HGB ozone nonattainment area. The HGB Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision) included a photochemical modeling analysis and a weight of evidence analysis to demonstrate attainment of the 1997 eight-hour ozone NAAQS by the June 15, 2019, deadline. This SIP revision also included a motor vehicle emissions budget (MVEB), a VOC RACT analysis, a NO_x RACT analysis, a reasonably available control measures (RACM) analysis, a contingency plan, and a mid-course review commitment. In addition, the HGB AD SIP revision incorporated revisions to 30 Texas Administrative Code Chapters 101 and 115, also adopted on March 10, 2010, which included the Mass Emissions Cap and Trade (MECT) Program Cap Integrity, the Highly Reactive Volatile Organic Compounds (HRVOC) Emissions Cap and Trade (HECT) Program Cap Reduction and Allowance Reallocation, and the VOC Control Techniques Guidelines (CTG) Update.

The HGB RFP SIP Revision for the 1997 Eight-Hour Ozone Standard (HGB RFP SIP revision), as required by the EPA, demonstrated that an 18% emissions reduction requirement will be met for the analysis period between 2002 through 2008 and an average of 3% per year emissions reduction between each of the milestone years 2008, 2011, 2014, 2017, and 2018. The RFP SIP revision established baseline emission levels, calculated reduction targets, identified control strategies to meet emission target levels, and tracked actual emission reductions against established emissions growth. An MVEB for each milestone year and a contingency plan were also included in the RFP SIP revision.

In the January 25, 2011, issue of the *Federal Register* (76 FR 4342), the EPA published a notice of its determination that the MVEBs in the HGB AD and RFP SIP revisions are adequate for transportation conformity purposes, effective February 9, 2011.

1.2.3 Existing Ozone Control Strategies (No change)

1.2.4 Current SIP Revision

Because this SIP revision focuses specifically on the seven CTG documents issued by the EPA from 2006 through 2008 that have not yet been addressed in the HGB AD SIP revision adopted March 10, 2010, the RACT analysis in this SIP revision only provides an update to the HGB VOC RACT demonstration.

Although the FCAA requires the state to implement RACT, EPA guidance on RACT indicates that states may choose to implement the CTG recommendations, implement an alternative approach, or demonstrate that additional controls for the CTG emission source category are not technologically or economically feasible in the area. If adopted, this SIP revision would provide a detailed RACT analysis update for the HGB area and incorporate any necessary rule revisions.

The following seven CTG documents would be evaluated during the associated proposed rulemaking (Rule Project No. 2010-016-115-EN) to determine if additional VOC controls are necessary to fulfill RACT requirements:

- Flexible Package Printing, Group II, issued in 2006;
- Industrial Cleaning Solvents, Group II, issued in 2006;
- Large Appliance Coatings, Group III, issued in 2007;
- Metal Furniture Coatings, Group III, issued in 2007;
- Paper, Film, and Foil Coatings, Group III, issued in 2007;
- Miscellaneous Industrial Adhesives, Group IV, issued in 2008; and
- Miscellaneous Metal and Plastic Parts Coatings, Group IV, issued in 2008.

1.3 HEALTH EFFECTS (NO CHANGE)

1.4 STAKEHOLDER PARTICIPATION AND PUBLIC HEARINGS

1.4.1 Stakeholder Participation

The TCEQ held a stakeholder meeting on December 1, 2010, and accepted informal comments until January 11, 2011, for the associated Chapter 115 rulemaking (Rule Project No. 2010-016-115-EN). For further information, please refer to the [CTG Stakeholder Group Web page](http://www.tceq.texas.gov/implementation/air/rules/ctg/control_techniques_stakeholder.html) (http://www.tceq.texas.gov/implementation/air/rules/ctg/control_techniques_stakeholder.html).

1.4.2 Public Hearings and Comment Information

The commission will hold public hearings for this proposed SIP revision and associated rulemaking at the following times and locations:

Table 1-1: Public Hearing Information

City	Date	Time	Location
Houston	July 18, 2011	6:30 p.m.	Houston-Galveston Area Council 3555 Timmons Lane Conference Room C Houston, TX 77027
Austin	July 22, 2011	10:00 a.m.	TCEQ Headquarters 12100 Park 35 Circle Bldg. E, Room 201 Austin, TX 78753

The public comment period will open on June 24, 2011, and close on July 25, 2011. Written comments will be accepted via mail, fax, or through the eComments system. All comments should reference the “HGB RACT Analysis Update SIP Revision for the 1997 Eight-Hour Ozone Standard” and Project Number 2010-028-SIP-NR. Comments may be submitted to Lola Brown, MC 206, State Implementation Plan Team, Chief Engineer’s Office, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-5687. Electronic comments may be submitted through the [eComments system](http://www5.tceq.texas.gov/rules/ecomments/) (<http://www5.tceq.texas.gov/rules/ecomments/>). File size restrictions may apply to comments being submitted via the eComments system. Comments must be received by July 25, 2011.

An electronic version of this proposed SIP revision and appendix can be found at the TCEQ’s [SIP Hot Topics Web page](http://www.tceq.texas.gov/airquality/sip/Hottop.html) (<http://www.tceq.texas.gov/airquality/sip/Hottop.html>).

1.5 SOCIAL AND ECONOMIC CONSIDERATIONS

There are no social or economic issues of concern attributable to this HGB RACT Analysis Update SIP Revision. For a detailed explanation of any social and economic issues involved with the associated Chapter 115 rulemaking (Rule Project No. 2010-016-115-EN), please refer to the preamble that precedes those rules, accessed from the TCEQ [Rule Proposals and Adoptions Web page](http://www.tceq.texas.gov/nav/rules/propose_adopt.html) (http://www.tceq.texas.gov/nav/rules/propose_adopt.html).

1.6 FISCAL AND MANPOWER RESOURCES (NO CHANGE)

**CHAPTER 2: ANTHROPOGENIC EMISSIONS INVENTORY (EI) DESCRIPTION
(NO CHANGE)**

CHAPTER 3: PHOTOCHEMICAL MODELING (NO CHANGE)

CHAPTER 4: CONTROL STRATEGIES AND REQUIRED ELEMENTS

4.1 INTRODUCTION (NO CHANGE)

4.2 EXISTING CONTROL MEASURES

Over several years of ozone planning in the Houston-Galveston-Brazoria (HGB) area, a broad range of control measures have been implemented for each emission source category. Table 4-1: *Existing Ozone Control Measures Applicable to the HGB Eight-County Nonattainment Area* lists the existing ozone control strategies that have been implemented for the one-hour and 1997 eight-hour ozone standards in the HGB area.

Table 4-1: Existing Control Measures Applicable to the HGB Eight-County Nonattainment Area

Measure	Description	Start Date(s)
Nitrogen Oxides (NO _x) Mass Emissions Cap and Trade (MECT) Program	Overall 80% NO _x reduction from existing industrial sources and utility power plants, implemented through a cap and trade program Affects utility boilers, gas turbines, heaters and furnaces, stationary internal combustion engines, industrial boilers, and many other industrial sources	April 1, 2003, and phased in through April 1, 2007
Highly Reactive Volatile Organic Compounds (HRVOC) Rules and HRVOC Emissions Cap and Trade (HECT) Program	Affects cooling towers, process vents, and flares, and establishes an annual emissions limit with a cap and trade for each site in Harris County Seven perimeter counties subject to permit allowable limits and monitoring requirements	Monitoring requirements began January 31, 2006 Cap and trade program implemented January 1, 2007 HECT cap incrementally stepped-down from 2014 through 2017 for a total 25% cap reduction
HRVOC Fugitive Rules	More stringent leak detection and repair (LDAR) requirements for components in HRVOC service Additional components included in LDAR program: more stringent repair times, lower leak detection, and third part audit requirements	March 31, 2004

Measure	Description	Start Date(s)
Volatile Organic Compounds (VOC) Rules – Storage Tanks	<p>Requires controls for slotted guide poles and more stringent controls for other fittings on floating roof tanks, and control requirements or operational limitations on landing floating roof tanks</p> <p>Eliminates exemption for storage tanks for crude oil or natural gas condensate, and regulates flash emissions from these tanks</p>	January 1, 2009
VOC Rules – Degassing Operations	<p>Requires vapors from degassing to be vented to a control device for a longer time period, and removes exemption from degassing to control for tanks with capacity of 75,000 to 1,000,000 gallons</p> <p>Clarification of rule and monitoring and testing requirements, additional control options, and notification requirements</p>	<p>January 1, 2009</p> <p>February 17, 2011</p>
NO _x Emission Standards for Nitric Acid and Adipic Acid Manufacturing	NO _x emission standards for nitric acid and adipic acid manufacturing facilities in the HGB area	November 15, 1999
Utility Electric Generation in East and Central Texas	NO _x control requirements (approximately 55 %) on utility boilers and stationary gas turbines at utility electric generation sites in East and Central Texas	May 1, 2003, through May 1, 2005
VOC Control Measures	<p>Additional control technology requirements for batch processes, bakeries, and offset lithographic printers by December 31, 2002</p> <p>Additional VOC measures adopted earlier for reasonably available control technology (RACT) purposes: storage, general vent gas, industrial wastewater, loading and unloading operations, general VOC LDAR, solvent using process, etc. (see Appendix D: <i>Reasonably Available Control Technology Analysis</i> of the Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision) adopted March 10, 2010, for more details)</p>	December 31, 2002, and earlier

Measure	Description	Start Date(s)
VOC Control Measures – Offset Lithographic Printers	<p>Additional control technology requirements for offset lithographic printers</p> <p>Revision to limit VOC content of solvents used by offset lithographic printing facilities and to include smaller sources in rule applicability (see Appendix D of the HGB AD SIP revision adopted March 10, 2010, for more details)</p>	<p>December 31, 2002</p> <p>March 1, 2011, for major sources</p> <p>March 1, 2012, for minor sources</p>
Refueling – Stage I	<p>Captures gasoline vapors that are released when gasoline is delivered to a storage tank</p> <p>Vapors returned to the tank truck as the storage tank is being filled with fuel, rather than released into the ambient air</p>	1990
Refueling – Stage II	<p>Captures gasoline vapors when a vehicle is being fueled at the pump</p> <p>Vapors returned through the pump hose to the petroleum storage tank, rather than released into the air</p>	1992
Federal Area/Non-Road Measures	<p>Series of emissions limits, implemented by the United States Environmental Protection Agency (EPA), for area and non-road sources</p> <p>Examples: diesel and gasoline engine standards for locomotives and leaf-blowers</p>	Through 2018
Texas Emission Reduction Plan (TERP)	Provides grant funds for on-road and non-road heavy-duty diesel engine replacement/retrofit	January 2002
California Gasoline Engines	California standards for non-road gasoline engines 25 horsepower and larger	May 1, 2004
Stationary Diesel Engines	Prohibition on operating stationary diesel and dual-fuel engines for testing and maintenance purposes between 6:00 a.m. and noon	April 1, 2002
Natural Gas-Fired Small Boilers, Process Heaters, and Water Heaters	NO _x emission limits on small-scale residential and industrial boilers, process heaters, and water heaters equal to or less than 2.0 million British thermal units per hour	2002
Minor Source NO _x Controls for Non-MECT Sites	NO _x emission limits on boilers, process heaters, stationary engines, and turbines at minor sites not included in the MECT program (uncontrolled design capacity to emit less than 10 tons per year (tpy))	March 31, 2005

Measure	Description	Start Date(s)
VOC Control Measures	<p>Additional control technology requirements for batch processes and bakeries by December 31, 2002</p> <p>Additional VOC measures adopted earlier for RACT purposes: storage, general vent gas, industrial wastewater, loading and unloading operations, general VOC LDAR, solvent using process, cutback asphalt, etc. (see Appendix D of the HGB AD SIP revision adopted March 10, 2010, for more details)</p>	December 31, 2002, and earlier
Texas Low Emission Diesel (TxLED)	Requires all diesels for both on-road and non-road use to have a lower aromatic content and a higher cetane number	Phase in began October 31, 2005
TxLED for Marine Fuels	Adds marine distillate fuels X and A, commonly known as DMX and DMA, or Marine Gas Oil, into the definition of diesel fuels, requiring them to be TxLED compliant	June 24, 2007
Texas Low Reid Vapor Pressure (RVP) Gasoline	Requires all gasoline for both on-road and non-road use to have a RVP of 7.8 pounds per square inch or less from May 1 through October 1 each year	April 2000
Voluntary Mobile Emissions Reduction Program (VMEP)	Voluntary measures administered by the Houston-Galveston Area Council (H-GAC) (see Appendix F: <i>Evaluation of Mobile Source Control Strategies for the Houston-Galveston-Brazoria State Implementation Plan (With Detailed Strategies)</i> , prepared for H-GAC by ENVIRON International Corporation, of the HGB AD SIP adopted March 10, 2010)	Through 2018
Federal On-Road Measures	<p>Series of emissions limits, implemented by the EPA, for on-road vehicles</p> <p>Examples: Tier 1 and Tier 2 vehicle standards, low sulfur diesel standards, National Low Emission Vehicle standards, and reformulated gasoline</p>	Phase in through 2013
Vehicle Inspection/Maintenance (I/M)	Yearly treadmill-type testing for pre-1996 vehicles and computer checks for 1996 and newer vehicles	<p>May 1, 2002, in Harris County</p> <p>May 1, 2003, in Brazoria, Fort Bend, Galveston, and Montgomery Counties</p>
Speed Limit Reduction	Five miles per hour (mph) below what was posted before May 1, 2002, on roadways where speeds were 65 mph or higher	September 2003

Measure	Description	Start Date(s)
Transportation Control Measures	Various measures in H-GAC's long-range transportation plans (see Appendix F of the HGB AD SIP adopted March 10, 2010, for more details)	Phase in through 2018
Voluntary Energy Efficiency/Renewable Energy	Energy efficiency and renewable energy projects encouraged by Senate Bill (SB) 7, 76th Texas Legislature, 1999 and SB 5, 77th Texas Legislature, 2001	September 1, 1999, and September 1, 2001
Automotive Windshield Washer Fluid	VOC content limitation on automotive windshield washer fluid sold, supplied, distributed, or manufactured for use in Texas	January 1, 1995

4.3 UPDATES TO EXISTING CONTROL MEASURES (NO CHANGE)

4.4 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) ANALYSIS

4.4.1 General Discussion

The HGB area is currently classified as a severe nonattainment area for the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS). Under the 1997 eight-hour ozone standard, the HGB area is required to meet the mandates of the Federal Clean Air Act (FCAA) under §172(c)(1) and §182(b)(2) and (f). According to the EPA's final rule to implement the 1997 eight-hour ozone NAAQS (40 Code of Federal Regulations §51.912, November 29, 2005), a state containing areas classified as moderate nonattainment or higher must submit a state implementation plan (SIP) revision demonstrating that its current rules fulfill the RACT requirements for all Control Techniques Guidelines (CTG) emission source categories and all non-CTG major sources of NO_x and VOC. The major source threshold for severe nonattainment areas is a potential to emit 25 tpy or more of either NO_x or VOC.

In the September 17, 1979, issue of the *Federal Register* (44 FR 53762), 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 economic feasibility. RACT requirements for nonattainment areas classified as moderate and higher are included in the FCAA to assure that significant source categories at major sources of ozone precursor emissions are controlled to a reasonable extent, but not necessarily to best available control technology (BACT) levels expected of new sources or to maximum achievable control technology (MACT) levels required for major sources of hazardous air pollutants. While RACT and reasonably available control measures (RACM) have similar consideration factors like technological and economic feasibility, there is a significant distinction between RACT and RACM. To be considered RACM, a control measure must advance attainment of the area towards meeting the NAAQS for that measure (see FCAA, §172(c)(1)). Advancing attainment of the area is not a factor of consideration when evaluating RACT because the benefit of implementing RACT is presumed under the FCAA.

Under the current state rules, the HGB area is subject to some of the most stringent NO_x and VOC emission control requirements in the country, and for many source categories, the existing rules are more stringent than recommended RACT standards for those categories. In the final approval notice for the revised HGB one-hour ozone attainment demonstration SIP revision published in the September 6, 2006, issue of the *Federal Register* (71 FR 52676), the EPA noted that the HGB VOC rules in 30 Texas Administrative Code Chapter 115 and NO_x rules in Chapter

117 were previously determined to meet the FCAA RACT requirements. Under the one-hour ozone NAAQS, the HGB area was also designated as a severe nonattainment area and the threshold for major stationary sources under the one-hour ozone nonattainment designation was identical to the current threshold under the 1997 eight-hour ozone nonattainment designation. Therefore, controls to satisfy RACT for most major sources under the 1997 eight-hour ozone designation were implemented by the Texas Commission on Environmental Quality (TCEQ) under the one-hour ozone attainment demonstration SIP revision and previously approved by the EPA.

4.4.2 NO_x RACT Determination (No change)

4.4.3 VOC RACT Determination

The TCEQ's analysis demonstrates that the current VOC rules and controls for the HGB area satisfy the FCAA requirements for RACT for all CTG or alternative control techniques (ACT) VOC source categories specific to any CTG or ACT documents issued prior to 2006. For all non-CTG/ACT major VOC emission source categories that controls are technologically and economically feasible, RACT is fulfilled by the EPA-approved Chapter 115 rules or other federally enforceable measures.

The EPA issued 11 CTG documents between 2006 and 2008 with recommendations for VOC controls on a variety of consumer and commercial products. Some of the new CTG recommendations are updates to previously issued CTG documents and some are recommendations for new categories. The TCEQ evaluated these new CTG documents in this RACT analysis to determine if additional VOC controls were necessary to fulfill RACT requirements.

The RACT analysis included in the HGB AD SIP revision adopted March 10, 2010, addresses the following CTG documents:

- Flat Wood Paneling Coatings, Group II, issued in 2006;
- Offset Lithographic and Letterpress Printing, Group II, issued in 2006;
- Auto and Light-Duty Truck Assembly Coatings, Group IV, issued in 2008; and
- Fiberglass Boat Manufacturing Materials, Group IV, issued in 2008.

The RACT analysis included in this SIP revision addresses the following CTG documents:

- Flexible Package Printing, Group II, issued in 2006;
- Industrial Cleaning Solvents, Group II, issued in 2006;
- Large Appliance Coatings, Group III, issued in 2007;
- Metal Furniture Coatings, Group III, issued in 2007;
- Paper, Film, and Foil Coatings, Group III, issued in 2007;
- Miscellaneous Industrial Adhesives, Group IV, issued in 2008; and
- Miscellaneous Metal and Plastic Parts Coatings, Group IV, issued in 2008.

The remainder of this section includes brief summaries of the TCEQ's determinations regarding these seven CTG documents. Additional details regarding the evaluation of the 11 CTG documents are provided in Appendix A: *Reasonably Available Control Technology Analysis*.

4.4.3.1 Flexible Package Printing

The TCEQ has determined that portions of the Flexible Package Printing CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing

rulemaking to limit the VOC content of coatings used by flexible package printing sources in the HGB area (Rule Project 2010-016-115-EN). The rulemaking implements the CTG recommendations to reduce the VOC content of coatings and imposes work practices for cleaning materials used during flexible package printing.

4.4.3.2 Industrial Cleaning Solvents

The TCEQ has determined that the Industrial Cleaning Solvents CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to implement the CTG recommendations to limit the VOC content of industrial cleaning solvents used in the HGB area (Rule Project 2010-016-115-EN).

4.4.3.3 Large Appliance Coatings

The TCEQ has determined that portions of the Large Appliance Coatings CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to limit the VOC content of large appliance coatings in the HGB area (Rule Project 2010-016-115-EN). The rulemaking implements the CTG recommendations to reduce the VOC content of coatings and imposes work practices for cleaning materials used during large appliance coating.

4.4.3.4 Metal Furniture Coatings

The TCEQ has determined that portions of the Metal Furniture Coatings CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to limit the VOC content of metal furniture coatings used in the HGB area (Rule Project 2010-016-115-EN). The rulemaking implements the CTG recommendations to reduce the VOC content of coatings and imposes work practices for cleaning materials used during metal furniture coating.

4.4.3.5 Paper, Film, and Foil Coatings

The TCEQ has determined that portions of the Paper, Film, and Foil Coatings CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to limit the VOC content of paper, film, and foil coatings in the HGB area (Rule Project 2010-016-115-EN). The rulemaking implements the CTG recommendations to reduce the VOC content of coatings and imposes work practices for cleaning materials used during paper, film, and foil coating.

4.4.3.6 Miscellaneous Industrial Adhesives

The TCEQ has determined that the Miscellaneous Industrial Adhesives CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to implement the CTG recommendations to limit the VOC content of miscellaneous industrial adhesives used in the HGB area (Rule Project 2010-016-115-EN).

4.4.3.7 Miscellaneous Metal and Plastic Parts Coatings

The TCEQ has determined that portions of the Miscellaneous Metal and Plastic Parts Coatings CTG recommendations are RACT for the HGB area. Concurrent with this SIP revision, the TCEQ is proposing rulemaking to limit the VOC content of miscellaneous metal and plastic parts coatings used in the HGB area (Rule Project 2010-016-115-EN). The rulemaking implements the CTG recommendations to reduce the VOC content of coatings and imposes work practices for cleaning materials used during miscellaneous metal and plastic parts coating.

4.5 REASONABLY AVAILABLE CONTROL MEASURES (RACM) ANALYSIS (NO CHANGE)

4.6 NEW CONTROL MEASURES (NO CHANGE)

4.7 MOTOR VEHICLE EMISSIONS BUDGET (MVEB) (NO CHANGE)

4.8 MONITORING NETWORK (NO CHANGE)

4.9 CONTINGENCY PLAN (NO CHANGE)

4.10 REFERENCES (NO CHANGE)

CHAPTER 5: WEIGHT OF EVIDENCE (NO CHANGE)

CHAPTER 6: ONGOING AND FUTURE INITIATIVES (NO CHANGE)

APPENDIX A

**REASONABLY AVAILABLE CONTROL TECHNOLOGY
ANALYSIS**

**HOUSTON-GALVESTON-BRAZORIA REASONABLY
AVAILABLE CONTROL TECHNOLOGY ANALYSIS UPDATE
STATE IMPLEMENTATION PLAN REVISION FOR THE 1997
EIGHT-HOUR OZONE STANDARD**

Project No. 2010-028-SIP-NR

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1.1 INTRODUCTION

The eight-county Houston-Galveston-Brazoria (HGB) eight-hour ozone nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties) is currently classified as severe under the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS). Under the 1997 eight-hour ozone standard, the HGB area is required to meet the mandates of the Federal Clean Air Act (FCAA) under §172(c)(1) and §182(b)(2) and (f). According to the United States Environmental Protection Agency's (EPA) final rule to implement the 1997 eight-hour ozone NAAQS (40 Code of Federal Regulations (CFR) §51.912, November 29, 2005), a state containing areas classified as moderate nonattainment or higher must submit a state implementation plan (SIP) revision demonstrating that its current rules fulfill the reasonably available control technology (RACT) requirements for all Control Techniques Guidelines (CTG) emission source categories. In the final approval notice for the revised HGB one-hour ozone attainment demonstration SIP revision published in the September 6, 2006, issue of the *Federal Register* (71 FR 52676), the EPA noted that the HGB volatile organic compounds (VOC) rules in 30 Texas Administrative Code (TAC) Chapter 115: *Control of Air Pollution from Volatile Organic Compounds* and nitrogen oxides (NO_x) rules in Chapter 117: *Control of Air Pollution from Nitrogen Compounds* were previously determined to meet the FCAA RACT requirements.

The EPA issued 11 CTG documents between 2006 and 2008 with recommendations for VOC controls on a variety of consumer and commercial products. Some of the new CTG recommendations are updates to previously issued CTG documents and some are recommendations for new categories. The Texas Commission on Environmental Quality (TCEQ) evaluated these new CTG documents in this RACT analysis to determine if additional VOC controls were necessary to fulfill RACT requirements.

The RACT analysis included in the Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision) adopted March 10, 2010, addresses the following CTG documents:

- Flat Wood Paneling Coatings, Group II, issued in 2006;
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- Miscellaneous Industrial Adhesives, Group IV, issued in 2008; and
- Miscellaneous Metal and Plastic Parts Coatings, Group IV, issued in 2008.

By letter dated December 8, 2008, the TCEQ requested clarification from the EPA regarding several issues related to the recommendations in the following three CTG categories: Large Appliance Coatings; Metal Furniture Coatings; and Miscellaneous Metal and Plastic Parts Coatings. A number of the recommended VOC content limits for specific coatings categories in the CTG documents are less stringent than the more general VOC content limits specified in the

EPA's original CTG recommendations. The TCEQ requested clarification to assure that implementing the CTG recommendations would not be considered as backsliding and to be certain that the TCEQ has the appropriate information to determine whether the CTG recommendations actually represent RACT for Texas. On March 17, 2011, the EPA issued a guidance memorandum regarding these three CTG categories entitled *Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings Categories*. The EPA stated in the memorandum that: "...if a state believes the volume usage distribution among the general and specialty categories in the docket is representative of the distribution in the nonattainment area, we believe that if a state undertakes wholesale adoption of the new categorical limits in a specific CTG, the state may rely on the assessments in the docket to demonstrate that the range of new limits will result in an overall reduction in emissions from the collection of covered coatings."

The TCEQ is proposing concurrent rulemaking (Rule Project Number 2010-016-115-EN) to implement RACT for these three CTG categories that incorporates the limits as recommended in the CTG documents. The preamble of the proposed rulemaking provides discussion regarding the estimated percent reductions for these CTG categories that supports the EPA's position that applying the new recommended limits as a whole results in net reductions. In addition, as discussed in the preamble of the proposed rulemaking and in this appendix, the current TCEQ rules for these CTG categories have exemption thresholds more stringent than recommended by the CTG documents and the proposed rulemaking would retain the more stringent exemption thresholds of the current rules to prevent potential backsliding. This approach also results in an overall control level greater than the new CTG recommendations and supports the TCEQ's position that proposed rulemaking provides equivalent or better VOC control for these CTG categories and is not backsliding under the FCAA. The TCEQ contends that the proposed rulemaking is consistent with the EPA's guidance in the March 17, 2011, memorandum and meets RACT requirements for these three CTG categories.

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 economic feasibility (44 FR 53762, September 17, 1979). RACT requirements for moderate and higher classification nonattainment areas are included in the FCAA to assure that significant source categories at major sources of ozone precursor emissions are controlled to a reasonable extent, but not necessarily to best available control technology (BACT) levels expected of new sources or to maximum achievable control technology (MACT) levels required for major sources of hazardous air pollutants.

While RACT and reasonably available control measures (RACM) have similar consideration factors like technological and economic feasibility, there is a significant distinction between RACT and RACM. A control measure must advance attainment of the area towards meeting the NAAQS for that measure to be considered RACM. Advancing attainment of the area is not a factor of consideration when evaluating RACT because the benefit of implementing RACT is presumed under the FCAA.

1.2 RACT EVALUATION APPROACH

1.2.1 General Discussion

The TCEQ demonstrates that the RACT requirements are being fulfilled in the HGB area by: (1) identifying all CTG source categories of NO_x and VOC emissions and submitting negative declarations for categories where there are no emission sources within the HGB area; (2) identifying all non-CTG major sources of NO_x and VOC emissions; (3) identifying the state regulation that implements or exceeds RACT for each applicable CTG source category or non-CTG major emission source; and (4) describing the basis for concluding that these regulations

fulfill RACT. Because this SIP revision focuses specifically on the seven CTG documents issued by the EPA from 2006 through 2008 that were not addressed in the HGB AD SIP revision adopted March 10, 2010, this RACT analysis only provides an update to the HGB VOC RACT demonstration.

1.2.2 Identification of CTG Emission Sources

The EPA has issued CTG documents defining RACT for existing facilities. The TCEQ reviewed the seven Consumer and Commercial Products CTG documents issued from 2006 through 2008 that were not addressed in the HGB AD SIP revision adopted March 10, 2010, to identify all source categories of VOC emissions that require RACT. RACT determinations are not required if there are no sources in the HGB area that are subject to a CTG document.

1.2.3 Determining if State Regulations Fulfill RACT Requirements

The EPA previously approved the VOC rules in 30 TAC Chapter 115 as meeting the FCAA RACT requirements for CTG documents issued prior to 2006. RACT for the CTG documents issued in or after 2006 was evaluated by comparing CTG recommendations to TCEQ rules to determine if the existing rules satisfied RACT. RACT determinations for four of the CTG documents issued after 2006 were submitted to the EPA on April 6, 2010 (SIP Project Number 2009-017-SIP-NR). Additional discussion regarding CTG documents issued in 2006 and later is provided in Section 1.3.2: *VOC RACT Determination* of this appendix. State rules that are consistent with or more stringent than controls implemented in other nonattainment areas were also determined to fulfill RACT requirements. Federally approved state rules and rule approval dates can be found in 40 CFR §52.2270(c), EPA Approved Regulations in the Texas SIP.

BACT is an emission standard that is based on the maximum degree of emission reduction achievable and is at least as stringent as the emission standards set by any applicable FCAA provisions. MACT is an emission standard that requires the maximum reduction of hazardous emissions and is at least as stringent as the average emission level achieved by controls on the top 12% of existing sources in the applicable source category. Therefore, emission sources subject to the more stringent BACT or MACT requirements were determined to also fulfill RACT requirements.

The TCEQ reviewed the emission sources in the HGB area and the applicable state rules to verify that all CTG emission source categories in the HGB area were subject to requirements that meet or exceed the applicable RACT requirements, or that further emission controls on the sources were either not economically feasible or not technologically feasible.

1.3 RACT DETERMINATION AND DISCUSSION

1.3.1 General Discussion

The HGB area is subject to some of the most stringent NO_x and VOC emission control requirements in the country, and for many source categories the existing rules are more stringent than recommended RACT standards for those categories. In the final approval notice for the revised HGB one-hour ozone attainment demonstration SIP revision (71 FR 52676, September 6, 2006), the EPA noted that the HGB VOC rules in Chapter 115 and NO_x rules in Chapter 117 were previously determined to meet the FCAA RACT requirements. Under the one-hour ozone NAAQS, the HGB area was also designated severe nonattainment and the threshold for major stationary sources under the one-hour ozone nonattainment designation was identical to the current threshold under the 1997 eight-hour ozone designation. Therefore, controls to satisfy RACT for most major sources under the 1997 eight-hour ozone designation were implemented by the TCEQ under the one-hour ozone attainment demonstration SIP revision and previously approved by the EPA.

1.3.2 VOC RACT Determination

1.3.2.1 Flexible Package Printing

Concurrent with this SIP revision, the TCEQ is proposing revisions to the flexographic and rotogravure printing rules in 30 TAC Chapter 115, Subchapter E: *Solvent-Using Processes*, Division 3: *Flexographic and Rotogravure Printing* to implement the EPA's 2006 Flexible Package Printing CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would reduce the VOC content limits of coatings, increase the overall control efficiency of add-on controls used in flexible package printing operations, establish work practice procedures for materials used during associated cleaning activities, and expand rule applicability to include smaller flexible package printing lines that were previously exempt from these rules.

The TCEQ is not proposing to implement the EPA's 2006 CTG recommendation to exempt flexible package printing operations from all VOC coating content limits if the operations have total actual VOC emissions less than 15 pounds per day from inks, coatings, and adhesives. For the HGB area, the existing Chapter 115 rules provide an exemption for combined flexographic and rotogravure printing operations with the potential to emit less than 25 tons per year (tpy) of VOC from inks. Calculating only the VOC emissions resulting from flexible package printing operations to determine exemption from the required controls may create backsliding issues for properties already complying with the current Chapter 115 rules. The existing Chapter 115 exemption limit is equal to or potentially more stringent than the 2006 CTG-recommended exemption threshold for properties conducting multiple flexographic and rotogravure printing operations, and is retained in the proposed rules.

Additionally, the TCEQ is not proposing to implement the EPA's 2006 CTG recommendation to exempt a flexible package printing line from complying with VOC coating content limits if the line has the potential to emit less than 25 tpy of uncontrolled VOC emissions from the dryer, from inks, coatings, and adhesives. As previously stated, the current Chapter 115 rules require combining the VOC emissions from all flexographic and rotogravure printing lines to determine exemption from the VOC coating content limits. Implementing the 2006 CTG recommendation may exempt flexible package printing lines co-located on a property with other flexographic and rotogravure printing lines that are currently required to comply with the VOC control limits. The proposed Chapter 115 rules would retain the existing VOC content limits for a flexible package printing line with VOC emissions below the 2006 CTG-recommended exemption threshold.

The EPA's 2006 CTG recommends requiring control equipment first installed before the effective date of rules implementing the CTG recommendations to have an overall control efficiency ranging from 65% to 75% and control equipment first installed after the effective date of rules implementing the CTG recommendations to have an overall control efficiency of 80%. The TCEQ disagrees with the 2006 CTG recommendation to correlate control device efficiency requirements with the first installation date of the control device regardless of where the equipment was first installed. Imposing this policy may encourage the installation of older, less efficient equipment and may create potential backsliding issues. The policy may also create significant practical enforceability issues for TCEQ investigators with regard to verifying the first installation date of the control equipment. Instead, the TCEQ proposes to implement the CTG-recommended 80% overall control efficiency, regardless of the first installation date.

1.3.2.2 Industrial Cleaning Solvents

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 6: *Industrial Cleaning Solvents* to implement the EPA's 2006 Industrial Cleaning Solvents CTG recommendations that the TCEQ has determined are RACT in

the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would establish VOC content limits for cleaning solvents used in specific cleaning activities, provide exemptions for certain cleaning activities from all or portions of the rule, and require certain work practice procedures for the use, storage, and disposal of cleaning solvents.

1.3.2.3 Large Appliance Coatings

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 5: *Control Requirements for Surface Coating Processes* to implement the EPA's 2007 Large Appliance Coatings CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would reduce VOC content limits of coatings, increase the overall control efficiency for add-on controls used in large appliance coating operations, and establish minimum transfer efficiency for coating application methods. The proposed rules would also require certain work practice procedures for coating-related activities and materials used during associated cleaning criteria.

The EPA's 2007 CTG recommends exempting large appliance coating operations from the coating VOC content limits and work practice standards if total uncontrolled VOC emissions from coatings and associated cleaning solvents are less than 15 pounds per day. The current TCEQ rules provide an exemption from the coating VOC content limits for large appliance coating operations if total uncontrolled VOC emissions from all applicable coating processes on a property subject to Chapter 115, Subchapter E, Division 2: *Surface Coating Processes* are less than three pounds per hour and 15 pounds per day. The existing exemption from the required VOC controls may be more stringent for properties conducting multiple coating operations specified in Division 2 because the exemption is not based on VOC emissions from a single coating category. To prevent potential backsliding for properties already required to comply with the state's regulations, the proposed Chapter 115 rules would retain the existing exemption criteria.

The existing TCEQ large appliance coating limits are based on the original CTG recommendations issued by the EPA in 1977. Several of the recommended VOC content limits for specific coating categories listed in the 2007 CTG document are less stringent than the limits specified in the EPA's original CTG recommendations for this coating category. The 2007 CTG also recommends minimum solids transfer efficiency for coating application equipment. Despite the higher VOC content limits for the specialty coatings, the EPA's 2007 CTG claims that implementing the limits as recommended would result in an overall emissions reduction and provides documentation containing the methodology used to estimate the reduction. The TCEQ has conducted a comprehensive comparison of the 2007 CTG recommendations to the existing VOC coating content limit and determined that proposing the 2007 CTG-recommended coating VOC content limits will not negatively impact the status of the state's attainment with the 1997 eight-hour ozone NAAQS, will not interfere with control measures, and will not prevent reasonable further progress toward attainment of the ozone NAAQS. The full Determination of Noninterference Demonstration under FCAA, §110(l) is provided in the preamble of Rule Project Number 2010-016-115-EN.

1.3.2.4 Metal Furniture Coatings

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 5 to implement the EPA's 2007 Metal Furniture Coatings CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would reduce VOC content limits of coatings, increase the overall control efficiency for add-on controls used in metal

furniture coating operations, and establish minimum transfer efficiency of coating application methods. The proposed rules would also require certain work practice procedures for coating-related activities and materials used during associated cleaning operations.

The EPA's 2007 CTG recommends exempting metal furniture coating operations from the coating VOC content limits and work practice standards if total uncontrolled VOC emissions from coatings and associated cleaning solvents are less than 15 pounds per day. The current TCEQ rules provide an exemption from the coating VOC content limits for metal furniture coating operations if total uncontrolled VOC emissions from coatings in all applicable coating processes located on a property subject to Chapter 115, Subchapter E, Division 2 are less than three pounds per hour and 15 pounds per day. The existing exemption from the required VOC controls may be more stringent for properties conducting multiple coating processes specified in Division 2 because the exemption is not based on VOC emissions from a single coating category. To prevent potential backsliding for properties already required to comply with the state's regulations, the proposed Chapter 115 rules would retain the existing exemption criteria.

The existing TCEQ metal furniture coating limits are based on the original CTG recommendations issued by the EPA in 1977. Several of the recommended VOC content limits for specific coating categories listed in the 2007 CTG document are less stringent than the limits specified in the EPA's original CTG recommendations for this coating category. The 2007 CTG also recommends minimum solids transfer efficiency for coating application equipment. Despite the higher VOC content limits for the specialty coatings, the EPA's 2007 CTG claims that implementing the limits as recommended would result in an overall emissions reduction and provides documentation containing the methodology used to estimate the reduction. The TCEQ has conducted a comprehensive comparison of the 2007 CTG recommendations to the existing VOC coating content limits and determined that proposing the 2007 CTG-recommended coating VOC content limits will not negatively impact the status of the state's attainment with the 1997 eight-hour ozone NAAQS, will not interfere with control measures, and will not prevent reasonable further progress toward attainment of the ozone NAAQS. The full Determination of Noninterference Demonstration under FCAA, §110(l) is provided in the preamble of Rule Project Number 2010-016-115-EN.

1.3.2.5 Paper, Film, and Foil Coatings

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 5 to implement the EPA's 2007 Paper, Film, and Foil Coatings CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would reduce the VOC content limits of coatings; increase the overall control efficiency for add-on controls used in paper, film, and foil coating operations; and establish work practice procedures for materials used during cleaning operations associated with paper, film, and foil coating.

The EPA's 2007 CTG recommends exempting all paper, film, and foil coating operations on a property from the coating VOC content limits and work practice standards if total uncontrolled VOC emissions from paper, film, and foil coatings and associated cleaning solvents are less than 15 pounds per day. The current TCEQ rules provide an exemption from the coating VOC content limits for paper, film, and foil coating operations if total uncontrolled VOC emissions from all applicable surface coating processes on a property subject to Chapter 115, Subchapter E, Division 2 are less than three pounds per hour and 15 pounds per day. The existing exemption from the required VOC controls may be more stringent for properties conducting multiple coating processes specified in Division 2 because the exemption is not based on VOC emissions from a single coating category. To prevent potential backsliding for properties conducting paper,

film, and foil coating operations already required to comply with the state's regulations, the proposed Chapter 115 rules would retain the existing exemption criteria.

Additionally, the TCEQ is not proposing to implement the EPA's 2007 CTG recommendation to exempt a paper, film, and foil coating line from complying with VOC coating content limits if the line has the potential to emit less than 25 tpy of uncontrolled VOC emissions from coatings. As previously stated, the current Chapter 115 rules require combining the VOC emissions from all applicable surface coating processes located on a property subject to Subchapter E, Division 2 to determine exemption from the VOC coating content limits. Implementing the 2007 CTG recommendation may exempt paper, film, and foil coating lines co-located on a property with other coating lines subject to Division 2 that are currently complying the VOC coating content limits. To prevent backsliding, the proposed Chapter 115 rules would retain the existing VOC content limits for a paper, film, and foil coating line with VOC emissions below the 2007 CTG-recommended exemption threshold.

1.3.2.6 Miscellaneous Industrial Adhesives

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 7: *Miscellaneous Industrial Adhesives* to implement the EPA's 2008 Miscellaneous Industrial Adhesives CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The proposed Chapter 115 rulemaking would implement VOC content limits for general adhesive application processes, specialty adhesive application processes, and adhesive primer application processes; provide exemptions for certain cleaning activities from all or portions of the rule; incorporate test methods and recordkeeping requirements; and establish minimum transfer efficiency of adhesive application methods. The proposed rules would also require certain work practice procedures for adhesive-related activities and materials used during associated cleaning operations.

1.3.2.7 Miscellaneous Metal and Plastic Parts Coatings

Concurrent with this SIP revision, the TCEQ is proposing revisions to Chapter 115, Subchapter E, to create new Division 5, to implement the EPA's 2008 Miscellaneous Metal and Plastic Parts Coatings CTG recommendations that the TCEQ has determined are RACT in the HGB area (Rule Project Number 2010-016-115-EN). The miscellaneous plastic parts category of the CTG represents a new RACT CTG category for the HGB area, and the current coatings rules in Chapter 115, Subchapter E, Division 2 do not apply to miscellaneous plastic parts. The proposed Chapter 115 rulemaking would expand the scope of the existing rule applicability to include the new coating categories recommended in the 2008 CTG. The proposed Chapter 115 rulemaking would reduce VOC content limits of coatings, increase the overall control efficiency of add-on controls, and establish minimum transfer efficiency of coating application methods. The proposed rules would also require certain work practice procedures for coating-related activities and materials used during associated cleaning operations.

The EPA's 2008 CTG recommends exempting miscellaneous metal and plastic parts coating operations from the VOC control requirements if total uncontrolled VOC emissions from coatings and cleaning solvents are less than 15 pounds per day. The current TCEQ rules exempt miscellaneous metal parts and products coating operations from the required VOC coating limits if located on a property where total uncontrolled VOC emissions from all applicable surface coating processes subject to Chapter 115, Subchapter E, Division 2 are less than three pounds per hour and 15 pounds per day. The existing exemption from the required controls may be more stringent for properties conducting multiple coating processes specified in Division 2 because the exemption is not based on VOC emissions from a single coating category. To

prevent potential backsliding for sources already subject to the Chapter 115 rules, the proposed rule revisions would integrate the new 2008 CTG coating categories into the existing exemption from the VOC control requirements. The proposed Chapter 115 rules would retain the state's approach to maintain consistency with the current exemption criteria.

The existing TCEQ miscellaneous metal part and product coating limits are based on the original CTG recommendations issued by the EPA in 1978. Several of the recommended VOC content limits for specific coating categories listed in the 2008 CTG document are less stringent than the limits specified in the EPA's original CTG recommendations for this coating category. The 2008 CTG also recommends minimum solids transfer efficiency for coating application equipment. Although the 2008 CTG does not quantify the estimated VOC emissions reduced as a result of implementing the recommended VOC content limits, the TCEQ applied an approach consistent with the Large Appliance Coating and Metal Furniture Coating CTG emission reduction memo documents to estimate the VOC emissions reduction. The TCEQ has determined that proposing the 2008 CTG-recommended coating VOC content limits will not negatively impact the status of the state's attainment with the 1997 eight-hour ozone NAAQS, will not interfere with control measures, and will not prevent reasonable further progress toward attainment of the 1997 eight-hour ozone NAAQS. The full Determination of Noninterference Demonstration under FCAA, §110(l) is provided in the preamble of Rule Project Number 2010-016-115-EN.

APPENDIX A

REASONABLY AVAILABLE CONTROL TECHNOLOGY ANALYSIS

Attachment 1

**December 8, 2008, Letter to Mr. William T. Harnett, Director,
Air Quality Policy Division, United States Environmental Protection Agency
on Issues Related to Control Techniques Guidelines Documents**

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 8, 2008

Mr. William T. Harnett, Director, Air Quality Policy Division
Office of Air Quality Planning and Standards Organization
United States Environmental Protection Agency
Mail Drop C504-01
Research Triangle Park, North Carolina 27711

Dear Director Harnett:

The Texas Commission on Environmental Quality (TCEQ), Air Quality Division is currently reviewing the Consumer and Commercial Products Group II, Group III, and Group IV Control Techniques Guidelines (CTG) documents released by the United States Environmental Protection Agency (EPA) from 2006 through 2008. Our evaluation of these CTG documents has prompted several questions regarding the CTG documents for Large Appliance Coatings, Metal Furniture Coatings, and Miscellaneous Metal and Plastic Parts Coatings. The issues and questions related to these CTG documents are detailed below.

Texas' existing rules in 30 Texas Administrative Code (TAC) Chapter 115 for controlling volatile organic compound (VOC) emissions from the surface coating of large appliances¹, metal furniture², and miscellaneous metal parts and products³ were based on the EPA's Office of Air Quality Planning and Standards (OAQPS) corresponding 1977 and 1978 Guideline Series⁴ (GS) recommendations. The existing emission standards for surface coating of large appliances and metal furniture are not specific to coating types; however, the 2007 CTG documents for Large Appliance Coatings⁵ and Metal Furniture Coatings⁶ recommend setting coating type specific emission standards. Some of the recommended emissions standards are equivalent or more stringent than the existing generic standards while some recommended emission standards are less stringent than the existing standards. Similarly, the 2008 CTG for Miscellaneous Metal and Plastic Parts Coatings⁷ also recommends emission standards for certain coating types that are less stringent than the existing 30 TAC Chapter 115 emission standards. Please see the enclosed table for a more detailed comparison of the existing VOC emission standards based on the 1977 and 1978 GS recommendations (and TCEQ rules) versus the 2007 and 2008 CTG documents for these categories.

Since some of the limits recommended for these specific coating types are less stringent than the existing emission standards based on the EPA's original GS recommendations, TCEQ's Air Quality Division has

Mr. William T. Harnett
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December 8, 2008

concerns that implementing the new CTG recommendations could be perceived as backsliding. In addition, these discrepancies may make it impossible for TCEQ staff to determine if actual VOC reduction benefit would occur from implementing the CTG recommendations. Given the limited explanation⁸ of how these differences should be considered in light of the original GS standards, the TCEQ Air Quality Division is requesting written guidance to clarify the intent of the EPA's new CTG recommendations with regard to the following issues.

1. Specific clarification is needed that implementing the recommendations in the new CTG would not be considered backsliding.
2. Are the coating type categories in the new CTG considered by the EPA to be coating types that were unregulated by the original GS recommendations or is this a situation where these specific coatings were covered under the original guidance, but the EPA has re-evaluated what is technically feasible for these specialty coating types? What data was used to make this determination?
3. In light of the varying stringency of the recommended coating standards in these new CTG documents, how did the EPA determine the overall reduction benefit? Additional information, beyond what is provided in the docket, is necessary for the state to determine whether implementing the CTG recommendations will result in a net VOC reduction in the specific nonattainment areas where these CTG recommendations would be implemented.

The EPA's clarification regarding these issues is critical for the Air Quality Division to complete our evaluation of the CTG recommendations and proceed with any recommendation to TCEQ's executive management and the commission regarding the potential implementation of the EPA's CTG recommendations. Therefore, your expeditious response regarding these issues is greatly appreciated. You may contact me at 512-239-4696.

Sincerely,



S Susana M. Hildebrand, P.E.
Director, Air Quality Division
Texas Commission on Environmental Quality

SMH/LA/sy

Enclosures: References
 Emission Limit Comparison Table

cc: Mr. Guy Donaldson, EPA Region 6
 Ms. Ellen Belk, EPA Region 6
 Mr. Bruce Moore, EPA, Office of Air Quality Planning and Standards
 Mr. Bill Johnson, EPA, Office of Air Quality Planning and Standards

Enclosure: References

- 1: Title 30 TAC §115.421(a)(1), Emission Specifications for Large Appliance Coating (Amended January 17, 2003).
- 2: Title 30 TAC §115.421(a)(2), Emission Specifications for Metal Furniture Coating (Amended January 17, 2003).
- 3: Title 30 TAC §115.421(a)(9)(A), Emission Specifications for Miscellaneous Metal Parts and Products Coating (Amended January 17, 2003).
- 4: Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources - Volume V: Surface Coating of Large Appliances, Publication number EPA-450/2-77-0.34.
Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources - Volume III: Surface Coating of Metal Furniture, Publication number EPA-450/2-77-032.
Guideline Series. Control of Volatile Organic Emissions from Existing Stationary Sources - Volume VI: Surface Coating of Miscellaneous Metal Parts and Products, Publication number EPA-450/2-78-015.
- 5: Control Techniques Guidelines for Large Appliance Coatings. Publication number EPA 453/R-07-004.
- 6: Control Techniques Guidelines for Metal Furniture Coatings. Publication number EPA 453/R-07-005.
- 7: Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings. Publication number EPA 453/R-08-003.
- 8: EPA Docket Number EPA-HQ-OAR-2007-0329-0009 and EPA Docket Number EPA-HQ-OAR-2007-0334-0010.

Enclosure: Emission Limit Comparison Table

Comparison of 30 TAC Chapter 115 Emission Limits and 2006-2008 CTG Recommended Emission Limits			
Coating Type*	Chapter 115 Emission Limit**	CTG Recommended Emission Limit**	
		Baked Coating	Air-Dried Coating
Large Appliance Coating			
General, One Component	2.8	2.3	2.3
General, Multi-Component	2.8	2.3	2.8
Extreme High Gloss	2.8	3.0	2.8
Extreme Performance	2.8	3.0	3.5
Heat Resistant	2.8	3.0	3.5
Metallic	2.8	3.5	3.5
Pretreatment Coatings	2.8	3.5	3.5
Solar Absorbent	2.8	3.0	3.5
Metal Furniture Coating			
General, One Component	3.0	2.3	2.3
General, Multi-Component	3.0	2.3	2.8
Extreme High Gloss	3.0	3.0	2.8
Extreme Performance	3.0	3.0	3.5
Heat Resistant	3.0	3.0	3.5
Metallic	3.0	3.5	3.5
Pretreatment Coatings	3.0	3.5	3.5
Solar Absorbent	3.0	3.0	3.5
Miscellaneous Metal Parts and Products Coating			
General One Component	3.0	2.3	2.8
General Multi Component	3.0	2.3	2.8
Camouflage	3.0	3.5	3.5
Electric-Insulating Varnish	3.0	3.5	3.5
Etching Filler	3.0	3.5	3.5
Extreme High-Gloss	3.0	3.0	3.5
Extreme Performance	3.5	3.0	3.5
Heat-Resistant	3.5	3.0	3.5
High Performance Architectural	3.0	6.2	6.2
High Temperature	3.0	3.5	3.5
Metallic	3.0	3.5	3.5
Military Specification	3.0	2.3	2.8
Mold-Seal	3.0	3.5	3.5
Pan Backing	3.0	3.5	3.5
Prefabricated Architectural Multi-Component	3.0	2.3	3.5
Prefabricated Architectural One-Component	3.0	2.3	3.5
Pretreatment Coatings	3.0	3.5	3.5
Repair and Touchup	3.0	3.0	3.5
Silicone Release	3.0	3.5	3.5
Solar-Absorbent	3.0	3.0	3.5

Comparison of 30 TAC Chapter 115 Emission Limits and 2006-2008 CTG Recommended Emission Limits

Coating Type*	Chapter 115 Emission Limit**	CTG Recommended Emission Limit**	
		Baked Coating	Air-Dried Coating
Vacuum-Metalizing	3.0	3.5	3.5
Drum Coating, New, Exterior	3.0	2.8	2.8
Drum Coating, New, Interior	4.3	3.5	3.5
Drum Coating, Reconditioned, Exterior	3.0	3.5	3.5
Drum Coating, Reconditioned, Interior	4.3	4.2	4.2

* The CTG recommended emission limits for coating types listed in red font are less stringent than existing Chapter 115 limits.

** Limit expressed in pounds per gallon of coating (minus water and exempt solvent) delivered to the application system.

Mr. William T. Harnett
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December 8, 2008

bcc: Theresa Pella
Ashley Forbes
Vincent Meiller
Lindley Anderson
Amy Browning

APPENDIX A

REASONABLY AVAILABLE CONTROL TECHNOLOGY ANALYSIS

Attachment 2

March 17, 2011, Memorandum from
Scott Mathias, Air Quality Policy Division, United States Environmental Protection
*Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings
Categories*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

MAR 17 2011

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings Categories

FROM: Scott Mathias, Interim Director *Scott Mathias*
Air Quality Policy Division (C539-01)

TO: Regional Air Division Directors

The Office of Air Quality Planning and Standards has received requests from Regional Offices for guidance on approving State Implementation Plan (SIP) revisions resulting from newly-issued Control Techniques Guidelines (CTGs) documents. These CTGs provide recommendations to inform state determinations as to what constitutes reasonably available control technology (RACT). In some cases, the newly-issued CTGs contain recommended emission limits that are less stringent than limits recommended in older CTGs covering the same industry, and may be less stringent than limits already adopted into SIPs based on the older CTGs. This is the case for industries covered by CTGs pertaining to Large Appliance Coatings, Metal Furniture Coatings, and Miscellaneous Metal and Plastic Parts Coatings.

The U. S. Environmental Protection Agency (EPA) issued new CTGs for these categories in 2007 and 2008, under authority of Clean Air Act (CAA) section 183(e), to address volatile organic compound (VOC) emissions from categories of consumer and commercial products. They replace similar CTGs issued by EPA in 1977 and 1978. The new CTGs recommend more stringent limits for general use coatings, but also include new recommendations for several "specialty use" categories that are less stringent than the general use limits established in the 1970s guidelines.

States are required to submit a SIP revision in response to any newly-issued CTGs.¹ If an existing SIP contains requirements that are not less stringent than the applicability thresholds and/or coating operations limits recommended in new CTGs, the state may choose to submit as a SIP revision a certification that the existing SIP meets RACT requirements.

¹ CAA section 182(b)(2) requires Moderate and above ozone nonattainment areas to revise SIPs when a new CTG is issued by EPA after 1990. EPA is required to set a SIP submission deadline with the issuance of each CTG. For CTGs we have issued in the past several years, we have specified a submission deadline of one year after the CTG was issued (See 72 FR 57215 Oct 9, 2007 and 73 FR 5848 Oct 7, 2008).

We anticipate that EPA Regional Offices would be able to approve the RACT determinations in these circumstances. We note that EPA's recommendations in CTGs are generally treated as "presumptive" RACT and states may demonstrate that other limits are RACT for one or more sources within the source category addressed by the CTG. Where a state has previously determined that more stringent applicability thresholds and/or control levels are RACT for one or more sources in a source category and the sources have complied with those requirements, then those existing controls should be considered RACT for such sources.

If a state chooses to revise more stringent rules that are already in the approved SIP, so that those rules reflect the less-stringent recommended limits in the new CTGs, there are additional considerations that must be factored into any EPA decision to approve the SIP revision. The state would need to first demonstrate that the SIP-approved control requirements are not reasonably available considering technological and economic feasibility, consistent with EPA's definition of RACT. *See* 44 FR 53762 (September 17, 1979). In addition, in order to comply with the SIP approval conditions of CAA section 110(l), the state would need to demonstrate that the revision to the SIP would not interfere with attainment of, or reasonable further progress toward attainment of, the National Ambient Air Quality Standards, nor interfere with any other applicable requirement of the CAA. This would be demonstrated if the stricter limits on general use coatings provide sufficient emission reductions to entirely offset any emission increase caused by adopting the less stringent limits for specialty coatings. Alternatively, the state could adopt supplemental measures that achieve additional emission reductions from another source category in another industry to offset the increased emissions from the specialty coatings. In general, if a proposed SIP revision achieves the same or greater emission reductions as the approved SIP within the same timeframe as provided under the existing plan, the Regional Office should be able to determine that the SIP revision is consistent with the approval conditions of CAA section 110(l).

The public dockets for the Large Appliance Coatings and the Metal Furniture Coatings CTGs contain information that states may find helpful in determining the reductions that can be achieved by adopting the new general use category CTG limits for these industries. According to the docketed information, the estimated reductions from the new CTGs are 30 to 35 percent greater than from the older CTGs. *See* documents EPA-HQ-OAR-2007-0329-0009 and EPA-HQ-OAR-2007-0334-0010 in dockets EPA-HQ-OAR-2007-0329 and EPA-HQ-OAR-2007-0334, respectively. The increase in emissions reductions in any specific nonattainment area may vary depending on the volume usage distribution among the general and specialty categories in that area. The dockets for the new CTGs do not contain area-specific analyses of potential emissions reductions. Generally, if a state believes the volume usage distribution among the general and specialty categories in the docket is representative of the distribution in the nonattainment area, we believe that if a state undertakes wholesale adoption of the new categorical limits in a specific CTG, the state may rely on the assessments in the docket to demonstrate that the range of new limits will result in an overall reduction in emissions from the collection of covered coatings. However, if a state adopts some specialty category limits, but not all of the new categorical limits, or determines that it has a different volume usage distribution among categories, the state may need to do an area-specific assessment of whether tighter restrictions for some coatings, coupled with

less stringent restrictions on other coatings would provide overall equal or greater emissions reductions than the set of rules based on the recommendations in the 1970s guidelines.

If you have further questions on SIP-related issues you should contact Butch Stackhouse at (919) 541-5208. If you have further technical questions on the topics covered in this memorandum you should contact Kaye Whitfield at (919) 541-2509.

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