TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

for State Implementation Plan Revision Adoption

AGENDA REQUESTED: December 7, 2011

DATE OF REQUEST: November 18, 2011

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

CAPTION: Docket No. 2011-0083-SIP. Consideration of the adoption of the 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 SIP revision will update the RACT analysis for volatile organic compounds emission sources to include Control Techniques Guidelines (CTG) that were not addressed in the HGB Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard, submitted to the EPA on April 6, 2010. The revision will also incorporate concurrent 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

Kim Herndon for D. Brymer
Division Director

Joyce Spencer
Agenda Coordinator

Copy to CCC Secretary? NO X YES

Texas Commission on Environmental Quality
Interoffice Memorandum

To: Commissioners **Date:** November 18, 2011

Thru: Bridget Bohac, 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 Adoption of the 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 were not addressed in the HGB Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard (HGB AD SIP revision) and to incorporate concurrent 30 Texas Administrative Code Chapter 115 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 from November 15, 1990, through the area's attainment date. For the HGB area, the attainment date is June 15, 2019. 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 from 2006 through 2008 with RACT recommendations for controlling VOC emissions from a variety of consumer and commercial products.

Of the 11 CTG documents, the commission has previously 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 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 December 8, 2008, 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 HGB RACT Update SIP revision includes the analyses and RACT determinations for these seven CTG source categories to determine if additional VOC controls are necessary to fulfill RACT requirements. This SIP revision provides a detailed RACT analysis update and incorporates concurrent Chapter 115 CTG-related rulemaking for the HGB area into the Texas SIP. The concurrent rulemaking revises 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 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 SIP revision provides a detailed RACT analysis update for the HGB area and incorporates any necessary rule revisions. The following seven CTG documents have been evaluated as part of the concurrent Chapter 115 CTG-related 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 and above 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 and above 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 are those sources affected by the concurrent Chapter 115 CTG-related rulemaking that will be incorporated in this SIP revision. Affected sources may be required to install control technologies or use reformulated products to meet the emission specifications, implement new work practices, or comply with additional monitoring and recordkeeping requirements. See the executive summary memo for the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision (Rule Project No. 2010-016-115-EN) for further information.

B.) Public:
The public could benefit from improved air quality due to lower ozone levels as a result of the concurrent Chapter 115 CTG-related rulemaking. However, there is a possibility that the economic impact to affected industries could be passed to consumers in the form of increased product costs. See the executive summary memo for the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision (Rule Project No. 2010-016-115-EN) for further information.

C.) Agency programs:
The CTG rules could increase the Office of Compliance and Enforcement workload when inspecting affected facilities to ensure that the additional requirements are met and could increase workloads for the Small Business and Environmental Assistance Division due to a likely impact on many small business owners. See the executive summary memo for the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision (Rule Project No. 2010-016-115-EN) for further information.

Stakeholder meetings:
A CTG Stakeholder Group meeting was held on December 1, 2010, and informal comments were accepted until January 12, 2011, for the concurrent Chapter 115 CTG-related rulemaking. See the executive summary memo for the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision (Rule Project No. 2010-016-115-EN) for further information.

Public comment:
Public hearings for the proposed SIP revision and concurrent Chapter 115 CTG-related rulemaking were held on July 18, 2011, at the Houston-Galveston Area Council office in Houston and on July 22, 2011, at the Texas Commission on Environmental Quality (TCEQ) headquarters in Austin. Question and answer sessions were held 30 minutes prior to the hearings. American Coatings Association (ACA) presented oral comments at the July 18, 2011, hearing applicable to this HGB RACT Update SIP revision and the concurrent Chapter 115 CTG-related rulemaking. The July 22, 2011, hearing in Austin was not officially opened because no party indicated a desire to provide comment.

The public comment period opened on June 24, 2011, and closed on August 8, 2011. Written comments were accepted via mail, fax, and through the eComments system (http://www5.tceq.texas.gov/rules/ecomments/). Written comments were received from the ACA, Flexographic Technical Association (FTA), National Aeronautics and Space Administration (NASA), Texas Chemical Council (TCC), EPA, United States Navy (US Navy), and one individual.

The EPA commented that in order for portions of the proposed rules for Large Appliance Coatings, Metal Furniture Coatings, and Miscellaneous Metal and Plastic Parts Coatings to be approved as RACT, the state must also demonstrate that the existing state limits for these CTG categories, which were based on the EPA's original CTG recommendations, are

no longer technologically or economically feasible. The EPA also requested clarification of the alternate control requirement concerning miscellaneous metal parts and products coating.

The ACA commented that the pleasure craft industry was not provided the opportunity to comment on the EPA's CTG RACT recommendations because the draft Miscellaneous Metal and Plastic Parts Coatings CTG did not mention pleasure craft surface coating operations and that EPA's final CTG-recommended pleasure craft coating limits do not represent RACT for the pleasure craft industry. The ACA requested several revisions to the proposed rules to establish appropriate RACT requirements for the pleasure craft coating operations.

TCC suggested an exemption for solvent cleaning operations associated with processes or operations that are subject to the control requirements or emission specification in another division in Chapter 115 and clarification of certain definitions in the proposed rules.

Comments received more directly related to the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision (Rule Project No. 2010-016-115-EN) are addressed in the preamble to those rules and a summary of the comments is included in the executive summary memo for those rules.

Significant changes from proposal:
This SIP revision was revised in response to comments received on the RACT update for the following CTG categories: Industrial Cleaning Solvents; Large Appliance Coatings; Metal Furniture Coatings; Miscellaneous Industrial Adhesives; and Miscellaneous Metal and Plastic Parts Coatings.

In response to comments, the TCEQ revised the industrial cleaning solvents rules to exempt from these requirements operations that are subject to the control requirements or emission specifications in another division in Chapter 115. The exemption provides flexibility and reduces the compliance burden for affected sources. The exemption is consistent with the EPA's CTG recommendations and at least as effective as complying with the industrial cleaning solvents rules.

The commission proposed to implement the CTG-recommended RACT limits for the large appliance, metal furniture, and miscellaneous metal and parts coatings categories and provided a demonstration that implementing the CTG-recommended approach for these three categories would not interfere with attainment of the 1997 ozone standard. However, the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing state limits for these CTG categories, which were based on the EPA's original CTG recommendations, are no longer technologically or economically feasible. Staff contends that by promulgating higher CTG-recommended RACT limits for these source categories, the EPA has established that the original CTG-recommended limits, and thus the existing state limits, are no longer technologically or

economically feasible. However, in the absence of any specific information indicating that the state's existing limits for these source categories are no longer technologically or economically feasible and considering the EPA's intent to disapprove the rules as proposed without such a demonstration of infeasibility, the TCEQ is obligated under the FCAA to revise the proposed rules to only include the CTG-recommended VOC limits that are equivalent to or lower than the state's existing limits. Where the EPA's new CTG-recommended emission limits are less stringent than the original CTG-recommended limits, the TCEQ is retaining the original emission limit in the current rules, except for the high performance architectural coatings limit for the miscellaneous metal parts and products category.

In response to comments, the TCEQ determined that some of the pleasure craft coating VOC emission limits included in the EPA's 2008 Miscellaneous Metal and Plastic Parts Coatings CTG recommendations are not technologically feasible at this time and therefore do not constitute RACT for Texas. The adopted rules include higher VOC limits for extreme high-gloss coating, finish primer/surfacer coating, and other substrate antifoulant coating. Additionally, VOC limits have been introduced for antifoulant sealer/tie coating, a new coating category.

Additional details regarding these changes are provided in the Response to Comments section and Appendix A of this HGB RACT Analysis Update SIP revision and also in the executive summary memo and preamble for the Chapter 115 CTG-related rulemaking being adopted concurrently with this SIP revision.

Potential controversial concerns and legislative interest:
Due to the broad applicability recommended in the Industrial Cleaning Solvents and Miscellaneous Industrial Adhesive CTG documents, the concurrent Chapter 115 CTG-related rulemaking impacts many small businesses.

In response to comments, the TCEQ determined that some of the pleasure craft coating VOC limits included in the EPA's 2008 Miscellaneous Metal and Plastic Parts Coatings CTG recommendations are not technologically feasible at this time and therefore do not constitute RACT for Texas. The EPA may not agree with this conclusion.

Does 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 this SIP revision?
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 from 1990 through 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.

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 from 2006 through 2008. Additionally, failure to update the RACT analysis could jeopardize the approvability of the HGB AD SIP revision submitted to the EPA on April 6, 2010.

Key points in the adoption SIP revision schedule:

Texas Register proposal publication date: NA
Anticipated *Texas Register* publication date: NA
Anticipated effective date: NA
Six-month *Texas Register* filing deadline: NA

Agency contacts:

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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

Adoption
December 7, 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 Program Cap Integrity, the Highly Reactive Volatile Organic Compounds Emissions Cap and Trade 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 from 2002 through 2008 and an average of 3% per year emissions reduction for 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 from November 15, 1990, through 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 from 2006 through 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 Texas' December 8, 2008, 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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- 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.

This SIP revision provides a RACT analysis update to include the seven CTG documents listed above issued by the EPA from 2006 through 2008 that were not addressed in the HGB AD SIP revision adopted on March 10, 2010, and incorporates concurrent CTG-related rulemaking for the HGB area (Rule Project No. 2010-016-115-EN) into the Texas SIP. The associated rulemaking revises Chapter 115, Subchapter E, to implement RACT for the previously listed 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 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, 2009, and 2011. 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. In 2011, the 82nd Texas Legislature continued the existence of the TCEQ until 2023.

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 National Ambient Air Quality Standards; 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, 2011
TEXAS WATER CODE	September 1, 2011

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 15, 2011

Chapter 106: Permits by Rule, Subchapter A — May 15, 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 — August 11, 2011

Chapter 115: Control of Air Pollution from Volatile Organic Compounds — February 17, 2011

Chapter 116: Permits for New Construction or Modification — March 17, 2011

Chapter 117: Control of Air Pollution from Nitrogen Compounds — May 15, 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

A. Introduction (No change)
B. Ozone (Revised)
   1. Dallas-Fort Worth (No change)
   2. Houston-Galveston-Brazoria (Revised)
      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)
   9. Victoria Area (No change)
C. Particulate Matter (No change)
D. Carbon Monoxide (No change)
E. Lead (No change)
F. Oxides of Nitrogen (No change)
G. Sulfur Dioxide (No change)
H. Conformity with the National Ambient Air Quality Standards (No change)
I. Site Specific (No change)
J. Mobile Sources Strategies (No change)
K. Clean Air Interstate Rule (No change)
L. Transport (No change)
M. Regional Haze (No change)

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LIST OF ACRONYMS

ACT	alternative control techniques
AD	attainment demonstration
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
LDAR	leak detection and repair
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)
TNRCC	Texas Natural Resource Conservation Commission
tpy	tons per year
TxLED	Texas Low Emission Diesel
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) on the Texas Commission on Environmental Quality's (TCEQ) Web site (http://www.tceq.texas.gov/).

1.2 INTRODUCTION

The Houston-Galveston-Brazoria (HGB) area presents a complex air pollution challenge 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 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 Program Cap Integrity, the Highly Reactive Volatile Organic Compounds Emissions Cap and Trade Program Cap Reduction and Allowance Reallocation, and the VOC Control Techniques Guidelines (CTG) Update for offset lithographic printing.

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 was met for the analysis period from 2002 through 2008 and an average of 3% per year emissions reduction will be met for 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 were 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 were not 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. The following seven CTG documents have

been evaluated during the concurrent associated 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.

This SIP revision provides a detailed RACT analysis update for the HGB area and incorporates the concurrent rulemaking, which revises Chapter 115, Subchapter E, to implement RACT for the previously listed CTG emission source categories in the HGB area.

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).

1.4.2 Public Hearings and Comment Information

The commission held public hearings for this SIP revision and associated rulemaking on July 18, 2011, at 6:30 p.m. at the Houston-Galveston Area Council office in Houston and on July 22, 2011, at 10:00 a.m. at the TCEQ headquarters in Austin. Question and answer sessions were held 30 minutes prior to the hearings. One person presented oral comments at the July 18, 2011, hearing applicable to this HGB RACT SIP revision. The July 22, 2011, hearing in Austin was not officially opened because no party indicated a desire to provide comment.

The public comment period opened on June 24, 2011, and closed on August 8, 2011. Written comments were accepted via mail, fax, and through the eComments system (http://www5.tceq.texas.gov/rules/ecomments/). Nine written comments were received. Summaries of public comments and TCEQ responses applicable to this HGB RACT SIP revision are addressed in the Response to Comments section of this SIP revision. Comments received applicable to the Chapter 115 CTG rulemaking (Rule Project No. 2010-016-115-EN) are addressed in the preamble to those rules.

An electronic version of the SIP revision and appendix can be found at the TCEQ's Texas State Implementation Plan Web page (http://www.tceq.texas.gov/airquality/sip/texas-sip).

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 Air Quality Rule Projects Web page (http://www.tceq.texas.gov/airquality/stationary-rules/rule_log.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 Ozone 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	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 Eliminates exemption for storage tanks for crude oil or natural gas condensate, and regulates flash emissions from these tanks	January 1, 2009 Compliance with revised monitoring and testing requirements required by March 1, 2013
VOC Rules – Degassing Operations	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 Clarification of rule and monitoring and testing requirements, additional control options, and notification requirements	January 1, 2009 February 17, 2011
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	Additional control technology requirements for batch processes, bakeries, and offset lithographic printers by December 31, 2002 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: *Reasonably Available Control Technology Analysis* 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)	December 31, 2002, and earlier

Measure	Description	Start Date(s)
VOC Control Measures – Offset Lithographic Printers	Additional control technology requirements for offset lithographic printers 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)	December 31, 2002 March 1, 2011, for major sources March 1, 2012, for minor sources
Refueling – Stage I	Captures gasoline vapors that are released when gasoline is delivered to a storage tank Vapors returned to the tank truck as the storage tank is being filled with fuel, rather than released into the ambient air	1990
Refueling – Stage II	Captures gasoline vapors when a vehicle is being fueled at the pump Vapors returned through the pump hose to the petroleum storage tank, rather than released into the air	1992
Federal Area/Non-Road Measures	Series of emissions limits, implemented by the United States Environmental Protection Agency (EPA), for area and non-road sources Examples: diesel and gasoline engine standards for locomotives and leaf-blowers	Through 2018
Texas Emissions Reduction Plan	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	Additional control technology requirements for batch processes and bakeries by December 31, 2002 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)	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	Voluntary measures administered by the Houston-Galveston Area Council (H-GAC) (see Appendix F: *Evaluation of Mobile Source Control Strategies for the Houston-Galveston-Brazoria State Implementation Plan (With Detailed Strategies)*, prepared for H-GAC by ENVIRON International Corporation, of the HGB AD SIP adopted March 10, 2010)	Through 2018
Federal On-Road Measures	Series of emissions limits, implemented by the EPA, for on-road vehicles Examples: Tier 1 and Tier 2 vehicle standards, low sulfur diesel standards, National Low Emission Vehicle standards, and reformulated gasoline	Phase in through 2013
Vehicle Inspection/ Maintenance	Yearly treadmill-type testing for pre-1996 vehicles and computer checks for 1996 and newer vehicles	May 1, 2002, in Harris County May 1, 2003, in Brazoria, Fort Bend, Galveston, and Montgomery Counties
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 and above 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 above 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 levels expected of new sources or to maximum achievable control technology 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 sources addressed in CTG and alternative control techniques (ACT) documents issued prior to 2006 and 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 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 from 2006 through 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 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 seven CTG documents addressed in this SIP revision 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 commission is adopting

rulemaking (Rule Project 2010-016-115-EN) to limit the VOC content of coatings used by flexible package printing sources in the HGB area. 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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to implement the CTG recommendations to limit the VOC content of industrial cleaning solvents used in the HGB area. The TCEQ revised the proposed rules for industrial cleaning solvents in response to comments received on the proposed rules and this SIP revision. Additional details regarding these changes are provided in Appendix A.

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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to limit the VOC content of large appliance coatings in the HGB area. 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. The TCEQ revised the proposed rules for large appliance coatings in response to comments received on the proposed rules and this SIP revision. Additional details regarding these changes are provided in Appendix A.

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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to limit the VOC content of metal furniture coatings used in the HGB area. 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. The TCEQ revised the proposed rules for metal furniture coatings in response to comments received on the proposed rules and this SIP revision. Additional details regarding these changes are provided in Appendix A.

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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to limit the VOC content of paper, film, and foil coatings in the HGB area. 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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to implement the CTG recommendations to limit the VOC content of miscellaneous industrial adhesives used in the HGB area. The TCEQ revised the proposed rules for miscellaneous industrial adhesives in response to comments received on the proposed rules and this SIP revision. Additional details regarding these changes are provided in Appendix A.

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 commission is adopting rulemaking (Rule Project 2010-016-115-EN) to limit the VOC content of miscellaneous metal and plastic parts coatings used in the HGB area. 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. The TCEQ revised the proposed rules for miscellaneous metal and plastic parts coatings in response to comments received on the proposed rules and this SIP revision. Additional details regarding these changes are provided in Appendix A.

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)

RESPONSE TO COMMENTS RECEIVED CONCERNING THE HOUSTON GALVESTON-BRAZORIA (HGB) REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) ANALYSIS UPDATE STATE IMPLEMENTATION PLAN (SIP) REVISION FOR THE 1997 EIGHT-HOUR OZONE STANDARD

Public hearings for this proposed RACT analysis update SIP revision and the associated rulemaking were held on July 18, 2011, at the Houston-Galveston Area Council offices in Houston and on July 22, 2011, at the Texas Commission on Environmental Quality (TCEQ) headquarters in Austin. Question and answer sessions were held 30 minutes prior to the hearings. The hearing in Austin was not officially opened because no party indicated a desire to provide comment. One person provided oral comments applicable to this HGB RACT SIP revision and the associated rulemaking at the Houston public hearing.

The comment period opened on June 24, 2011, and closed on August 8, 2011. The commission received comments from the American Coatings Association (ACA), Flexographic Technical Association (FTA), National Aeronautics and Space Administration (NASA), Texas Chemical Council (TCC), United States Environmental Protection Agency (EPA), United States Navy (US Navy), and one individual.

Comments more directly related to the concurrent rulemaking in 30 Texas Administrative Code Chapter 115 Volatile Organic Compounds (VOC) RACT Rule Revisions (Rule Project No. 2010-016-115-EN), which are incorporated by reference into this SIP revision, are responded to in the Response to Comments section of the preamble to the rulemaking. Those comments are included in this RACT update revision through the adoption of those rules. Some changes were made to the proposed version of this SIP revision in response to those comments.

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GENERAL

The ACA commented that the EPA's Control Techniques Guidelines (CTG) should be consistent with other EPA rulemakings for this industrial sector. The ACA commented that coatings manufacturers have provided the EPA product information to assist in the evaluation of the National Emission Standard for Hazardous Air Pollutants for Shipbuilding and Ship Repair

Operations, and that the industry supports rulemaking that will provide a consistent approach to reduce emissions of both VOC and hazardous air pollutants in this industry sector.

The commission appreciates the comment. However, ensuring consistency among future federal rulemakings for this coating category is beyond the scope of this rulemaking. The commission makes no change in response to this comment.

An individual commented that the one thing no successful businessman can handle is the constant changing of regulations that potentially require equipment and increased employment to support such equipment, when one never knows if he or she will be allowed to operate the purchased equipment. The individual commented that a reasonable and prudent businessman needs to be able to plan, and that has been impossible with the ever-changing regulations that the EPA has come forth with.

The commission appreciates the comment and acknowledges that the changing regulations can be challenging. The purpose of this rulemaking is to fulfill the state's obligation under Federal Clean Air Act (FCAA), §172(c)(1) and §182(b)(2), to submit a SIP revision that implements RACT for VOC emission sources located in nonattainment areas classified as moderate and above, addressed in a CTG issued from November 15, 1990, through an area's attainment date. When enacting rules, the commission considers the appropriate implementation deadlines. The commission makes no change in response to this comment.

The EPA commented that approval of the portions of the control requirements in §115.453 for the surface coating of large appliances, metal furniture, and miscellaneous metal and plastic parts and products of the proposed rules that replace emissions limits previously adopted as RACT with less stringent emissions limits would not be possible without a demonstration from the state showing that the SIP-approved limits are no longer RACT. On March 17, 2011, the EPA issued a memorandum entitled *Approving SIP Revisions Addressing VOC RACT Requirements for Certain Coatings Categories* indicating that:

> "for situations in which 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 . . . The state would need to first demonstrate that the SIP-approved control requirements are not reasonably available considering technological and economic feasibility, consistent with the EPA's definition of RACT."

The EPA requested the commission explain how the existing limits are no longer RACT for these sources that in some cases have been complying with these limits for 20 years or more.

By letter dated December 8, 2008, the TCEQ requested the EPA clarify several issues related to the recommendations in the following three CTG documents: *Control Techniques Guidelines for Large Appliance Coatings* (EPA 453/R-07-004), issued in 2007; *Control Techniques Guidelines for Metal Furniture Coatings* (EPA 453/R-07-005), issued in 2007; and *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings* (EPA 453/R-08-003), issued in

2008. A number of the recommended VOC content limits for specific coatings categories in these 2007 and 2008 CTG documents are less stringent than the more general VOC content limits specified in the following EPA guideline series recommendations: *Control of Volatile Organic Emissions from Existing Stationary Sources Volume V: Surface Coating of Large Appliances* (EPA-450/2-77-034), issued in 1977; *Control of Volatile Organic Emissions from Existing Stationary Sources Volume III: Surface Coating of Metal Furniture* (EPA-450/2-77-032), issued in 1977; and *Control of Volatile Organic Emissions from Existing Stationary Sources Volume VI: Surface Coating of Miscellaneous Metal Parts and Products* (EPA-450/2-78-015), issued in 1978. The TCEQ requested clarification to ensure that implementing the new 2007 and 2008 CTG recommendations would not be considered 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."

Consistent with this EPA memorandum, on June 8, 2011, the commission proposed rulemaking (Rule Project Number 2010-016-115-EN) concurrent with this SIP revision to implement the 2007 and 2008 CTG-recommended RACT limits for these three emission source categories. The proposed rulemaking provided discussion regarding the estimated percent reductions for these CTG categories that supported the EPA's position that applying the new 2007 and 2008 CTG-recommended limits as a whole will result in net VOC emissions reductions. Despite the state's demonstration that implementing the 2007 and 2008 CTG-recommended approach would not interfere with attainment of, or reasonable progress towards attainment of, the ozone standard for the HGB area, the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing Chapter 115 limits for these CTG categories, which were based on the EPA's original 1977 and 1978 recommendations, are no longer technologically or economically feasible.

The commission contends that by promulgating higher CTG-recommended RACT limits for these source categories in 2007 and 2008, the EPA has established that the original 1977 and 1978 recommended limits, and thus the existing Chapter 115 limits, are no longer technologically or economically feasible. The EPA defines RACT as the lowest emission 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). In the 2007 and 2008 CTG documents, the EPA provides recommendations for RACT for these source categories based on available information. The EPA claims the 2007 and 2008 CTG RACT recommendations were based on available

information and a review of existing federal and state regulations, including the original 1977 and 1978 recommendations for these emission source categories. The EPA goes on to indicate that 21 states have adopted the EPA's 1977 recommendations for large appliance coating; 32 states have adopted the EPA's 1977 recommendations for metal furniture coating; and as many as 36 states have adopted the EPA's 1978 recommendations for metal parts surface coating. Given that Texas had previously adopted the EPA's 1977 and 1978 recommendations for these three source categories, the Chapter 115 rules should have been included in EPA's review of existing regulations. If upon review of the existing Chapter 115 regulations the EPA had determined that the limits recommended in 1977 and 1978 were technologically and economically feasible, then those limits presumably would have been included in the final 2007 and 2008 CTG recommendations for these source categories.

In accordance with FCAA, §183(e)(3)(C), the EPA determined the 2007 and 2008 CTG documents issued for these three source categories would be substantially as effective as national regulations in reducing VOC emissions (72 FR 57215, October 9, 2007; 73 FR 40230, July 14, 2008). FCAA, §183(e)(3)(A) requires any regulations issued under FCAA, §183(e), including the 2007 and 2008 CTG documents, to be based on best available controls, which are defined under FCAA, §183(e)(1)(A) as the degree of emissions reduction that the EPA determines, on the basis of technological and economic feasibility, health, environment, and energy impacts, is achievable through the application of the most effective equipment, measures, processes, methods, systems or techniques, including chemical reformulation, product or feedstock substitution, repackaging, and directions for use, consumption, storage, or disposal. If the lower limits in the EPA's original 1977 and 1978 recommendations were in fact technologically or economically feasible for these specialty coating categories, the EPA presumably would have retained these limits in the 2007 and 2008 final CTG documents in accordance with FCAA, §183(e)(1)(A).

The Large Appliance Coatings and Metal Furniture Coatings draft CTG only recommended general coating limits for these source categories. However, in response to public comments (72 FR 57215, October 9, 2007), the EPA's final 2007 CTG recommendations for these two source categories also included higher limits for several specialty coatings. The specialty coating limits included in the 2007 CTG are higher than the EPA's 1977 recommendations for these two source categories. In the response to public comments, the EPA acknowledged that the higher specialty coating limits recommended in the final 2007 CTG were necessary to accommodate the range of coatings needed in these industries.

However, the EPA's 2007 and 2008 CTG documents do not specifically explain why the lower limits included in the EPA's original 1977 and 1978 recommendations for these source categories are no longer technologically or economically feasible. In absence of any specific information indicating that the existing Chapter 115 limits for these source categories are not technologically or economically feasible, and given the EPA's stated intention to disapprove the rules without such a demonstration, the commission is obligated under the FCAA to revise the proposed

limits for these source categories. Therefore, in response to this comment, the commission is revising the proposed limits for these three source categories to only include the EPA's 2007 and 2008 CTG-recommended limits that are equivalent to or lower than the existing Chapter 115 limits. Where the EPA's 2007 and 2008 CTG-recommended limits are less stringent than the EPA's original 1977 and 1978 recommended limits, the commission is retaining the original emission limit in the current Chapter 115 rule, except for the high performance architectural coatings limit for the miscellaneous metal parts and products category.

The EPA only addressed the technological and economic feasibility issues associated with high performance architectural coatings in support of its presumptive RACT recommendations in the 2008 CTG for Miscellaneous Metal and Plastic Parts Coatings. The commission agrees with the EPA that the 6.2 pounds of VOC per gallon of coating (lb VOC/gal coating) constitutes RACT for this coating type and that promulgating a VOC limit less than 6.2 lb VOC/gal coating may restrict the application of liquid high performance architectural coatings that are currently available and in use today. The cost of converting to powder coatings or installing and operating add-on controls to meet a lower limit is not a reasonable alternative compared to the emission reduction that would be achieved. In light of this information, as provided in the EPA's 2008 CTG, the commission has determined a VOC limit of 6.2 lb VOC/gal coating for high performance architectural coatings to be RACT. The commission contends that the adoption of this coating VOC limit for high performance architectural coatings, which is higher than in the existing Chapter 115 rules, does not interfere with attainment of, or reasonable progress towards attainment of, the ozone standard for the HGB area. Therefore, the commission is making no change to the proposed VOC limit of 6.2 lb VOC/gal coating for high performance architectural coatings in the Chapter 115 miscellaneous metal parts and products coatings rules in response to this comment; the commission is adopting to retain the EPA's 2008 Miscellaneous Metal and Plastic Parts CTG-recommended 6.2 lb VOC/gal coating limit for high performance architectural coatings in the adopted Chapter 115 miscellaneous metal parts and products coatings rules.

FLEXIBLE PACKAGE PRINTING

The FTA strongly disagreed with the requirement in §115.432(c)(1)(C) for flexible package printers to meet an 80% overall control efficiency regardless of the first installation date of the oxidizer. The FTA commented that this approach may require printers that installed oxidizers at an earlier date to replace equipment and would be a significant financial hardship, as new oxidizers start in the hundreds of thousands of dollars. The FTA commented that the EPA's Flexible Package Printing CTG recommends a more reasonable approach consistent with a RACT regulation, which allows add-on controls installed prior to specific dates to have lower overall control of VOC emissions. The FTA added that the commission's claim that the EPA's approach would create backsliding is not justified.

The commission maintains that the EPA's CTG-recommended approach for controlling VOC emissions from flexible package printing may encourage the installation of older, less efficient equipment and may create backsliding issues if a

source becomes subject to a lower efficiency standard as a result of equipment replacement.

The commission has determined that an 80% overall control efficiency represents RACT for flexible package printing processes in the HGB area. Based on a review of permits for flexographic printing and rotogravure printing processes, the only two types of printing processes identified in the CTG as conducting flexible package printing, the majority of printers are using add-on control equipment that achieves at least an 80% overall control efficiency, demonstrating that this level of control is reasonably available considering technological and economic feasibility.

Flexible package printers with the potential to emit greater than or equal to 25 tons per year of uncontrolled VOC emissions that choose to use a vapor control system to comply with the adopted rules, are not limited to operating at an 80% overall control efficiency. The adopted new control requirements in §115.432(c) provide different compliance options to provide flexibility for affected owners and operators. Flexible package printers can instead choose the compliance option that requires the use of coatings in conjunction with a vapor control system to meet the VOC limits. Under this compliance option, an owner or operator does not have to meet a certain VOC limit or meet a certain overall control efficiency; rather, the combined coating VOC content and the overall control efficiency must meet the VOC limits. The commission makes no change in response to this comment.

INDUSTRIAL CLEANING SOLVENTS

The ACA requested the commission exempt resin manufacturing from the Chapter 115, Subchapter E, Division 6, industrial cleaning solvents rules since the proposed VOC limits would not allow effective cleaning of resin manufacturing equipment. The ACA commented that both the Bay Area Air Quality Management District (BAAQMD) and South Coast Air Quality Management District (SCAQMD) rules, which the EPA relied on to develop the CTG recommendations, exempt resin manufacturing operations from solvent cleaning VOC limits as follows: the SCAQMD Rule 1171(g)(2)(E) exempts cleaning operations subject to Rule 1141 - Control of Volatile Organic Compound Emissions from Resin Manufacturing and Rule 1141.1 - Coatings and Ink Manufacturing; and the BAAQMD Regulation 8, Rule 4, Section 113 exempts operations that are subject to the requirements of other rules of Regulation 8, or which comply with appropriate limitations of those rules prior to their effective dates. The ACA commented that since the BAAQMD regulates resin manufacturing under Regulation 8, Rule 36, the BAAQMD solvent cleaning rule does not apply to resin manufacturing operations. As an alternative to completely exempting resin manufacturing operations from the Chapter 115 industrial cleaning solvents rules, the ACA suggested implementing a VOC limit of 1.67 pounds of VOC per gallon of solution (lb VOC/gal solution), work practices, and an overall control efficiency of at least 80% or 90% if incineration is used.

The commission agrees that requiring resin manufacturing operations to comply with the 0.42 lb VOC/gal solution VOC limit for cleaning solutions poses technical feasibility issues, as described in the ACA's formal comments and supporting documentation. The EPA's 2006 Industrial Cleaning Solvents CTG recommends excluding ink, adhesive, and coating manufacturing from the industrial cleaning solvents rule applicability because the 0.42 lb VOC/gal solution VOC content limit

is not technologically and economically feasible for these manufacturing processes. The commission expects that the same technological and economic feasibility issues associated with manufacturing inks, coatings, and adhesives also exist for resin manufacturing. The VOC limit established in the industrial cleaning solvents rules prevent the use of adequate cleaning solutions, potentially causing cross contamination of manufactured products and poor product quality resulting in disposal of off-specification products. The 0.42 lb VOC/gal solution VOC content limit is not technologically feasible for resin manufacturing operations and therefore does not represent RACT for this industry. In response to this comment, the commission is revising §115.461(d)(13) to exempt resin manufacturing from the VOC content limits for industrial cleaning solvents.

The TCC commented that §115.461(b) should specifically exclude processes or operations that are subject to and complying with Chapter 115, Subchapter B, Division 2 or Division 6, including any qualifying exemptions. Specifically, the TCC suggested revising §115.461(b) to exempt a cleaning operation from the requirements in Division 6 if all of the VOC emissions from the cleaning operation originate from a source for which another division within Chapter 115 has established a control requirement, emission specification, or exemption that applies to that VOC source category in that county.

The commission agrees with the TCC's suggestion to provide an exemption for cleaning operations that are controlled by emission specifications or control requirements established in another Chapter 115 division. As proposed, the rules for industrial cleaning solvents exempted cleaning operations subject to another division in Chapter 115 that establishes cleaning work practices or cleaning VOC limits used during a solvent cleaning operation. However, in light of this comment, the commission acknowledges that not all Chapter 115 rules contain cleaning requirements, but that owners and operators of some processes may consider cleaning activities to be a part of their production process or may find it to be more efficient to control emissions from cleaning activities in accordance with the process control requirements or emissions specifications.

However, the commission declines to incorporate the TCC's request to exempt a cleaning operation from this division if the cleaning VOC emissions originate from a source that qualifies for an exemption in another Chapter 115 division. Basing an exemption for a cleaning operation on a process-specific exemption in another Chapter 115 division, is inconsistent with the EPA's stated purpose that the CTG recommendations are intended to apply to all industrial cleaning operations that are not already subject to or complying with other control requirements.

Therefore, in response to this comment, the commission is adopting new §115.461(c) to exempt from this division a solvent cleaning operation where the process the cleaning operation is associated with is subject to another division in Chapter 115 and the VOC emissions from the solvent cleaning operation are controlled in accordance with an emission specification or control requirement of the division that the process is subject to. This exemption is intended to provide affected owners and operators with the flexibility to comply with control requirements or emission specifications in another Chapter 115 rule to minimize

compliance burden. The commission expects that an owner or operator choosing to comply with the control requirements or emission specifications for a cleaning operation is at least as effective as complying with the industrial cleaning solvent rule requirements.

MISCELLANEOUS INDUSTRIAL ADHESIVES

NASA commented that adhesives are applied to non-production mock-ups, prototypes, fixtures, and displays at manned spacecraft centers. NASA requested a complete exemption be added to §115.471 for adhesives or adhesive primers used on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the Texas National Guard) and NASA. NASA requested the exemption because extensive field testing is required before adhesives can be approved for use and the proposed regulations would be impractical and extremely costly for NASA due to the complexity of adhesive operations, the number of adhesives used, and the number of different items and substrates bonded together.

The rules in Division 7 are necessary to implement RACT for miscellaneous industrial adhesives as required in FCAA, §172(c)(1) and §182(b)(2). The commission disagrees that a complete exemption for NASA is consistent with the EPA's recommendations for this CTG emission source category. Granting the categorical exemption requested for NASA and other military organizations could potentially result in EPA disapproval of the Chapter 115 RACT rules and corresponding SIP revisions. The commission does not consider the adopted rules any less technologically or economically feasible for NASA and the US Navy as the rules are for other affected entities, which includes some small businesses.

The EPA's 2008 CTG is intended to apply to adhesive and adhesive primer application processes at manufacturing operations that are not already regulated. For purposes of the rules, a manufacturing operation refers to a manufacturer that uses adhesives to join surfaces in the assembly or construction of a product involving the application processes listed in §115.473(a). Accordingly, the adopted rules in Division 7 do not apply to adhesives and adhesive primers used in the application processes specified in §115.473(a) that are subject to another division in Chapter 115. For example, owners and operators subject to the aerospace surface coating requirements in Division 2 qualify for the exemption in §115.471(c) because adhesives are regulated under the Division 2 aerospace rules. Additionally, the EPA's 2008 CTG explicitly states that the miscellaneous industrial adhesives rules are not intended to include adhesives that are addressed by CTG documents already issued for categories listed under FCAA, §183(e) or by an earlier CTG, which includes aerospace coatings. The commission makes no change in response to this comment.

MISCELLANEOUS METAL AND PLASTIC PARTS COATINGS

Pleasure Craft Coatings

The ACA commented that it is imperative to work with the federal, state, and local agencies to develop RACT rules given that the pleasure craft industry was not afforded the usual opportunity to comment on the EPA's CTG RACT recommendations because the draft Miscellaneous Metal and Plastic Part Coatings CTG did not mention pleasure craft surface coating operations. The

ACA commented that the EPA's final CTG-recommended pleasure craft coating limits do not represent RACT for the pleasure craft industry. The ACA commented that the SCAQMD Rule 1106.1, which was the basis for these CTG recommendations, should not be identified as RACT for pleasure craft coating operations in other areas since these requirements were adopted to address the severe ozone nonattainment conditions in the South Coast air basin. The ACA commented that the CTG-recommended VOC limits and compliance dates are too restrictive to allow coating manufacturers to formulate products that meet the VOC limits, while also maintaining adequate technical performance and meeting customers' aesthetic requirements. The ACA requested several revisions to the proposed rules to establish appropriate RACT requirements for pleasure craft coating operations.

For *extreme high-gloss coatings*, the ACA suggested implementing a VOC limit of 5.0 lb VOC/gal coating and revising the definition to any coating that achieves greater than 90% reflectance on a 60 degree meter. The ACA commented that the controlled application conditions that make the use of high solids and water-based technologies possible in other industries are not available for the pleasure craft coating industry. The ACA also commented that the low-VOC technologies available at this time do not provide the aesthetic properties, functionality, and durability required from an extreme high-gloss coating.

For *finish primer/surfacer coatings*, the ACA suggested implementing a VOC limit of 5.0 lb VOC/gal coating. The ACA commented that a higher VOC solvent is required for both the topcoats and the primers that go beneath them to achieve the finish that is extremely smooth, glossy, and durable. In addition, high solids or low-VOC primers often require additional sanding to achieve the necessary smooth surface and the use of these coatings necessitates a change in traditional working practices in yards to overcome the increased health hazard associated with the increased dust levels.

For *other substrate antifoulant coatings*, the ACA suggested implementing a VOC limit of 3.34 lb VOC/gal coating. Antifoulant coating formulations are currently registered with the EPA based on the percentage weight of biocide in the wet paint. Reducing the VOC content of the coating reduces the percentage of biocide in the dry film with a concomitant reduction in performance of the coating and increase in recoating frequency. In addition, low-VOC antifoulant coatings often result in a rougher film; the roughness of the hull contributes directly to drag.

For *antifoulant sealer/tie coatings*, the ACA suggested introducing a VOC limit of 3.5 lb VOC/gal coating and the following definition: a coating applied over a biocidal antifoulant coating for the purpose of preventing release of biocides into the environment, or to promote adhesion between an antifoulant and a primer or other antifoulants. The 2007 International Maritime Organization Antifouling Systems convention prohibits the use of certain biocides in the antifoulant coatings applied to the hulls of any marine vessels entering the waters of countries that are signatories to the convention. A specialized coating, an antifoulant sealer/tie coat, is required to seal in certain prohibited antifoulant coatings and to promote adhesion of biocide-free, non-stick foul release coatings when applied to vessels. As alternative compliance options, the ACA suggested implementing an averaging approach and extending the compliance date to allow the development, testing, and commercial introduction of low-VOC pleasure craft coatings.

In response to the ACA's request for reconsideration of the pleasure craft CTG VOC limits, the EPA issued a memorandum on June 1, 2010, entitled *Control Technique*

Guidelines for Miscellaneous Metal and Plastic Part Coatings-Industry Request for Reconsideration, **"recommending that the pleasure craft industry work with state agencies during their RACT rule development process to assess what is reasonable for the specific sources regulated because the CTG impose no legally binding requirements on any entity, including pleasure craft coating facilities."**

Based on the information submitted by the ACA, and in accordance with the EPA's guidance to work with the pleasure craft industry on this issue, the commission agrees that some of the pleasure craft coating VOC limits included in the EPA's CTG recommendations are not technologically feasible at this time. The commission agrees that the coating VOC limits requested by the ACA are technologically and economically feasible and therefore constitute RACT for the pleasure craft industry in Texas. In response to this comment, the commission is revising §115.453(a)(1)(F) to reflect the ACA's recommended VOC limits for *extreme high-gloss coating, finish primer/surfacer coating, other substrate antifoulant coating,* and *antifoulant sealer/tie coating*. The commission has also revised §115.450(c)(8) to include the commenter's suggested definitions for *extreme high-gloss coating, pretreatment wash primer,* and *antifoulant sealer/tie coating*. Because the commission is revising the rules to incorporate the suggested VOC limits, the commission does not agree it is also necessary to include the averaging approach and extended compliance period that were suggested as alternative compliance options.

The ACA requested a small container exemption for pleasure craft touch-up and repair coatings to allow minor repairs at the end of the painting line and avoid having to completely re-coat the pleasure craft.

In response to this comment, the commission is adopting new §115.451(n) to exempt touch-up and repair coatings from meeting the VOC limits in §115.453(a)(1)(F) if those coatings are supplied by the manufacturer in containers that do not exceed 1.0 quart and the use of those coatings at the site does not exceed 50 gallons per calendar year. The commenter did not suggest a quantity for the annual limit on touch-up and repair coatings. The 50-gallon limit is equivalent to the volume of coatings exempt in §115.451(i)(4) for miscellaneous plastic parts and products. In addition, the commission is including definitions for repair coatings and touch-up coatings in §115.450(c)(8)(I) and (K), respectively. The commission agrees that providing an exemption for touch-up and repair coatings used in small quantities eliminates the need to completely re-coat a pleasure craft and, as a result, reduces overall VOC emissions from pleasure craft coating. This exemption for coatings used in small quantities is also consistent with the EPA's recommended exemptions for other coating categories in the Miscellaneous Metal and Plastic Parts Coating CTG.

<u>Miscellaneous Metal Parts and Products Coatings</u>

NASA and the US Navy suggested the commission remove designated on-site maintenance shops from the rule applicability in Chapter 115, Subchapter E, Divisions 2 and 5 for the following reasons: there is no definition of this type of facility in the proposed rules; the frequency of what is considered routine is unclear; the federal maximum available control technology standards for

miscellaneous metal parts and products excludes facility maintenance operations; industrial maintenance coatings are already covered by the national Architectural and Industrial Maintenance rule; and the EPA's Miscellaneous Metal and Plastic Parts Coatings CTG does not include designated on-site maintenance shops in the applicability.

The existing Chapter 115, Subchapter E, Division 2 rules were revised in July 2000 (25 TexReg 6754) to reflect a rule interpretation that determined the miscellaneous metal parts and products coatings rules should be applied to original equipment manufacturers, off-site job shops that coat new or used parts or products, and designated on-site maintenance shops that re-coat used parts or products. Because this rulemaking was submitted as a SIP revision and approved by the EPA, providing an exemption for designated on-site maintenance shops that are currently complying with the existing Division 2 rules would be backsliding.

However, the commission has determined that it is not necessary to apply these RACT requirements to designated on-site maintenance shops that re-coat used parts or products in order to meet the mandates of FCAA, §172(c)(1) and §182(b)(2). The EPA's 1978 CTG recommendations for this source category, which were the basis for the Division 2 rules, were clearly not intended to apply to designated on-site maintenance shops that re-coat used parts or products. The commission also agrees that the EPA's 2008 Miscellaneous Metal and Plastic Parts Coatings CTG recommendations do not apply to designated on-site maintenance shops.

Therefore, in response to this comment, the commission is adopting §115.427(a)(8) to limit the rule applicability to the designated on-site maintenance shops in the HGB area that were subject to §115.421(a)(9) prior to January 1, 2012. Only those designated on-site maintenance shops that re-coat used parts or products that were exempt from §115.421(a)(9) in Division 2 prior to January 1, 2012, the beginning of the calendar year immediately following the approximate effective date of these rules, or that begin operation on or after January 1, 2012, are exempt from all requirements in Division 2. Additionally, in response to this comment, the commission is revising §115.450(a) to exclude re-coating of used miscellaneous metal parts and products at designated on-site maintenance shops from the coatings rule applicability in Division 5. The adopted revisions prevent any potential backsliding concerns by requiring sources that are currently complying with these rules in Division 2 to continue to meet these VOC limits. The adopted revisions are consistent with the intent of the EPA's 1978 and 2008 CTG RACT recommendations for miscellaneous metal parts and products coatings and the commission maintains the rules continue to satisfy RACT requirements for this CTG emission source category.

NASA and the US Navy requested an exemption be added to §115.451 for miscellaneous metal or plastic parts and product surface coating processes performed at on-site installations owned or operated by the Armed Forces of the United States or NASA, or the surface coating of military munitions manufactured by or for the Armed Forces of the United States. NASA and the US Navy requested the exemption because extensive field testing is required before reformulated coatings and solvents can be approved for use and because the proposed regulations would be impractical

and extremely costly for NASA and the US Navy due to the complexity of coating operations, the number of coatings and solvents used, and the number of different items and substrates coated. NASA and the US Navy also requested exemption from the miscellaneous metal and plastic parts coatings rules because historically accurate coatings for these items must be used.

The rules in Division 5 are necessary to implement RACT requirements for miscellaneous metal and plastic parts coatings as required in FCAA, §172(c)(1) and §182(b)(2). The commission disagrees that a complete exemption for the Armed Forces of the United States or NASA is consistent with the EPA's recommendations for this CTG emission source category. Some of the specific coating categories recommended by the EPA for miscellaneous metal and plastic parts and products are specific to military application. Granting the categorical exemption requested for NASA, the US Navy, and other military organizations could potentially result in EPA disapproval of the Chapter 115 RACT rules and corresponding SIP revisions.

However, the miscellaneous metal and plastic parts coatings rules do not apply to the other coating categories specifically regulated in Divisions 2 or 5. The commission recognizes that an explicit exemption for those specific coating categories from the miscellaneous metal and plastic parts coatings rules in Division 5, similar to the exemption provided in Division 2, was not incorporated into the proposed rules and may have created confusion. In response to this comment, the commission is adding an exemption in §115.451(b)(4) to reflect the exclusion of all other coating categories in Divisions 2 and 5 from the miscellaneous metal and plastic parts coatings rules. Adopted new §115.451(b)(4) clearly indicates that any item characterized by the other coating categories specified in Division 2 and Division 5 is not considered miscellaneous metal or plastic parts and products and is therefore not subject to any of the corresponding requirements. Additionally, the commission does not consider the adopted rules any less technologically or economically feasible for NASA and the US Navy as the rules are for other affected entities, which include some small businesses.

The EPA commented that the alternate control requirements proposed in §115.454(b) should be revised to make clear that any alternative requirements to §115.453(a)(1)(A), approved by the executive director would need to be submitted as a site-specific SIP revision for approval by the EPA to ensure it meets the requirements for enforceability and public hearings.

The adopted alternate control requirement in §115.454(b) is identical to the existing SIP-approved requirement in §115.423(4), except that the rule citations reference the applicable process in the adopted new Division 5 rules. The commission notes that the rule citation in the proposed rules incorrectly referenced large appliance coating, and the commission is revising §115.454(b) to accurately reference miscellaneous metal parts and products surface coating processes in §115.453(a)(1)(C).

The commission agrees that any alternate control requirement approved by the executive director under §115.454(b) would need to be submitted as a site-specific SIP revision for EPA approval. However, the commission does not agree that revisions to adopted §115.454(b) are warranted to clarify that EPA approval of

alternate control requirements is necessary. The commission makes no change in response to this comment.

The TCC requested clarification on whether it is the commission's intent to regulate the coating of newly fabricated piping or other equipment at an on-site maintenance shop, which appears to fall outside of the miscellaneous metal parts and products definition, while the re-coating of some equipment at an on-site job shop appears to be included. In addition, the TCC requested clarification on whether the coating of newly fabricated piping or other equipment at an on-site lay-down yard would be a regulated activity. The TCC stated that the EPA excludes the coating of new and existing support structures, piping, and equipment as part of routine maintenance activities, considered to be facility maintenance operations, from 40 Code of Federal Regulations, Part 63, Subpart MMMM for Surface Coating of Miscellaneous Metal Parts and Products.

In response to other comments on this rulemaking, the commission is revising §115.450(a) to exclude designated on-site maintenance shops from the miscellaneous metal parts and products coatings rule applicability in Division 5. Additionally, the commission is adding §115.427(a)(8) to limit the Division 2 rule applicability to only those designated on-site maintenance shops that re-coat used parts and products that were required to comply with the emission specifications in §115.421(a)(9) prior to January 1, 2012, which is the beginning of the calendar year immediately following the approximate effective date of this rulemaking. The re-coating of used miscellaneous metal parts and products at a designated on-site maintenance shop that was exempt from §115.421(a)(9) prior to January 1, 2012, or that begins operation on or after January 1, 2012, is exempt from all requirements in Division 2.

The coating of newly fabricated miscellaneous metal parts and products, including piping or other equipment, for a site's own use does not constitute coating at a designated on-site maintenance shop and does not meet the miscellaneous metal parts and products coatings rule applicability in Division 2. Only designated areas where the routine re-coating of miscellaneous metal parts and products takes place is considered a designated on-site maintenance shop. The location of the designated on-site maintenance shop is irrelevant for purposes of the Division 2 rules; the designated on-site maintenance shop may be an area reserved inside a site building or a location on the site's grounds outdoors.

The TCC requested clarification on whether extreme performance coatings applied to newly fabricated piping and equipment, which do not meet the corresponding definition in the Division 5 rules, would now be considered a general-use coating.

Coatings that do not meet a specific coating category definition in Division 5, are considered general-use coatings and are subject to the VOC content or emission limit for general-use coatings. This requirement is adopted directly from the EPA's 2008 Miscellaneous Metal and Plastic Parts Coatings CTG recommendations. Conversely, the commission recognizes that some coatings may meet more than one coating category definition. For these instances, the commission is revising the rules to indicate that the least stringent VOC limit applies.

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 and above 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.

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 above 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 levels expected of new sources or to maximum achievable control technology 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 (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.

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. Therefore, controls to satisfy RACT for emission source categories addressed in a CTG document issued prior to 2006 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.

The EPA issued 11 CTG documents from 2006 through 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 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, addressed the following CTG documents:

- Flat Wood Paneling Coatings, Group II, issued in 2006;
- Offset Lithographic and Letterpress Printing, Group II, issued in 2006;
- Fiberglass Boat Manufacturing Materials, Group IV, issued in 2008; and

- Auto and Light-Duty Truck Assembly Coatings, Group IV, issued in 2008.

The RACT analysis included in this SIP revision addresses the following seven 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.

By letter dated December 8, 2008, the TCEQ requested the EPA clarify several issues related to the recommendations in the following three CTG documents: *Control Techniques Guidelines for Large Appliance Coatings* (EPA 453/R-07-004), issued in 2007; *Control Techniques Guidelines for Metal Furniture Coatings* (EPA 453/R-07-005), issued in 2007; and *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings* (EPA 453/R-08-003), issued in 2008. A number of the recommended VOC content limits for specific coatings categories in these 2007 and 2008 CTG documents are less stringent than the more general VOC content limits specified in the following EPA guideline series recommendations: *Control of Volatile Organic Emissions from Existing Stationary Sources Volume V: Surface Coating of Large Appliances* (EPA-450/2-77-034), issued in 1977; *Control of Volatile Organic Emissions from Existing Stationary Sources Volume III: Surface Coating of Metal Furniture* (EPA-450/2-77-032), issued in 1977; and *Control of Volatile Organic Emissions from Existing Stationary Sources Volume VI: Surface Coating of Miscellaneous Metal Parts and Products* (EPA-450/2-78-015), issued in 1978. The TCEQ requested clarification to ensure that implementing the new 2007 and 2008 CTG recommendations would not be considered 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."

Consistent with this EPA memorandum, on June 8, 2011, the commission proposed rulemaking (Rule Project Number 2010-016-115-EN) concurrent with this SIP revision to implement the 2007 and 2008 CTG-recommended RACT limits for these three emission source categories. The proposed rulemaking provided discussion regarding the estimated percent reductions for these CTG categories that supported the EPA's position that applying the new 2007 and 2008 CTG-recommended limits as a whole will result in net VOC emissions reductions. Despite the state's demonstration that implementing the 2007 and 2008 CTG-recommended approach would not interfere with attainment of, or reasonable progress towards attainment of, the ozone standard for the HGB area, the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing Chapter 115 limits for these CTG categories, which were based on the EPA's original 1977 and 1978 recommendations, are no longer technologically or economically feasible.

The commission contends that by promulgating higher CTG-recommended RACT limits for these source categories in 2007 and 2008, the EPA has established that the original 1977 and 1978 recommended limits, and thus the existing Chapter 115 limits, are no longer technologically or economically feasible. However, the EPA's 2007 and 2008 CTG documents do not specifically explain why the lower limits included in the EPA's original 1977 and 1978 recommendations for these source categories are no longer technologically or economically feasible. In absence of any specific information indicating that the existing Chapter 115 limits for these source categories are not technologically or economically feasible, and given the EPA's stated intention to disapprove the rules without such a demonstration, the commission is obligated under the FCAA to revise the proposed limits for these source categories. Therefore, in response to the EPA's comment, the commission is revising the proposed limits for these three source categories to only include the EPA's 2007 and 2008 CTG-recommended limits that are equivalent to or lower than the existing Chapter 115 limits. Where the EPA's 2007 and 2008 CTG-recommended emission limits are less stringent than the EPA's original 1977 and 1978 recommended limits, the TCEQ is retaining the original emission limit in the current Chapter 115 rules, except for the high performance architectural coatings limit for the miscellaneous metal parts and products category. Additional details regarding the changes made in response to the EPA's comments can be found in Section 1.3.2: *VOC RACT Determination* of this appendix and in the preamble for the adopted rulemaking (Rule Project Number 2010-016-115-EN).

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. Federally approved state rules and rule approval dates can be found in 40 CFR §52.2270(c), EPA Approved Regulations in the Texas SIP.

RACT for the 11 CTG documents issued from 2006 through 2008 was evaluated by comparing CTG recommendations to TCEQ rules to determine if the existing rules satisfied RACT. 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. RACT determinations for four of the CTG documents issued from 2006 through 2008 were submitted to the EPA on April 6, 2010 (SIP Project Number 2009-017-SIP-NR). Additional discussion regarding the RACT determinations for the remaining seven CTG documents issued from 2006 through 2008 is provided in Section 1.3.2 of this appendix.

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 commission is adopting 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 Chapter 115 rulemaking reduces the VOC content limits of coatings, increases the overall control efficiency of add-on controls used in flexible package printing processes, establishes work practice procedures for materials used during associated cleaning activities, and expands rule applicability to include smaller flexible package printing lines that were previously exempt from these rules.

The TCEQ is not implementing 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 because sources currently subject to the Chapter 115 rules could potentially become exempt. 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 rules.

Additionally, the TCEQ is not implementing 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, 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 Chapter 115 rules 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 to have an overall control efficiency ranging from 65% to 80% depending on the first installation date of the press and control equipment. The TCEQ disagrees with the 2006 CTG recommendation for flexible package printing to correlate control device efficiency requirements with the first installation date of the printing press or 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 if a source becomes subject to a lower efficiency standard as a result of equipment replacement. 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 is requiring the CTG-recommended 80% overall control efficiency for flexible package printing, regardless of the first installation date.

1.3.2.2 Industrial Cleaning Solvents

Concurrent with this SIP revision, the commission is adopting 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 Chapter 115 rulemaking establishes VOC content limits for cleaning solvents used in specific cleaning activities, provides exemptions for certain cleaning activities from all or portions of the rule, and requires certain work practice procedures for the use, storage, and disposal of cleaning solvents. In response to comments on the proposed industrial cleaning solvents rules, the commission is adopting new §115.461(c) to exempt a solvent cleaning operation from the requirements in this division if the VOC emissions from that solvent cleaning operation are controlled by the control requirements or emission specifications in another division in Chapter 115. The adopted new exemption provides flexibility and reduces the compliance burden for affected sources. Additionally, the commission expects that complying with requirements in other Chapter 115 rules is at least as effective as meeting the industrial cleaning solvents rule requirements. The adopted exemption is consistent with the EPA's 2006 CTG recommendation to ensure that a particular cleaning activity is not subject to duplicative requirements.

1.3.2.3 Large Appliance Coatings

Concurrent with this SIP revision, the commission is adopting 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 Chapter 115 rulemaking reduces VOC content limits of coatings, increases the overall control efficiency for add-on controls used in large appliance coating operations, and establishes minimum transfer efficiency for coating application methods. The rules also require certain work practice procedures for coating-related activities and materials used during associated cleaning operations.

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 3.0 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 Chapter 115 rules retain the existing exemption criteria.

The existing Chapter 115, Subchapter E, Division 2 large appliance coating limit is based on the EPA guideline series recommendations in *Control of Volatile Organic Emissions from Existing Stationary Sources Volume V: Surface Coating of Large Appliances* (EPA-450/2-77-034), issued in 1977. Several of the EPA's recommended VOC content limits for specific coating categories in the 2007 CTG document are less stringent than the limit specified in the EPA's original 1977 recommendation 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 also conducted a comprehensive comparison of the 2007 CTG recommendations to the existing Chapter 115 VOC limit and determined that implementing the 2007 CTG-recommended coating VOC content limits will not negatively impact the status of the state's attainment of, or reasonable further progress toward attainment of, the 1997 eight-hour ozone NAAQS. Despite the full demonstration of noninterference provided in the proposed rule preamble (Rule Project Number 2010-016-115-EN), the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing Chapter 115 VOC emission limit for large appliance coatings, which was based on the EPA's original 1977 recommendation, is no longer technologically or economically feasible. The commission contends that by promulgating higher CTG-recommended RACT limits for large appliance coatings in 2007, the EPA has established that the original 1977-recommended limit, and thus the existing Chapter 115 limit, is no longer technologically or economically feasible. However, the EPA's 2007 CTG did not specifically explain why the lower limit included in the EPA's original 1977 recommendation is no longer technologically or economically feasible. In absence of any specific information indicating that the existing Chapter 115 large appliance coating emission limit is no longer technologically or economically feasible, the adopted Chapter 115 rules only include the EPA's 2007 CTG-recommended limits that are equivalent to or lower than the existing Chapter 115 limit.

1.3.2.4 Metal Furniture Coatings

Concurrent with this SIP revision, the commission is adopting 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 Chapter 115 rulemaking reduces VOC content limits of coatings, increases the overall control efficiency for add-on controls used in metal furniture coating operations, and establishes minimum transfer efficiency of coating application methods. The rules 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 3.0 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 Chapter 115 rules retain the existing exemption criteria.

The existing Chapter 115, Subchapter E, Division 2 metal furniture coating limit is based on the EPA guideline series recommendations in *Control of Volatile Organic Emissions from Existing Stationary Sources Volume III: Surface Coating of Metal Furniture* (EPA-450/2-77-032), issued in 1977. Several of the EPA's recommended VOC content limits for specific coating categories in the 2007 CTG document are less stringent than the limit specified in the EPA's original 1977 recommendation 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 also conducted a comprehensive comparison of the 2007 CTG recommendations to the existing Chapter 115 VOC limit and determined that implementing the 2007 CTG-recommended coating VOC content limits will not negatively impact the status of the state's attainment of, or reasonable further progress toward attainment of, the 1997 eight-hour ozone NAAQS. Despite the full demonstration of noninterference provided in the proposed rule preamble (Rule Project Number 2010-016-115-EN), the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing Chapter 115 VOC emission limit for metal furniture coatings, which was based on the EPA's original 1977 recommendation for metal furniture coatings, is no longer technologically or economically feasible. The commission contends that by promulgating higher CTG-recommended RACT limits for metal furniture coatings in 2007, the EPA has established that the original 1977 CTG-recommended limit, and thus the existing Chapter 115 limit, is no longer technologically or economically feasible. However, the EPA's 2007 CTG for metal furniture coatings did not specifically explain why the lower limit included in the original 1977 recommendation is no longer technologically or economically feasible. In absence of any specific information indicating that the existing Chapter 115 metal furniture coating limit is no longer technologically or economically feasible, the adopted Chapter 115 rules only include the EPA's 2007 CTG-recommended limits that are equivalent to or lower than the existing Chapter 115 limit.

1.3.2.5 Paper, Film, and Foil Coatings

Concurrent with this SIP revision, the commission is adopting 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 Chapter 115 rulemaking reduces the VOC content limits of coatings; increases the overall control efficiency for add-on controls used in paper, film, and foil coating operations; and establishes 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 3.0 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 Chapter 115 rules retain the existing exemption criteria.

Additionally, the TCEQ is not implementing 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 Chapter 115 rules 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 commission is adopting 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 Chapter 115 rulemaking implements VOC content limits for general adhesive application processes, specialty adhesive application processes, and adhesive primer application processes; provides exemptions for certain cleaning activities from all or portions of the rule; incorporates test methods and recordkeeping requirements; and establishes minimum transfer efficiency of adhesive application methods. The rules also require certain work practice procedures for adhesive-related activities and materials used during associated cleaning operations. In response to comments, the commission is revising §115.470(a) to clarify the rules in Division 7 apply to manufacturing operations that use adhesives for any of the adhesive application processes specified in the control requirements in §115.473(a); adhesives applied in the field (e.g., adhesives applied at construction jobs in the field) are not subject to this division. The revised rule applicability in §115.470(a) more accurately reflects the sources affected by the CTG recommendations as described by the EPA in the final rule for the 2008 Miscellaneous Industrial Adhesives CTG (73 FR 58489).

1.3.2.7 Miscellaneous Metal and Plastic Parts Coatings

Concurrent with this SIP revision, the commission is adopting 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

Chapter 115 rulemaking expands the scope of the existing rule applicability to include the new coating categories recommended in the 2008 CTG. The Chapter 115 rulemaking reduces VOC content limits of coatings, increases the overall control efficiency of add-on controls, and establishes minimum transfer efficiency of coating application methods. The rules 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 3.0 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 rule revisions integrate the new 2008 CTG coating categories into the existing exemption from the VOC control requirements. The Chapter 115 rules retain the state's approach to maintain consistency with the current exemption criteria.

The existing Chapter 115, Subchapter E, Division 2 miscellaneous metal part and product coating limits are based on the EPA guideline series recommendations in *Control of Volatile Organic Emissions from Existing Stationary Sources Volume VI: Surface Coating of Miscellaneous Metal Parts and Products* (EPA-450/2-78-015), issued in 1978. Several of the EPA's recommended VOC content limits for specific coating categories in the 2008 CTG document are less stringent than the limits specified in the EPA's original 1978 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 methodology the EPA used to estimate VOC emission reductions associated with implementing the 2007 Large Appliance Coating CTG and 2007 Metal Furniture Coating CTG recommendations. The TCEQ determined that implementing the 2008 CTG-recommended coating VOC content limits for miscellaneous metal part and product coatings will not negatively impact the status of the state's attainment of, or reasonable further progress toward attainment of, the 1997 eight-hour ozone NAAQS. Despite the full demonstration of noninterference provided in the proposed rule preamble (Rule Project Number 2010-016-115-EN), the EPA commented that in order for the proposed rules to be approved as RACT, the state must also demonstrate that the existing Chapter 115 VOC limits for miscellaneous metal part and product coatings, which were based on the EPA's original 1978 recommendations, are no longer technologically or economically feasible. The commission contends that by promulgating higher CTG-recommended RACT limits for miscellaneous metal part and product coatings in 2007, the EPA has established that the original 1978-recommended limits, and thus the existing Chapter 115 limits, are no longer technologically or economically feasible. However, the EPA's 2008 CTG did not specifically explain why the lower limits included in the EPA's original 1978 recommendations are no longer technologically or economically feasible, with the exception of the 2007-recommended limit for high performance architectural coatings. In absence of any specific information indicating that the existing Chapter 115 miscellaneous metal part and product coating limits are no longer technologically or economically feasible, the adopted Chapter 115 rules only include the EPA's 2008 CTG-recommended limits that are equivalent to or lower than the existing Chapter 115 limits. In light

of the technological and economic feasibility issues detailed in the EPA's 2008 CTG that are associated with high performance architectural coatings containing less than 6.2 pounds of VOC per gallon of coating (lb VOC/gal coating), the commission is adopting to retain the EPA's 2008 CTG-recommended 6.2 lb VOC/gal coating limit for high performance architectural coatings in the adopted Chapter 115 miscellaneous metal parts and products rules.

In response to comments, the commission has revised §115.427 to limit the rule applicability to only those designated on-site maintenance shops that re-coat used parts or products that were required to comply with the rules in Division 2 prior to January 1, 2012, which is the beginning of the calendar year shortly after the expected effective date of the rule revision. Additionally, in response to this same comment, the commission has revised §115.450(a) to exclude designated on-site maintenance shops from the miscellaneous metal parts and products coatings rule applicability in Division 5. The adopted revisions prevent any potential backsliding concerns by requiring sources that are currently complying with these rules in Division 2 to continue to meet these VOC limits. The adopted revisions are consistent with the intent of the EPA's 1977 and 2008 CTG RACT recommendations for miscellaneous metal parts and products coatings and the commission maintains the rules continue to satisfy RACT requirements in FCAA, §172(c)(1) and §182(b)(2) for this CTG emission source category. Regulating the coating of miscellaneous metal parts and products at a new designated on-site maintenance shop is not appropriate since VOC reductions do not advance attainment of the 1997 eight-hour ozone standard for the HGB area, as demonstrated in the RACM analyses in the HGB AD SIP revision adopted on March 10, 2010.

In response to comments, the commission added new §115.451(2)(D) to exempt all other coating categories regulated in Divisions 2 and 5 from the miscellaneous metal and plastic parts coatings rules. Incorporating this new exemption into §115.451 clarifies that the miscellaneous metal parts and products coatings rules do not apply to the coating operations characterized by another rule specified in Division 2 and Division 5.

Based on information provided during the public comment period, the commission determined that some of the pleasure craft coating VOC limits included in the EPA's 2008 CTG recommendations are not technologically feasible at this time and therefore do not represent RACT. In response to comments, the commission is increasing the VOC limit for *extreme high-gloss coatings* to 5.0 lb VOC/gal coating and revising the definition include any coating that achieves greater than 90% reflectance on a 60 degree meter. In response to comments, the commission is increasing the VOC limit for *finish primer/surfacer coatings* to 5.0 lb VOC/gal coating. In response to comments, the commission is increasing the VOC limit for *other substrate antifoulant coatings* to 3.34 lb VOC/gal coating. In response to comments, the commission is introducing a new specialty coating category for *antifoulant sealer/tie coatings*, which are coatings applied over biocidal antifoulant coating for the purpose of preventing release of biocides into the environment, or to promote adhesion between an antifoulant and a primer or other antifoulants, and is establishing a VOC limit of 3.5 lb VOC/gal coating for this new category. In response to comments, the commission is revising the definition of *pretreatment wash primer coatings* to include any coating that contains no more than 25% solids, by weight, and at least 0.1% acids, by weight; is used to provide surface etching; and is applied directly to fiberglass and metal surface to provide corrosion resistance and adhesion of subsequent coatings.

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 appliances[1], metal furniture[2], and miscellaneous metal parts and products[3] were based on the EPA's Office of Air Quality Planning and Standards (OAQPS) corresponding 1977 and 1978 Guideline Series[4] (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 Coatings[5] and Metal Furniture Coatings[6] 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 Coatings[7] 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

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 explanation[8] 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,

Richard C Chi

for 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.

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
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.

cc: Robin Dunkins, SPPD
Kimber Scavo, AQPD
David Orlin, OGC
Sara Schneeberg, OGC

ORDER ADOPTING
REVISIONS TO THE STATE IMPLEMENTATION PLAN

Docket No. 2011-0083-SIP

On December 7, 2011, the Texas Commission on Environmental Quality (Commission), during a public meeting, considered adoption of revisions to the State Implementation Plan (SIP) for the Houston-Galveston-Brazoria (HGB) 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS). The Commission adopts a reasonably available control technology (RACT) analysis update to include Control Techniques Guidelines (CTG) not yet addressed in the HGB Attainment Demonstration SIP Revision for the 1997 eight-hour ozone NAAQS; and corresponding revisions to the state implementation plan (SIP). Under Tex. Health & Safety Code Ann. §§ 382.011, 382.012, and 382.023 (Vernon 2008), the Commission has the authority to control the quality of the state's air and to issue orders consistent with the policies and purposes of the Texas Clean Air Act, Chapter 382 of the Tex. Health & Safety Code. Notice of the proposed revisions to the SIP was published for comment in the June 24, 2011, issue of the Texas Register (36 TexReg 3985).

Pursuant to 40 Code of Federal Regulations § 51.102 and after proper notice, the Commission conducted public hearings to consider the revisions to the SIP. Proper notice included prominent advertisement in the areas affected at least 30 days prior to the dates of the hearings. Public hearings were held in Houston, Texas on July 18, 2011 and Austin, Texas on July 22, 2011.

The Commission circulated hearing notices of its intended action to the public, including interested persons, the Regional Administrator of the EPA, and all applicable local air pollution control agencies. The public was invited to submit data, views, and recommendations on the proposed SIP revisions, either orally or in writing, at the hearings or during the comment period. Prior to the scheduled hearings, copies of the proposed SIP revisions were available for public inspection at the Commission's central office and on the Commission's Web site.

Data, views, and recommendations of interested persons regarding the proposed SIP revisions were submitted to the Commission during the comment period, and were considered by the Commission as reflected in the analysis of testimony incorporated by reference to this Order. The Commission finds that the analysis of testimony includes the names of all interested groups or associations offering comment on the proposed SIP revisions and their position concerning the same.

IT IS THEREFORE ORDERED BY THE COMMISSION that the revisions to the SIP incorporated by reference to this Order are hereby adopted. The adopted revisions to the SIP are incorporated by reference in this Order as if set forth at length verbatim in this Order.

IT IS FURTHER ORDERED BY THE COMMISSION that on behalf of the Commission, the Chairman should transmit a copy of this Order, together with the adopted revisions to the SIP, to the Regional Administrator of EPA as a proposed revision to the Texas SIP pursuant to the Federal Clean Air Act, codified at 42 U.S. Code Ann. §§ 7401 - 7671q, as amended.

If any portion of this Order is for any reason held to be invalid by a court of competent jurisdiction, the invalidity of any portion shall not affect the validity of the remaining portions.

Date issued:

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

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Bryan W. Shaw, Ph.D., Chairman