TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

for Rulemaking Adoption

AGENDA REQUESTED: November 3, 2010

DATE OF REQUEST: October 15, 2010

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Charlotte Horn, 239-0779

CAPTION: Docket No. 2010-1039-RUL. Consideration of the issuance of a new air quality standard permit under 30 TAC Chapter 116, Subchapter F, Standard Permits.

The new standard permit would authorize Thermoset Resin Facilities. Notice of the proposed standard permit was published in the April 2, 2010 issue of the *Texas Register* (35 TexReg 2762). (Becky Southard, Erin Selvera) (Rule Project No. 2010-056-OTH-NR)

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Copy to CCC Secretary? NO X YES _____

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Commissioners **Date:** October 15, 2010

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

From: Richard A. Hyde, P.E., Deputy Director
Office of Permitting and Registration

Docket No.: 2010-1039-RUL

Subject: Air Quality Standard Permit for Thermoset Resin Facilities
Rule Project No. 2010-056-OTH-NR

Background:
Staff is recommending issuance of a new air quality standard permit for thermoset resin facilities, which would cover a variety of thermoset processes. Currently, most thermoset resin facilities are authorized under the permit by rule (PBR) in 30 Texas Administrative Code (30 TAC) § 106.392, Thermoset Resin Facilities, which allow for a maximum resin and gelcoat usage of 75 tons per year (tpy) for spraying operations and 150 tpy for non-spraying operations. Higher resin and gelcoat usage rates are typically authorized by a permit issued under 30 TAC Chapter § 116.111, General Application. The standard permit is being developed to address changes in the effects screening level (ESL) for styrene, and to allow for greater public participation and tracking of these types of facilities.

Specifically, between 1986 and 2000, the short-term ESL for styrene was 215 micrograms per cubic meter ($\mu g/m^3$). However, in 2000, the Texas Commission on Environmental Quality (TCEQ) Toxicology Division lowered styrene's ESL to 110 $\mu g/m^3$ to prevent odor nuisances. Between August, 2007 and August, 2008, the TCEQ Toxicology Division reevaluated styrene's ESL and concluded that an ESL of 110 $\mu g/m^3$ is appropriate for styrene.

In addition, the Composites Fabricators Association, which was later renamed the American Composites Manufacturers Association (ACMA), released a revised set of emission factors for open molding pre-unified emission factors (UEF) in April, 1999 and subsequently raised the UEF in July, 2001. TCEQ has been using these emission factors for open molding since June 21, 1999, with the appropriate emission factors from AP-42, Compilation of Air Pollutant Emission Factors, used for other processes such as closed molding. On February 20, 2007, the United States Environmental Protection Agency (EPA) reposted the AP-42 emission factor table on their website that is to be used as a reference for permitting both of these processes.

Therefore, the UEF underestimation of styrene emissions, coupled with the TCEQ Toxicology Division's 2000 decision to lower styrene's ESL, makes it inappropriate to allow new or modified thermoset resin facilities to be authorized under the conditions of 30 TAC § 106.392. The commission will consider rulemaking to repeal 30 TAC § 106.392 in a separate commission action. Permit holders currently operating under a PBR may continue to do so until their facilities are

modified.

Key Provisions of the Standard Permit

- Does not authorize or allow for additional control equipment to be used to meet the emission limits outlined in the standard permit. This restriction is intended to encourage more complex facilities to use case-by-case new source review permitting.
- Styrene emission limits vary depending on building height, stack height, and flow rate.
- Flow rate requirements will result in greater scrutiny of potential styrene fugitives.
- Contains technical requirements representing best available control technology (BACT) to prevent nuisance conditions.
- Includes maintenance, start-up, and shutdown (MSS) emissions, however, start-up and shutdown emissions are not distinguishable from other operations expected with this type of facility.
- Recordkeeping requirements are included to verify material usage and face velocity.

Response to Comments and Significant Changes:

A stakeholder meeting on the draft standard permit was held in Austin on December 7, 2009. The standard permit was formally proposed on April 2, 2010. A public meeting on the proposed standard permit was held in Austin on May 6, 2010. Austin Marble Co., Inc., Gulf Coast Composite Marine Specialist, Inc., and Molded Fiber Glass Companies/Texas made oral comments during the meeting. During the public comment period which closed on May 10, 2010, the Air Permits Division received comments from the regulated community, industry groups, and EPA.

The most significant comments are summarized in this section.

The regulated community and industry groups asked that the TCEQ Toxicology Division staff revise the odor-based styrene ESL because odor is not expressly mentioned in the Texas Clean Air Act as something to be regulated in regard to the protection of "human health and welfare", and asserted that because there is not an emphasis on odor regulation at the federal level, TCEQ is not obligated to regulate odor concerns. **Although the revised odor-based ESL was applied when developing emission limits for the thermoset resin standard permit, revision of the odor-based ESL is not part of this action. Revision of the ESL occurs as a separate action through the Toxicology Division. In accordance with the Texas Health and Safety Code, the Texas Clean Air Act §382.002, Policy and Purpose, the commission is tasked with safeguarding the state's air resources, including "controlling or abating air pollution and emissions of air contaminants, consistent with the protection of public health, general welfare, and physical property, including the esthetic enjoyment of air resources by the public and the maintenance of adequate visibility." Because the primary air contaminant at issue for the thermoset resin standard permit, styrene, is not subject to the national ambient air quality standards (NAAQS), the Texas Commission on Environmental Quality reviews this pollutant by comparing predicted concentrations against the appropriate ESL. Odor-based ESLs are a useful tool used for addressing the commission's mandate to protect public welfare and public enjoyment of air resources. The current short-term ESL for styrene was developed by**

conducting a comprehensive literature search, consideration of all available styrene odor studies, and selection of the appropriate odor detection threshold among the studies that meet the American Industrial Hygiene Association and EPA odor evaluation criteria. The odor-based ESL is considered reliable, valid and scientifically based; therefore, it is used to set the odor-based ESL for styrene. Through use of odor-based ESLs, the commission minimizes the potential for interference with use and enjoyment of neighboring properties.

Industry commented that styrene's low ESL makes the requirements of the standard permit too restrictive and that the styrene ESL is so low that the corresponding standard permit stack and ventilation system requirements would be too expensive and could prevent growth of this industry in Texas without benefit to the public health or welfare. **The main requirements in the standard permit that are different from the current thermoset resin facilities PBR requirements are to extend already required stacks, to install additional exhaust fans, air filters, and a submerged fill pipe for any storage tanks onsite. The commission finds these requirements to be appropriate for thermoset resin facilities, and venting emissions properly through a stack of appropriate height is a scientifically acceptable method of safely dispersing emissions such as styrene.**

The EPA requested that the TCEQ clarify whether or not a facility that is considered a major source or major modification would potentially qualify for the thermoset resin standard permit. **The thermoset resin standard permit has been updated to include an applicability statement that clarifies that facilities that constitute a new major stationary source or major modification do not qualify for authorization under the standard permit. This change is necessary to ensure that a facility that triggers nonattainment new source review (NNSR) will undergo NNSR permitting as required.**

EPA requested an explanation as to the purpose of exempting owners or operators with thermoset facilities that use less than 1 ton of styrene per year on a rolling 12-month average from storage tank and recordkeeping requirements. **The intent of the exemption was to keep the smallest facilities out of the majority of the permitting process. The storage tank requirements were exempted, because facilities using less than 1 ton of styrene for non-spraying operations and 0.5 tons for spraying operations on a rolling 12-month average would not ordinarily have storage tanks. The exempt facilities are simply encouraged to keep monthly usage records maintained for a rolling 24-month period in order to prove that the facility can still be considered exempt.**

Industry requested the deletion of the MSS emissions prohibitions since they are more stringent than requirements found in 30 TAC § 101.211, Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements. EPA requested that emission limits specifically include MSS emissions with an independent short term limit stated in the permit. **Emissions from MSS in this industry are indistinguishable from production emissions, and are included in this standard permit with no additional control requirements.**

Industry commented that the standard permit should require 95 percent efficient filters instead of a 98 percent efficient filter since the 95 percent efficient filters are more cost effective and would

meet the requirements of the current PBR. **Filters rated at 98 percent efficiency or better are commonly used to comply with state and federal regulations and are well established as BACT in the thermoset resin industry. These filters are not difficult to obtain, and would not contribute significantly to the cost of complying with the requirements of the proposed standard permit.**

The EPA requested an explanation as to why the standard permit does not establish a maximum hourly emission rate for volatile organic compounds (VOC). **The standard permit includes tables that establish the maximum allowable hourly emission rates of styrene, alpha-methylstyrene, and methyl methacrylate. The sum of the rates for these three compounds effectively establishes the hourly emission limits for VOC because they represent the vast majority of the VOC emissions and essentially are an upper bound on emissions.**

Potential Controversial Matters:
From the first stakeholder meeting until the last public comment period on this project, representatives from the thermoset resin industry have expressed dissatisfaction with styrene's odor-based ESL. These representatives have also expressed concern that new facilities may choose not to locate in Texas due to the more stringent requirements in the standard permit. Also, the standard permit limits will require many sites to raise or install stacks.

cc: Chief Clerk, 2 copies
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THERMOSET RESIN FACILITIES AIR QUALITY STANDARD PERMIT SUMMARY DOCUMENT

I. EXECUTIVE SUMMARY

The Texas Commission on Environmental Quality (TCEQ or commission) adopts the air quality standard permit for thermoset resin facilities. This standard permit replaces the permit by rule (PBR) for thermoset resin facilities that was available under Title 30 Texas Administrative Code (30 TAC) § 106.392, Thermoset Resin Facilities. Owners or operators currently operating under a PBR may continue to do so until their facilities are modified.

II. EXPLANATION AND BACKGROUND OF AIR QUALITY STANDARD PERMIT

The New Source Review (NSR) Program under 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification, requires any person who plans to construct any new facility or to engage in the modification of any existing facility that may emit air contaminants into the air of this state to obtain a permit under 30 TAC § 116.111, General Application, or satisfy the conditions of a standard permit, PBR, or the criteria for a de minimis facility or source, before any actual work is begun. A standard permit authorizes the construction of new facilities or modification of existing facilities that are similar in terms of operations, processes, and emissions. A standard permit provides an efficient mechanism for qualifying entities to obtain authorization and is an alternative to a case-specific air quality permit.

Thermoset resin facilities currently authorized under 30 TAC § 106.392 can have a maximum resin and gelcoat usage of 75 tons per year (tpy) for spraying operations and 150 tpy for non-spraying operations. Higher resin and gelcoat usage rates may be authorized by a permit issued under 30 TAC Chapter § 116.111.

The Air Permits Division initially developed the thermoset resin authorization as Standard Exemption Number 113 (effective date: April 25, 1986) with a 50 tpy resin usage limit. Effective May 4, 1994, the Air Permits Division revised the usage limit to the current limit of 75 tpy (spraying) and 150 tpy (non-spraying). Between 1986 and 2000, the short-term effects screening level (ESL) for styrene was 215 micrograms per cubic meter ($\mu g/m^3$). However, in 2000, the TCEQ Toxicology Division lowered styrene's ESL to 110 $\mu g/m^3$ to prevent odor nuisances. Between August of 2007 and August of 2008, the TCEQ Toxicology Division reevaluated styrene's ESL and concluded that an ESL of 110 $\mu g/m^3$ is appropriate for styrene. The development support documents concerning styrene's ESL is available at: http://tceq.com/assets/public/implementation/tox/dsd/comments/public_comments_and_tceq_responses_styrene.pdf.

In addition, the Compilation of Air Pollution Emission Factors (AP-42) Section 4.4-2 (the emission factors historically used to estimate styrene emissions from thermoset resin facilities) was removed from the United States Environmental Protection Agency (EPA) website, effective

March 18, 1998, because these emission factors were found to underestimate styrene emissions from some thermoset resin facilities. The Composites Fabricators Association, which was later renamed the American Composites Manufacturers Association (ACMA), released a revised set of emission factors for open molding known as Unified Emission Factors (UEF) in April 1999 and subsequently updated the UEF in July 2001. TCEQ has been using these emission factors for open molding since June 21, 1999, with the appropriate emission factors from AP-42 used for other processes such as closed molding. On February 20, 2007, the EPA reposted the AP-42 table on their website to be used as a reference for these processes.

The pre-UEF underestimation of styrene emissions, coupled with the TCEQ Toxicology Division's 2000 decision to lower styrene's ESL, makes it inappropriate to allow new or modified thermoset resin facilities to be authorized under the conditions of 30 TAC § 106.392. Therefore, the commission will consider rulemaking to repeal 30 TAC § 106.392 in a separate commission action. Permit holders currently operating under a PBR may continue to do so until their facilities are modified.

This standard permit provides a streamlined preconstruction authorization process that may be used for any thermoset resin facility complying with the standard permit requirements. Any thermoset resin facility with control equipment other than that specifically required by this standard permit is not eligible for authorization under this standard permit because case-by-case review is more appropriate for facilities whose emissions are high enough to require additional or other types of controls.

Many facilities authorized under the conditions of 30 TAC § 106.392 currently have a Title V permit, so the Air Permits Division does not expect this standard permit to alter the number of facilities that need a Title V permit. The Air Permits Division may consider the creation of a general operating permit. Owners or operators should continue to check the requirements reference table links to determine if the potential to emit at a site may be enough to trigger Title V requirements. If a thermoset resin facility is subject to a 40 CFR 63 Subpart, it will most likely be subject to PPPP, Surface Coating of Plastic Parts and Products, Subpart VVVV, Boat Manufacturing, or Subpart WWWW, Reinforced Plastic Composites Production, but it is also possible that it may be subject to another federal requirement. These subparts include requirements such as performance tests, monitoring, and recordkeeping.

III. OVERVIEW OF AIR QUALITY STANDARD PERMIT

The commission has adopted an air quality standard permit authorizing thermoset resin facilities under authority of the Texas Clean Air Act, Texas Health and Safety Code, § 382.05195, Standard Permit, and 30 TAC Chapter 116, Subchapter F, Standard Permits. The purpose of this standard permit is to simplify the commission's regulatory structure.

The standard permit is designed to allow for authorization of most thermoset resin facilities. However, it is not intended to provide an authorization mechanism for all possible unit configurations or for unusual operating scenarios. The owner or operator of those facilities that cannot meet the standard permit conditions may apply for a case-by-case review of an air quality permit under 30 TAC § 116.111.

IV. PERMIT CONDITION ANALYSIS AND JUSTIFICATION

The standard permit for thermoset resin facilities creates a new authorization mechanism for construction or modification of thermoset resin facilities that previously could be authorized under 30 TAC § 106.392 or 30 TAC Chapter 116. In a separate action, the commission will consider rulemaking to repeal the thermoset resin facility PBR contained in 30 TAC § 106.392.

The owner or operator of new and modified thermoset resin facilities not qualifying for this standard permit may apply for an air quality permit under 30 TAC § 116.111. The standard permit requires owners or operators of thermoset resin facilities to comply with certain administrative requirements, including registration, a fee, and executive director approval in most cases. The standard permit also includes recordkeeping requirements, as well as general requirements, including maximum emission limitations for volatile organic compounds (VOC) and exempt solvents. This standard permit requires renewal of registration every 10 years.

Applicability

Section (1) outlines the applicability criteria of the standard permit.

Subsection (1)(A) specifies that this standard permit applies to new units installed, or existing units modified, after the effective date of the standard permit. Permit holders currently operating under a PBR may continue to do so until their facilities are modified.

Subsection (1)(B) clarifies that new major stationary sources or major modifications do not qualify for the standard permit. Facilities defined as major with regard to federal NSR cannot be authorized by a standard permit according to 30 TAC Chapter 116.

Subsection (1)(C) prohibits the use of control equipment that is not specified in this standard permit at thermoset resin facilities. Case-by-case review is more appropriate for facilities whose emissions are high enough to need other controls. Specifically, a thermoset resin facility equipped with add-on controls (for example, a thermal oxidizer) for control of organic compound emissions is not allowed under this standard permit. This restriction is necessary to allow for an evaluation of the control system, monitoring, and stack testing protocol as part of the review for a case-by-case permit.

Subsection (1)(D) prohibits multiple authorizations for thermoset resin facilities at a site along with this standard permit to ensure that the standard permit is protective of air quality and public safety.

Subsection (1)(E) requires the owner or operator to include any existing thermoset resin facilities in the registration. This will allow the Air Permits Division to consolidate any previously approved thermoset preconstruction authorizations into one standard permit authorization.

Subsection (1)(F) clarifies that after the effective date of the thermoset resin standard permit, the Air Permits Division will no longer be accepting new registrations under 30 TAC §106.392 because it is to be repealed. It notes that facilities already authorized under 30 TAC §106.392 may continue to operate under this PBR as long as certain conditions apply.

Subsection (1)(G) reminds the owner or operator that the existence of this standard permit does not preclude them from applying for a case-by-case new source review permit instead.

Subsection (1)(H) provides an exemption from many of the standard permit's requirements for a thermoset resin facility having a thermoset resin usage of no more than 1 ton per rolling 12-month period in non-spraying operations and no more than 0.5 tons per rolling 12-month period in spraying operations. For example, such facilities would not have to register, pay a standard permit fee, obtain site approval, or meet ventilation requirements. However, the visible emissions requirements, pollution prevention requirements, and basic thermoset resin usage recordkeeping requirements would apply. Resin usage in this range is low enough to have no adverse effect on air quality or public safety.

Subsection (1)(I) exempts thermoset resin facilities using only resins other than polyester and vinyl ester from many of the standard permit's requirements. For example, these facilities would not have to register, pay a standard permit fee, obtain site approval, or meet stack height and time of operation restrictions. However, the pollution prevention requirements and thermoset resin usage recordkeeping requirements would apply. Resins of this type produce essentially no emissions, so would have no adverse effect on air quality or public safety.

Definitions

Section (2) of the standard permit contains definitions of gelcoat, hazardous air pollutant (HAP), thermoset resin, thermoset resin facility, and thermoset resin processes. The definition of HAP refers to the federal definition of this term, and the other terms are intended to be consistent with the facilities covered by this standard permit.

Administrative Requirements

Section (3) of the standard permit outlines the administrative requirements for thermoset resin facilities using more than one ton of resin per rolling 12-month period in non-spraying operations, or more than 0.5 tons of resin per rolling 12-month period in spraying operations. Subsection (3)(A) requires registration of the facilities in accordance with the regulatory requirements of 30 TAC § 116.611, Registration to Use a Standard Permit. The compounds authorized under this standard permit are volatile organic compounds and exempt solvents that have been predicted to produce acceptable off-property concentrations based upon refined atmospheric dispersion modeling. Consequently, subsection (3)(A) specifies that the emissions and distance limitations of 30 TAC § 116.610(a)(1), Applicability do not apply to thermoset resin facilities under this standard permit.

Subsection (3)(B) requires compliance with 30 TAC § 116.614, Standard Permit Fees, which requires a fee of $900 for any standard permit registration unless otherwise specified in a particular standard permit. As noted in the discussion of subsection (1)(H), no fee is required of a thermoset resin facility having a thermoset resin usage less than or equal to 1 ton per rolling

12-month period in non-spraying operations and less than or equal to 0.5 tons per rolling 12-month period in spraying operations. Thermoset resin facilities having a thermoset resin usage greater than these thresholds would require a $900 standard permit registration fee.

Subsection (3)(C) states that facilities cannot be constructed or operated until the applicant obtains written approval of the registration from the executive director. The waiver of executive director approval after 45 days specified in 30 TAC § 116.611(b) does not apply, because thermoset resin facilities emit volatile organic compounds that are prone to producing odor nuisances.

General Requirements
Section (4) of the standard permit outlines the general requirements.

Subsection (4)(A) addresses maintenance, start-up, and shutdown emissions within this standard permit. Start-up and shutdown emissions that are not distinguishable from other operation times are not expected with this type of facility. The maintenance requirements are outlined in sections (4) through (6).

Subsection (4)(B) establishes a visible emissions limitation of five percent opacity, using Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Appendix A, Test Method 9. Subsection (4)(B) specifies restrictions to the observations and states that the observations are to be made while the facility is in operation. These visible emissions limitations represent best available control technology (BACT) for thermoset resin facilities.

Subsection (4)(C) clarifies that facilities certifying that emissions will be limited to less than 10 tons for each individual HAP and less than 25 tons for each individual HAP are exempt from the requirements listed in (4)(D)(i)-(iv).

Subsection (4)(D) specifies that the owner or operator shall meet applicable requirements of 40 CFR Part 63, Subparts PPPP, VVVV, and WWWW if the site is major for hazardous air pollutant emissions. It also states that the owner or operator shall meet any other applicable federal requirement not otherwise specified because the subparts that are listed are not an exhaustive list of all potentially applicable rules.

Subsections (4)(E) and (4)(F) specify that the owner or operator shall control particulate matter (PM) emissions from gelcoat or resin spraying and trimming, grinding, or sanding by using dry filters having a PM control efficiency of at least 98 percent as determined by American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 52.1, Gravimetric and Dust Spot Procedures for Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter. This represents BACT for thermoset resin facilities based on representations in recent permit applications and the widespread availability of dry filters having a PM control efficiency of at least 98 percent.

Subsection (4)(G) specifies a minimum face velocity of 100 feet per minute across the open face of each booth or work area so proper ventilation of emissions will occur through the stack.

Subsection (4)(H) specifies that the owner or operator shall operate exhaust fans while conducting thermoset resin processes and, in the case of processes that result in VOC or exempt solvent emissions, for an additional half hour after processing. These requirements are necessary to ensure 100 percent capture of emissions, which, in turn, is necessary for acceptable off-property concentrations of the various air contaminants.

Subsection (4)(I) requires vertical discharge of emissions which is necessary to reduce off-property concentrations to acceptable levels.

Subsection (4)(J) requires the use of vertical stacks of a specified height to aid in dispersion of pollutants. It is expected that some owners and operators of existing facilities that seek authorization under this standard permit will need to install new or extend existing stacks in order to meet these requirements.

Subsection (4)(K) establishes ventilation requirements and the maximum allowable area of openings in the production area. These requirements are necessary to ensure capture of emissions necessary for acceptable off-property concentrations.

Subsection (4)(L) establishes requirements for bulk resin and cleaning solvent storage tanks, including submerged fill pipes, venting to a booth or work area exhaust stack, using white or aluminum paint on exterior surfaces exposed to the sun to reduce heat and vaporization, and filling only one tank at a time. These requirements represent BACT based on representations in recent permit applications and are necessary to ensure acceptable off-property concentrations.

Subsection (4)(M) restricts resin application and cleaning operation times to the period between 5:00 a.m. and 10:00 p.m. This is necessary due to the higher off-property concentrations predicted by atmospheric dispersion modeling during night-time meteorological conditions.

Pollution Prevention

Section (5) of the standard permit outlines the pollution prevention and good housekeeping requirements. These requirements represent BACT for thermoset resin facilities and help to reduce off-property concentrations.

Subsections (5)(A) and (B) include storage requirements that are included to minimize emissions.

Subsection (5)(C) describes requirements for clean up of spills and details what should be done with the waste.

Subsection (5)(D) requires PM collected from booths and other areas to be handled in a way that prevents emissions.

Subsection (5)(E) requires the booth and work area filters to be replaced and handled according to manufacturer specifications such that fugitive PM emissions do not occur.

Subsection (5)(F) requires maintenance of equipment according to the manufacturer's

instructions.

Subsection (5)(G) requires owners or operators to conduct activities that may result in the emission of air contaminants inside the production area in order to prevent fugitive emissions.

Subsection (5)(H) specifies that owners or operators shall keep one complete change of dry filters for each booth or work area on site.

Subsection (5)(I) specifies that these requirements do not supersede or negate any other applicable state or federal waste requirements.

Emission Limitations

Section (6) of the standard permit establishes the emission limitation requirements for thermoset resin facilities using more than one ton of resin per rolling 12-month period in non-spraying operations or more than 0.5 tons per rolling 12-month period in spraying operations.

Subsection (6)(A) establishes tables for determining the maximum allowable styrene, alpha-methylstyrene, and methyl methacrylate (MMA) emission rates. These rates are a function of the building height, stack height, and exhaust flow rate and are based on the results of the air dispersion modeling analysis and protectiveness review.

Subsection (6)(B) establishes the maximum allowable cleanup solvent usage rates. These rates are based upon a review of prior permits issued for thermoset resin facilities. As an alternative to meeting these maximum allowable solvent usage rates, an owner or operator may elect to use a solvent having a low vapor pressure or low VOC or exempt solvent content, as provided in subsection (6)(C).

Subsection (6)(D) specifies that the owner or operator shall use agency approved emission factors in calculating the styrene, alpha-methylstyrene, and MMA emission rates.

Subsection (6)(E) limits the site-wide total of VOC and exempt solvent emissions to 50 tons per rolling 12-month period and prohibits the use of control equipment to meet this emission limit other than that specifically required by this standard permit. The 50 ton cutoff was selected to provide the commission the ability to conduct a case-by-case review of the economic reasonableness of controls for larger thermoset resin facilities. Also, as noted earlier, case-by-case review is more appropriate for facilities whose emissions are high enough to warrant consideration of controls other than those specifically required by this standard permit.

Recordkeeping

Section (7) of the standard permit establishes the recordkeeping requirements that thermoset resin facilities using more than one ton of resin per rolling 12-month period shall meet in order to use this standard permit. The 60-month record retention period and availability requirements are consistent with those established in case-by-case permits and ensure compliance with the conditions of the standard permit.

Subsection (7)(A) requires that documentation be kept that shows the maximum weight percent

of the volatile ingredients for the various raw materials.

Subsection (7)(B) requires daily records of material usage and the actual hours of operation. This documentation is necessary for calculation of emission rates to demonstrate compliance with the standard permit.

Subsection (7)(C) requires a monthly report (to be kept on site) that represents the VOC, exempt solvent, and HAP emission rates in pounds per hour on a daily average basis and tons emitted for the previous 12-month period. This documentation is necessary to demonstrate compliance with the emission rates in the standard permit.

Subsection (7)(D) requires documentation of the face velocity and filter efficiency for each booth or work area.

Subsection (7)(E) requires documentation of the maximum allowable area of openings if the owner or operator elects to use the ventilation requirement under paragraph (4)(K)(ii).

Subsection (7)(F) specifies that if 40 CFR Part 63, Subpart PPPP, Subpart VVVV, Subpart WWWW, or any other federal requirements are applicable, the owner or operator shall maintain records and follow reporting requirements as specified in the applicable subpart(s).

Subsection (7)(G) requires documentation of either quarterly opacity observations using Test Method 9 or of visible emissions observations.

Subsection (7)(H) specifies that the owner or operator may maintain records in hard copy or electronic format.

V. PROTECTIVENESS REVIEW

Modeling was performed for a typical thermoset resin facility with building dimensions of 200 feet long and 100 feet wide, and a stack diameter of 3 feet. After finding that night-time meteorological conditions caused atmospheric dispersion modeling to predict higher off-property concentrations, the Air Permits Division decided on an operating schedule of 5:00 a.m. to 10:00 p.m. The modeling analysis used surface meteorological data from Austin and upper air meteorological data from Victoria for the years 1983, 1984, 1986, 1987, and 1988. Because the analysis was primarily for short-term concentrations, this five-year data set included worst-case short-term meteorological conditions that could occur anywhere in the state. The wind directions were used at ten-degree intervals to be coincident with the receptor radials. This provided predictions along the plume centerline, which was a conservative result. Preliminary modeling results indicated that short-term styrene emissions are the limiting factor, based upon predicted ground-level concentrations. Because styrene is prone to odor nuisance problems, and owners or operators typically encounter difficulty in achieving acceptable off-property concentrations from thermoset resin facilities, the standard permit conditions were written to ensure that no fugitive emissions occur, thereby reducing the off-property concentrations significantly.

Forty-five scenarios representing all combinations of building height (20, 25, and 30 feet), stack height (1.5, 2.0, and 2.5 times the building height), and exhaust stack flow rate (15,000, 20,000, 25,000, 30,000, and 35,000 cubic feet per minute) were modeled using the ISCST3 (version 02035) air dispersion model. The modeling results were used to develop the tables in the standard permit that establish the maximum allowable emission rates as a function of the building height, stack height, and exhaust flow rate.

The next step in the process is the health effects review in which the air dispersion modeling predicted maximum concentrations are compared to the appropriate ESLs. ESLs are guideline ambient air chemical concentrations derived by the commission's Toxicology Division and used to evaluate the potential for adverse health and welfare effects among the general population. ESLs are based on data concerning health effects, potential nuisance odor, and vegetative effects. However, ESLs are not ambient air standards. If predicted or measured airborne chemical concentrations do not exceed the ESL, adverse health or welfare effects are not expected. If ambient air concentrations exceed the ESL, it does not necessarily indicate a problem, but triggers a more in-depth review.

The maximum allowable emission rates for styrene listed in the tables in the standard permit are established so that the predicted maximum 1-hour concentrations will not exceed styrene's current ESL of 110 $\mu g/m^3$, alpha-methylstyrene's current ESL of 250 $\mu g/m^3$, or methyl methacrylate's current ESL of 340 $\mu g/m^3$ for any of the thirty scenarios referenced above. The maximum allowable emission rates were obtained by dividing the ESL for each pollutant by the generic concentration predicted by the model for each scenario. The values listed in the tables in the standard permit are the maximum allowable emission rates truncated to three significant digits. No setback distance was included because the maximum allowable styrene emission rates for all modeling scenarios ensure that predicted maximum ground-level concentrations do not exceed the styrene ESL. Staff have reviewed the proposed standard permit for compliance with the most recent national ambient air quality standards (NAAQS) including $PM_{2.5}$, and have determined that when applicable control is used and proper operating procedures are followed, compliance with the NAAQS should be achieved.

VI. PUBLIC NOTICE AND COMMENT PERIOD

In accordance with 30 TAC § 116.603, Public Participation in Issuance of Standard Permits, the TCEQ published notice of the proposed standard permit in the *Texas Register* and newspapers of the largest general circulation in Austin, Corpus Christi, Dallas, Houston, and Lubbock. The date for these publications was April 1, 2010. The public comment period was from the date of publication until May 10, 2010. During the public comment period for the proposal of the thermoset resin standard air permit, the TCEQ received comments from the following groups: Acoustical Resources (AR), the American Composites Manufacturers Association (ACMA), Guida, Slavich & Flores representing the American Composites Manufacturers Association and its Texas member companies (ACMA), Austin Marble Co., Inc. (Austin Marble), Belco Manufacturing Company (Belco), Benton and Associates (Benton), Composites One, the United States Environmental Protection Agency (EPA), Fibergrate Composite Structures, Inc. (Fibergrate), Gulf Coast Composite Marine Specialist, Inc. (Gulf Coast), Harless Benthul for Gulf Coast Composite Marine Specialist, Inc. (Gulf Coast), Kamal, Inc. dba Venetian Marble

and Granite (Kamal), Mainland Custom Marble (Mainland), Molded Fiber Glass Companies/Texas (MFG), Titan Engineering, Inc. (Titan), Venetian of Lubbock (Venetian), Waco Boom Co., Ltd (Waco Boom), and West U Marble Company, LLC (West U).

VII. PUBLIC MEETING

A public meeting on the proposed standard permit was held on May 6, 2010, 10:00 a.m., at the TCEQ, Building E, Room 201S, 12100 Park 35 Circle, Austin, Texas. The meeting was structured for the receipt of oral or written comments by interested persons. Austin Marble, Gulf Coast, and MFG made oral comments during the meeting.

VIII. ANALYSIS OF COMMENTS

AR, ACMA, Austin Marble, Belco, Benton, Composites One, Fibergrate, Kamal, Mainland, MFG, Venetian, and West U asked that the TCEQ Toxicology Division staff revise the odor-based styrene ESL. ACMA commented that odor is not expressly mentioned in the Texas Clean Air Act as something to be regulated in regard to the protection of "human health and welfare", and asserted that because there is not an emphasis on odor regulation at the federal level, the TCEQ is not obligated to regulate odor concerns. ACMA stated that PBRs and standard permits are required by law to be based on protection of human health, and asserted that it is unlawful to calculate or limit allowable emissions in a standard permit using styrene's ESL. ACMA noted that no thermoset resin facilities can currently meet the current styrene ESL. ACMA added that even though TCEQ contacted the toxicology excellence for risk assessment (TERA), their advice regarding the use of sensory irritation rather than odor as a basis for the styrene ESL was disregarded by the commission, so the validity of the Toxicology Division's ESL study is questionable. ACMA further stated that failure by the TCEQ to derive a health-based styrene ESL would be arbitrary, capricious, and contrary to law.

Although the revised odor-based ESL was applied when developing emission limits for the thermoset resin standard permit, revision of the odor-based ESL is not part of this action. Revision of the ESL occurs as a separate action through the Toxicology Division. In accordance with the Texas Health and Safety Code, the Texas Clean Air Act (TCAA) §382.002, Policy and Purpose, the commission is tasked with safeguarding the state's air resources, including "controlling or abating air pollution and emissions of air contaminants, consistent with the protection of public health, general welfare, and physical property, including the esthetic enjoyment of air resources by the public and the maintenance of adequate visibility." The TCAA § 382.003, Definitions, defines air pollution to mean the presence in the atmosphere of one or more air contaminants or combination of air contaminants in such concentration and of such duration that: (A) are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property; or (B) interfere with the normal use or enjoyment of animal life, vegetation, or property." Potential impacts to human health and welfare or the environment are determined by comparing air dispersion modeling predicted emission concentrations from the proposed facility to appropriate state and federal standards and

effects screening levels.[1] The specific health-based standards or guidance levels employed in evaluating the potential emissions include the National Ambient Air Quality Standards (NAAQS); TCEQ standards contained in 30 TAC Chapter 112, Control of Air Pollution From Sulfur Compounds, specifically, 30 TAC § 112.3, Net Ground Level Concentrations, and 30 TAC § 112.41, Allowable Emissions; and TCEQ ESLs.[2] Because the primary air contaminant at issue for the thermoset resin standard permit, styrene, is not subject to the NAAQS, TCEQ reviews this pollutant by comparing predicted concentrations against the appropriate ESL. Odor-based ESLs are a useful tool used for addressing the commission's mandate to protect public welfare and public enjoyment of air resources. The current short-term ESL for styrene is 110μg/m^3 which is an odor-based ESL. It was developed by conducting a comprehensive literature search, consideration of all available styrene odor studies, and selection of the appropriate odor detection threshold among the studies that meet the American Industrial Hygiene Association (AIHA) and EPA odor evaluation criteria. The odor-based ESL is considered reliable, valid and scientifically based; therefore, it is used to set the odor-based ESL for styrene. ESLs, along with other data, are used during an effects review to determine emission limits and controls found in a permit. Through use of odor-based ESLs, the commission minimizes the potential for interference with use and enjoyment of neighboring properties. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the Toxicology Division was not legally compelled to lower the styrene ESL because the TCEQ 2006 ESL Guidance (RG-442) is not a rule, and the decision to lower the styrene ESL is discretionary. ACMA added that toxicology's proposed development support document did not include any practical support for lowering styrene's ESL. Austin Marble expressed agreement with ACMA.

The Toxicology Division agrees with this comment that the ESL guidance is not a rule. It is regulatory guidance for the development of ESLs and other toxicity benchmarks used for the evaluation of air permit reviews and air monitoring data and to ensure that the derived ESLs are scientifically valid and protective to the general public. The current short-term ESL for styrene of 110μg/m^3 is the lowest reported odor detection threshold from among the more recent studies that meet the AIHA and EPA acceptability criteria and is considered reliable, valid, and scientifically based.

ACMA, AR, Austin Marble, Belco, Composites One, Fibergrate, Kamal, Mainland, Venetian, and West U commented that styrene's low ESL makes the requirements of the standard permit too restrictive. ACMA, AR, Austin Marble, Belco, Benton, Composites One, Fibergrate, Gulf Coast, Kamal, Mainland, MFG, Venetian, and West U commented that the styrene ESL is so low that the corresponding standard permit stack and ventilation system requirements would be too expensive and could prevent growth of this industry in Texas without benefit to the public health or welfare. Gulf Coast added that installing stacks to a large facility is too expensive for a system that does not truly control styrene emissions, but vents it into the atmosphere. Austin

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[1] Documents referenced in this response are available on the TCEQ website at www.tceq.state.tx.us and are also available in printed form at a small cost from the TCEQ Publications office at 512-239-0028.

[2] To view the ESL list or obtain more information on ESLs, visit the TCEQ website at http://www.tceq.state.tx.us/implementation/tox/esl/list_main.html.

Marble added that for large warehouse ventilation systems to comply with the proposed standard permit, power consumption and costs associated with increasing the flow rate would increase so drastically that many jobs would be lost. Austin Marble added that there are many thermoset facilities currently in the state that are already moving locations due to the proposed standard permit costs and the present economy. ACMA added that this is especially true since the equivalent 1-hour ESL values for styrene in other states range from 1,704 to 21,000 $\mu g/m^3$.

The main requirements in the standard permit that are different from the current thermoset resin facilities PBR requirements are to extend already required stacks, to install additional exhaust fans, air filters, and a submerged fill pipe for any storage tanks onsite. The commission finds these requirements to be appropriate for thermoset resin facilities, and venting emissions properly through a stack of appropriate height is a scientifically acceptable method of safely dispersing emissions such as styrene. Odor-based ESLs are a useful tool used for addressing the commission's mandate to protect public welfare and public enjoyment of air resources. When developing chemical-specific ESLs, the Toxicology Division follows TCEQ's 2006 regulatory guidance document, Guidelines to Develop Effects Screening Levels, Reference Values, and Unit Risk Factors (RG-442) to ensure that the derived ESLs are scientifically valid and protective of the general public. For the derivation of toxicity values, the Toxicology Division does not consider factors such as control costs, economic impact, and attainability, although these issues could affect risk management decisions in the use of ESLs. To address the commenters' concerns about stack height and costs, commission staff conducted additional air dispersion modeling to establish a new Table 1 that applies to stack heights that extend at least 1.5 times (but less than two times) the manufacturing building peak height above ground level.

ACMA commented that the science of detecting odors has not progressed to the same level of scientific and statistical verifiability as health effects sciences, such as animal toxicity testing; scientific studies confirm that odor perception is highly subjective and that anticipation, mood, and bias can play significant roles; and odor detection thresholds measured in the laboratory in a single study are a very weak basis for any standard or guideline for acceptable ambient exposure. ACMA recommended that the TCEQ should not use odor threshold data in a manner other than setting the lowest data point for styrene's ESL. ACMA also commented that the thermoset resin facilities PBR should not be repealed based on a lowered ESL for styrene, because the new number is based on an odor-based study. Austin Marble expressed agreement with ACMA.

The Toxicology Division agrees with ACMA's comments on the overall quality of odor detection studies, but it is important to recognize that ESLs are intended to be guidelines and not strict standards. ESLs are used in the air permitting process to evaluate the protectiveness of chemical-specific emissions for a facility undergoing air permit reviews. The Toxicology Division conservatively sets ESLs at the low end of reported scientifically valid toxicity or odor data, which meets the acceptability criteria by AIHA and EPA. Unlike standard permits or permits by rule, when applying the odor-based ESL in a case-by-case new source review air permit application review, the option to consider the nature of the odor, the surrounding land use, the frequency of odor-based ESL exceedance, and

the odor complaint history at the site, is built into the permitting process. Standard permits must consider many different facility types and locations, and thus cannot include the kind of case specific and location specific data evaluated for new source review applications. According to the Texas Health and Safety Code, §382.002, the powers of the commission, including the issuance of air permits, are used for "controlling or abating air pollution and emissions of air contaminants, consistent with the protection of public health, general welfare, and physical property, including the esthetic enjoyment of air resources by the public and the maintenance of adequate visibility." Odor-based ESLs are a useful tool used for addressing the commission's mandate to protect public welfare and public enjoyment of air resources. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA requested that TCEQ's Toxicology Division use a different study to revise the ESL for styrene since the agency did not follow the opinions of authoritative bodies and the best scientific literature. ACMA stated that EPA, and the Agency for Toxic Substance and Disease Registry both rely on the study, J.E. Amoore and E. Hautala (1983). ACMA stated that these agencies used this study because none of the other studies available, including Stalker (1963) that was used by TCEQ, met all of the applicable methodology and study design criteria. ACMA also commented that the Stalker (1963) study is flawed because it did not employ the forced-choice method that would address the problem of more sensitive clinical perception. ACMA suggested using either the Amoore and E. Hautala (1983) study or the Dalton et al. (2003) study in evaluating styrene's ESL, which would place the styrene odor threshold at over 1,000 $\mu g/m^3$. ACMA suggested a styrene ESL of 1,200 $\mu g/m^3$, since it is close to the results of ACMA's suggested studies and Arkansas' styrene ESL, and would be closer to a geometric mean of multiple odor studies. ACMA also commented that the Toxicology Division's arbitrary selection of one or more of the reported studies that provided lower odor detection thresholds would arbitrarily and unscientifically elevate the standing of these low-threshold studies. MFG requested that the Toxicology Division re-evaluate styrene's ESL if new EPA research didn't match the ESL. ACMA also commented that the TCEQ should not repeal the PBR based on the lower styrene ESL since the new number is based on a 1963 study. Austin Marble expressed agreement with ACMA.

Although revision of the ESL for styrene is not the purpose of, or within the scope of this action, the Toxicology Division expressed a willingness to consider re-evaluating styrene's ESL if new data or issues were brought to their attention. No data was presented that would cause re-evaluation of the ESL. The Toxicology Division also stresses that the ESLs are intended to be guidelines (not standards), and it is typical for it to use the lowest threshold identified by odor studies that meet EPA and AIHA criteria. In August of 2008, the Toxicology Division finalized the styrene ESL at 110 $\mu g/m^3$ based on the van Doorn et al. (2002) study and did not lower the ESL to the previously proposed level of 73 $\mu g/m^3$ that was based on the Stalker (1963) data. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the Toxicology Division's approach to setting a styrene odor-based ESL is flawed because the odor-based portion of the ESL guidance did not receive approval from its external peer review committee. ACMA further proposed that the Toxicology Division

be required to convene an external expert panel, follow the recommendations of Drs. Dalton and Jacquot, and be required to obtain concurrence by the panel on the establishment of a styrene odor detection threshold. Austin Marble expressed agreement with ACMA.

Revision of the ESL for styrene, and the process in doing so, is not the purpose or within the scope of this action. The comment appears to be a belated comment on TCEQ RG-442 which was available for public comment in April 2005 and May 2006. The TCEQ Responses to Peer Review Report, including the responses to Dr. William Cain's written review of odor-based ESLs, was available in November 2006 therefore, the Toxicology Division will not convene an additional external expert panel on the establishment of odor-based ESLs. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the process for agreeing on styrene's ESL between Toxicology and Risk Assessment (TARA) and TERA was opaque and excluded stakeholders. Austin Marble expressed agreement with ACMA. MFG added that stakeholders should have the opportunity to be involved in the process of determining styrene's ESL.

The commission disagrees with this comment, because the Toxicology Division's ESL review process included a stakeholder review and comment period, in which ACMA and other stakeholders participated. The comment period started on January 16, 2008, and ended on March 17, 2008. The process followed all required public participation processes. Also, in 2006, a panel of expert scientists conducted an external peer review of the draft RG-442 prepared by the TCEQ. The external peer review was organized by TERA; this guidance document also underwent two rounds of public comments. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA stated that TCEQ's comparison of styrene's ESL to South Coast Air Quality Management District actions is invalid. Austin Marble expressed agreement with ACMA.

This comment is not relevant to styrene's ESL review or the thermoset resin standard air permit.

ACMA commented that styrene's odor-based ESL is contrary to protecting public welfare, because jobs and products produced from this industry serve to improve public welfare and this industry will likely cease to locate new thermoset facilities in Texas. Austin Marble expressed agreement with ACMA.

The Texas Clean Air Act considers protection of human health and welfare in the context of protecting people and animals from the potential adverse affects from exposure to air contaminants, as exposure may affect use and enjoyment of their property. In this context, financial gain is not considered part of welfare. Furthermore, owners or operators currently operating under a PBR may continue to do so until their facilities are modified. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the Toxicology Division has overlooked the unaffordability of air pollution control equipment in setting styrene's ESL. ACMA stated that lowering styrene's ESL would keep smaller composites manufacturers from being able to comply with this ESL, and as a result, would force them to install capture and oxidation control equipment. ACMA further commented that EPA's MACT-related decision on the affordability of air pollution control equipment is an independent, reliable resource that should guide the Toxicology Division in setting the styrene ESL. Austin Marble expressed agreement with ACMA.

When developing chemical-specific ESLs, the Toxicology Division follows TCEQ's 2006 regulatory guidance document, RG-442 to ensure that the derived ESLs are scientifically valid and protective of the general public. The ESL guidelines were also reviewed by EPA staff. For the derivation of toxicity values, the Toxicology Division does not consider factors such as control costs, economic impact, and attainability, although these issues could affect risk management decisions in the use of ESLs. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA, AR, Belco, Benton, Composites One, Fibergrate, Kamal, Mainland, MFG and Venetian commented that the styrene ESL was lowered without very many odor complaints from people living near their plants. Austin Marble expressed agreement with ACMA and Benton. ACMA added that they are troubled by odor complaints dictating the lowering of styrene's ESL. ACMA further stated that it prefers to support the use of good ventilation practices to proactively address odor issues.

ESLs are not developed in response to odor complaints, but rather to ensure consistency with TCEQ's 2006 regulatory guidance document, RG-442, that underwent external scientific peer review and two rounds of public comment. Furthermore, development of styrene's odor-based ESL included a comprehensive literature search, consideration of all available styrene odor studies, and selection of the appropriate odor detection threshold among the studies that meet the AIHA and EPA odor evaluation criteria. The TCEQ appreciates ACMA's comment that they support the use of good ventilation practices.

ACMA commented that the Odor Complaint Investigation Procedures Guidance, dated January 3, 2005, should be used in determining an acceptable amount of odor occurrence instead of using the styrene limits found in the proposed standard permit. ACMA commented that the agency is legally required to consider and act on all of its guidance documents and the selective reliance on air dispersion modeling is legally arbitrary and capricious. They specifically approved of the odor-related variables of frequency, intensity, offensiveness, and duration (FIDO) for determining the presence of a nuisance. ACMA stated that using the FIDO system would be more reasonable than the "zero-tolerance" for styrene odor that is included in the draft standard permit. Austin Marble expressed agreement with ACMA.

The FIDO guidance is an appropriate tool used when responding to odor complaints. However, it does not provide a basis for establishing limits for emissions or exposure in permits. Conversely, TCEQ uses the ESL system for establishing appropriate exposure concentrations in air permits for which there are not federally established limits. In this case, the odor-based ESL is intended to prevent an odor problem from occurring and is

used to determine appropriate permit requirements. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA stated that because odor is subjective in relation to what constitutes a nuisance, odor concerns should be handled by local ordinance and state nuisance laws. Austin Marble expressed agreement with ACMA. ACMA added that EPA supports a local, complaint-driven approach in handling nuisance odors.

Although municipalities may develop and enforce local ordinances concerning odors that may constitute a potential nuisance, 30 TAC § 101.4, Nuisance, states, "No person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property." To prevent or minimize the potential for odor nuisances, TCEQ establishes emission limitations, set-back distances and other permit requirements such as those found in the thermoset resin standard permit to protect the public. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the TCEQ had at one time considered styrene odors minimally objectionable and unpleasant with the rating of unpleasant as being the second-lowest of the TCEQ Enforcement Division's nuisance odor categories. Austin Marble expressed agreement with ACMA.

Nuisance odor categories used to determine the severity of a nuisance condition were not used to establish the ESL, nor the standard permit's styrene emission limits. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the repeal of the PBR and promulgation of the thermoset resin standard permit would codify the ESL and would be arbitrary, capricious, and contrary to law. ACMA stated that the Texas Legislature has, at least twice considered and rejected codifying the TCEQ's entire ESL list, so the agency does not have the legal authority to codify an ESL. ACMA also commented that codifying the ESL for styrene would constitute selective and unlawful regulation of the composite industry because the agency is not proposing codifying the ESL for any other chemical compound. ACMA commented that directly or indirectly codifying the styrene ESL would be an unlawful avoidance of state administrative procedural requirements and rulemaking procedures. ACMA commented that incorporating the ESL into the standard permit would keep the agency from modifying ESLs informally and would go against the Toxicology Division's intentions behind the creation of the ESLs. Austin Marble expressed agreement with ACMA.

Although the ESL was used as the basis for establishing the emission limitations and other permit requirements, it has not been codified as a matter of law. The ESL for styrene was established in compliance with all required administrative procedural processes. As with any evaluation method, permits and ESLs are subject to periodic change as better information becomes available. The ESLs are derived through standard methodologies

including measurements, statistical evaluation, and the application of engineering and regulatory experience. Furthermore, the thermoset resin standard permit is only one of the potential methods of authorization for this type of operation. Owners or operators currently operating under a thermoset resin facilities PBR may continue to do so until their facilities are modified. Additionally, evaluation of new source review applications will include site and case-specific considerations applying the ESL evaluation methodologies as applied to all air emissions to which an ESL applies. Therefore, the regulation of styrene is not selective enforcement but recognition of its potential for off-property impacts. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA stated that TCEQ seems to lack internal consistency in setting odor-based ESLs. ACMA stated that internal TCEQ guidance such as RG-442, is not a valid basis for using the lowest accepted odor threshold in setting the styrene ESL. ACMA commented that only nine of the 38 odor ESLs in the AIHA's 1989 study follow the Toxicology Division's selection policy. ACMA stated that even though RG-442, maintains that ESLs are to be set at the lowest odor threshold, vegetative impact threshold and human health impact, there is no need for styrene to follow this, because the agency is not consistent with following this approach with all pollutants. Austin Marble expressed agreement with ACMA.

The TCEQ Toxicology Division has criteria for setting odor-based ESLs. Section 1.6.2.2, Odor-Based ESLs, of the RG-442 indicates that to set appropriate ESL values for odorous air contaminants, the odor threshold values for chemicals that have been critiqued and accepted by AIHA and EPA or current odor studies that have been conducted in accordance with criteria established by AIHA and EPA are considered first. To keep up to date with newer findings, and to specifically address how odor-based ESL values are set, the Toxicology Division uses selection criteria outlined in the RG-442 which states, in general, odor detection values defined as Level 1 by the NAC/AEGL Committee (van Doom et al. 2002) and the Netherlands National Institute for Public Health and the Environment (Ruijten et al. 2009) will be considered first in setting the ESL values. If no Level 1 values are available, Level 2 quality data will be considered. If no Level 1 or 2 odor thresholds are available, then Level 3 quality data that meet the criteria from the AIHA and EPA may be used. The Toxicology Division believes that odor-based ESLs for constituents determined by using the geometric mean of reported Level 1 or Level 2 thresholds instead of the lowest odor threshold to set the odor-based ESL is objective and is protective of general welfare, including the esthetic enjoyment of air resources by the public. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented in detail about the Toxicology Division's RG-442. ACMA and MFG requested that the TCEQ explain the exclusion of styrene from the RG-442. Austin Marble expressed agreement with ACMA.

Comments regarding the development of styrene's ESL are beyond the scope of this action. The development of the styrene ESL is part of a different and distinct process that has its own public comment and participation process. The interim guidelines would use

the lowest acceptable reported odor threshold in lieu of the geometric mean only for odorous constituents that have been extensively measured in the field and consistently reported by TCEQ highly trained monitoring staff members or field investigators as experiencing noticeable and unpleasant smells, nausea and headaches at certain measured concentrations. The TD believes that the proposed exception from using the geometric mean of Level 1 or Level 2 quality odor data will assure the protectiveness of potential odor nuisance for certain odorous constituents.

AR, ACMA, Belco, Composites One, Fibergrate, Kamal, Mainland, MFG, Venetian, and West U requested that 30 TAC §106.392 not be repealed. ACMA and Austin Marble commented that the repeal of the PBR is being proposed without very many odor complaints. Austin Marble commented that the changing rules bring uncertainty to its business and asked if the state needed to improve something that is already improving and regulated by the State.

The repeal of the PBR is beyond the scope of this action. Notwithstanding, the revision to the ESL for styrene necessitated its repeal or revision. The TCEQ has trended toward the creation of standard permits in lieu of PBRs because they provide additional flexibility for registrants, and facilitate enforcement process necessary to protect the public. Unlike the PBR, the standard permit would regulate emissions rather than materials usage, using various scenarios of building and stack height, building square footage, and flow rate. This allows the regulated facility flexibility and capacity for growth provided it meets the emission limits. A standard permit provides an efficient mechanism for qualifying facilities to obtain authorization and is an alternative to a case-by-case air quality permit which requires site specific modeling. If the standard permit were not adopted, all thermoset resin facilities would be required to apply for a case-by-case permit. As research is completed, it is common for emission factors to change over time. It is part of the commission's permitting process to revise and sometimes repeal PBRs based on new information. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that styrene emissions are not higher than the numbers expected in the PBR since the thermoset industry made a transition to pollution prevention technologies in anticipation of EPA's promulgation of applicable MACT requirements. Austin Marble expressed agreement with ACMA.

Before 2000, the ESL that the thermoset resin PBR limits were based on was 215 $\mu g/m^3$. Between August of 2007 and August of 2008, the TCEQ Toxicology Division reevaluated styrene's ESL and concluded that an ESL of 110 $\mu g/m^3$ is appropriate for styrene. The emission limits in the standard permit were based on styrene's current ESL. The thermoset resin standard air permit was not changed as a result of this comment.

MFG commented that stakeholders should have the opportunity to be involved in the process of deciding whether or not to repeal the PBR.

Although the repeal of the PBR is not within the scope of this action, both the thermoset resin standard air permit project and the thermoset resin PBR repeal project have

included a stakeholder meeting, as well as a public notice, comment period, and public meeting. The thermoset resin standard permit comment period was from March 26, 2010 to May 10, 2010 and the permit by rule repeal comment period was from July 2, 2010 to August 16, 2010.

In dealing with PBR issues, Belco commented that it has found TCEQ staff in Waco to be fair, thorough, and professional.

The commission appreciates the support.

Austin Marble commented that in order to stay permitted under its PBR, it must restrict its business growth which keeps the business from the increase in revenue that would pay for new systems and other operating costs.

The proposed standard permit and the case-by-case NSR permit will be available for thermoset resin facilities already permitted under the PBR that are planning on growing until the facility would no longer be able to qualify for, or comply with the PBR. Whether a company chooses to restrict its business growth such that the conditions of the PBR continue to be met or chooses to obtain a different NSR authorization is a business decision that the company makes after weighing the various pros and cons of the available choices. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that TCEQ's reasoning for repealing the PBR was faulty, because material usage does not directly relate to the hourly emissions or its dispersion. Austin Marble expressed agreement with ACMA.

Although the repeal of the PBR is not within the scope of this action, in addition to material usage, the Air Permits Division established limits based on building height, stack height, and flow rate for the standard permit. The combination of these factors was considered in conjunction with resin types in processes that have typically been permitted in Texas. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that TCEQ's reasoning for repealing the PBR was faulty, because the VOC limits in 30 TAC § 106.4, Requirements for Permitting by Rule, of 25 tons per year was ignored. Austin Marble expressed agreement with ACMA.

Although the repeal of the PBR is not within the scope of this action, the thermoset resin facilities PBR limits are not as stringent as the general limits found in 30 TAC § 106.4. This is another valid reason to repeal § 106.394.

ACMA and MFG asked the Air Permits Division to clarify their policy of granting NSR permits to facilities with emissions above styrene's ESL. Austin Marble expressed agreement with ACMA. MFG commented that styrene's lower ESL would also cause case-by-case permits to be unnecessarily more stringent.

If predicted airborne levels of a constituent do not exceed the screening level, adverse health or welfare effects are not expected. If predicted ambient levels of constituents in air exceed the screening levels, it does not necessarily indicate a problem but rather triggers a more in-depth review. The case-by-case new source review permitting process takes into account a variety of site-specific information, including the magnitude and frequency of predicted ambient levels of constituents in air that exceed the ESLs, and may result in a determination that predicted ambient levels of constituents in air that exceed the ESLs are not expected to result in adverse health or welfare effects. The commission disagrees with the comment that styrene's lower ESL would also cause case-by-case permits to be unnecessarily more stringent. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA, Belco, Benton, Composites One, Fibergrate, Kamal, Mainland, MFG, Venetian, and West U commented that new thermoset facilities would be discouraged from locating in Texas if they felt forced into applying for a case-by-case permit, because it would be uncertain whether or not they would be granted the permit, and the permit application process is too lengthy. Austin Marble expressed agreement with ACMA. MFG added that many in industry would confuse a standard permit with being the standard emission limits for all thermoset facility air permits in Texas, and that any other air permits in the state would only be more stringent than its requirements.

The owner or operator of each facility that emits contaminants into the air of Texas must receive authorization to do so. Many owners or operators of facilities throughout the state use the case-by-case permitting and go through the application review process in a reasonable amount of time, particularly if they submit a complete and accurate application. The Air Permits Division will extend the same courtesy of processing thermoset resin case-by-case NSR permits in the same manner. A case-by-case permit may, in fact, be less or more stringent than the associated standard permit due to specific issues at the facility. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA submitted a series of suggestions and concerns regarding a TCEQ internal guidance document created for combustion and coatings case-by-case permit reviewers. Austin Marble expressed agreement with ACMA.

As this guidance document was intended for case-by-case NSR permits, and was in fact never implemented by the commission, these comments are outside the scope of this project.

ACMA specifically requested that the Air Permits Division withdraw the proposed thermoset resin standard permit. Benton claimed that the proposed standard permit was unwarranted, unworkable, and ill-conceived. Austin Marble expressed agreement with ACMA and Benton.

After the PBR is repealed, the permitting options left for this industry would either be to apply for a standard permit or to apply for a case-by-case permit. The standard permit

option takes the burden of modeling from the owner or operator and is intended to be a more simple permitting solution for an average thermoset resin facility. The thermoset resin standard air permit was not changed as a result of this comment.

MFG stated that requiring this industry to install stacks and ventilation systems is excessive since they have received no odor complaints. Kamal added that it would be unfair if a nearby homeowner filed a complaint that would result in the company being required to purchase costly taller stacks. Kamal noted that their business has been in the same location much longer than the residences that encroached into the area surrounding their business.

The requirements in the standard permit are based on the ESL for styrene and thus set to protect human health and welfare including odor nuisances, but were not established as a direct result of odor complaints. These requirements are necessary to ensure acceptable predicted off-property concentrations of air contaminants. The current PBR includes stack requirements, however, changes to the ESL necessitate repeal or revision to the PBR. The thermoset resin standard air permit was not changed as a result of this comment.

MFG added that the taller stacks required in the thermoset resin standard permit are aesthetically undesirable in a small town such as Gainesville.

Stacks at the height indicated are needed to effectively disperse emissions. Aesthetic value is not a consideration in the development of standards and requirements necessary for protection of human health and welfare. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA, AR, Belco, Composites One, Fibergrate, Mainland, MFG, Venetian, and West U commented that the operating hour restrictions found in the proposed standard permit will cause certain thermoset resin companies to be unable to use the standard permit or to stop manufacturing certain products that require 24-hour operations. Austin Marble expressed agreement with ACMA.

Restrictions on hours of operation were included because morning and evening meteorological effects modeled an increase in concentrations of emissions naturally settling close to the ground. One may apply for a case-by-case permit that models a facility's hours of operation should those hours fall outside the range of the standard permit. The thermoset resin standard air permit was not changed as a result of this comment.

Austin Marble expressed concern that the proposed standard permit would have requirements that would cause its facility's processes to be more labor intensive and potentially unsafe.

The proposed standard permit requirements should not result in added processing steps or unsafe work environments. To the contrary, the requirements in the thermoset standard air permit are intended to provide greater protections to workers and the public by requiring greater ventilation and air dispersion. The thermoset resin standard air

permit was not changed as a result of this comment.

Austin Marble stated that its facility already used products that reduced employee exposure to emissions regulated by the proposed standard permit.

The commission appreciates Austin Marble's efforts to use products that reduce employee exposure to emissions. However, the jurisdiction of the TCEQ, and the focus of the standard permit is to ensure that off-property impacts caused by emissions from thermoset resin operations will not be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property; or interfere with the normal use or enjoyment of animal life, vegetation, or property.

Austin Marble commented that Governor Perry had someone review the standard permit and the thermoset resin industry does not have to follow the requirements of the standard permit.

The TCEQ agrees that the thermoset resin standard permit will not be the only air permitting option available for the thermoset resin industry. Thermoset resin facilities may also be authorized through the use of a NSR permit. However, compliance with either authorization method is required and will be enforced by TCEQ regional staff. The thermoset resin standard air permit was not changed as a result of this comment.

Austin Marble commented that a model could not accurately represent the many situations, systems, locations, and other variables associated with the thermoset resin industry.

Air dispersion modeling using several configurations and operating parameters was used to establish the limits in the standard permit. However, it does not cover all possible operating scenarios. Therefore, owners and operators have the option of applying for a case-by-case NSR permit that can customize the modeling to more accurately represent its individual facility. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA stated that the technical support section of the standard permit is materially flawed because the allowable emissions proposed in Table 1 and 2 have no valid air dispersion modeling support. ACMA commented that the allowable emissions proposed in these tables are based on a styrene ESL of 110 $\mu g/m^3$ while the 2006 modeling exercise was based on a styrene ESL of 70 $\mu g/m^3$. ACMA commented that this is fatal to the accuracy and predictability of the modeling within the standard permit and the proposed standard permit would need to be repealed, reevaluated, and re-promulgated with the current ESL. ACMA stated that this action would be arbitrary, capricious, and contrary to law. Austin Marble expressed agreement with ACMA.

The standard permit includes emission limits based on an evaluation using the current ESL of 110 $\mu g/m^3$.

ACMA stated that the agency's air dispersion modeling contains unsubstantiated and inaccurate assumptions concerning the input variables to the air dispersion model. ACMA commented that

because property boundaries are not considered, the modeling that was used was inaccurate. ACMA concluded that the permit draft lacks any valid technical support, and therefore, the proposed actions must be considered arbitrary, capricious and contrary to law. Austin Marble expressed agreement with ACMA.

No setback distance was proposed because the maximum allowable styrene emission rates for all modeling scenarios ensure that predicted maximum ground-level concentrations do not exceed the styrene ESL. If the owner or operator of a facility would like setback distance to be a factor in determining its styrene limits, a case-by-case permit is the more appropriate authorization mechanism. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA stated that meteorological data from the Austin area should not have been applied to the entire state when doing the air dispersion modeling in the standard permit since it would apply to facilities across the state. Austin Marble expressed agreement with ACMA.

The modeling analysis used surface meteorological data from Austin and upper air meteorological data from Victoria for the years 1983, 1984, 1986, 1987, and 1988. Because the analysis was primarily for short-term concentrations, this five-year data set included worst-case short-term meteorological conditions that could occur anywhere in the state. The wind directions were used at ten-degree intervals to be coincident with the receptor radials. This provided predictions along the plume centerline, which was a conservative result. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that any significantly sized thermoset resin facility would not be able to use the standard permit as it is currently written. Austin Marble expressed agreement with ACMA.

The thermoset resin standard permit was intended to include the majority of facilities in the industry. The commission intended for larger facilities, such as those needing add-on controls to reach the standard permit's emission limits, to apply for a case-by-case NSR permit. The thermoset resin standard air permit was not changed as a result of this comment.

The EPA requested that the TCEQ clarify whether or not a facility that is considered a major source or major modification would potentially qualify for the thermoset resin standard permit.

The thermoset resin standard permit has been updated to include an applicability statement that clarifies that facilities that constitute a new major stationary source or major modification do not qualify for authorization under the standard permit. This change is necessary to ensure that a facility that triggers nonattainment new source review (NNSR) will undergo NNSR permitting as required.

MFG and Waco Boom requested that epoxy resins that contain no styrene, alpha-methylstyrene, or methyl methacrylate be exempted from the standard permit since they have no emissions.

Some thermoset resins, such as epoxy and polyurethane resins, have no emissions or essentially no emissions, while others (polyester and vinyl ester resins) contain styrene and related compounds such as alpha-methyl styrene and MMA. The commission agrees that resins other than polyester and vinyl ester resins can be excluded from many of the requirements of the standard permit, particularly the registration, fee, stack height, operating hour restrictions, emission rate limitations, and recordkeeping. Therefore, the commission has added a new subsection (1)(I) for thermoset resin facilities that use only thermoset resins other than polyester and vinyl.

ACMA objected to the prohibition of the use of control equipment to meet styrene emission limits. Austin Marble expressed agreement with ACMA.

The commission disagrees with this comment. Case-by-case NSR review is more appropriate for facilities whose emissions are high enough to need add-on controls (for example, a thermal oxidizer). This restriction is necessary to allow for an evaluation of the control system, monitoring, and stack testing protocol as part of the review for a case-by-case permit. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA objected to the requirement to install control equipment based on odor. In addition, ACMA stated that most of the composites manufacturing facilities are small and medium sized companies for which cash flow is a constant challenge. Austin Marble expressed agreement with ACMA. Mainland stated that the addition of control equipment would not be economically feasible for a company of its size and suggested that the commission work closely with ACMA to do an economic feasibility study on companies employing 50-100 people.

Subsection (1)(C) of the standard permit states that control equipment other than that specifically required by this standard permit shall not be used to meet the emissions limits of this standard permit. The only "required control equipment" mentioned in the standard permit are air filters and a submerged fill pipe for storage tanks onsite. These controls should not cause undue financial harm to thermoset resin facilities, so an economic feasibility study would be unnecessary. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that subsection (1)(C) of the proposed standard permit was confusing and should allow owners or operators of thermoset resin facilities the ability to apply for the kind of permit appropriate to the facility. Austin Marble expressed agreement with ACMA.

The wording of the subsection of concern has been revised to clarify the intent. Due to other changes in the standard permit, this subsection is now (1)(D). The purpose of this subsection is to ensure that once a facility is issued a thermoset resin standard air permit, the facility cannot also be permitted under the PBR or a case-by-case permit. It was not the intention of the agency to restrict an owner or operator from applying for a case-by-case permit instead of the standard permit.

EPA asked for an explanation as to the purpose of exempting owners or operators with

thermoset facilities that use less than 1 ton of styrene per year on a rolling 12-month average from storage tank and recordkeeping requirements.

The intent of the exemption found in subsection (1)(H) of the standard permit was to keep the smallest facilities out of the majority of the permitting process. The storage tank requirements were exempted, because according to Air Permits Division staff experience, facilities using less than 1 ton of styrene for non-spraying operations and 0.5 tons for spraying operations on a rolling 12-month average would not ordinarily have storage tanks. The exempt facilities are simply encouraged to keep monthly usage records maintained for a rolling 24 month period in order to prove that the facility can still be considered exempt. This recordkeeping requirement is explained in the technical summary and on related TCEQ web pages. The thermoset resin standard air permit was not changed as a result of this comment.

Gulf Coast commented that thermoset resin operations using a two piece or covered mold in which vacuum-mold technology is used should not be required to consider the resin used in this process toward the usage exemption limit, since virtually no styrene is released in this process. Gulf Coast further commented that this would effectively exempt owners or operators that exclusively use closed molding, a more environmentally friendly process that controls styrene emissions rather than disperse them through a stack.

The commission disagrees with the comment because there are, in fact, emissions from closed molding processes. The emission factors for closed molding processes are different than those for open molding processes. The commission took these differences into account when developing emission limits. Therefore, the commission has made no changes in response to the comments.

Gulf Coast commented that thermoset resin facilities conducted inside a closed facility should not be required to consider the resin used in this process toward the usage exemption limit.

The commission disagrees because it is highly unlikely that styrene emissions can be completely sealed off indefinitely and would never be released into the atmosphere. Therefore, the thermoset resin standard air permit was not changed as a result of this comment.

Gulf Coast recommended increasing the styrene usage limit to 5 tons or 10 tons so that small repair shops would not need the standard permit.

Based on air dispersion modeling, the commission has revised subsection (1)(H) to allow thermoset resin usage of up to 1 ton per rolling 12-month period in non-spraying operations and up to 0.5 tons per rolling 12-month period in spraying operations. Modeling of the commenter's suggested limits resulted in exceedances of styrene's ESL and therefore cannot be supported.

West U requested that the definition of "gel coat" be classified as a "sprayed material".

The application method is not relevant to the definition of gelcoat. Therefore, the thermoset resin standard air permit was not changed as a result of this comment.

West U requested that the definition of "resin" and "gel coat" should contain "styrene containing materials" and not be open-ended.

Styrene is not the only air contaminant emitted from resins and gelcoats. Other examples include alpha-methylstyrene and methyl methacrylate. The commenter's suggestion would exclude resins and gelcoats containing these air contaminants. Therefore, the thermoset resin standard air permit was not changed as a result of this comment.

MFG commented that the definition of "thermoset resin" shouldn't include bisphenol A and polyol resins since these materials don't emit styrene or VOCs. MFG suggested a change that would cause facilities that only use these resins to be exempt from the proposed standard permit.

The commission agrees that bisphenol A and polyol resins should be deleted from the definition of thermoset resin and has revised subsection (2)(C) of the standard permit accordingly.

Gulf Coast and MFG commented that closed molding processes should be recognized as a separate process from open molding.

Closed molding processes are already recognized as a separate process from open molding processes, as evidenced by the emission factors that are used for closed molding processes and different emission factors that are used for open molding processes. The commission has made no changes in response to the comments.

ACMA requested the deletion of the maintenance, start-up, and shutdown (MSS) emissions prohibitions since they are more stringent than requirements found in 30 TAC § 101.211, Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements. Austin Marble expressed agreement with ACMA. EPA requested that emission limits specifically include MSS emissions with an independent short term limit stated in the permit.

Emissions from maintenance, start-up, and shutdown in this industry are indistinguishable from production emissions, and are included in this standard permit with no additional control requirements. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA requested the addition of a term that states, "The facilities engaged in the application of paints or adhesive to molded composite products are subject to and shall operate in compliance with the applicable requirements of 40 CFR Part 63, Subpart PPPP, Plastic Parts Surface Coating." in order to inform sources of the potentially applicable requirements. Austin Marble expressed agreement with ACMA.

The permit has been updated to include paragraph (4)(D)(i) as suggested.

EPA requested clarification that paragraph (4)(C)(i)-(iv) applies to facilities with emissions greater than 10 tons per year for an individual HAP or greater than 25 tons per year for total HAPs.

A new subsection (4)(C) has been added that clarifies which facilities may be subject to related federal requirements, and subsection (4)(C) has been moved to (4)(D).

ACMA commented that the standard permit should require 95 percent efficient filters instead of a 98 percent efficient filter since the 95 percent efficient filters are more cost effective and would meet the requirements of the current PBR. Austin Marble expressed agreement with ACMA.

Filters rated at 98 percent efficiency or better are commonly used to comply with state and federal regulations and are well-established as BACT in the thermoset resin industry. These filters are not difficult to obtain, and would not contribute significantly to the cost of complying with the requirements of the proposed standard permit. To clarify how the 98 percent control efficiency is determined, the commission has revised the standard permit to include references to American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 52.1, Gravimetric and Dust Spot Procedures for Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter, which is the established method for determining the average filter efficiency (i.e., without regard to particle size).

The EPA commented that the permit must state how often the face velocity and filter efficiency are to be performed.

The face velocity must be maintained at the required level for the entire time that production is occurring. Filter efficiency is simply determined by the rating of the filter used. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that a minimum stack height is not practical. ACMA stated that since the proper stack height depends on local topography, surrounding land use, and other site-specific circumstances, and suggested that the proper stack height at each facility should be determined on a case-by-case basis. Austin Marble expressed agreement with ACMA.

Standard permits must incorporate many scenarios, so they may be more restrictive than a case-by-case permit. In order to factor in facility-specific data to custom-fit stack height requirements, the owner or operator would need to apply for a case-by-case permit instead of a standard air permit. The thermoset resin standard air permit was not changed as a result of this comment.

MFG commented that tanks should not be required to be exposed to atmospheric moisture because it can cause polymerization.

The thermoset resin standard permit does not include a requirement for storage tanks to be exposed to atmospheric moisture. When the pressure relief valve on the storage tank opens due to either filling or expansion of the vapors (breathing), the standard permit requires that the resultant emissions be vented to a booth or work area exhaust stack or a stack that meets the specified height requirements. This is necessary to ensure acceptable off-site air contaminant concentrations. The thermoset resin standard air permit was not changed as a result of this comment.

MFG commented that indoor storage tanks should not need to exit to a vent or follow venting requirements while they are being filled. MFG commented that filling storage tanks results in less than 50 pounds per year of emissions, and is therefore, deminimis.

The commission does not have a 50 pounds per year deminimis level for storage tank emissions. Any styrene fugitives were accounted for in modeling for this standard permit since the ESL was based on odor. For this reason, any facility complying with the standard permit cannot have any styrene fugitives and shall direct all styrene emissions up the stack for proper dispersion. The thermoset resin standard air permit was not changed as a result of this comment.

MFG commented that the requirement to route storage tank vents to booth exhaust stacks is a fire hazard according to the National Fire Protection Association and other fire codes.

The requirement in the standard permit is to vent tanks only when the pressure relief valve opens due to filling or expansion of vapors. This should not pose a fire hazard to the facility. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA commented that the control requirements in subsection (4)(K) seems to conflict with the requirement that prohibits the use of add-on control. Austin Marble expressed agreement with ACMA.

The nuisance odor term that was numbered (4)(K) in the September 2006 draft of the standard permit has been removed due to this conflict and other issues.

ACMA commented that the 100 foot per minute (ft/minute) average air velocity requirement in the proposed standard permit was too strict. ACMA added that facilities that work with large parts in a large work area would find it particularly difficult to follow the requirement without excessive air flow that would waste energy. Austin Marble expressed agreement with ACMA.

If a facility meets the requirements of EPA Test Method 204 for permanent total enclosures, it will meet 100 percent capture efficiency. The commission's criteria for achieving 100 percent capture of emissions requires that the face velocity across all of the openings into the shop that are normally open is greater than 100 ft/minute. This can be determined by taking the exhaust flow rate in cubic feet per minute through the stacks and subtracting the flow rate for any air makeup fans that force air into the shop and dividing the resulting flow rate by the area of the openings (in square feet). This allows

for significant design flexibility of the ventilation system because the permanent total enclosure can be a booth, a room that contains the work area, or an entire building. The thermoset resin standard air permit was not changed as a result of this comment.

West U requested that the standard permit require a yearly acetone cap of 10 tons instead of a 1 percent acetone to resin limit since the coating industry has much higher limits on chemicals such as methyl ethyl ketone and toluene.

After reviewing issued thermoset resin permits, commission staff found that many facilities can readily meet the proposed acetone usage limits. However, to provide additional operational flexibility while still ensuring that acetone emissions are not excessive, the commission increased the acetone usage limits to 3.0 percent by weight of the total monthly resin usage for cultured marble facilities and to 1.5 percent by weight of the total monthly resin usage for all other thermoset resin facilities.

ACMA commented that the 50 tons per rolling 12-month period limit on VOC plus exempt solvent emissions is too low and stated that the term should clarify what emissions are included in the VOC total. Austin Marble expressed agreement with ACMA.

Add-on controls such as thermal oxidizers may be cost-effective at facilities with VOC plus exempt solvent emissions of approximately 50 tons per year. Consequently, case-by-case review is more appropriate for facilities whose emissions are high enough to require add-on controls such as a thermal oxidizer. Regarding what emissions are included in the limitation of site-wide VOC plus exempt solvent emissions to a total of 50 tons per rolling 12-month period, the commission notes that "VOC" and "exempt solvent" are defined in 30 TAC § 101.1, Definitions. Therefore, the commission believes that the cutoff of 50 tons per rolling 12-month period should be retained and that no clarification is necessary concerning what emissions are included in the site-wide total. The commission has made no changes in response to the comment.

MFG commented that AP-42 emission factors shouldn't always be used for the standard permit unless more reliable data is not available.

The emission factors from EPA's "Compilation of Air Pollutant Emission Factors, AP-42" are only used for the emissions from closed molding (including, but not limited to, continuous lamination/casting, pultrusion, cultured (synthetic) marble casting, compression molding, injection molding, and resin transfer molding). These emissions are calculated using the high end of the range for the appropriate emission factors from Table 4.4-2 of EPA's "Compilation of Air Pollutant Emission Factors, AP-42." The emissions from open molding are calculated using the appropriate emission factors from the UEF for Open Molding of Composites." The thermoset resin standard air permit was not changed as a result of this comment.

ACMA objected to the regulation, and limitation of, the use of exempt solvents since the "exempt" designation confirms its negligible impact on the environment. Austin Marble expressed agreement with ACMA.

Exempt solvents are a separate class of compounds from volatile organic compounds only because exempt solvents participate in the formation of ground-level ozone less aggressively than volatile organic compounds. Nevertheless, exempt solvents are still air contaminants, and some are classified as hazardous air pollutants. The thermoset resin standard air permit was not changed as a result of this comment.

Gulf Coast commented that the standard permit should allow thermoset resin operations to be situated inside a sealed tent either inside or outside a permanent building. In cases when the tent is situated outside the permanent structure, it could be fitted with appropriate stacks or ducts to more efficiently capture and vent emissions through the ventilation system in the permanent building. Gulf Coast added that these tents would be especially useful in working on large items like the repair of a 160 foot yacht.

The standard permit does not specify the material to be used for construction of the structure that encloses the thermoset resin processes. As long as the sealed tent structure continuously meets the ventilation requirements of subsection (4)(K), the permit does not disallow it. Therefore, the commission has made no changes in response to the comment.

ACMA requested that scrap resin treatment, as provided under EPA's approval of polymerization ("POLYM"), should be included as a treatment technology. Austin Marble expressed agreement with ACMA.

The standard permit establishes polymerization treatment as a cleanup option in (5)(C)(ii) of the standard permit. To clarify the meaning of polymerization treatment, the commission has revised paragraph (5)(C)(ii) to include a reference to EPA method "POLYM" (Method of Treatment for High Total Organic Carbon Ignitable D001 Waste) in 40 CFR § 268.42(a), Table 1, Technology Codes and Description of Technology-Based Standards.

MFG commented that emission factors for composite injection, resin transfer, and compression molding should require the middle of the range instead of the high end of the range for AP-42 emission factors.

The suggested use of the mid-range would allow emissions at a higher rate than was evaluated in the development of the standard permit, and therefore, the limits would be lower. Therefore, the commission has made no changes in response to the comment.

MFG commented that closed molding processes such as resin infusion and resin transfer molding should be exempted from the standard permit. Titan requested that resin transfer molding processes (a type of closed molding) be allowed with a limit of 10 pounds per hour (lbs/hr) of styrene. Waco Boom and Gulf Coast also requested separate requirements for closed mold processes that factored in emissions that are much lower than open molding processes.

Sufficient justification for exempting the emissions from closed molding processes was not provided by MFG. Closed molding processes are already recognized as a separate process

from open molding processes in the thermoset resin standard permit, but both processes still result in emissions. The thermoset resin standard air permit was not changed as a result of this comment.

The EPA requested an explanation as to why the standard permit does not establish a maximum hourly emission rate for VOC.

Subsection (6)(A) of the standard permit includes tables that establish the maximum allowable hourly emission rates of styrene, alpha-methylstyrene, and MMA. The sum of the rates for these three compounds effectively establishes the hourly emission limits for VOC because these three compounds represent the vast majority of the VOC emissions and essentially are an upper bound on emissions. The commission has made no changes in response to the comment.

ACMA commented that the maximum styrene emission rates in the proposed standard permit are too low to allow economically viable operations at most thermoset resin facilities. Austin Marble expressed agreement with ACMA.

The emission rate numbers proposed in the standard permit were determined by using modeling that factored in building height, stack height, general meteorological information, and other factors. These emission limits are necessary to demonstrate that styrene emissions under the example scenarios presented in the standard permit will be below the applicable ESL. A case-by-case NSR permit is available in the event that a thermoset resin facility's owner or operator chooses to pursue an authorization other than the thermoset resin standard permit. The thermoset resin standard air permit was not changed as a result of this comment.

ACMA requested that a monthly recordkeeping requirement for major sources of HAPs be instituted in the draft permit rather than a daily recordkeeping requirement. ACMA stated that the recordkeeping requirements alone would be a sufficient deterrent for most small and medium sized companies from attempting to use the proposed standard permit. Austin Marble expressed agreement with ACMA.

A monthly requirement would not provide the commission's compliance and enforcement staff sufficient data to demonstrate compliance with the standard permit. The commission considered an alternative to the frequency of the recordkeeping requirement, but decided against it based on other stakeholder comments that a daily requirement was reasonable and matches good waste reduction practices for the industry. The thermoset resin standard air permit was not changed as a result of this comment.

Austin Marble commented that having the public meeting at 10:00 A.M. created a problem for a large number of industry representatives to attend.

The commission appreciates the comment and has updated internal guidance to suggest that public meetings be held during the time of day that best accommodates those that have expressed an interest in commenting during the meeting.

IX. STATUTORY AUTHORITY

This standard permit is adopted under Texas Health and Safety Code (THSC), § 382.011, General Powers and Duties, which authorizes the commission to control the quality of the state's air, THSC, § 382.051, Permitting Authority of Commission; Rules, which authorizes the commission to issue permits, including standard permits for similar facilities, and THSC, § 382.0513, Permit Conditions, which authorizes the commission to establish and enforce permit conditions consistent with the TCAA, and THSC, § 382.05195, Standard Permit, which authorizes the commission to issue standard permits according to the procedures set out in that section.

Thermoset Resin Facilities Air Quality Standard Permit

This standard permit authorizes thermoset resin facilities that meet all of the specified conditions. This standard permit does not relieve the owner or operator from complying with any other applicable provision of the Texas Health and Safety Code, Texas Water Code, rules of the Texas Commission on Environmental Quality (TCEQ or commission), or any additional state or federal regulations.

(1) Applicability

(A) This standard permit may be used to authorize stationary thermoset resin facilities constructed or modified on or after the effective date of this standard permit and that meet the requirements of this standard permit.

(B) A thermoset resin facility does not qualify for authorization under this standard permit if it constitutes a new major stationary source or major modification as defined by Title 30 Texas Administrative Code (30 TAC) §116.12, Nonattainment and Prevention of Significant Deterioration Review Definitions, or is located at a major stationary source.

(C) The owner or operator shall not use control equipment other than that specifically required by this standard permit to meet the emissions limits of this standard permit.

(D) Once an owner or operator has registered a thermoset resin facility under this standard permit, no authorization under 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification, or under 30 TAC Chapter 106, Permits by Rule (PBR), shall be used to authorize any thermoset resin facilities or changes to thermoset resin facilities at the same site.

(E) If there are any existing thermoset resin facilities at the site at the time of registration for this standard permit, the applicant shall include all such facilities in the standard permit registration.

(F) After the effective date of this standard permit, the Air Permits Division of the TCEQ will no longer accept new registrations under 30 TAC §106.392, Thermoset Resin Facilities. Facilities already authorized under 30 TAC §106.392 may continue to operate under this PBR, provided that the facility continues to meet all applicable requirements of 30 TAC §106.392 and that no thermoset resin facilities at the site are registered under this standard permit.

(G) The owner or operator has the option of applying for a case-by-case new source review permit instead of the thermoset resin standard permit.

(H) An owner or operator of a thermoset resin facility having a thermoset resin usage

of 1 ton or less per rolling 12-month period in non-spraying operations and a thermoset resin usage of 0.5 tons or less per rolling 12-month period in spraying operations is exempt from the requirements of (3), (4)(E)-(M), (5)(H), (6), and (7) of this standard permit, provided that the owner or operator keeps records of resin usage on a monthly basis. The owner or operator shall maintain records, written or electronic, for a rolling 60 month period and shall make these records readily available, upon request, for inspection by the executive director, the United States Environmental Protection Agency (EPA), and any local air pollution control agency having jurisdiction.

(I) An owner or operator of a thermoset resin facility that uses only thermoset resins other than polyester and vinyl is exempt from the requirements of (3), (4)(J), (4)(M), (6), and (7)(C)(i) of this standard permit. The owner or operator shall maintain records, written or electronic, for a rolling 60-month period and shall make these records readily available, upon request, for inspection by the executive director, EPA, and any local air pollution control agency having jurisdiction.

(2) Definitions

(A) Gelcoat - A thermoset resin, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.

(B) Hazardous Air Pollutant (HAP) - Any air contaminant (pollutant) listed in Federal Clean Air Act, § 112(b), Hazardous Air Pollutants (HAP) or Title 40 Code of Federal Regulations (40 CFR) Part 63, Subpart C, List of Hazardous Air Pollutants, Petition Process, Lesser Quantity Designations, Source Category List. Examples of HAPs commonly emitted from thermoset resin facilities include styrene and methyl methacrylate (MMA).

(C) Thermoset Resin - A substance prepared by polymerization or obtained as exudations from certain plants that undergoes a chemical reaction during curing and cannot be reshaped, including (but not limited to) isophthalic, orthophthalic, halogenated, vinyl ester, and furan resins; cross-linking agents; catalysts; gelcoats; inhibitors; accelerators; and promoters.

(D) Thermoset Resin Facility - A facility that fabricates, reworks, repairs, or touches up products or parts by using thermoset resin processes.

(E) Thermoset Resin Processes - Includes (but is not limited to) mixing, pouring, hand laying-up, impregnating, injecting, forming, winding, spraying, or curing with thermoset resins; use of any other material containing volatile organic compounds (VOC) or exempt solvent, as defined in 30 TAC § 101.1, Definitions; and trimming, grinding, and sanding.

(3) Administrative Requirements

(A) Owners or operators of thermoset resin facilities shall register in accordance with 30 TAC § 116.611, Registration to Use a Standard Permit. Facilities that meet the conditions of this standard permit do not have to meet 30 TAC § 116.610(a)(1), Applicability.

(B) Owners or operators shall comply with 30 TAC § 116.614, Standard Permit Fees.

(C) No owner or operator of a thermoset resin facility is permitted to begin construction or operation without obtaining written approval from the executive director. The waiver of executive director approval after 45 days in 30 TAC § 116.611(b) does not apply to owners or operators registering under this standard permit. The owner or operator of any entity registered under this standard permit shall comply with 30 TAC § 116.120, Voiding of Permits, concerning start of construction.

(4) General Requirements

(A) This standard permit does not authorize emissions from maintenance, start-up, and shutdown activities other than those described in sections (4) - (6).

(B) Opacity from each stack shall not exceed five percent. Owners or operators shall make this determination by looking for visible emissions while the thermoset resin processes are in operation. Owners or operators shall:

(i) make observations at least 15 feet and no more than 1,320 feet from the stack(s);

(ii) determine opacity using 40 CFR Part 60, Appendix A, Test Method 9 only if visible emissions are observed from the stack(s);

(iii) determine compliance with this condition without including uncombined water; and

(iv) perform and record observations quarterly.

(C) If the registration to use this standard permit includes certification that limits potential site-wide emissions per rolling 12-month period to less than 10 tons for each individual HAP and less than 25 tons for total HAPs, then facilities are exempt from (4)(D)(i)-(iv).

(D) If the potential site-wide emissions per rolling 12-month period are equal to or greater than 10 tons for each individual HAP and equal to or greater than 25 tons for total HAPs, then facilities:

(i) engaged in the application of paints or adhesive to molded composite products are subject to and shall operate in compliance with the applicable requirements of 40 CFR Part 63, Subpart PPPP, Surface Coating of Plastic Parts and Products;

(ii) engaged, either in part or in whole, in fiberglass boat manufacturing are subject to and shall operate in compliance with the applicable requirements of 40 CFR Part 63, Subpart VVVV, Boat Manufacturing;

(iii) engaged, either in part or in whole, in reinforced plastic composites production are subject to and shall operate in compliance with the applicable requirements of 40 CFR Part 63, Subpart WWWW, Reinforced Plastic Composites Production;

(iv) with owners or operators subject to a federal requirement not listed in paragraphs (4)(D)(i-iii) shall also operate in compliance with those requirements as these paragraphs are not intended to be an exhaustive list of potentially applicable rules.

(E) All gelcoat spraying and resin spraying shall take place in a booth or work area equipped with a dry filter system that achieves a PM control efficiency of at least 98 percent as determined by American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 52.1, Gravimetric and Dust Spot Procedures for Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter.

(F) All trimming, grinding, and sanding shall take place in a booth or work area equipped with a dry filter system that achieves a particulate matter (PM) control efficiency of at least 98 percent as determined by ASHRAE Standard 52.1.

(G) Each booth or work area shall have a face velocity of at least 100 feet per minute across the open face of the booth or work area.

(H) Owners or operators shall operate exhaust fans (except the trimming, grinding, or sanding booth or work area fan) while, and for at least one half hour after, conducting thermoset resin processes. The owner or operator shall operate the trimming, grinding, or sanding booth or work area fan during all trimming, grinding, and sanding operations.

(I) Owners or operators shall exhaust emissions through one or more elevated stacks that have no restrictions or obstructions to vertical discharge of exhaust, such as rain caps, unless such devices are designed to automatically open when that stack's fan is in operation.

(J) The height of the stack(s) required by paragraph (4)(I) of this subsection shall be at least 1.5 times the manufacturing building's peak height above ground level,

but no less than 30 feet above ground level.

(K) Concerning ventilation requirements, the owner or operator shall:

(i) keep all doors, windows, and other openings in the production area (excluding openings designed to provide makeup air for the ventilation system) closed or covered while, and for at least one half hour after, conducting thermoset resin processes, excluding when the owner or operator actually uses the opening for ingress or egress of personnel, parts, and materials in or out of the production area; or

(ii) limit the maximum total area of doors, windows, and other openings in the production area that may be open while, and for one half hour after, conducting thermoset resin processes as follows:

$$\text{Area} = \text{FR} / 100$$

where:

Area = Maximum allowable area of openings (square feet)

FR = total flow rate in cubic feet per minute (cfm) from the manufacturing building exhaust stacks minus the flow rate (cfm) for any air makeup fans that force air into the building; and

100 = Face velocity to ensure 100 percent capture of emissions (feet per minute)

Owners or operators shall keep all other doors, windows, and other openings in the production area closed or covered while, and for at least one half hour after, conducting thermoset resin processes, excluding when the owner or operator actually uses the opening for ingress or egress of personnel, parts, and materials.

(L) Concerning all bulk resin storage tanks and cleaning solvent storage tanks at the site, the owner or operator shall:

(i) equip each storage tank with a submerged fill pipe as defined in 30 TAC § 101.1;

(ii) route each storage tank vent to a booth or work area exhaust stack or a stack that meets the height requirements in (4)(J). All storage tank vent stacks must be continuously open to the atmosphere and the exhaust fan serving that stack shall be operated whenever the storage tank is being filled;

(iii) fill storage tanks one tank at a time; and

(iv) keep exterior surfaces of each outdoor storage tank painted either white or aluminum.

(M) The owner or operator shall conduct all thermoset resin processes between 5:00 a.m. and 10:00 p.m.

(5) Pollution Prevention

(A) The owner or operator shall store all resins and solvents and any other material having the potential to emit air contaminants in closed containers.

(B) The owner or operator shall store materials that have been used for cleaning, including waste solvents, sponges, and cloths, in closed containers until properly removed from the site.

(C) The owner or operator shall clean up all spills using one of the following options:

(i) if the spill is not a thermoset resin, the owner or operator shall clean it up immediately, and waste materials shall be placed into closed containers immediately after use to be kept in storage until properly removed from the site; or

(ii) if the spill is a thermoset resin, the owner or operator shall either remove it using polymerization treatment in accordance with EPA method "POLYM" (Method of Treatment for High TOC [Total Organic Carbon] Ignitable D001 Waste) in 40 CFR § 268.42(a), Table 1, or clean it up immediately. Waste materials shall be placed into closed containers immediately after use to be kept in storage until properly removed from the site.

(D) The owner or operator shall contain PM collected from booths and other areas in such a way that it does not escape into the atmosphere when removed from those areas, stored awaiting disposal, or upon disposal.

(E) The owner or operator shall replace and handle filters according to manufacturer specifications such that fugitive PM emissions do not occur either in the building or on the site.

(F) The owner or operator shall maintain all equipment related to fabricating, reworking, repairing, or touching up products using thermoset resins according to the manufacturer's instructions.

(G) The owner or operator shall only conduct activities that may result in the emission of air contaminants (excluding transfer of solvents to a covered on-site waste dump, to recycling equipment, or onto trucks to be taken off site) inside

the production area.

(H) The owner or operator shall keep one complete change of filters for each booth or work area on site.

(I) This standard permit does not supersede or negate any applicable state or federal waste requirements such as the 30 TAC Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste or the 30 TAC Chapter 327, Spill Prevention and Control.

(6) Emission Limitations

(A) The owner or operator shall limit site-wide hourly styrene, alpha-methylstyrene, and MMA emission rates as shown in Tables 1, 2, and 3. Table 1 applies to stack heights that extend at least 1.5 times (but less than two times) the manufacturing building peak height above ground level. Table 2 applies to stack heights that extend at least two times (but less than 2.5 times) the manufacturing building peak height above ground level. Table 3 applies to stack heights that extend at least 2.5 times the manufacturing building peak height above ground level. For sites with multiple stacks, the owner or operator shall use the lowest stack flow rate to determine the maximum allowable hourly emission rate.

TABLE 1 - MAXIMUM ALLOWABLE HOURLY EMISSION RATES
(STACKS ≥1.5 AND <2 TIMES BUILDING PEAK HEIGHT ABOVE GROUND LEVEL)

Peak Building Height (feet above ground level)	Exhaust Flow Rate (cfm)	Maximum Styrene Emissions (lb/hr)	Maximum Alpha-Methylstyrene Emissions (lb/hr)	Maximum Methyl Methacrylate Emissions (lb/hr)
≥20 but <25 OR <20 provided that the stack height is at least 30 feet above ground level	≥15,000 and <20,000	1.45	3.30	4.49
	≥20,000 and <25,000	2.00	4.56	6.2
	≥25,000 and <30,000	2.08	4.74	6.45
	≥30,000 and <35,000	2.82	6.40	8.71
	≥35,000	2.86	6.50	8.84
≥25 but <30	≥15,000 and <20,000	2.35	5.34	7.27
	≥20,000 and <25,000	3.36	7.64	10.3
	≥25,000 and <30,000	4.10	9.33	12.6
	≥30,000 and <35,000	5.03	11.4	15.5
	≥35,000	5.88	13.3	18.1
≥30	≥15,000 and <20,000	3.00	6.83	9.29
	≥20,000 and <25,000	4.00	9.11	12.3
	≥25,000 and <30,000	5.03	11.4	15.5
	≥30,000 and <35,000	6.32	14.3	19.5
	≥35,000	7.34	16.7	22.7

TABLE 2 - MAXIMUM ALLOWABLE HOURLY EMISSION RATES
(STACKS ≥2 AND <2.5 TIMES BUILDING PEAK HEIGHT ABOVE GROUND LEVEL)

Peak Building Height (feet above ground level)	Exhaust Flow Rate (cfm)	Maximum Styrene Emissions (lb/hr)	Maximum Alpha-Methylstyrene Emissions (lb/hr)	Maximum Methyl Methacrylate Emissions (lb/hr)
≥20 but <25 OR <20 provided that the stack height is at least 40 feet above ground level	≥15,000 and <20,000	3.46	7.88	10.7
	≥20,000 and <25,000	4.20	9.55	12.9
	≥25,000 and <30,000	5.71	12.9	17.6
	≥30,000 and <35,000	6.18	14.0	19.1
	≥35,000	7.64	17.3	23.6
≥25 but <30	≥15,000 and <20,000	3.80	8.63	11.7
	≥20,000 and <25,000	5.41	12.2	16.7
	≥25,000 and <30,000	6.50	14.7	20.1
	≥30,000 and <35,000	7.73	17.5	23.8
	≥35,000	9.33	21.2	28.8
≥30	≥15,000 and <20,000	5.27	11.9	16.3
	≥20,000 and <25,000	6.17	14.0	19.0
	≥25,000 and <30,000	7.63	17.3	23.5
	≥30,000 and <35,000	9.71	22.0	30.0
	≥35,000	11.0	25.0	34.0

TABLE 3 - MAXIMUM ALLOWABLE HOURLY EMISSION RATES
(STACKS ≥2.5 TIMES BUILDING PEAK HEIGHT ABOVE GROUND LEVEL)

Peak Building Height (feet above ground level)	Exhaust Flow Rate (cfm)	Maximum Styrene Emissions (lb/hr)	Maximum Alpha-Methylstyrene Emissions (lb/hr)	Maximum Methyl Methacrylate Emissions (lb/hr)
≥20 but <25 OR <20 provided that the stack height is at least 50 feet above ground level	≥15,000 and <20,000	3.80	8.63	11.7
	≥20,000 and <25,000	5.41	12.2	16.7
	≥25,000 and <30,000	6.50	14.7	20.1
	≥30,000 and <35,000	7.73	17.5	23.8
	≥35,000	9.33	21.2	28.8
≥25 but <30	≥15,000 and <20,000	5.33	12.1	16.4
	≥20,000 and <25,000	6.40	14.5	19.8
	≥25,000 and <30,000	8.12	18.4	25.1
	≥30,000 and <35,000	9.81	22.3	30.3
	≥35,000	11.1	25.2	34.3
≥30	≥15,000 and <20,000	6.37	14.4	19.7
	≥20,000 and <25,000	7.83	17.8	24.2
	≥25,000 and <30,000	9.53	21.6	29.4
	≥30,000 and <35,000	11.6	26.4	35.9
	≥35,000	13.3	30.4	41.3

(B) The owner or operator shall limit monthly solvent usage to:

(i) no more than 3.0 percent by weight of the total monthly resin usage, including gelcoat, for cultured (synthetic) marble facilities; and

(ii) no more than 1.5 percent by weight of the total monthly resin usage, including gelcoat, at all other thermoset resin facilities.

(C) Owners or operators may exclude the following from the limits in paragraphs (6)(B)(i) and (ii) of this standard permit:

(i) any solvent having a true vapor pressure less than or equal to 2 millimeters of mercury at 68 degrees Fahrenheit, provided that the solvent is not heated; and

(ii) any solvent containing less than or equal to 5.0 percent by weight VOC or exempt solvent.

(D) The following emission factors shall be used when calculating emission rates from resin systems:

(i) For styrene, alpha-methylstyrene, and MMA emissions from open molding, use the appropriate emission factor(s) from the Composites Fabricators Association (now known as the American Composites Manufacturers Association) "Unified Emission Factors (UEF) for Open Molding of Composites"; or

(ii) For styrene, alpha-methlstyrene, and MMA emissions from closed molding (including, but not limited to, continuous lamination/ casting, pultrusion, cultured (synthetic) marble casting, compression molding, injection molding, and resin transfer molding), use the high end of the range for the appropriate emission factor(s) from Table 4.4-2 of EPA's "Compilation of Air Pollutant Emission Factors, AP-42".

(E) The owner or operator shall limit site-wide VOC plus exempt solvent emissions to a total of 50 tons per rolling 12-month period. The owner or operator shall not use control equipment to meet this emission limit other than that specifically required by this standard permit.

(7) Recordkeeping Requirements

The owner or operator shall maintain the following records, written or electronic, on site for a rolling 60-month period (except as specified in subsection (7)(G) of this standard permit), and made readily available, upon request, for inspection by the executive director, the EPA, and any local air pollution control agency having jurisdiction. Additionally, the owner or operator shall keep a copy of the initial permit registration on

site for the life of the permit.

(A) The owner or operator shall maintain environmental data sheets or similar documentation (including material safety data sheets) to demonstrate the maximum weight percent of the volatile ingredients for all materials currently in use and those in use during the previous 60 months.

(B) The owner or operator shall record material usage and the actual hours of operation daily.

(C) The owner or operator shall produce a monthly report (to be kept on site) that represents the VOC, exempt solvent, and HAP emission rates in pounds per hour on a daily average basis and tons emitted for the previous rolling 12-month period using the data recorded in subsections (7)(A) - (C) of this standard permit. The report shall:

(i) demonstrate compliance with the emission limitations of Table 1, Table 2, or Table 3 as specified in subsection (6)(A) of this standard permit;

(ii) contain examples of the calculations performed (including units, conversion factors, and emission factors); and

(iii) contain any assumptions with justifications made in the calculations.

(D) The owner or operator shall keep documentation of face velocity and filter efficiency for each booth or work area.

(E) If the owner or operator elects to use the ventilation requirement under paragraph (4)(K)(ii), the owner or operator shall document the maximum area of openings, including the specific scenarios, such as combination of doors, that meet or exceed a face velocity of 100 feet per minute.

(F) If applicable, the owner or operator shall keep records and follow reporting requirements included in 40 CFR Part 63, Subpart PPPP, Subpart VVVV, Subpart WWWW, or any other applicable federal requirement for at least five years.

(G) The owner or operator shall keep records of either quarterly opacity observations as prescribed in 40 CFR Part 60, Appendix A, Test Method 9 or of visible emissions observations.

(H) The owner or operator shall maintain records required in this standard permit in either hard copy or electronic format.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

ORDER ADOPTING NEW STANDARD PERMIT

Docket No. 2010-1039-RUL

On November 3, 2010, the Texas Commission on Environmental Quality (TCEQ or Commission) issued a new standard permit for thermoset resin facilities under 30 Texas Administrative Code (30 TAC) Chapter 116, Subchapter F, concerning Standard Permits. The proposed standard permit was published for comment in the April 2, 2010 issue of the Texas Register, 35 Tex Reg 2762. In accordance with 30 TAC § 116.603, Public Participation In Issuance Of Standard Permits, the TCEQ published notice of the proposed amended air quality standard permit in the *Texas Register* and daily newspapers of the largest general circulation in the following metropolitan areas: Austin; Dallas; and Houston. In accordance with 30 TAC § 116.603(c), TCEQ held a public meeting on May 6, 2010 to provide additional opportunity for public comment. After review of this new air quality standard permit and the response to comments, and in accordance with 30 TAC § 116.602, Issuance Of Standard Permits, the commission finds that the new standard permit requires best available control technology, that the new standard permit is enforceable, and that the commission can adequately monitor compliance with the terms of the new standard permit.

IT IS THEREFORE ORDERED BY THE COMMISSION that the new standard permit is hereby adopted. The Commission further authorizes staff to make any non-substantive revisions to the standard permit necessary to comply with Texas Register requirements. The adopted standard permit and the preamble to the adopted standard permit are incorporated by reference in this Order as if set forth at length verbatim in this Order.

This Order constitutes the Order of the Commission required by the Administrative Procedure Act, Government Code, Section 2001.033, State Agency Order Adopting Rule

The effective date of the issued Thermoset Resin Facilities standard air permit is November 23, 2010.

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.

Issued date:

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

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Bryan W. Shaw, Ph. D. Chairman