

Proposed date of adoption: December 15, 1989

For further information, please call: (512) 451-5711, ext. 354

Surface Coating Processes

• 31 TAC §§115.421-115.423, 115.425-115.427, 115.429

The Texas Air Control Board (TACB) proposes new §§115.421-115.423, 115.425-115.427, and 115.429, concerning surface coating processes, which contain the provisions of existing §§115.191-115.194, concerning surface coating processes in Brazoria, Dallas, El Paso, Galveston, Gregg, Harris, Jefferson, Nueces, Orange, Tarrant, and Victoria Counties. This new undesignated head will be included in a proposed new Subchapter E, concerning solvent-using processes. While in most instances the proposal does not involve new requirements, the sections have been significantly reorganized to reduce the inconsistencies which have developed as a result of numerous independent revisions in the past. Several substantive changes, however, are also proposed in order to respond to the Environmental Protection Agency requirements of Phase I of the post-87 state implementation plan (SIP) revisions.

These changes are a part of a series of substantial proposed revisions to Chapter 115, concerning control of air pollution from volatile organic compounds. Since the proposed changes are extensive, the staff has determined that it would be administratively more efficient to propose concurrently the repeal of the existing Chapter 115 in its entirety and the addition of a new Chapter 115.

The proposed new §115.421, concerning emission specifications, establishes emission limits for volatile organic compounds (VOC) from affected sources. The proposed new §115.422, concerning control requirements, specifies the applicable equipment and procedural requirements. The proposed new §115.423, concerning alternate control requirements, provides for executive director approval for the use of alternate technology which will result in equivalent VOC emission reductions. The proposed new §115.425, concerning testing requirements, identifies federally approved test methods and procedures to be used to determine compliance with applicable controls or exemptions. The proposed new §115.426, concerning recordkeeping requirements, specifies the type of records to be kept to document satisfaction of exemption criteria, coating formulation requirements, or performance of applicable control devices. The proposed new §115.427, concerning exemptions, specifies the types of facilities which are exempted from the requirements of these sections. This proposal will lower the exemption level in El Paso and Harris Counties to require small

surface coating operations emitting more than three pounds per hour or 15 pounds per day of VOC to use compliant coatings, if available. The proposed new §115.429, concerning counties and compliance schedules, requires all affected facilities to be in compliance in accordance with all expired and pending schedules. Furthermore, affected sources in Brazoria, El Paso, Galveston, Harris, Jefferson, and Orange Counties must comply with applicable recordkeeping requirements by December 31, 1990. Small surface coating operations in El Paso and Harris Counties required to implement controls must also be in compliance by December 31, 1990.

Bennie Engelke, director of management and staff Services, has determined that for the first five years the proposed sections are in effect, there will be no fiscal implications for state and local governments or for small businesses as a result of enforcing or administering the sections. Economic costs for individuals and businesses required to implement the proposed measures are associated only with recordkeeping requirements and are estimated as follows: annual cost per facility for fiscal year 1990 will be \$0, and for fiscal years 1991-1994 will be \$5,000.

Les Montgomery, P.E., director of Technical Support and Regulation Development Program, has determined that for each of the first five years the sections as proposed are in effect, the public benefit anticipated as a result of enforcing the sections will be more effective and consistent enforcement associated with the control of VOC. In addition, these measures are necessary to address the requirements of Phase I of the post-87 SIP revisions.

Public hearings on this proposal are scheduled for the following times and places: August 15, 1989, 10 a.m., Texas Air Control Board Auditorium, 6330 Highway 290 East, Austin; August 15, 1989, 7 p.m., City of Houston Pollution Control Building Auditorium, 7411 Park Place Boulevard, Houston; August 16, 1989, 7 p.m., City Council Chambers, Second Floor, 2 Civic Center Plaza, El Paso; and August 17, 1989, 4 p.m., Arlington Public Library, 101 East Abram, Arlington.

Copies of the proposed sections are available at the central office of the TACB, 6330 Highway 290 East, Austin, Texas 78723, and at all TACB regional offices. Public comment, both oral and written, on the proposed changes is invited at the hearings. The TACB would appreciate receiving five copies of testimony prior to or at the hearings. Written testimony received by the Regulation Development Section by 4 p.m. on August 25, 1989, at the TACB central office will be included in the hearing record.

The new sections are proposed under Texas Civil Statutes, Article 4477-5, §3.09(a), which provide the TACB with the authority to make rules and regulations consistent with the general intent and purposes of the Texas Clean Air Act and to amend any rule or regulation the TACB makes.

§115.421. Emission Specifications. No person in the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules) may cause, suffer, allow, or permit volatile organic compound (VOC) emissions from the surface coating processes as defined in §115.010 of this title (relating to Definitions) affected by paragraphs (1)-(11) of this section to exceed the specified emission limits. These limitations are based on the daily weighted average of all coatings delivered to the application systems, except for those in paragraph (10) of this section which are based on paneling surface area, and those in paragraph (11) of this section which are based on the volatile organic compound content of architectural coatings sold or offered for sale.

(1) Large appliance coating. Volatile organic compound emissions from the application, flashoff, and oven areas during the coating of large appliances (prime and topcoat, or single coat) shall not exceed 2.8 pounds per gallon of coating (minus water) delivered to the application system (0.34 kg/liter).

(2) Furniture coating. Volatile organic compound emissions from metal furniture coating lines (prime and topcoat, or single coat) shall not exceed 3.0 pounds per gallon of coating (minus water) delivered to the application system (0.36 kg/liter).

(3) Coil coating. Volatile organic compound emissions from the coating (prime and topcoat, or single coat) of metal coils shall not exceed 2.6 pounds per gallon of coating (minus water) delivered to the application system (0.31 kg/liter).

(4) Paper coating. Volatile organic compound emissions from the coating of paper (or specified tapes or films) shall not exceed 2.9 pounds per gallon of coating (minus water) delivered to the application system (0.35 kg/liter).

(5) Fabric coating. Volatile organic compound emissions from the coating of fabric shall not exceed 2.9 pounds per gallon of coating (minus water) delivered to the application system (0.35 kg/liter).

(6) Vinyl coating. Volatile organic compound emissions from the coating of vinyl fabrics or sheets shall not exceed 3.8 pounds (minus water) per gallon of coating delivered to the application system (0.45 kg/liter).

(7) Can coating. The following volatile organic compound emission limits shall be achieved, on the basis of solvent content per gallon of coating (minus water) delivered to the application system:

VOC Emission Limitation

<u>Affected Operation</u>	<u>pounds per gallon</u>	<u>kg per liter</u>
sheet basecoat (exterior and interior) and over-varnish	2.8	0.34
two-piece can exterior (basecoat and over-varnish)	2.8	0.34
two- and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	4.2	0.51
three-piece can side-seam spray	5.5	0.66
end sealing compound	3.7	0.44

(8) Automobile and light-duty truck coating.

(A) The following volatile organic compound emission limits shall be achieved for all automobile and light-duty truck manufacturing, on the basis of solvent content per gallon of coating (minus water) delivered to the application system.

<u>Operation (including application, flashoff, and oven areas)</u>	<u>VOC Emission Limitation</u>	
	<u>pounds per gallon</u>	<u>kg per liter</u>
prime application (body and front-end sheet metal)	1.2	0.15
primer surfacer application	2.8	0.34
topcoat application	2.8	0.34
final repair application	4.8	0.58

(B) Volatile organic compound emissions from the coatings or solvents used in automobile refinishing shall be based on an assumed 30% transfer efficiency from an air spray applicator or equivalent, unless otherwise specified in an alternate means of control approved by the executive director in accordance with §115.910 of this title (relating to Alternate Means of Control), and shall not exceed the following limits, as delivered to the application system:

(i) 2.1 pounds per gallon (0.25 kg/liter) of coating (minus water and exempt solvent) for primers or primer/surfacers;

(ii) >5.2 pounds per gallon (0.62 kg/liter) of coating (minus water and exempt solvent) for acrylic enamel coatings;

(iii) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for alkyd enamel coatings;

(iv) 5.2 pounds per gallon (0.62 kg/liter) of coating (minus water and

exempt solvent) for clear coatings;

(v) 6.2 pounds per gallon (0.74 kg/liter) of coating (minus water and exempt solvent) for base coatings;

(vi) 6.2 pounds per gallon (0.74 kg/liter) of coating (minus water and exempt solvent) for lacquers; and

(vii) 1.4 pounds per gallon (0.17 kg/liter) of wipe-down solutions.

(C) Additional control requirements for automobile refinishing oper-

ations are referenced in §115.422 of this title (relating to Control Requirements).

(9) Miscellaneous metal parts and products coating.

(A) Volatile organic compound emissions from the coating of miscellaneous metal parts and products shall not exceed the following limits for each surface coating type:

(i) 4.3 pounds per gallon (0.52 kg/liter) of coating (minus water) delivered to the application system as a clear coat; or as an interior protective coating for pails and drums;

(ii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water) de-

livered to the application system that utilizes air or forced air driers;

(iii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water) delivered to the application system as an extreme performance coating;

(iv) 3.0 pounds per gallon (0.36 kg/liter) of coating (minus water) delivered to the application system for all other coating applications that pertain to miscellaneous metal parts and products; and

(v) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water) delivered to the application system as a prime coat for the exterior of aircraft in Dallas and Tarrant Counties.

(B) If more than one emission limitation in subparagraph (A) of this paragraph applies to a specific coating, then the least stringent emission limitation shall apply.

(C) All volatile organic compound emissions from solvent washings shall be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(10) Factory surface coating of flat wood paneling. The following emission limits shall apply to each product category of factory-finished paneling (regardless of the number of coats applied).

VOC Emission Limitation

Product Category	lb VOC/1000 ft ²	kg VOC/100 m ²
	of coated surface	of coated surface
printed interior wall		2.9
panels made of hardwood plywood and thin particle board (less than 1/4 inch (0.64 cm)) in thickness	6.0	
natural finish hardwood plywood panels	12.0	5.8
hardboard paneling with Class II finish (ANSI Standard PS-59-73)	10.0	4.8

(11) Architectural coating. The volatile organic compound content of any coating sold or offered for sale as an architectural coating shall have the date of manufacture clearly marked on each container and shall not exceed the following limits:

(A) 2.2 pounds per gallon (0.26 kg/liter) of coating (minus water and exempt solvent) for non-flat and flat latex paints;

(B) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) for interior alkyd paints;

(C) 4.0 pounds per gallon (0.48 kg/liter) of coating (minus water and exempt solvent) for exterior alkyd paints;

(D) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for epoxy paints;

(E) 6.0 pounds per gallon (0.72 kg/liter) of coating (minus water and exempt solvent) for exterior stains;

(F) 7.0 pounds per gallon (0.84 kg/liter) of coating (minus water and exempt solvent) for interior stains;

(G) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for urethane coatings;

(H) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for alkyd varnishes; and

(I) 5.6 pounds per gallon (0.67 kg/liter) of coating (minus water and exempt solvent) for nitrocellulose-based lacquers.

§115.422. Control Requirements. For the

counties referenced in §115.429(2)(A) of this title (relating to Counties and Compliance Schedules), automobile refinishing operations shall minimize volatile organic compound emissions during equipment cleanup by the following procedures.

(1) install and operate a system which totally encloses spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures;

(2) recycle all wash solvents from an enclosed reservoir which must be kept closed at all times except when being refilled with fresh solvent solution;

(3) dispose of all waste solvents and associated cleaning materials in closed containers.

§115.423. Alternate Control Requirements. For all affected persons in the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules), the following alternate control techniques may apply.

(1) Emission calculations for surface coating operations performed to satisfy the conditions of §101.23 of this title (relating to Alternate Emission Reduction ("Bubble") Policy), §115.910 of this title (relating to Alternate Means of Control), or other demonstrations of equivalency with the specified emission limits in this section shall be based on the pounds of volatile organic compounds per gallon of solids for all affected coatings.

(2) Any alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this section may be approved by the executive director in accordance with §115.910 of this title (relating to Alternate Means of Control) if emission reductions are demonstrated to be substantially equivalent.

(3) If a vapor recovery system is used to control emissions from coating operations, the capture and abatement system shall be capable of achieving and maintaining emission reductions equivalent to the emission limitations of §115.421 of this title (relating to Emission Specifications) and an overall control efficiency of at least 80% of the volatile organic compound emissions from those coatings. The owner or operator of any surface coating facility shall submit design data for each capture system and emission control device which is proposed for use to the executive director for approval.

(4) For any surface coating process or processes at a specific property, the executive director may approve requirements different from those in §115.421(9) of this title (relating to Emission Specifications) based upon his determination that such requirements will result in the lowest emission rate that is technologically and economically reasonable. When he makes

such a determination, the executive director shall specify the date or dates by which such different requirements shall be met and shall specify any requirements to be met in the interim. If the emissions resulting from such different requirements equal or exceed 25 tons a year for a property, the determinations for that property shall be reviewed every two years.

§115.425. Testing Requirements. For the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules), the following testing requirements shall apply.

(1) Compliance with §115.421 of this title (concerning Emission Specifications) shall be determined by applying the following test methods, as appropriate:

(A) Test Method 24 (40 Code of Federal Regulations 60, Appendix A) with a one-hour bake;

(B) ASTM Test Methods D 1186-06.01, D 1200-06.01, D 3794-06.01, D 2832-69, D 1644-75, and D 3960-81;

(C) United States Environmental Protection Agency (EPA) guidelines series document Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings, EPA-450/3-84-011, as in effect December 1984;

(D) additional test procedures described in 40 Code of Federal Regulations 60.446; or

(E) modifications to these test methods approved by the executive director.

(2) Compliance with §115.423(2) of this title (relating to Alternate Control Requirements) shall be determined by applying the following test methods, as appropriate:

(A) Test Method 1-4 (40 Code of Federal Regulations 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 25 (40 Code of Federal Regulations 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Test Methods 25A or 25B (40 Code of Federal Regulations 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(D) additional performance test procedures described in 40 Code of Federal Regulations 60.444; or

(E) modifications to these test methods approved by the executive director.

§115.426. Recordkeeping Requirements. For the counties referenced in §115.429(2)(B) of this title (relating to Counties and Compliance Schedules), the following recordkeeping requirements shall apply.

(1) Any person affected by §115.421 of this title (relating to Emission Specifications) shall satisfy the following recordkeeping requirements.

(A) A material data sheet shall be maintained which documents the volatile organic compound content, composition, solids content, solvent density, and other relevant information regarding each coating and solvent available for use in the affected surface coating processes sufficient to determine continuous compliance with applicable control limits.

(B) Records shall be maintained of the quantity and type of each coating and solvent consumed during the specified averaging period if any of the coatings, as delivered to the coating application system, exceed the applicable control limits. Such records shall be sufficient to calculate the applicable weighted average of volatile organic compounds for all coatings.

(C) Records shall be maintained of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(1) of this title (relating to Testing Requirements).

(D) Records required by subparagraphs (A)-(C) of this paragraph shall be maintained for at least two years and shall be made available upon request by representatives of the Texas Air Control Board, United States Environmental Protection Agency, or local air pollution control agency.

(2) The owner or operator of any surface coating facility which utilizes a vapor recovery system approved by the executive director in accordance with §115.423(2) of this title (relating to Alternate Control Requirements) shall:

(A) install and maintain monitors to accurately measure and record operational parameters of all required control devices as necessary to ensure the proper functioning of those devices in accordance with design specifications, including:

(i) the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream

and downstream of any catalyst bed;

(ii) the total amount of volatile organic compounds recovered by carbon adsorption or other solvent recovery systems during a calendar month;

(iii) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of volatile organic compound emissions during such activities;

(B) maintain records of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(2) of this title (relating to Testing Requirements); and

(C) maintain all records at the affected facility for at least two years and make such records available to representatives of the Texas Air Control Board, United States Environmental Protection Agency, or local air pollution control agency, upon request.

(3) In accordance with the schedule referenced in §115.429(2)(C) of this title (relating to Counties and Compliance Schedules) records shall be maintained sufficient to document the applicability of the conditions for exemptions referenced in §115.427(6) of this title (relating to Exemptions).

§115.427. Exemptions. For the counties referenced in §115.429 of this title (relating to Counties and Compliance Schedules), the following exemptions shall apply.

(1) Surface coating operations located at any facility in Brazoria, El Paso, Galveston, Gregg, Jefferson, Nueces, Orange, or Victoria County which when uncontrolled will emit a combined weight of volatile organic compounds less than 550 pounds (249.5 kg) in any continuous 24-hour period are exempt from the provisions of §115.421 of this title (relating to Emission Specifications).

(2) Surface coating operations located at any facility in Harris County which when uncontrolled will emit a combined weight of volatile organic compounds less than 100 pounds (45.4 kg) in any continuous 24-hour period are exempt from the provisions of §115.421 of this title (relating to Emission Specifications):

(3) The following coating operations are exempt from the application of §115.421(9) of this title (relating to Emission Specifications):

(A) exterior of fully assembled aircraft except as required by §115.421(9)(A)(v) of this title (relating to Emission Specifications);

(B) automobile refinishing except as required by §115.421(8)(B) and

(C) of this title (relating to Emission Specifications);

(C) customized (decorative) top coating of automobiles and trucks, if production is less than 35 vehicles per day;

(D) exterior of fully assembled marine vessels; and

(E) exterior of fully assembled fixed offshore structures.

(4) The following coating operations are exempt from the application of §115.421(10) of this title (relating to Emission Specifications):

(A) the manufacture of exterior siding;

(B) tileboard; or

(C) particle board used as a furniture component.

(5) Architectural coatings are exempt from the provisions of §115.421(11) of this title (relating to Emission Specifications) in Dallas and Tarrant Counties if manufactured before December 31, 1988.

(6) Surface coating operations located at any facility in Dallas and Tarrant Counties, which when uncontrolled will emit a combined weight of volatile organic compounds of less than 100 pounds (45.4 kg) per day, except aircraft exterior prime coating controlled by §115.421(9)(A)(v) of this title (relating to Emission Specifications) and automobile refinishing controlled by §115.421(8)(B) and (C) of this title (relating to Emission Specifications), shall be exempt from the provisions of §115.421 of this title (relating to Emission Specifications).

(7) In accordance with the schedule referenced in §115.429(2)(C) of this title (relating to Counties and Compliance Schedules), the following exemptions shall apply to surface coating operations in Dallas, El Paso, Harris, and Tarrant Counties, except for aircraft prime coating controlled by §115.421(9)(H)(v) of this title (relating to Emission Specifications) and automobile refinishing controlled by §115.421(8)(B) and (C) of this title (relating to Emission Specifications).

(A) Surface coating operations on a property, which when uncontrolled, will emit a combined weight of volatile organic compounds of less than three pounds per hour and 15 pounds in any consecutive 24-hour period shall be exempt from the provisions of §115.421 of this title (relating to Emission Specifications) and §115.423 of this title (relating to Alternate Control Requirements).

(B) Surface coating operations on a property, which when uncontrolled, will emit a combined weight of volatile organic compounds of less than 100 pounds in any consecutive 24-hour period shall be exempt from the provisions of §115.421 of this title (relating to Emission Specifications) if documentation is provided to demonstrate that necessary coating performance criteria cannot be achieved with coatings which satisfy applicable emission specifications.

(C) Surface coating operations on an property, which when uncontrolled, will emit a combined weight of volatile organic compounds of less than 100 pounds in any consecutive 24-hour period shall be exempt from the provisions on §115.423 of this title (relating to Alternate Control Requirements).

(8) The following coatings are exempt from the application of this undesignated head (concerning surface coating processes):

(A) paints sold in containers of one quart or less;

(B) paints used on roadways, pavement, swimming pools, and similar surfaces;

(C) concentrated color additives; and

(D) sealants applied over bare metal solely for the prevention of flash rusting.

§115.429. Counties and Compliance Schedules. All affected persons in Brazoria, Dallas, El Paso, Galveston, Gregg, Harris, Jefferson, Nueces, Orange, Tarrant, and Victoria Counties shall be in compliance with this undesignated head (concerning surface coating processes) in accordance with the following schedules:

(1) all compliance schedules which have expired prior to the effective date of the adoption of this section, in accordance with §115.930 of this title (relating to Compliance Dates); and

(2) the following additional compliance schedules.

(A) All affected persons in Dallas and Tarrant Counties shall be in compliance with §115.421(8)(B) and (C) of this title (relating to Emission Specifications) as soon as practicable but no later than December 31, 1989.

(B) All affected persons in Dallas and Tarrant Counties shall be in

compliance with §115.421(11) of this title (relating to Emission Specifications) as soon as practicable but no later than December 31, 1989.

(C) All affected persons shall be in compliance with §115.426 of this title (relating to Recordkeeping Requirements):

(i) in Dallas and Tarrant Counties as soon as practicable but no later than August 31, 1990; and

(ii) in Brazoria, El Paso, Galveston, Harris, Jefferson, and Orange Counties as soon as practicable but no later than December 31, 1990.

(D) All persons required to implement controls as a result of exceeding the exemption levels referenced in §115.427(6) of this title (relating to Exemptions) shall be in compliance with §115.421 of this title (relating to Emissions Specifications):

(i) in Dallas and Tarrant Counties as soon as practicable but no later than August 31, 1990; and

(ii) in El Paso and Harris Counties as soon as practicable but no later than December 31, 1990.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's authority to adopt.

Issued in Austin, Texas on July 19, 1989.

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Allen Eli Bell
Executive Director
Texas Air Control Board

Proposed date of adoption: December 15, 1989

For further information, please call: (512) 451-5711, ext. 354

Graphics Arts (Printing) by Rotogravure and Flexographic Processes

• 31 TAC §§115.432, 115.433,
115.435-115.437, 115.439

The Texas Air Control Board (TACB) proposes new §§115.432, 115.433, 115.435-115.437, and 115.439, concerning graphic arts (printing) by rotogravure and flexographic processes, which contain the provisions of existing §§115.201-115.203, concerning graphic arts (printing) by rotogravure and flexographic processes in Brazoria, Dallas, El Paso, Galveston, Gregg, Harris, Jefferson, Nueces, Orange, Tarrant, and Victoria Counties. This new undesignated head will be included in a proposed new Subchapter E, concerning solvent-using processes. While in most instances the proposal does not involve new requirements, the sections have been significantly reorganized to reduce the inconsistencies which have developed as a result of numerous independent revisions in

the past. Several substantive changes, however, are also proposed in order to respond to the Environmental Protection Agency requirements of Phase I of the post-87 state implementation plan (SIP) revisions.

These changes are a part of a series of substantial proposed revisions to Chapter 115, concerning control of air pollution from volatile organic compounds. Since the proposed changes are extensive, the staff has determined that it would be administratively more efficient to propose concurrently the repeal of the existing Chapter 115 in its entirety and the addition of a new Chapter 115.

The proposed new §115.432, concerning control requirements, specifies the applicable equipment and procedural requirements. The proposed new §115.433, concerning alternate control requirements, provides for executive director approval for the use of alternate technology which will result in equivalent volatile organic compound (VOC) emission reductions. The proposed new §115.435, concerning testing requirements, identifies federally approved test methods and procedures to be used to determine compliance with applicable controls or exemptions. The proposed new §115.436, concerning recordkeeping requirements, specifies the type of records to be kept to document satisfaction of exemption criteria or performance of applicable control devices. The proposed new §115.437, concerning exemptions, specifies the types of facilities which are exempted from the requirements of these sections. The proposed new §115.439, concerning counties and compliance schedules, requires all affected facilities to be in compliance in accordance with all expired and pending schedules. Furthermore, affected printing operations in Brazoria, El Paso, Galveston, Harris, Jefferson, and Orange Counties must comply with applicable recordkeeping requirements by December 31, 1990.

Bennie Engelke, director of management and staff services, has determined that for the first five-year period the sections are in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the sections. Economic costs to individuals and businesses required to implement the proposed measures are associated only with recordkeeping requirements and are estimated as follows: annual cost per facility for fiscal year 1990 will be \$0 and for fiscal years 1991-1994 will be \$5,000.

Les Montgomery, P.E., director of the Technical Support and Regulation Development Program, also has determined that for each year of the first five years the sections are in effect the public benefit anticipated as a result of enforcing the sections are the public benefit anticipated as a result of implementing the sections will be more effective and consistent enforcement associated with the control of VOC. In addition, these measures are necessary to address the requirements of Phase I of the post-87 SIP revisions.

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Second Floor, 2 Civic Center Plaza, El Paso; and August 17, 1989, 4 p.m., Arlington Public Library, 101 East Abram, Arlington.

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§115.432. Control Requirements. For the counties referenced in §115.439 of this title (relating to Counties and Compliance Schedules), no person shall operate or allow the operation of a packaging rotogravure, publication rotogravure, or flexographic printing facility that uses solvent-containing ink unless volatile organic compound emissions are limited by one of the following:

(1) application to the substrate of low solvent ink with a volatile fraction containing 25% by volume or less of volatile organic compound solvent and 75% by volume or more of water and exempt solvent;

(2) application to the substrate of high solids solvent-borne ink containing 60% by volume or more of nonvolatile material (minus water and exempt solvent); or

(3) operation of a carbon adsorption or incineration system to reduce the volatile organic compound emissions from an effective capture system by at least 90% by weight. The design and operation of the capture system must be consistent with good engineering practice and shall be required to provide for an overall reduction in volatile organic compound emissions, as demonstrated to the satisfaction of the executive director, upon request, of at least the following weight percentages:

(A) 75% for a publication rotogravure process;

(B) 65% for a packaging rotogravure process; and

(C) 60% for a flexographic printing process.

§115.433. Alternate Control Requirements.

For all affected persons in the counties referenced in §115.439 of this title (relating to Counties and Compliance Schedules), alternate methods of demonstrating and