APPENDIX 11-I

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Appendix 11-I

Evaluation of Reasonably Available Control Technology (RACT)

Section 182(b)(2) of the Federal Clean Air Act (FCAA) requires implementation of RACT for ozone nonattainment areas classified as moderate and above for: (A) each category of volatile organic compounds (VOC) sources covered by a control technique guideline (CTG) document issued between November 15, 1990 and the date of attainment; (B) all VOC sources covered by any CTG document issued prior to November 15, 1990; and (C) all other major stationary sources of VOCs.

CTGs are U.S. Environmental Protection Agency (EPA) guidance documents which are intended to provide state and local air pollution control agencies with an information base for proceeding with their own analysis of RACT to meet statutory requirements. These documents review existing information and data concerning the technical capability and cost of various control techniques to reduce emissions. Each CTG document contains a recommended "presumptive norm" for RACT for a particular source category, based on EPA's evaluation of capabilities and problems general to the source category. However, the presumptive norm is only a recommendation, and state and local air pollution control agencies may choose to develop their own RACT requirements on a case-by-case basis, considering the economic and technical circumstances of the individual source category within an area.

For sources specified in §182(b)(2)(B) and (C), the commission has previously adopted VOC RACT rules or has demonstrated that no major sources exist for specific source categories. For sources specified in §182(b)(2)(A), EPA has issued two CTG documents to date. The first CTG document, Control of Volatile Organic Compound Emissions From Reactor Processes and Distillation Operations Processes in the Synthetic Organic Compound Manufacturing Industry (SOCMI) was issued on November 15, 1993.

The commission adopted RACT rules for SOCMI reactor processes and distillation operations on November 10, 1993. Availability of a final CTG for wood furniture coatings was announced on May 20, 1996 in the Federal Register (61 FR 25223).

The other categories for which EPA was to issue CTGs under §182(b)(2)(A) include VOC storage tanks, automotive refinishing, SOCMI batch processes, industrial wastewater, cleanup solvents, plastic parts (automotive and business machines) coatings, and offset printing. Instead of issuing CTGs for these source categories, EPA issued guidance documents known as Alternative Control Techniques (ACT) documents. The ACTs do not establish the presumptive norm for RACT but merely contain information on emissions, controls, control options, and costs. EPA itself has consistently noted in the ACTs that each ACT "presents options only, and does not contain a recommendation on RACT." Clearly, the ACTs are not RACT-defining documents like CTGs, but are information documents only, which leave to the states the decision about the level of control that represents RACT. Further, the ACTs do not constitute a benchmark to which RACT as established by a state can be compared. Consequently, the commission is under no obligation to adopt any of the suggested control options contained within the ACT documents. Likewise, the commission is under no obligation to adopt any of the suggested control options contained within the draft CTG documents.

EPA's failure to promulgate CTGs as presumptive RACT results in the authority to define RACT being passed to the states. Because ACTs are represented as guidance only, EPA's strict adherence to them as establishing presumptive RACT goes beyond the intent of the 1990 FCAA Amendments, because the 1990 FCAA Amendments charged EPA to define RACT through the CTG promulgation process. EPA's failure to do so has resulted in no establishment of presumptive RACT. EPA's adherence to the ACTs as presumptive RACT is violative of statutory and common law principles in that it is an arbitrary and capricious act on the part of EPA without opportunity for due process through the established public comment process.

EPA has stated that for certain categories the Maximum Achievable Control Technology (MACT) standard establishes the RACT level of control. However, the definition of RACT states that all categories should be covered to an appropriate degree of technical feasibility and economic reasonableness. MACT is the most stringent 12% in use and thus cannot be mandatorily equated with RACT. The MACT definition is inherently more stringent than RACT. Therefore, the commission believes that it is beyond the intent of the 1990 FCAA Amendments for EPA to define RACT as equivalent to, or more stringent than, MACT. Finally, the commission believes that its existing VOC rules demonstrate substantial compliance with EPA's guidance on RACT. Since the common law principle of substantial compliance is typically upheld by the courts, the commission does not believe that additional RACT requirements are necessary at this time.

The 1990 FCAA Amendments require states to ensure that RACT is in place for all major VOC sources in moderate and above ozone nonattainment areas. Although the commission believes existing state or proposed federal rules represent a reasonable level of control and thus fulfill the RACT requirements, the remainder of this section further discusses the commission’s demonstration that the VOC RACT requirements have been met on required and major source categories.

Storage Tanks

Existing rules (§§115.112-115.119) are in place for all counties in the Beaumont/Port Arthur (BPA), Dallas/Fort Worth (DFW), El Paso (ELP), and Houston/Galveston (HGA) nonattainment areas. These rules are based upon CTGs issued in 1977-1978. EPA has issued an ACT document for storage tanks which suggests: (1) lowering the vapor pressure exemption level to 0.5 or 0.75 psia; (2) upgrading of vapor-mounted primary seals on internal floating roof tanks at tank turnaround; (3) installation of secondary seals on external floating roof tanks which previously had been exempt from secondary seal requirements at tank turnaround; (4) 95% control efficiency for add-on control devices; and (5) installation of gasketed seals. These will be addressed in order.

(1) Vapor Pressure: The most stringent exemption level suggested by EPA's ACT would require installation of floating roofs at tanks with a nominal storage capacity of $40,000 gallons which store VOCs with a vapor pressure (vp) of $0.5 psia. The commission's current rule requires installation of floating roofs at tanks with a nominal storage capacity of $25,000 gallons which store VOC with a vapor pressure of $1.5 psia. These exemption levels will be compared through 1) use of the commission's emissions inventory (EI) for the BPA, DFW, ELP, and HGA ozone nonattainment areas; and 2) an analysis of the storage tanks which are exempted by the ACT and the commission's existing rule. A summary is as follows:

Tanks Which Are Exempted

EPA's ACT	Commission's Existing Rule
<40,000 gal. (any vp)	<25,000 gal. (any vp)
AND	AND
$40,000 gal. and <0.5 psia	$25,000 gal. and <1.5 psia

This can be rewritten as:

<40,000 gal. (any vp)	<25,000 gal. (any vp)
AND	AND
$40,000 gal. and <0.5 psia	25,000 $ x <40,000 and <1.5 psia
	AND

	$40,000 gal. and <1.5 psia

This in turn can be rewritten as:

<40,000 gal. (any vp)	<25,000 gal. (any vp)
AND	AND
$40,000 gal. and <0.5 psia	25,000 $ x <40,000 and <1.5 psia
	AND
	$40,000 gal. and <0.5 psia
	AND
	$40,000 gal. and 0.5 $ x <1.5 psia

The "$40,000 gal. and <0.5 psia" category appears on both sides and can be subtracted. This leaves:

<40,000 gal. (any vp)	<25,000 gal. (any vp)
	AND
	25,000 $ x <40,000 and <1.5 psia
	AND
	$40,000 gal. and 0.5 $ x <1.5 psia

Rewriting the left side:

<25,000 gal. (any vp)	<25,000 gal. (any vp)
AND	AND
25,000 $ x <40,000 gal. (any vp)	25,000 $ x <40,000 and <1.5 psia
	AND
	$40,000 gal. and 0.5 $ x <1.5 psia

Subtracting the "<25,000 gal. (any vp)" category from both sides and rewriting the remaining term on the left side gives:

25,000 $ x <40,000 gal. and < 1.5 psia	25,000 $ x <40,000 and <1.5 psia
25,000 $ x <40,000 gal. and $ 1.5 psia	AND
	$40,000 gal. and 0.5 $ x <1.5 psia

Now subtract the "25,000 $ x <40,000 gal. and < 1.5 psia" category from both sides to get:

25,000 $ x <40,000 gal. and $ 1.5 psia	$40,000 gal. and 0.5 $ x <1.5 psia

If emissions associated with the term on the left (E_{EPA}) are larger than the emissions associated with the term on the right ($E_{Commission}$), based on an EI retrieval for each of the four ozone nonattainment areas, then this would show that EPA's ACT exempts more emissions (net) based on size and vapor pressure than the commission's current rule. The term ($E_{Commission}$ - E_{EPA}) gives the magnitude of any increased emissions due to the commission's exemption levels as compared to the ACT's exemption levels for size and vapor pressure.

A summary of a review of the EI data for each of the four nonattainment areas is as follows:

	E_{EPA} (TPY)	$E_{Commission}$ (TPY)	($E_{Commission}$ - E_{EPA}) (TPY)
BPA	3.44	6.39	2.95
DFW	2.64	0.05	-2.59
ELP	0.59	1.13	0.54
HGA	36.29	308.70	272.41

(2) <u>Vapor-mounted primary seals on internal floating roof tanks (IFRTs).</u> EPA's ACT suggests that

upgrading of vapor-mounted primary seals on IFRTs be required at tank turnaround. According to EPA's storage tank ACT (page 3-20), the emissions from IFRTs can be estimated by the following equation:

$$L_T = L_W + L_R + L_F + L_D,$$

where

L_T = the total loss;

L_W = the withdrawal loss;

L_R = the rim seal loss;

L_F = the deck fitting loss; and

L_D = the deck seam loss.

Examination of the equations for L_W, L_R, L_F, and L_D revealed that the type of primary seal is a factor only in the equation for L_R. Therefore, L_W, L_F, and L_D will not change no matter what type of primary seal an IFRT has. For the rim seal loss (L_R):

$$L_R = K_R \, D \, P^* \, M_V \, K_C \, / \, 2205,$$

where

L_R = the rim seal loss (Mg/yr);

K_R = the rim seal loss factor (lb-mole/ft-yr);

D = tank diameter (feet);

P^* = the vapor pressure function (dimensionless)

= $0.068 P / ([1 + (1 - 0.068 P)^{0.5}]^2)$,

where P = true vapor pressure (psia) of the VOC stored;

M_V = average molecular weight of the vapor (lb/lb-mole); and

K_C = the product factor (dimensionless).

For an IFRT with a vapor-mounted primary seal only, K_R is 6.7, while for an IFRT with a liquid-mounted primary seal only, K_R is 3.0. Therefore, if all other factors are held constant, then the rim seal loss (L_R) will be (3.0 / 6.7) = 0.448 times lower for an IFRT with a liquid-mounted primary seal only as compared to an IFRT with a vapor-mounted primary seal only (allowed under the commission's rule). The decrease in emissions from implementing the control requirements of the ACT logically can not be larger than L_T; i.e., the smallest that emissions can mathematically be under the tank configuration suggested by EPA's ACT is zero.

It should be noted that EI extracts give only L_T, the total emissions, which includes L_W, L_R, L_F, and L_D; i.e., L_R is not available from the EI except by a manual file search. Therefore, scaling down L_T, rather than L_R, to give the emissions under EPA's ACT will also scale down L_W, L_F, and L_D, although these three emission types are independent of the type of primary seal. Also, no attempt was made to subtract out the tanks storing VOC with a vapor pressure below 0.5 psia. Consequently, this approach will indicate that the difference in emissions between the ACT and the commission’s existing rule is larger than it actually is.

A summary of the EI extracts (one for each of the four nonattainment areas) listing the IFRTs which are $40,000 gallons AND are equipped with vapor-mounted primary seals AND which have no secondary seal is as follows:

Ë BPA -- Tanks with total emissions, L_T, of 335.94 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 335.94 TPY.

Ë DFW -- Tanks with total emissions, L_T, of 8.63 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 8.63 TPY.

Ë ELP -- Tanks with total emissions, L_T, of 4.17 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 4.17 TPY.

Ë HGA -- Tanks with total emissions, L_T, of 177.12 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 177.12 TPY.

(3) <u>Installation of secondary seals on external floating roof tanks (EFRTs) which currently have only primary seals.</u> EPA's ACT suggests that EFRTs which were previously exempt from the requirement to have secondary seals be required to upgrade to secondary seals at tank turnaround. According to EPA's storage tank ACT (page 3-15), the emissions from EFRTs can be estimated by the following equation:

$$L_T = L_S + L_W,$$

where

L_T = the total loss;

L_S = the standing loss; and

L_W = the withdrawal loss.

According to page 3-6 of the ACT, $L_S = L_R + L_F$,

where

L_R = the rim seal loss; and

L_F = the deck fitting loss;

Therefore, $L_T = L_R + L_F + L_W$.

Examination of the equations for L_R, L_F, and L_W revealed that the presence or absence of a secondary seal is a factor only in the equation for L_R. Therefore, L_F and L_W will not change no matter what type of seals an EFRT has. For the rim seal loss (L_R):

$$L_R = K_R V^N D P^* M_V K_C / 2205,$$

where

L_R = the rim seal loss (Mg/yr);

K_R = the rim seal loss factor (lb-mole/(mph)^N ft-yr);

V = average wind speed (mph);

N = rim seal-related wind speed exponent (dimensionless);

D = tank diameter (feet);

P^* = the vapor pressure function (dimensionless)

$= 0.068 P / ([1 + (1 - 0.068 P)^{0.5}]^2)$,

where P = true vapor pressure (psia) of the VOC stored;

M_V = average molecular weight of the vapor (lb/lb-mole); and

K_C = the product factor (dimensionless).

From Table 3-2 of the storage tank ACT, K_R and N vary depending on whether the primary seal is a mechanical shoe, a liquid-mounted seal, or a vapor-mounted seal. The average wind speed, V, for BPA, DFW, ELP, and HGA is 9.7, 10.7, 8.8, and 7.9 mph, respectively, according to 1993 meteorological data from the commission's Monitoring Operations Division. Therefore, $K_R V^N$ for various seal configurations is calculated as follows for each of the four nonattainment areas:

Seal Type	**K_R**	**N**	**K_RV^N BPA**	**K_RV^N DFW**	**K_RV^N ELP**	**K_RV^N HGA**
Mechanical shoe primary only	1.2	1.5	36.3	42.0	31.3	26.6
Mechanical shoe primary with shoe-mounted secondary	0.8	1.2	12.2	13.8	10.9	9.6
Liquid-mounted primary only	1.1	1.0	10.7	11.8	9.7	8.7
Liquid-mounted primary with rim-mounted secondary	0.7	0.4	1.7	1.8	1.7	1.6
Vapor-mounted primary only	1.2	2.3	223.2	279.7	178.4	139.2

If all other variables are held constant, the effect on the rim seal loss emissions due to adding a secondary seal depends only on the value of K_RV^N for the different types of primary seal. The difference in rim seal loss emissions between the commission's current rule and EPA's ACT is determined by comparing the value of K_RV^N for a primary seal only to the value of K_RV^N for the minimum acceptable configuration according to the ACT.

For example, an EFRT in HGA with only a vapor-mounted primary seal has a K_RV^N value of 139.2. EPA's ACT would require this tank to be upgraded to at least a mechanical shoe primary seal and shoe-mounted secondary seal. For HGA, this configuration has a K_RV^N value of 9.6. Therefore, the rim seal loss (L_R) will be (9.6 / 139.2) = 0.069 times lower for the ACT's minimum requirements of a primary and secondary seal than for the vapor-mounted primary seal (allowed under the commission's rule).

It should be noted that EI extracts give only L_T, the total emissions, which includes L_W, L_R, and L_F; i.e., L_R is not available from the EI except by a manual file search. Therefore, scaling down L_T, rather than L_R, will also scale down L_W and L_F, although these two emission types are independent of the presence of absence of a secondary seal. Also, no attempt was made to subtract out the tanks storing VOC with a vapor pressure below 0.5 psia. Consequently, this approach will indicate that the difference in emissions between the ACT and commission's existing rule is larger than it actually is. Logically, this can not be larger than L_T; i.e., the smallest that emissions can mathematically be under the tank configuration suggested by EPA's ACT is zero.

A summary of the EI extracts (one for each of the four nonattainment areas, broken down according to primary seal type) listing the EFRTs which are $40,000 gallons AND which have no secondary seal is as follows:

Mechanical shoe primary only:

Ë BPA -- Tanks with total emissions, L_T, of 141.95 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 141.95 TPY.

Ë DFW -- Tanks with total emissions, L_T, of 2.55 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 2.55 TPY.

Ë ELP -- No affected storage tanks were identified.

Ë HGA -- Tanks with total emissions, L_T, of 192.99 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 192.99 TPY.

Liquid-mounted primary only:

Ë BPA -- Tanks with total emissions, L_T, of 19.89 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 19.89 TPY.

Ë DFW -- No affected storage tanks were identified.

Ë ELP -- No affected storage tanks were identified.

Ë HGA -- Tanks with total emissions, L_T, of 22.89 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 22.89 TPY.

Vapor-mounted primary only:

Ë BPA -- Tanks with total emissions, L_T, of 0.12 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 0.12 TPY.

Ë DFW -- Tanks with total emissions, L_T, of 0.37 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 0.37 TPY.

Ë ELP -- No affected storage tanks were identified.

Ë HGA -- Tanks with total emissions, L_T, of 144.82 TPY were identified. Therefore, the worst case difference in emissions between EPA's ACT and the commission's current rule is 144.82 TPY.

(4) 95% control efficiency for add-on control devices. EPA's ACT suggests that emissions from storage tanks which are routed to a control device should be controlled by a device which has an efficiency of at least 95%. The commission's current rule requires that add-on controls have a minimum efficiency of 90%. The emissions increase (L_{INC}) due to having a control efficiency below the ACT's suggested minimum of 95% is:

$$L_{INC} = L_T - \left[\frac{L_T}{(1 - CE_{actual})} \right] \times (1 - 0.95)$$

$$= L_T - \left[1 - \underline{\quad 0.05 \quad} \right],$$

$(1 - CE_{actual})$

where

L_T = the tank emissions at a control efficiency less than 95%; and

CE_{actual} = the actual control efficiency.

Results of EI extracts (one for each of the four nonattainment areas) which list the fixed roof tanks which are $40,000 gallons AND which are controlled by a control device with a control efficiency below 95% but at least 90% are as follows:

Ë BPA -- No affected storage tanks were identified.

Ë DFW -- Increased emissions are 1.82 TPY.

Ë ELP -- No affected storage tanks were identified.

Ë HGA -- Increased emissions are 4.88 TPY.

(5) Installation of gasketed seals on deck fittings (access hatches, automatic gauge float wells, sample wells, etc.) Information on the deck fitting gaskets is not available without conducting a very time-intensive study of the paper copies of individual EIs in the files. It is assumed that these losses are insignificant in light of the extremely conservative approach taken in calculating the difference in emissions between EPA's ACT and the commission's current rule for: 1) vapor-mounted primary seals on IFRTs; and 2) installation of secondary seals on EFRTs which currently have only primary seals.

Comparison using the "5% rule." The 5% rule provides a mechanism for states to justify exemptions or cutpoints which are more lenient than EPA's RACT baseline. It is applied by determining the total emissions allowed by EPA's RACT baseline (including exemptions) and comparing this to the emissions allowed (including exemptions) by a state regulation. If the difference is less than 5%, EPA considers that there is no substantive difference between state and EPA requirements. The 5% justification for each rule category must be applied separately to each nonattainment area.

The total storage tank emissions, E_{EI}, for all tanks in each of the four nonattainment areas are as follows:

- BPA -- 6881.43 TPY
- DFW -- 387.60 TPY
- ELP -- 197.51 TPY
- HGA -- 12,358.39 TPY

These totals include emissions from tanks controlled by and exempted from the commission's current rules. These emission totals would be reduced by implementing the suggestions of Items (1)-(5) as given in EPA's ACT. For each nonattainment area, the total adjustments (E_{ADJ}) to reflect EPA's suggested level of control are determined by totaling the differences between the commission and EPA control levels for Items (1) -(5) and are as follows:

- BPA -- 2.95 + 335.94 + 141.95 + 19.89 + 0.12 + 0.0 = 500.85 TPY
- DFW -- (-2.59) + 8.63 + 2.55 + 0.0 + 0.37 + 1.82 = 10.78 TPY
- ELP -- 0.54 + 4.17 + 0.0 + 0.0 + 0.0 + 0.0 = 4.71 TPY
- HGA -- 272.41 + 177.12 + 192.99 + 22.89 + 144.82 + 4.88 = 815.11 TPY

Therefore, if the suggested controls of the storage tank ACT were implemented, the total emissions in each nonattainment area would be $E_{EI} - E_{ADJ} = E_{ACT}$, as summarized below:

Ë BPA -- 6881.43 - 500.85 = 6380.58 TPY

Ë DFW -- 387.60 - 10.78 = 376.82 TPY

Ë ELP -- 197.51 - 4.71 = 192.80 TPY

Ë HGA -- 12,358.39 - 815.11 = 11,543.28 TPY

For each nonattainment area, the 5% rule can be used if E_{EI} is less than (1.05) E_{ACT}. A comparison of E_{EI} to (1.05) x (E_{ACT}) is as follows:

Area	**Post-control Emissions (E_{EI}) (TPY)**	**Post-control Emissions (E_{ACT}) (TPY)**	**(1.05) x (E_{ACT}) (TPY)**
BPA	6881.43	6380.58	6699.61
DFW	387.60	376.82	395.66
ELP	197.51	192.80	202.44
HGA	12,358.39	11,543.28	12,120.44

Since E_{EI} is less than (1.05) x (E_{ACT}) for DFW and ELP, the commission's existing storage tank rules represent RACT for these areas, even though an extremely conservative approach was taken in calculating the difference in emissions between EPA's ACT and the commission's current rule for: 1) vapor-mounted primary seals on IFRTs; and 2) installation of secondary seals on EFRTs which currently have only primary seals. Because E_{EI} is greater than (1.05) x (E_{ACT}) for BPA and HGA, the difference in emissions associated with upgrading IFRTs which have vapor-mounted primary seals and EFRTs which do not have secondary seals will be re-evaluated in order to more realistically determine the actual emissions difference.

<u>Re-evaluation of emissions reduction from upgrading of vapor-mounted primary seals on IFRTs and from</u>

installation of secondary seals on EFRTs which currently have only primary seals. EI staff reviewed several tanks from half a dozen accounts in BPA and HGA for rim seal losses as a percentage of the total tank loss. Rim seal losses were typically 30% to 45% of the total emissions for these tanks.

Upgrading of vapor-mounted primary seals on IFRTs. As discussed earlier, if all other factors are held constant, then the rim seal loss (L_R) will be (3.0 / 6.7) = 0.448 times lower for an IFRT with a liquid-mounted primary seal only as compared to an IFRT with a vapor-mounted primary seal only (allowed under the commission's rule). A summary of the EI extracts for BPA and HGA listing the IFRTs which are $40,000 gallons AND are equipped with vapor-mounted primary seals AND which have no secondary seal is as follows:

Ë BPA -- IFRTs with total emissions, L_T, of 335.94 TPY were identified. Of the 335.94 TPY, up to 45% are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (3.0 / 6.7)] (0.45) (335.94 TPY) = 83.45 TPY.

Ë HGA -- IFRTs with total emissions, L_T, of 177.12 TPY were identified. Of the 177.12 TPY, up to 45% are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (3.0 / 6.7)] (0.45) (177.12 TPY) = 44.00 TPY.

Installation of secondary seals on EFRTs which currently have only primary seals. As discussed earlier, if all other variables are held constant, the effect on the rim seal loss emissions due to adding a secondary seal depends only on the value of $K_R V^N$ for the different types of primary seal. The difference in rim seal loss emissions between the commission's current rule and EPA's ACT is determined by comparing the value of $K_R V^N$ for a primary seal only to the value of $K_R V^N$ for the minimum acceptable configuration according to the ACT. A summary of the EI extracts for BPA and HGA (broken down according to primary seal type) listing the EFRTs which are $40,000 gallons AND which have no secondary seal is as follows:

Mechanical shoe primary only:

Ë BPA -- Tanks with total emissions, L_T, of 141.95 TPY were identified. Of the 141.95 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (12.2 / 36.3)] (0.45) (141.95 TPY) = 42.41 TPY.

Ë HGA -- Tanks with total emissions, L_T, of 192.99 TPY were identified. Of the 192.99 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (9.6 / 26.6)] (0.45) (192.99 TPY) = 55.50 TPY.

Liquid-mounted primary only:

Ë BPA -- Tanks with total emissions, L_T, of 19.89 TPY were identified. Of the 19.89 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (1.7 / 10.7)] (0.45) (19.89 TPY) = 7.53 TPY.

Ë HGA -- Tanks with total emissions, L_T, of 22.89 TPY were identified. Of the 22.89 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (1.6 / 8.7)] (0.45) (22.89 TPY) = 8.41 TPY.

Vapor-mounted primary only:

Ë BPA -- Tanks with total emissions, L_T, of 0.12 TPY were identified. Of the 0.12 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (12.2 / 223.2)] (0.45) (0.12 TPY) = 0.05 TPY.

Ë HGA -- Tanks with total emissions, L_T, of 144.82 TPY were identified. Of the 144.82 TPY, up to 45%, are due to rim seal losses. Therefore, the maximum difference in emissions between EPA's ACT and the commission's current rule is [1 - (9.6 / 139.2)] (0.45) (144.82 TPY) = 60.67 TPY.

<u>Revised comparison using the "5% rule."</u> As before, the total storage tank emissions, E_{EI}, for all tanks in BPA and HGA are as follows:

Ë BPA -- 6881.43 TPY

Ë HGA -- 12,358.39 TPY

These totals include emissions from tanks controlled by and exempted from the commission's current rules. These emission totals would be reduced by implementing the suggestions of Items (1)- (5) as given in EPA's ACT. The revised total adjustments (E_{ADJ}) to reflect EPA's suggested level of control are determined by totaling the differences between the commission and EPA control levels for Items (1) -(5) and are as follows:

Ë BPA -- 2.95 + 83.45 + 42.41 + 7.53 + 0.05 + 0.0 = 136.39 TPY

Ë HGA -- 272.41 + 44.00 + 55.50 + 8.41 + 60.67 + 4.88 = 445.87 TPY

Therefore, if the suggested controls of the storage tank ACT were implemented, the revised total emissions in BPA and HGA would be $E_{EI} - E_{ADJ} = E_{ACT}$, as summarized below:

Ë BPA -- 6881.43 - 136.39 = 6745.04 TPY

Ë HGA -- 12,358.39 - 445.87 = 11,912.52 TPY

For each nonattainment area, if the ACT limits constituted RACT then the 5% rule can be used if E_{EI} is less than (1.05) E_{ACT}. A comparison of E_{EI} to (1.05) x (E_{ACT}) is as follows:

Area	**Post-control Emissions (E_{EI}) (TPY)**	**Post-control Emissions (E_{ACT}) (TPY)**	**(1.05) x (E_{ACT}) (TPY)**
BPA	6881.43	6745.04	7082.29
HGA	12,358.39	11,912.52	12,508.15

Since E_{EI} is less than (1.05) x (E_{ACT}) for BPA and HGA, the commission's existing storage tank rules represent RACT for these areas if the ACT is RACT.

Additional control requirements may be necessary in the future to achieve attainment with the ozone standard. The commission will retain improved storage tank requirements as a potential future control measure.

Synthetic Chemical Manufacturing Industry (SOCMI) Batch Processes

Existing rules (§§115.121-115.129) for general vent gas streams which require 90% control of individual vents are in place for all nonattainment counties. The rules require control of all vent gas streams except those with emissions less than 100 pounds per 24-hour period or less than 612 parts per million by volume (ppmv).

EPA has issued an ACT document for SOCMI batch processes which applies to Standard Industrial Classification (SIC) codes 2821, 2833, 2834, 2861, 2865, 2869, and 2879. A search for these SIC codes was conducted in the EI. No major sources were identified in ELP. One major source (Styrochem International, formerly Scott Polymers) was identified in DFW. This facility holds Air Permit No. 3069A and therefore has undergone a Best Available Control Technology (BACT) review, which represents at least RACT. VOC emissions from this polystyrene bead manufacturing facility are controlled by use of a flare and a thermal oxidizer. Permit No. 3069A requires that the flare comply with 40 CFR 60.18 and that the thermal oxidizer maintain a destruction efficiency of 95%. Stack testing of the thermal oxidizer on December 21-22, 1993 revealed that the destruction efficiency was 98.2%. The controls required by Permit No. 3069A insure that RACT or better is applied at this source.

A variety of major sources were identified in BPA and HGA. The ACT suggests a minimum control efficiency of 90% for aggregated vents. The Mass Emission Curves (presented in Appendix F of the ACT) which form the basis for EPA's suggested applicability criteria consider concentrations of 1,000 to 37,000 ppmv. As noted above, the commission's existing general vent gas rule has a 612 ppmv exemption level. However, the ACT suggests that individual vents be analyzed for possible combining into an aggregate vent gas stream. While the commission notes that implementation of the ACT's suggested control options might result in control of additional vent gas streams, the commission does not believe that such control would necessarily represent RACT. The ACT is predicated on all SOCMI batch process stream vents being uncontrolled initially. Existing control devices are not likely to have the capacity for handling anything more than a relatively minor increase in loading; consequently, companies would either have to replace the existing control device with a larger control device or add another control device in parallel with the existing control device. The ACT fails to take into account the fact that the associated incremental costs (in dollars per ton of VOC controlled) are much higher than the cost associated with the installation of the existing controls. Therefore, upgrading the control system is generally not considered to be cost-effective except in special circumstances (for example, when replacement or reconstruction of the control device is necessary for other reasons such as a concurrent plant expansion or when a control device has outlived its useful lifespan).

The ACT also fails to take into account the varying distances between vents; the cost increases as the distance between vents and the control device increases. In addition, the flow rate, concentration, temperature, etc. of batch processes are by definition not steady-state. As a result, each control device must be sized in order to handle the maximum flow rate and concentration, resulting in an oversized control device most if not all of the time. Consequently, the addition of a control device to a batch process vent gas stream is more costly (in dollars per ton of VOC controlled) than the cost of controlling a similar steady-state vent gas stream.

Furthermore, the ACT suggests that combined vents from a batch process train which have an annual mass emission total of 10,000 pounds per year or less be exempted from the control requirements. The ACT's Table 6-1, Summary of Control Option Regression Line Data, presents the regression line and data points obtained from the Appendix F graphs for various control levels. However, if the suggested 10,000 pounds per year rate is inserted into any of the regression line equations of Table 6-1, the equations give a negative flow rate. This is also true if a flow rate greater than the suggested exemption level (for example, 10,100 pounds per year) is inserted into any of these regression line equations. Evidently, an important part of the ACT is inherently flawed, and therefore this ACT cannot be relied upon as the basis for RACT. Finally, it should also be noted that EPA has previously evaluated the commission's existing general vent gas rule and determined that this rule represents RACT. In summary, additional controls on batch process vent gas streams based upon the ACT are not appropriate at this time.

Summary:

- BPA -- Current rules represent RACT.
- DFW -- One major source; current rules and BACT permit requirements represent RACT.
- ELP -- No major sources; current rules represent RACT.
- HGA -- Current rules represent RACT.

<u>SOCMI Reactor/Distillation</u>

On November 10, 1993, the commission adopted rules (§§115.121-115.129) for SOCMI reactor processes and distillation operations in all nonattainment counties. On November 15, 1993, EPA issued a CTG for these two source categories. The commission rules are essentially equivalent to the CTG's recommended level of RACT.

Summary:

Ë BPA -- Existing SOCMI vent gas rules represent RACT.

Ë DFW -- Existing SOCMI vent gas rules represent RACT.

Ë ELP -- Existing SOCMI vent gas rules represent RACT.

Ë HGA -- Existing SOCMI vent gas rules represent RACT.

Bakeries

The commission has adopted rules (§§115.121-115.129) for bakeries in DFW, ELP, and HGA. No major source bakeries were identified in BPA and ELP through a search of the EI and information from the American Bakers Association. EPA has issued an ACT document for bakeries and believes that the commission rule does not constitute RACT for major sources because the level of control required is only 30%. EPA is not disputing the level of control for non-major sources.

The affected major source bakeries in DFW and HGA are required by §115.126(a)(4) to submit a specific control plan by May 31, 1995; §115.126(a)(4) also states that all representations are enforceable conditions. Major source bakeries identified in the 1990 EI include Mrs. Baird's in Fort Worth; and Apple Tree, Mrs. Baird's, Campbell Taggert, and Flowers Industries in Houston. Apple Tree has since shut down.

Initial control plans for Flowers Industries and the two Mrs. Baird's plants specify that add-on controls which reduce VOC emissions by at least 90% will be installed on all ovens and will be operational by May 31, 1996. Also, both Mrs. Baird's plants are mandated by permit to install add-on controls on all oven vents. Campbell Taggert's control plan indicates that they will install a catalytic oxidizer on their three largest ovens which will reduce VOC emissions by at least 90% from those ovens. The fourth oven (the cornbread oven) will not be controlled, but the facility will still achieve at least an 80% overall control of VOC emissions through control of the other three ovens.

Summary:

Ë BPA -- No major sources identified.

Ë DFW -- Existing rules; the only major source bakery (Mrs. Baird's in Ft Worth) will route all bread ovens to a control device (at least 90% efficient); consequently, RACT is in place for major source bakeries in DFW.

Ë ELP -- No major sources identified; existing rules.

Ë HGA -- Existing rules; of the four major source bakeries, one (Apple Tree) is shut down. Mrs. Baird's and Flowers Industries will install add-on controls (at least 90% efficient) on all oven vents. Campbell Taggert will control the largest three of their four ovens and will achieve an 80% overall reduction; consequently, RACT is in place for major source bakeries in HGA.

<u>**Industrial Wastewater**</u>

The commission has adopted rules (§§115.140-115.149) for industrial wastewater in DFW, ELP, and HGA. These rules are currently a contingency measure in BPA. The commission’s industrial wastewater rules were modeled after EPA’s draft industrial wastewater CTG, which in turn was modeled after the proposed Hazardous Organic National Emission Standards for Hazardous Air Pollutants (NESHAP) for SOCMI facilities, known as the SOCMI HON. It should be noted that the draft CTG for industrial wastewater confines its recommendations to only four categories of industries: 1) organic chemicals, plastics, and synthetic fibers (OCPSF); 2) pharmaceuticals; 3) pesticides manufacturing; and 4) hazardous waste treatment, storage, and disposal facilities. The draft CTG contains information on two additional categories: petroleum refining, and pulp and paper, but does not recommend RACT for those industries due to the MACT standards for Hazardous Air Pollutants (HAPs) that will address them. It was EPA's opinion that within these two industries, the wastewater streams that contain non-HAP VOCs also contain a substantial amount of HAPs. The EPA concluded that the MACT standards for petroleum refining and pulp and paper will substantially reduce VOC emissions, and the recommended RACT outlined in the draft CTG was not suggested for these industries. Any industrial wastewater sources not specifically included in the draft CTG or in separate MACT standards were evidently excluded because EPA considered "no control" to represent an acceptable level of RACT for these sources.

It should be noted that the draft CTG specifically allows an affected facility, prior to the compliance date, to modify its processes to alter the characteristics of affected wastewater streams in an attempt to exempt as many of these streams as possible. This flexibility is provided because it is not cost effective to control wastewater emissions by controlling all affected wastewater streams including those with low VOC concentrations. A process adjustment where more VOC is routed to fewer streams would result in a rule implementation that is more cost effective, yet achieves the same level of emission reductions. EPA took this approach a step forward when it introduced the concept of emissions averaging under the final SOCMI HON rules. Anticipated emission reductions may be achieved by overcontrolling affected streams with high flowrates and VOC concentrations and undercontrolling (or not controlling) affected streams with low flowrates and/or VOC concentrations. EPA has long indicated that if the industrial wastewater CTG is ever finalized, it will include requirements that mirror those of the final SOCMI HON rules. The commission, therefore, anticipates that the emissions averaging concept will also be incorporated in the final CTG for industrial wastewater.

While the commission realizes that the state rule, which requires control to just below the exemption level, is not identical to the HON, which allows process adjustment and emissions averaging to exempt or reduce the required control efficiency of some wastewater streams, the commission believes these approaches will result in essentially the same outcome. None of these approaches specifically mandate 90% control of all streams. From a practical standpoint, it is highly unlikely that a wastewater stream with low flowrate and/or low VOC concentration would ever be controlled, because it is not cost effective to do so. It is a common fact that control devices achieve higher control efficiencies when the concentration of target pollutants is higher. These streams with high VOC concentrations will be the target of controls with both the state rule and the HON. Therefore, it is the commission's assessment that the state's rule would be effective in achieving the projected overall level of control.

Although the commission used a 90% control efficiency in the calculations of industrial wastewater reductions, this is only an estimate. The actual control efficiency could range between 80-90%. The overall control efficiency is the product of the control efficiency and the rule effectiveness. The commission used an 80% rule effectiveness in the calculations, although the actual rule effectiveness could also range between 80-90%. The overall control efficiency is therefore 72%. At the midpoint, with the control efficiency and rule effectiveness both 85%, the overall control efficiency of the rule is also 72%. The control efficiency takes into account the rule's control requirements and exemptions. The draft CTG for industrial wastewater, which employs similar exemptions, estimates an overall percent control reduction of 85% for the chemical industry and 83% for the refinery industry. Therefore, the commission is not trying to claim the full credit that the draft CTG would project. Even with a 90% RE, which the state is expecting to be achieved as a result of implementing the Compliance Assurance Monitoring (CAM) rules, the overall control efficiency anticipated by the commission would still be less than that assumed in the draft CTG. The reason for the high estimate of the overall control efficiency in the draft CTG is that the control devices available to be installed generally achieve control efficiencies much higher than 90%. For example, a properly designed steam stripper may achieve as high as 99.9% control efficiency. Likewise, an air stripper and a well operated biotreatment basin may easily achieve 95%

control. These types of high-efficiency control devices will be used to comply with the state wastewater rule. Therefore, even with the presence of exemption levels in the commission's industrial wastewater rule, an adjusted overall control of 72% can be achieved.

For BPA, the rule for industrial wastewater is currently a contingency rule; however, industrial wastewater VOC emissions will be controlled under federal requirements for control of HAPs. The SOCMI HON will require control of HAPs in wastewater streams at SOCMI plants, and the Petroleum Refinery MACT will require control of benzene in refinery wastewater streams. Based upon a search of the EI for Source Classification Code (SCC) 3-01-820-01 through 3-01-820-11, 3-06-005-03 through 3-06-005-06, and 3-06-005-14 through 3-06-005-22, these two industrial classifications (SOCMI and refineries) encompass all the major sources of industrial wastewater in BPA.

Two SOCMI facilities were identified in BPA and must be in compliance with the SOCMI HON by April 1997. The HON implementation plans from these two facilities (because they chose to use emissions averaging for compliance) were submitted directly to the EPA Region 6 office in October 1995. These plans would be expected to indicate that the majority of the VOC wastewater emissions at these plants are being controlled through the HON. Refineries are the other four major industrial wastewater sources identified in BPA and account for 90% of the industrial wastewater emissions. These refineries (a category not targeted by the draft CTG) are subject to the Benzene NESHAP Subpart FF for wastewater and the Petroleum Refinery MACT. The EPA Office of Air Quality Planning and Standards lead for the Petroleum Refinery MACT, Mr. Jim Durham, explained that in the case of a refinery, the primary wastewater stream constituents are BTEX (benzene, toluene, ethylbenzene, and xylene). Because these compounds usually occur together, the MACT requirement to control benzene is believed to be adequate to effect control of all BTEX emissions, and therefore, most of the HAP emissions. Furthermore, according to Mr. Durham, the available information indicates that MACT control requirements are adequate to control most refinery wastewater VOC emissions.

For HGA, the existing commission industrial wastewater rule targets the same industrial categories as those recommended by the draft CTG. The commission conducted a search of the 1990 point source data base for the following SCC codes: 3-01-820-01 through -11; 3-06-005-03 through -06; and -14 through -22. The search yielded facilities in two of the industrial categories targeted by the draft CTG: one facility in pesticide manufacturing, and 47 facilities in OCPSF.

The one facility classified as a pesticide manufacturer reported wastewater emissions of only 4.1 TPY. At this insignificant level of emissions, no control is considered RACT. The facilities classified as OCPSF fell into three groups: plastics materials, synthetic resins, and nonvulcanizable elastomers (SIC 2821); cyclic crudes and cyclic intermediates, dyes and organic pigments (SIC 2865), and industrial organic chemicals, not elsewhere classified (SIC 2869). Of these facilities, the majority (24) reported wastewater emissions less than 1 TPY. Many of the 47 facilities, and all 12 of the facilities that reported wastewater emissions in excess of 11 TPY, have indicated they are subject to, and plan to comply with, Subpart G of the SOCMI HON. These plans were submitted directly to the EPA Region 6 office by April 22, 1996 and would be expected to indicate that the majority of the VOC wastewater emissions from these plants are being controlled through the HON.

The control technology recommended under the HON, steam stripping, is the same as that recommended by the draft CTG. The commission believes that the SOCMI HON will control wastewater streams to RACT levels, as most streams within a SOCMI facility are expected to contain HAPs and therefore fall under HON applicability. A demonstration of this should be possible once these facilities have completed the detailed studies of their wastewater streams required before they submit their SOCMI HON implementation plans. Most, if not all, of the SOCMI facilities in HGA are opting not to use emissions averaging for compliance; implementation plans for these facilities were due to EPA on April 22, 1996.

EPA noted in the draft CTG that its intent was to publish the CTGs on the same schedule as the MACT standards, so that owners and operators would have a knowledge of both sets of requirements as they develop their control strategies. Facility owners and operators are well into planning and budgeting for SOCMI HON compliance because they were required to submit SOCMI HON implementation plans to EPA by April 22, 1996. Requiring additional controls, after facilities have budgeted for and installed controls to comply with the HON, would not be economically reasonable.

Summary:

Ë BPA -- Six major sources of industrial wastewater; SOCMI HON and Refinery MACT controls all VOCs effectively enough to constitute RACT. The commission wastewater rule is a contingency measure.

Ë DFW -- No major sources identified; existing rules.

Ë ELP -- No major sources identified; existing rules.

Ë HGA -- Commission wastewater rules in place.

Cleanup Solvents

The commission has not adopted specific rules for cleanup solvents (other than for cleanup solvents used in offset printing). Chapter 115 includes RACT rules for cold solvent cleaning and vapor degreasing. EPA's ACT document for cleanup solvents suggests the implementation of a solvent accounting system (tracking the use, fate, and cost of all cleaning solvents) and a solvent management system (evaluation of material balances to identify the cleaning activities with the highest emissions, evaluation of alternative cleaning solutions, and experimentation to minimize the solvent needed for particular jobs).

In addition, the commission conducted a search of the EI for all the SCC codes associated with solvent cleaning (excluding cold solvent cleaning and vapor degreasing): 4-02-011-05, 4-02-013-05, 4-02-014-02 and -05, 4-02-015-02 and -05, 4-02-016-02 and -05, 4-02-017-02 and -05, 4-02-018-05, 4-02-020-02 and -05, 4-02-021-05, 4-02-022-02 and -05, 4-02-023-02 and -05, 4-02-024-02 and -05, 4-02-025-02 and -05, 4-02-026-02 and -05, 4-05-004-13 and -14, and 4-05-005-14. No cleanup solvent emissions were identified in BPA or ELP under these SCCs. Consequently, RACT rules for cleanup solvents do not need to be added in BPA or ELP. However, cleanup solvent emissions were reported at nine accounts in DFW and seven accounts in HGA.

An in-depth review of the EIs for the DFW accounts revealed that six of the nine identified accounts in DFW are not major sources. Because the total account emissions at these six facilities are less than the DFW major source definition of 100 tons per year, the "uncontrolled emissions" are also less than the major source threshold. A review of the EIs for the three DFW accounts which are major sources revealed that nearly all of the emissions are from surface coating operations which are regulated by RACT rules. At two of the facilities, the emissions classified as "cleanup solvent emissions" are actually associated with cold solvent cleaners which have emissions of less than 1.0 ton per year each. These cold solvent cleaners are regulated under Chapter 115 RACT rules, and the total "uncontrolled emissions" at these two accounts are less than the major source threshold. At all three major source accounts identified in DFW, cleanup solvent emissions are regulated by the RACT surface coating rules which include the requirement that "all VOC emissions from non-exempt solvent washings shall be included in determination of compliance with the emission limitations... unless the solvent is directed into containers that prevent evaporation into the atmosphere." Consequently, RACT rules for cleanup solvents do not need to be added in DFW.

An in-depth review of the EIs for the HGA accounts revealed that two of the seven identified accounts in HGA are not major sources. Because the total account emissions at these two facilities are less than the HGA major source definition of 25 tons per year, the "uncontrolled emissions" are also less than the major source threshold. A review of the EIs for the five HGA accounts which are major sources revealed that at one of the facilities, the emissions classified as "cleanup solvent emissions" are actually freon (non-VOC) emissions. At the other four accounts, the cleanup solvent emissions are actually surface coating operations which are regulated by the RACT surface coating rules. Consequently, RACT rules for cleanup solvents do not need to be added in HGA.

Summary:

Ë BPA -- No major sources identified; no rules adopted

Ë DFW -- Three major sources identified; cleanup solvent emissions regulated by RACT surface coating rules; no rules adopted.

Ë ELP -- No major sources identified; no rules adopted.

Ë HGA -- Five major sources identified; cleanup solvent emissions are from non-VOCs or are regulated by RACT surface coating rules; no rules adopted.

Autobody Refinishing

The commission has adopted rules (§§115.421-115.429) for automobile refinishing in DFW, ELP, and HGA. On April 30, 1996, EPA proposed a national rule for auto refinishing; the national rule will insure that affected sources in all counties are controlled.

A search of the BPA, DFW, ELP, and HGA EIs was conducted on SIC 7532 (top and body repair paint and paint shops), 5511 (new and used car dealers), and 5521 (used car dealers). (No SCC exists which is specific to auto body shops). No major source autobody shops were identified in any nonattainment area.

Summary:

Ë BPA No major sources identified; no rules adopted.

Ë DFW No major sources identified; autobody refinishing rules in place.

Ë ELP No major sources identified; autobody refinishing rules in place.

Ë HGA No major sources identified; autobody refinishing rules in place.

Aerospace Coatings and Solvents

The commission has existing rules (§§115.421-115.429) for coating of miscellaneous metal parts and products in all nonattainment counties. However, topcoating of the exterior of fully assembled aircraft is currently exempt.

A search of the EI was conducted on SIC 3721 (aircraft) and SCC 4-02-024-06 (surface coating of large aircraft -- topcoat). No major sources were identified in BPA, ELP, and HGA.

Topcoating of assembled aircraft occurs in DFW at Lockheed (formerly General Dynamics) and Bell Helicopter. Vought Aircraft (formerly LTV) paints subassemblies only. Lockheed's topcoating of assembled aircraft is subject to an Alternate Reasonably Available Control Technology (ARACT) determination which establishes VOC coating limits and coating application standards. A similar ARACT was issued to Bell Helicopter on March 20, 1996 which ensures that RACT is applied.

In addition, a MACT standard for the aerospace industry was promulgated on September 1, 1995 (60 FR 45956). This MACT standard regulates transfer efficiency and the topcoating of assembled aircraft and uses VOCs as surrogates for HAPs. Because the MACT will regulate both HAPs and VOCs, it will be adequate to ensure that affected sources in all areas are controlled.

Summary:

Ë BPA -- No major sources identified.

Ë DFW -- Existing rules cover most operations; topcoating of assembled aircraft at major sources is regulated by ARACTs which ensure that RACT is applied. MACT will also be adequate to ensure that RACT is applied.

Ë ELP -- No major sources identified.

Ë HGA -- No major sources identified.

Shipbuilding & Repair

The commission has existing surface coating rules (§§115.421-115.429) in all nonattainment counties. Topcoating of fully assembled marine vessels and fixed offshore structures is currently exempted by the state rules. However, a MACT standard for shipbuilding and ship repair was promulgated on December 15, 1995 (60 FR 64330). As is stated in the Shipbuilding and Ship Repair MACT preamble, due to the poor quality of HAP content data on the Material Safety Data Sheets and the lack of an approved test method for speciating and quantifying HAP, the EPA has determined that VOC will be used as a surrogate to limit HAP emissions.

Because the MACT will regulate both HAPs and VOCs, it will be adequate to ensure that affected sources in all areas are controlled.

A search in the BPA, DFW, ELP, and HGA EIs was conducted on SIC 3731 (ship building and repairing) and SCC 4-02-023-01, -02, -03, -04, -05, -06, and -99 (surface coating of large ships). No major sources were identified in BPA, DFW, and ELP. Two facilities were identified in HGA: Platzer Shipyards ($39 TPY from ship coating out of 166 TPY total), and Newpark Shipbuilding (39.4 TPY from ship coating out of 48.5 TPY total).

Summary:

Ë BPA -- No major sources.

Ë DFW -- No major sources.

Ë ELP -- No major sources.

Ë HGA -- Two sources identified; MACT will regulate both HAPs and VOCs and will be adequate to ensure that RACT is applied.

Wood Furniture

The commission has adopted rules (§§115.421-115.429) for wood parts and products coatings in DFW, ELP, and HGA. No rules have been adopted for BPA. A search of major sources in the EI was conducted on SIC 2434 (kitchen cabinets), 2511 (wood household furniture), 2512 (upholstered wood furniture), 2517 (wood TV and radio cabinets), 2519 (household furniture, nec), 2521 (wood office furniture), 2531 (public building and related furniture), 2541 (wood partitions and fixtures), and 2599 (furniture & fixtures, nec); and SCC 4-02-019-01, -03, -04, and -99 (surface coating of wood furniture). No major sources were identified in BPA, ELP, and HGA. Two major sources were identified in DFW: Triangle Pacific, and Texwood Industries.

A MACT standard for wood furniture was developed through a regulation negotiation ("reg-neg") with representatives of the wood furniture manufacturing industry, the coatings industry, environmental organizations, and state agencies. The wood furniture MACT was promulgated on December 7, 1995 (60 FR 62930) and has more stringent VOC coating limits than the existing commission rules, although its applicability is not as broad. Existing sources with at least 50 TPY of HAP emissions are required to comply with the MACT standards by November 15, 1997, and reductions in HAP emissions are expected to be at least 59%. The preamble to the adopted MACT notes that "while the emission limits do not require the use of lower-VOC materials, the work practice standards should reduce the use of VOC containing materials and, therefore, VOC emissions." The MACT is expected to affect the two wood furniture manufacturers in DFW which are major VOC sources. The commission believes that it is reasonable to conclude that the VOC emission reductions resulting from compliance with the MACT will ensure that RACT is implemented at these two sources.

EPA concurrently developed a CTG, also through the reg-neg process, to establish RACT for the wood furniture manufacturing industry. Availability of a final CTG was announced on May 20, 1996 in the Federal Register (61 FR 25223). The commission believes that it would be prudent to postpone any potential additional state rulemaking for the wood furniture manufacturing industry until agency staff has reviewed the final CTG and evaluated any differences between the commission's current rule and the CTG.

Summary:

Ë BPA -- No major sources.

Ë DFW -- Two major sources identified; existing commission rules in place; VOC reductions due to the MACT standard ensure that RACT is implemented; any differences between the commission's current rules and EPA's RACT recommendations will be identified and evaluated when agency staff review the CTG.

Ë ELP -- No major sources.

Ë HGA -- No major sources.

Plastic Parts Coating

The commission has existing surface coating rules (§§115.421-115.429) in all nonattainment counties.

However, surface coating of plastic parts is not currently regulated under §§115.421-115.429.

A search of major sources was conducted in the BPA, DFW, ELP, and HGA EIs on SIC 3079 and 3089 (plastic products, nec); and SCC 4-02-022-01, -02, -03, -04, -05, and -99. No major sources were found in BPA and ELP. In DFW, plastic parts coating is performed at two major sources: Peterbilt (Denton County) and Nash Manufacturing (Tarrant County). Since the 1990 EI, Peterbilt installed a thermal oxidizer on their painting operations (including the plastic parts coating operations) to meet permit requirements and, therefore, has RACT controls on their plastic parts coating operations.

At Nash Manufacturing, the VOC emissions from the coating of plastic skis are limited by Standard Exemption 75 to 25 TPY, although total facility emissions exceed 100 TPY. EPA's ACT for plastic parts only covers the surface coating of automotive/transportation and business machine plastic parts. The coating of plastic skis does not fall into either of these categories and, therefore, is a non-CTG category. According to EPA's Issues Relating To VOC Regulation Cutpoints, Deficiencies, And Deviations, a non-CTG major source is based on the plantwide emissions total from "nonregulated sources," which includes sources which would have been covered by a CTG if they had been above the EPA-accepted size cutoff, but excludes regulated CTG sources. Under this, if cost-effective, RACT may be required for equipment units which are individually less than a major source, if they are located at a plant with aggregate "nonregulated" major emissions. In Nash's case, the "nonregulated" emissions are limited to 25 TPY, which does not constitute a major source in DFW. Consequently, a RACT rule for Nash's plastic parts coating operation is not needed.

In 1990 in HGA, plastic parts coating was performed at one major source: Performance Plastics (Harris County). However, total VOC emissions for the facility in 1993 are only 19.8 TPY, and the emissions associated with coating of plastic parts comprise only 2 TPY out of the total of 19.8 TPY. Further file review revealed that the largest emission source, the curing oven, is limited by permit to 18.04 TPY of VOC.

On April 19, 1994, the company submitted Form PI-8 (Special Certification Form for Standard Exemptions §116.213) for both of their paint booths which establish federally enforceable allowable emission rates of 0.97 TPY each. Therefore, Performance Plastics no longer has the potential to be a major source, and consequently a RACT rule is not needed.

Summary:

Ë BPA -- No major sources.

Ë DFW -- One major source (Peterbilt) equipped with permit-required add-on controls which represent RACT.

Ë ELP -- No major sources.

Ë HGA -- No major sources.

<u>Offset Printing</u>

The commission has adopted rules (§§115.442-115.449) for offset printing in DFW, ELP, and HGA. These rules are mandatory for ELP and are contingency measures for DFW and HGA. No rules have been adopted for BPA.

A search of major sources was conducted in the BPA, DFW, ELP, and HGA EIs on SIC 2751 (printing), 2752 (commercial printing, lithographic), and 2759 (commercial printing, nec); and SCC 4-05-002-01, -11, -12, and 4-05-004-01, -11, -12, and -13. No major sources were found in any nonattainment area.

Summary:

Ë BPA -- No major sources.

Ë DFW -- No major sources; offset printing is a contingency measure.

Ë ELP -- No major sources; existing rules in place.

Ë HGA -- No major sources; offset printing is a contingency measure.

Petroleum Dry Cleaners

The commission has adopted rules (§§115.552-115.559) for petroleum dry cleaners in DFW, ELP, and HGA. These rules are contingency measures for these three areas; no rules have been adopted for BPA.

A search of major sources was conducted in the BPA, DFW, ELP, and HGA EIs on SIC 7216 (dry cleaning plants, except rug) and 7218 (industrial launderers); and SCC 4-01-001-02, -04, and -98. No major sources were found in the EI for any nonattainment area.

During the development of the petroleum dry cleaner rule, the commission sent out an industry survey to gather information on VOC emissions. The survey was sent to the dry cleaning trade associations to be distributed to their members. The agency received no responses. Dry cleaning solvent sales information provided by a major vendor suggested the possibility of two major source petroleum dry cleaners in the HGA nonattainment area. The vendor, however, would not identify the establishments, and there is no way to determine which dry cleaners these might be.

In addition, it can not be assumed that the total amount of solvent purchased by a particular facility is used entirely at that location or within a given time period. These establishments may be distributing a portion of their purchased solvent to other branch facilities or stockpiling for use in the distant future. Furthermore, solvent sales data cannot be equated with solvent emissions because adjustments must be made to account for operational losses (as high as 20%) through waste (wastewater and filter) disposal practices.

Summary:

Ë BPA -- No major sources.

Ë DFW -- No major sources; petroleum dry cleaning is a contingency measure.

Ë ELP -- No major sources; petroleum dry cleaning is a contingency measure.

Ë HGA -- No major sources; petroleum dry cleaning is a contingency measure.

Marine Vessel Loading

On September 19, 1995, EPA published final standards for marine vessel loading in the Federal Register (60 FR 48388). These standards included MACT requirements for air toxics under §112 of the FCAA, as well as RACT requirements under §183(f) of the FCAA. EPA's promulgation of marine vessel loading RACT under §183(f) establishes what EPA considers to be the minimum requirements for marine vessel loading under §182(b)(2)(C). The EPA's actions under §183(f) satisfy the marine vessel loading RACT requirements without any further action necessary on the state's part.

A search of the EI was conducted on SCC 4-06-002-31 through 4-06-002-40, 4-06-002-43 through 4-06-002-46, 4-06-002-48 through 4-06-002-51, 4-06-002-98, 4-06-002-99, and 4-08-999-97. No marine vessel loading operations are located in DFW and ELP. Major sources were identified in BPA and HGA and will be discussed separately.

The commission has adopted rules (§§115.211-115.219) for marine vessel loading in HGA. The marine vessel loading rule was initially adopted as a contingency rule for BPA on January 4, 1995 and can be implemented if the BPA area fails to attain the national ambient air quality standard for ozone by the attainment deadline; if the BPA area fails to demonstrate reasonable further progress as set forth in the 1990 Amendments to the FCAA, §172(c)(9); if EPA denies a petition to redesignate BPA as an ozone attainment area; or if EPA denies approval of the demonstration of attainment for BPA based upon UAM modeling.

Summary:

- BPA -- Marine vessel loading is a contingency measure to be implemented if necessary; EPA's final standards for marine vessel loading published in the Federal Register on September 19, 1995 establish RACT requirements under §183(f) of the FCAA.
- DFW -- No sources; no current rule.
- ELP -- No sources; no current rule.
- HGA -- Current rules represent RACT; EPA's final standards for marine vessel loading published in the Federal Register on September 19, 1995 establish RACT requirements under §183(f) of the FCAA.