RACM/RACT ANALYSIS

Summary

LDEQ has performed an analysis to evaluate emission levels of oxides of nitrogen (NOx) and volatile organic compounds (VOCs) and their relationships to the application of current and anticipated control measures expected to be implemented in the five-parish Baton Rouge moderate ozone nonattainment area.

Section 172(c)(1) of the Act requires SIPs to provide for the implementation of all reasonably available control measures (RACM) as necessary to provide for attainment of the ozone standard as expeditiously as practicable. EPA has previously provided guidance interpreting the RACM requirements of 172(c)(1) in the General Preamble (57 FR 13498, 13560). In the General Preamble, EPA indicated its interpretation of section 172(c)(1), under the 1990 Amendments, as imposing a duty on States to consider all available control measures and to adopt and implement such measures as are reasonably available for implementation in the particular nonattainment area. EPA also retained its pre-1990 interpretation of the RACM provisions that where measures that might in fact be available for implementation in the nonattainment area but could not be implemented on a schedule that would advance the date for attainment in the area, EPA would not consider it reasonable to require implementation of such measures. EPA indicated that a State could reject certain measures as not reasonably available for various reasons related to local conditions. A State could include area-specific reasons for rejecting a measure as RACM, such that the rejected measure would not advance the attainment date, or technological and economic feasibility in the area.

The EPA issued a memorandum concerning this topic, "Guidance on the Reasonably Available Control Measures (RACM) Requirements and Attainment Demonstration Submissions for Ozone Nonattainment Areas," by John Seitz, Director, Office of Air Quality Planning and Standards, dated November 30, 1999. In this memorandum, EPA states that in order to determine whether a state has adopted all RACM necessary for attainment and as expeditiously as practicable, the state will need to provide justification as to why measures within the arena of potential reasonable measures have not been adopted. The justification would need to support that a measure was not reasonably available for that area and could be based on technological or economic grounds.

Based on a review and analysis of emission reductions from potentially available control measures, the LDEQ concludes that these evaluated control measures are not RACM for the Baton Rouge area, because (a) some would require an intensive and costly effort for numerous small area sources, or (b) these measures would not produce emission reductions sufficient to advance the attainment date in the Baton Rouge area, and therefore, should not be considered RACM under the Act.

LDEQ reached this conclusion primarily because the reductions that could be achieved by the potential RACM measures are extremely small. These potential reductions are far less than the emissions reductions needed within the nonattainment area to reach attainment.

In addition, the Baton Rouge attainment demonstration relies on emission reductions from outside the nonattainment area (East Feliciana, Pointe Coupee, St. Helena and West Feliciana) to reach attainment, as well as federal rules. The attainment demonstration for the Baton Rouge area indicates that the ozone benefit expected to be achieved from regional NO_x reductions is substantial. Since the reductions from potential RACM measures do not nearly equate to the reductions needed to maintain attainment, none of these unadopted measures could advance the attainment date prior to full implementation of all other required measures in the Baton Rouge area. More importantly, the implemented NOx reductions in the Baton Rouge area were sufficient for the Baton Rouge area to meet the NAAQS for ozone in 2008. Thus, none of these potential measures should be considered RACM for the Baton Rouge area (See Appendix D for a complete analysis of rule applicability per facility.)

Mobile Sources Analysis

Onroad Mobile

This subsection of the overall RACM analysis is presented for evaluating potential on-road mobile emission reductions that could be achieved through implementation of transportation control measures (TCMs) in the Baton Rouge nonattainment area. LDEQ has analyzed for RACM purposes a broad range of TCMs that are identified and listed in Section 108(f) of the CAAA. This abbreviated analysis of TCMs is taken from the most recent and comprehensive TCM evaluation study[1] that exists for the Baton Rouge metropolitan area and reflects updated attainment year vehicle miles traveled (VMT) and emission reduction estimates.

The basic methodology employed to analyze TCM RACM for the Baton Rouge area consists of the following procedure:

1. Estimate the percentage of VOC and NOx emissions from the vehicle types affected by TCM implementation (light-duty vehicles, 80% and 70% of the VOC and NOx emissions respectively);
2. Apply the percentages from step 1 above to the total on-road mobile emissions to determine in tons per day the light-duty vehicle fleet emissions in the nonattainment area;
3. Calculate the daily VOC and NOx emissions from light-duty vehicles in tons per mile by dividing the daily emissions (tons/day) by the attainment year VMT (mi/day);

[1] Woodward Clyde Consultants, *An Evaluation of Transportation Control Measures for the Baton Rouge Nonattainment Area*, Final Report, June 1995.

4. Using the projected VMT reduction percentages from the TCM analysis, calculate the reduction in VMT for each TCM analyzed;
5. For each TCM, estimate the emission reductions in tons per day based on the corresponding reductions in VMT, and lastly;
6. Determine if TCM implementation is feasible for RACM purposes in the Baton Rouge nonattainment area.

The results of steps 1-3 of the analysis methodology are shown in Table A. The potential ozone-precursor emission reductions from each of the TCMs are derived from steps 4-5 and are summarized in Table B.

Table A
Baton Rouge Attainment Year Mobile Source Emissions, Vehicle Miles Traveled (VMT), and Light-Duty Vehicle Contributions to Total VOC and NOx Emissions.

Total 2005 On-Road Mobile Emissions (tpd)		**Estimated Emissions from Light-Duty Vehicles (tpd)**		**Attainment Year VMT (mi/day)**	**Daily Emissions from Light-Duty Vehicles (tons/mi)**	
VOC	**NOx**	**VOC (80%)**	**NOx (70%)**		**VOC**	**NOx**
16.14	**35.72**	**12.91**	**25.00**	**16,775,710**	**7.70E-7**	**1.49E-6**

Table B

TCM RACM Summary: Projected 2005 VMT and Emission Reductions for the Baton Rouge Ozone Nonattainment Area.

	TCM Descriptions	Projected VMT Reductions (%)[2]	Projected VMT Reductions (mi/day)	Projected Emission Reductions (tpd)	
				VOC	NOx
1	Market Based TCMs	5.40	905,888	0.70	1.35
2	Activity Centers	4.50	754,907	0.58	1.13
3	Parking Management	3.50	587,150	0.45	0.88
4	Vehicle Use	2.80	469,720	0.36	0.70
5	Telecommuting	1.50	251,636	0.19	0.38
6	Trip Reduction	0.90	150,981	0.19	0.23
7	Employer-Based	0.90	150,981	0.12	0.23
8	Flexible Work Hours	0.90	150,981	0.12	0.23
9	HOV Facilities	0.50	83,879	0.06	0.13
10	Park-and-Ride/Fringe	0.45	75,491	0.06	0.11
11	Area Rideshare	0.28	46,972	0.04	0.07
12	Improved Public	0.20	33,551	0.03	0.05
13	Bicycle/Pedestrian	0.01	1,678	< 0.01	< 0.01
14	Traffic Flow	0.00	0	N/A	N/A
	Totals:	21.84	3,663,815	2.82	5.46

Table B is sorted in descending order and reflects from top to bottom the most effective TCM categories that were originally analyzed in the study. The results of this updated TCM analysis closely match the projected emission-reduction benefits from the analysis. It is evident from the data in the table that there is considerable variation in the potential for achieving emission reductions according to TCM category. Of all TCMs analyzed, categories 1-5 offer the greatest potential for reducing on-road mobile emissions in the Baton Rouge Metropolitan area. Packaged together, these five categories account for about 85% of the total projected VMT and emission reductions. However, because of the low to medium cost effectiveness (per ton of NOx

[2] Values shown are those selected for the TCM emissions benefits calculations where percentile ranges were noted in the Woodward Clyde analysis.

[3] There are no VMT reductions associated with traffic flow improvements and emissions benefits due to congestion relief were not quantified in the Woodward Clyde study.

reduced) estimated historically for these types of measures, it is highly unlikely that any of these five TCMs would be implemented in the Baton Rouge area.

Excluding trip reduction ordinances and HOV lanes, the remainder of the TCMs has the most potential for actual implementation in the Baton Rouge nonattainment area. In addition to fairly routine traffic flow improvement projects, flexible work-hour and employer-based programs, rideshare programs, public transit upgrades, and bicycle/pedestrian projects would provide air quality benefits through the year 2008 and beyond. This analysis indicates that these types of transportation control measures could hypothetically reduce VMT by 2.8 percent and consequently reduce mobile source NOx emissions by about 0.7 tons per day.

Relative to the total NOx reductions required to maintain attainment of the 1-hour and 8-hour ozone standard, additional NOx reductions from other TCMs in the Baton Rouge area that might be implemented constitute a very small percentage of the total required reductions (~1%). Therefore, LDEQ concludes that for RACM purposes the TCMs analyzed would not produce emission reductions sufficient to advance the attainment date without obtaining further reductions from sources already regulated or from sources that are scheduled for additional regulation prior to the attainment year.

Nonroad Mobile

An additional mobile source measure, the Vehicle I/M program has been implemented in the five-parish Baton Rouge ozone nonattainment area. On-Board Diagnostics testing was implemented in 2002. There is a state statute prohibiting the expansion of the I/M program beyond the five-parish area [La. R.S. 30:2054.B(8)(a)].

The I/M program achieves emission reductions very near what stringent I/M 240 testing would have achieved at significantly less cost. Since legislative authority would have to be sought for any I/M program expansion, and since the fleet in the Baton Rouge area is small (approximately 400,000 subject to the I/M program), LDEQ concludes that the state has applied RACM for the I/M program, in that expansion of the I/M program could not be accomplished so as to advance the attainment date for the Baton Rouge nonattainment area.

Additionally, for off-road emissions, states are generally pre-empted from setting emissions standards for off-road mobile sources. In view of local feasibility and the economic impact of use restrictions, the LDEQ has determined that further off-road measures are not RACM.

Major Stationary Sources Analysis

VOC Major Sources

Sensitivity runs completed during the early stages of the Baton Rouge ozone attainment modeling analysis indicated that a NOx control strategy was most effective in reducing ozone in the Baton Rouge area. In addition, the CAA required 24% Rate-of-Progress VOC emission reductions have been achieved in the Baton Rouge nonattainment area. Further VOC reductions at this time are deemed to be technologically infeasible as well as not cost effective and would not advance the attainment date for the area. Louisiana has implemented RACT[4] on all major stationary sources of VOC in the Baton Rouge nonattainment area. The threshold for RACT applicability in the Baton Rouge area is 25 tons per year. The state regulations fulfilling the VOC RACT requirement are shown in Table 1 and Table 2 of this document.

NOx Major Sources

The Baton Rouge NOx control strategy was modeled after the approved strategy for Beaumont/Port Arthur. Although minor modifications were made in the Baton Rouge plan to tailor it to local conditions, EPA reviewed the proposed NOx control rule and provided no negative comments on the proposed emission factors. In the Baton Rouge area the plan will reduce NOx by approximately 77 tons per day, which, along with additional reductions from mobile sources and federal rules has been sufficient to reduce ozone for the Baton Rouge area to meet the NAAQS in 2008. Moreover, since the emission limits in the proposed rule are deemed to be beyond RACT, which is defined by EPA as the lowest achievable emission rate considering technical and economic feasibility, the LDEQ considers the Baton Rouge area NOx control plan RACM for major sources.

The NOx control rule establishes requirements for reducing emissions of NOx during the ozone season in the Baton Rouge 5-parish Nonattainment Area (Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge) and from point sources in the Region of Influence (the attainment parishes of East Feliciana, Pointe Coupee, St. Helena and West Feliciana Parishes). Affected facilities include those with one or more sources that collectively emit or have the potential to emit 25 tons per year or more of NOx.

The rule establishes emission factors for reducing NOx emissions from boilers, heaters, furnaces, turbines and internal combustion engines. Further, the rule establishes requirements for permits, compliance, record keeping and reporting. The rule achieves, at a minimum, the

[4] RACT is defined as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

emission reductions relied on in the attainment of the NAAQS. The state regulation fulfilling the NOx RACT requirement is shown in Table 1 of this document.

The rule proposes the following limits:

- Electric Power Generating System Boilers

Coal-fired ≥ 40 to < 80 MMBtu/hr	0.50 lb/MMBtu
Coal-fired ≥ 80 MMBtu/hr	0.21 lb/MMBtu
No. 6 fuel oil-fired ≥ 40 to < 80 MMBtu/hr	0.30 lb/MMBtu
No. 6 fuel oil-fired ≥ 80 MMBtu/hr	0.18 lb/MMBtu
All others (gaseous or liquid) ≥ 40 to < 80 MMBtu/hr	0.20 lb/MMBtu
All others (gaseous or liquid) ≥ 80 MMBtu/hr	0.10 lb/MMBtu
Industrial Boilers ≥ 40 to < 80 MMBtu/hr	0.20 lb/MMBtu
Industrial Boilers ≥ 80 MMBtu/hr	0.10 lb/MMBtu

- Process Heater/Furnaces

Ammonia reformers ≥ 40 to < 80 MMBtu/hr	0.30 lb/MMBtu
Ammonia reformers ≥ 80 MMBtu/hr	0.23 lb/MMBtu
All others ≥ 40 to < 80 MMBtu/hr	0.18 lb/MMBtu
All others ≥ 80 MMBtu/hr	0.08 lb/MMBtu

- Stationary Gas Turbines

Peaking Service, Fuel Oil-fired ≥ 5 to < 10 MW	0.37 lb/MMBtu
Peaking Service, Fuel Oil-fired ≥ 10 MW	0.30 lb/MMBtu
Peaking Service, Gas-fired ≥ 5 to < 10 MW	0.27 lb/MMBtu
Peaking Service, Gas-fired ≥ 10 MW	0.20 lb/MMBtu
All Others ≥ 5 to < 10 MW	0.24 lb/MMBtu
All Others ≥ 10 MW	0.16 lb/MMBtu

- Stationary Internal Combustion Engines

Lean-burn engines ≥ 150 to < 320 Hp	10 g/Hp-hr
Lean-burn engines ≥ 320 Hp	4 g/Hp-hr
Rich-burn engines ≥ 150 to < 300 Hp	2 g/Hp-hr
Rich-burn engines ≥ 300 Hp	2g/Hp-hr

The rule required that NOx controls be operational by May 1, 2005.

Area Sources Analysis

VOC Area Sources

The Clean Air Act (CAA) Section 172(c)(1) provides that State Implementation Plans (SIPs) for nonattainment areas must include "reasonably available control measures" (RACM), including "reasonably available control technology" (RACT), for sources of emissions. Section 182(b)(2)(A) provides that for certain nonattainment areas, States must revise their SIPs to include RACT for sources of VOC emissions covered by a control techniques guidelines (CTG) document issued after November 15, 1990 and prior to the area's date of attainment.

The CAA Section 183(e) directs EPA to list for regulation those categories of products that account for at least 80 percent of volatile organic compound (VOC) emissions, on a reactivity-adjusted basis, from consumer and commercial products in areas that violate the National Ambient Air Quality Standards (NAAQS) for ozone (i.e., ozone nonattainment areas). EPA issued the list on March 23, 1995, and has revised the list periodically. [See 60 FR 15264 (March 23, 1995); see also 71 FR 28320 (May 16, 2006), 70 FR 69759 (November 17, 2005); 64 FR 13422 (March 18, 1999)].

The CTGs are intended to provide state and local air pollution control authorities information that should assist them in determining RACT for VOCs from multiple source categories. In developing the CTGs, EPA evaluated the sources of VOC emissions from these categories and the available control approaches for addressing these emissions, including the costs of such approaches. Based on available information and data, EPA provides recommendations for RACT for these categories.

The Louisiana Department of Environmental Quality (LDEQ) published an Advanced Notice of Potential Rulemaking (ANPR) on August 20, 2008 for rules covering the following CTGs: flat wood paneling; large appliance coatings; metal furniture coatings; lithographic printing and letterpress printing; paper, film, and foil coatings; flexible package printing; and industrial cleaning solvents. Comments were received for this ANPR and minor changes were made to the rule. The department published a proposed rule for these CTGs on December 20, 2008. Based on comments received for this proposal, technical amendments were made to the rule and the final rule was published in the Louisiana Register on June 20, 2009 (AQ 296 – Appendix A). This rulemaking was initiated due to the changes that EPA made to these CTGs which were published in the Federal Register on October 5, 2007 and October 9, 2007.

The Louisiana Department of Environmental Quality (LDEQ) published an Advanced Notice of Potential Rulemaking (ANPR) on August 20, 2009 for rules covering the following CTGs: miscellaneous industrial adhesives, miscellaneous metal and plastic parts coatings, fiberglass boat manufacturing materials, and automobile and light-duty truck coatings. Comments were not received for this ANPR but minor changes were made to the rule. The

department published a proposed rule for these CTGs on March 20, 2010. Based on comments received for this proposal, technical amendments were made to the rule and the final rule was published in the Louisiana Register on August 20, 2010 (AQ 307 – Appendix B). This rulemaking was initiated due to the changes that EPA made to these CTGs which were published in the Federal Register on October 7, 2008. The state regulations fulfilling the VOC RACT requirements are shown in Table 1 of this document.

Since the above categories are already controlled in the Baton Rouge nonattainment area, there are little or no remaining potentially available emission reductions. Therefore, the amount of reduction available from additional controls on area sources is minimal and would not advance the attainment date for the Baton Rouge area. Also, area sources are mainly a source of VOCs. The Baton Rouge area has concentrated more on NOx controls because ozone modeling demonstrated that NOx controls produce more significant ozone reductions.

NOx Area Sources

NOx area sources are smaller and more numerous than the VOC area sources. Therefore, control of NOx area sources would be expensive and require an intensive effort. In addition, the EPA stated the following in EPA's final rule on the NOx SIP call:

> "Area Sources. In the NPR, EPA noted that control levels for area sources (i.e., sources other than mobile or point sources) could not be determined based on available information concerning applicable control technologies. Comments to the NPR did not identify specific NOx control technologies that were both technologically feasible and highly cost-effective. Because EPA has no new information on applicable control technologies for area sources, no additional control level is assumed for these sources in this rulemaking. (63 FR 57402, October 27, 1998.)"

As a result, controls on these categories are not considered reasonably available.

Conclusion

LDEQ has concluded from its modeling analysis that NOx emission reductions are the most effective way to reduce ozone. In the Baton Rouge attainment modeling, proposed NOx reductions from major stationary sources, mobile sources and federal rules are shown to be sufficient for the Baton Rouge area to meet the NAAQS for ozone.

LDEQ does not believe that additional VOC reductions are technologically feasible or cost effective at this time. VOC reductions would not advance the attainment date and are not as effective in reducing ozone in the Baton Rouge area as demonstrated in the modeling.

Furthermore, as shown in the modeled attainment demonstration, the Baton Rouge area relies upon emissions reductions from outside of the nonattainment area and from federal rules with implementation dates prior to 2005. Thus, there are no other reasonably available control measures that could advance the attainment date for the Baton Rouge area.

Table 1: State Rules Addressing RACT Requirements in CTG and ACT Reference Documents

Emission Source Category	CTG or ACT Reference Document	State Regulation Fulfilling RACT Requirements
VOC Emissions		
Aerospace	Guideline Series: Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations (EPA-453/R-97-004, EPA-68/D1-00115, EPA-453/D-96-016, December 1997)	No existing major sources in the 5-parish Baton Rouge ozone area.
Agricultural Pesticides	Control of Volatile Organic Compound Emissions from the Application of Agricultural Pesticides (EPA-450/R-92-011, March 1993)	The LDEQ does not regulate the use of agricultural pesticides and this ACT document does not give presumptive control therefore, no RACT determination is required for this source category.
Architectural and Industrial Maintenance Coatings	Reduction of Volatile Organic Compound Emissions from Application of Traffic Markings (EPA-450/3-88-007, August 1988)	Emissions from this source category are regulated by the AIM National Rule.
Automobile Coating	The Reduction of Volatile Organic Compound Emissions from Automobile Refinishing (EPA-450/3-88-009, October 1988)	LAC 33:III.2123
Automobile Coating	Control Techniques Guidelines for Automobile and Light-Duty truck Assembly Coatings (EPA-453/R-08-006, September 2008) and Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations	LAC 33:III.2123

	(EPA-453/R-08-002, September 2008)	
Automobile Refinishing	Alternative Control Techniques Document: Automobile Body Refinishing (EPA-453/R-94-031, April 1994)	LAC 33:III.2123
Batch Processes	Alternative Control Techniques Document: Control of Volatile Organic Compound Emissions from Batch Processes (EPA453/R-93-017 or EPA-453/R-93-020, February 1994	LAC 33:III.2149
Bulk Gasoline Plants	Control of Volatile Organic Emissions from Bulk Gasoline Plants (EPA-450/2-77-035, December 1977)	LAC 33:III.2133 and LAC 33:III.2135
Cleaning Solvents	Alternative Control Techniques Document: Industrial Cleaning Solvents (EPA-453/R-94-015, February 1994)	LAC 33:III.2125 and LAC 33:III.2151
Cleaning Solvents	Control Techniques Guidance for Industrial Cleaning Solvents (EPA-453/R-06-001, September 2006)	LAC 33:III.2123
Commercial Bakeries	Alternative Control Techniques Document: Bakery Ovens (EPA-453/R-92-017, December 1992)	No existing major sources in the 5-parish Baton Rouge ozone area
Cutback Asphalt	Control of Volatile Organic Compounds from Use of Cutback Asphalt (EPA-450/2-77-037, December 1977)	LAC 33:III.2127
Fugitive Emissions	Fugitive Emission Sources of Organic Compounds – Additional Information on Emissions, Emission Reductions, and Costs (EPA-450/3-82-010, April 1982)	LAC 33:III.2121 and LAC 33:III.2122
Gasoline Service Stations	Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations (November 1975)	LAC 33:III.2131
Gasoline Service		

Stations		
Graphic Arts	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts – Rotogravure and Flexography (EPA-450/2-78-033, December 1978)	LAC 33:III.2143
Graphic Arts	Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (September 1993)	LAC 33:III.2143
Graphic Arts	Alternative Control Technology Document: Offset Lithographic Printing (EPA-453/R-94-054, June 1994)	LAC 33:III.2143
Graphic Arts	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (EPA-453/R-06-002, September 2006)	LAC 33:III.2143
Graphic Arts	Control Techniques Guidelines for Flexible Package Printing (EPA-453/R-06-003, September 2006)	LAC 33:III.2143
Industrial Wastewater	Control Techniques for Industrial Wastewater (EPA-453/D-93-056, September 1992)	LAC 33:III.2153
Ink and Paint Manufacturing	Alternative Control Technology Document: Control of Volatile Organic Compounds from Ink and Paint Manufacturing (EPA-453/3-92-013	No existing major sources in the 5-parish Baton Rouge ozone area.
Leather Tanning and Finishing Operations	Alternative Control Technology Document: Leather Tanning and Finishing Operations (EPA-453/3-93-025)	No existing major sources in the 5-parish Baton Rouge ozone area.
Metal Furniture	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture (EPA-450/2-77-032,	LAC 33:III.2123

	December 1977)	
Natural Gas/Gasoline Processing	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants (EPA-450/3-83-007, September 1982)	LAC 33:III.2104
Petroleum Dry Cleaners	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners (EPA-450/3-82-009)	No existing major sources in the 5-parish Baton Rouge ozone area.
Petroleum Liquid Storage	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks (EPA-450/2-77-036)	LAC 33:III.2103
Petroleum Liquid Storage	Control of Volatile Organic Emissions in External Floating Roof Tanks (EPA-450/2-78-047, December 1978)	LAC 33:III.2103
Petroleum Liquid Storage	Alternative Control Techniques Document: Volatile Organic Liquid Storage in floating and Fixed Roof Tanks (EPA-453/R-94-001, January 1994)	LAC 33:III.2103
Plywood Veneer Dryers	Control Techniques for Organic Emissions from Plywood Veneer Dryers (EPA-450/3-83-012, May 1983)	No existing major sources in the 5-parish Baton Rouge ozone area.
Process Vents	Alternative Control Technology Document: Organic Waste Process Vents (EPA-450/3-91-007, December 1990)	LAC 33:III.2115
Refineries	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds (EPA-450/2-77-025, October 1977)	LAC 33:III.2139 and LAC 33:III.2141
Refineries	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment (EPA-450/2-78-036, June 1978)	LAC 33:III.2121 and LAC 33:III.2122

Rubber Tires	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires (EPA-450/2-78-030, December 1978)	No existing major sources in the 5-parish Baton Rouge ozone area.
Shipbuilding and Ship Repair	Control Technique Guidance for Shipbuilding and Ship Repair Operations (EPA-453/R-94-032, April 1994)	LAC 33:III.2123
Shipbuilding and Ship Repair	Control Techniques Guidelines for Shipbuilding and Ship Repair Surface Coating Operations (61 FR 44050, August 27, 1996)	LAC 33:III.2123
Solvent Cleaning	Control of Volatile Organic Emissions from Solvent Metal Cleaning (EPA-450/2-77-022, November 1977)	LAC 33:III.2125
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume I: Control Methods for Surface Coating Operation (EPA-450/2-76-028, November 1976	LAC 33:III.2123
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (EPA-450/2-77-008, May 1977)	LAC 33:III.2123
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnet Wire (EPA-450/2-77-033, December 1977)	LAC 33:III.2123
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances (EPA-450/2-77-034,	LAC 33:III.2123

	December 1977)	
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products (EPA-450/2-78-015, June 1978)	LAC 33:III.2123
Surface Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling (EPA-450/2-78-032, June 1978)	LAC 33:III.2123
Surface Coating	Alternative Control Techniques Document: Surface Coating of Automotive/Transportation and Business Machine Plastic Parts (EPA-453/R-94-017, February 1994)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Flat Wood Paneling Coatings (EPA-453/R-06-004, September 2006)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Paper, Film, and Foil Coatings (EPA-453/R-07-003, September 2007)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Large Appliance Coatings (EPA-453/R-07-004, September 2007)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Metal Furniture Coatings (EPA-453/R-07-005, September 2007)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (EPA-453/R-08-003, September 2008)	LAC 33:III.2123
Surface Coating	Control Techniques Guidelines for Fiberglass Boat Manufacturing	LAC 33:III.2123

	Materials (EPA-453/R-08-004, September 2008)	
Surface Coating	Control Techniques Guidelines for Miscellaneous Industrial Adhesives (EPA-453/R-08-005, September 2008)	LAC 33:III.2123
Synthetic Organic Chemical Manufacturing Industry	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products (EPA-450/2-78-029, December 1978)	LAC 33:III.2145
Synthetic Organic Chemical Manufacturing Industry	Control of Volatile Organic Compound Emissions form Manufacture of High-Density Polyethylene, Poly propylene, and Polystyrene Resins (EPA450/3-83-008, November 1983)	LAC 33:III.2147
Synthetic Organic Chemical Manufacturing Industry	Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment (EPA-450/3-83-006, March 1984)	LAC 33:III.2121 and LAC 33:III.2122
Synthetic Organic Chemical Manufacturing Industry	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (EPA-450/3-84-015, December 1984)	LAC 33:III.2147
Synthetic Organic Chemical Manufacturing Industry	Polystyrene Foam Manufacturing (EPA-450/3-90-020, 1990)	LAC 33:III.2147
Synthetic Organic Chemical Manufacturing Industry	Control of Volatile Organic Compound Emissions From Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry (EPA-450/4-91-031, August	LAC 33:III.2147

	1993)	
Tank Trucks	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (EPA-450/2-77-026, December 1977)	LAC 33:III.2137
Tank Trucks	Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (EPA-450/2-78-051, December 1978)	LAC 33:III.2137
Vegetable Oil Manufacturing	Control of Volatile Organic Emissions from Manufacture of Vegetable Oils (EPA-450/2-78-035, June 1978)	No existing major sources in the 5-parish Baton Rouge ozone area.
Wood Furniture Manufacturing	Guideline Series: Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (EPA-453/D-95-002)	No existing major sources in the 5-parish Baton Rouge ozone area.
Wood Furniture Manufacturing	Guidelines Series: Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (EPA-453/R-96-007, April 1996)	No existing major sources in the 5-parish Baton Rouge ozone area.
NOx Emissions		
Electric Power Generating System Boilers:		
Coal-fired	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Number 6 Fuel Oil-fired	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
All Otheres (gaseous or liquid)	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Industrial Boilers	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options	LAC 33:III.2201

	(STAPPA/ALAPCO, July 1994)	
Process Heater/Furnaces:		
Ammonia Reformers	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
All Others	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Stationary Gas Turbines:		
Peaking Service, Fuel Oil-fired	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Peaking Service, Gas-fired	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
All Others	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Stationary Internal Combustion Engines:		
Lean-burn	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201
Rich-burn	Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Options (STAPPA/ALAPCO, July 1994)	LAC 33:III.2201

Table 2: VOC Emissions – Rules in Addition to RACT

Emission Source Category	Federal Register Citation	State Regulation Fulfilling RACT Requirements
VOC Loading	59FR23166	LAC 33:III.2107
Marine Vapor Recovery	61FR54748	LAC 33:III.2108
Oil/Water Separation	61FR38591	LAC 33:III.2109
Pumps and Compressors	59FR23166	LAC 33:III.2111
Glycol Dehydrators	Has not been published in Federal Register	LAC 33:III.2116