

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
Boilers and Process Heaters in Petroleum Refineries	NOx emission limit + Approved Alternative Emission Control Plan + Continuous NOx stack monitoring	No	No	1
Cement Kilns	Continuous monitoring and recording of NOx emissions + NOx emission limit	No	No	6
Electric Power Generating Systems	Selective Catalytic Reduction	No	No	3
Glass Melting Furnaces 5	NOx emission limit + Continuous NOx monitoring from unit + Alternative Emission Control Plan	No	No	6
Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	NOx emission limit, methods to meet the limit is not specified	No	No	1
Large Water Heaters and Small Boilers	NOx emission limit + Compliance Certification Program for equipment manufacturers + Retrofit Compliance Certification Program	No	No	3
Natural-Gas-Fired, Fan-Type Central Furnaces	NOx emission limit	No	No	5
Nitric Acid Units	NOx emission limit	No	No	1
Refinery Flares <sup>2</sup>	Adoption of a Flare Monitoring and Recording Plan	No	No	3
Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	NOx emission limit, methods to meet the limit is not specified	No	No	3
Stationary Gas Turbines	Continuous in-stack NOx and oxygen monitoring system + Selective Catalytic Reduction	No	No	3
Stationary Internal Combustion Engines	NOx emission limit	No	No	1
Adipic Acid Manufacturing	Thermal Reduction	No	No	5
Adipic Acid Manufacturing	Extended Absorption	No	No	5
Agricultural Burning	Seasonal Ban (Ozone Season)	No	No	5
Ammonia - Natural Gas-Fired Reformers	Low NOx Burners + Flue Gas Recirculation	No	No	3
Ammonia - Natural Gas-Fired Reformers	Oxygen Trim + Water Injection	No	No	3
Ammonia - Natural Gas-Fired Reformers	Low NOx Burners	No	No	3
Ammonia - Natural Gas-Fired Reformers	Selective Catalytic Reduction	No	No	3
Ammonia - Natural Gas-Fired Reformers	Selective Non-Catalytic Reduction	No	No	3
Ammonia Production; Feedstock Desulfurization	Low NOx Burners + Flue Gas Recirculation	No	No	3
Asphaltic Concrete; Rotary Dryer; Conversion Plant	Low NOx Burners	No	No	6
By-Product Coke Manufacturing; Oven Underfiring	Selective Non-Catalytic Reduction	No	No	3
Cement Manufacturing - Dry	Selective Non-Catalytic Reduction - NH3 Based	No	No	6
Cement Manufacturing - Dry	Mid-Kiln Firing	No	No	6
Cement Manufacturing - Dry	Low NOx Burners	No	No	6
Cement Manufacturing - Dry	Selective Non-Catalytic Reduction - Urea Based	No	No	6
Cement Manufacturing - Dry	Selective Catalytic Reduction	No	No	6
Cement Manufacturing - Wet	Selective Catalytic Reduction	No	No	6
Cement Manufacturing - Wet	Low NOx Burners	No	No	6
Cement Manufacturing - Wet	Mid-Kiln Firing	No	No	6
Ceramic Clay Manufacturing; Drying	Low NOx Burners	No	No	6
Coal Cleaning-Thermal Dryer; Fluidized Bed	Low NOx Burners	No	No	3
Commercial, Institutional Incinerators	Selective Non-Catalytic Reduction	No	No	3

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
Conv. Coating of Product; Acid Cleaning Bath	Low NOx Burners	No	No	5
Fiberglass Manufacturing; Textile-Type Fiber; Recup Furnaces	Low NOx Burners	No	No	6
Fluid Catalytic Cracking Units; Cracking Unit	Low NOx Burners + Flue Gas Recirculation	No	No	3
Fuel Fired Equipment; Furnaces; Natural Gas	Low NOx Burners	No	No	1
Fuel Fired Equipment; Process Heaters, Propane Gas	Low NOx Burners + Flue Gas Recirculation	No	No	5
Gas Turbines - Jet Fuel	Selective Catalytic Reduction + Water Injection	No	No	6
Gas Turbines - Jet Fuel	Water Injection	No	No	6
Gas Turbines - Natural Gas	Steam Injection	No	No	1
Gas Turbines - Natural Gas	Selective Catalytic Reduction + Low NOx Burners	No	No	3
Gas Turbines - Natural Gas	Selective Catalytic Reduction + Steam Injection	No	No	3
Gas Turbines - Natural Gas	Selective Catalytic Reduction + Water Injection	No	No	3
Gas Turbines - Natural Gas	Low NOx Burners	No	No	3
Gas Turbines - Natural Gas	Water Injection	No	No	3
Gas Turbines - Oil	Selective Catalytic Reduction + Water Injection	No	No	3
Gas Turbines - Oil	Water Injection	No	No	1
Glass Manufacturing - Container5	Cullet Preheat	No	No	6
Glass Manufacturing - Container5	Low NOx Burners	No	No	6
Glass Manufacturing - Container5	Selective Catalytic Reduction	No	No	6
Glass Manufacturing - Container5	Oxygen-Firing	No	No	6
Glass Manufacturing - Container5	Electric Boost	No	No	6
Glass Manufacturing - Container5	Selective Non-Catalytic Reduction	No	No	6
Glass Manufacturing - Fiat	Low NOx Burners	No	No	6
Glass Manufacturing - Fiat	Oxygen-Firing	No	No	6
Glass Manufacturing - Fiat	Selective Non-Catalytic Reduction	No	No	6
Glass Manufacturing - Fiat	Electric Boost	No	No	6
Glass Manufacturing - Fiat	Selective Catalytic Reduction	No	No	6
Glass Manufacturing - Pressed	Oxygen-Firing	No	No	6
Glass Manufacturing - Pressed	Selective Catalytic Reduction	No	No	6
Glass Manufacturing - Pressed	Cullet Preheat	No	No	6
Glass Manufacturing - Pressed	Electric Boost	No	No	6
Glass Manufacturing - Pressed	Selective Non-Catalytic Reduction	No	No	6
Glass Manufacturing - Pressed	Low NOx Burners	No	No	6
IC Engines - Gas, Diesel, LPG	Selective Catalytic Reduction	No	No	3
IC Engines - Gas, Diesel, LPG	Ignition Retard	No	No	3
ICI Boilers - Coal/Cyclone	Selective Catalytic Reduction	No	No	6
ICI Boilers - Coal/Cyclone	Natural Gas Reburn	No	No	6
ICI Boilers - Coal/Cyclone	Coal Reburn	No	No	6
ICI Boilers - Coal/Cyclone	Selective Non-Catalytic Reduction	No	No	6
ICI Boilers - Coal/FBC	Selective Non-Catalytic Reduction - Urea	No	No	6
ICI Boilers - Coal/Stoker	Selective Non-Catalytic Reduction	No	No	6
ICI Boilers - Coal/Wall	Selective Non-Catalytic Reduction	No	No	6
ICI Boilers - Coal/Wall	Selective Catalytic Reduction	No	No	6
ICI Boilers - Coal/Wall	Low NOx Burners	No	No	6
ICI Boilers - Coke	Selective Catalytic Reduction	No	No	6

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
ICI Boilers - Coke	Low NOx Burners	No	No	6
ICI Boilers - Coke	Selective Non-Catalytic Reduction	No	No	6
ICI Boilers - Distillate Oil	Low NOx Burners + Flue Gas Recirculation	No	No	5
ICI Boilers - Distillate Oil	Low NOx Burners	No	No	5
ICI Boilers - Distillate Oil	Selective Catalytic Reduction	No	No	5
ICI Boilers - Distillate Oil	Selective Non-Catalytic Reduction	No	No	5
ICI Boilers - Liquid Waste	Low NOx Burners	No	No	5
ICI Boilers - Liquid Waste	Selective Catalytic Reduction	No	No	5
ICI Boilers - Liquid Waste	Selective Non-Catalytic Reduction	No	No	5
ICI Boilers - Liquid Waste	Low NOx Burners + Flue Gas Recirculation	No	No	5
ICI Boilers - LPG	Low NOx Burners + Flue Gas Recirculation	No	No	6
ICI Boilers - LPG	Low NOx Burners	No	No	6
ICI Boilers - LPG	Selective Non-Catalytic Reduction	No	No	6
ICI Boilers - LPG	Selective Catalytic Reduction	No	No	6
ICI Boilers - MSW/Stoker	Selective Non-Catalytic Reduction - Urea	No	No	6
ICI Boilers - Natural Gas	Selective Catalytic Reduction	No	No	3
ICI Boilers - Natural Gas	Oxygen Trim + Water Injection	No	No	1
ICI Boilers - Natural Gas	Low NOx Burners + Flue Gas Recirculation	No	No	1
ICI Boilers - Natural Gas	Selective Non-Catalytic Reduction	No	No	3
ICI Boilers - Natural Gas	Low NOx Burners	No	No	1
ICI Boilers - Process Gas	Oxygen Trim + Water Injection	No	No	1
ICI Boilers - Process Gas	Selective Catalytic Reduction	No	No	3
ICI Boilers - Process Gas	Low NOx Burners + Flue Gas Recirculation	No	No	1
ICI Boilers - Process Gas	Low NOx Burners	No	No	1
ICI Boilers - Residual Oil	Low NOx Burners + Flue Gas Recirculation	No	No	1
ICI Boilers - Residual Oil	Selective Non-Catalytic Reduction	No	No	5
ICI Boilers - Residual Oil	Low NOx Burners	No	No	5
ICI Boilers - Residual Oil	Selective Catalytic Reduction	No	No	5
ICI Boilers- Wood/Bark/Stoker	Selective Non-Catalytic Reduction - Urea	No	No	5
Industrial Coal Combustion	RACT to 50 tpy (Low NOx Burners)	No	No	3
Industrial Coal Combustion	RACT to 25 tidy (Low NOx Burners)	No	No	3
Industrial Incinerators	Selective Non-Catalytic Reduction	No	No	3
Industrial Natural Gas Combustion	RACT to 25 tpy (Low NOx Burners)	No	No	3
Industrial Natural Gas Combustion	RACT to 50 tpy (Low NOx Burners)	No	No	3
Industrial Oil Combustion	RACT to 25 tpy (Low NOx Burners)	No	No	3
Industrial Oil Combustion	RACT to 50 tpy (Low NOx Burners)	No	No	3
In-Process Fuel Use; Bituminous Coal; General	Selective Non-Catalytic Reduction	No	No	3
In-Process Fuel Use; Natural Gas; General	Low NOx Burners	No	No	5
In-Process Fuel Use; Residual Oil; General	Low NOx Burners	No	No	5
In-Process; Bituminous Coal; Cement Kiln	Selective Non-Catalytic Reduction - Urea	No	No	5
In-Process; Bituminous Coal; Lime Kiln	Selective Non-Catalytic Reduction - Urea	No	No	5
In-Process; Process Gas; Coke Oven Gas	Low NOx Burners	No	No	5
In-Process; Process Gas; Coke Oven/Blast Furnaces	Low NOx Burners + Flue Gas Recirculation	No	No	5
Internal Combustion Engines - Gas	Ignition Retard	No	No	1
Internal Combustion Engines - Gas	Air-to-Fuel Ratio	No	No	1

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
Internal Combustion Engines - Gas	Air-to-Fuel Ratio + Ignition Retard	No	No	1
Internal Combustion Engines - Gas	L-E (Medium Speed)	No	No	1
Internal Combustion Engines - Gas	L-E (Low Speed)	No	No	1
Internal Combustion Engines - Gas	Selective Catalytic Reduction	No	No	3
Internal Combustion Engines - Oil	Selective Catalytic Reduction	No	No	5
Internal Combustion Engines - Oil	Ignition Retard	No	No	5
Iron & Steel Mills - Annealing	Low NOx Burners + Selective Catalytic Reduction	No	No	5
Iron & Steel Mills - Annealing	Selective Catalytic Reduction	No	No	5
Iron & Steel Mills - Annealing	Low NOx Burners	No	No	5
Iron & Steel Mills - Annealing	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	5
Iron & Steel Mills - Annealing	Selective Non-Catalytic Reduction	No	No	5
Iron & Steel Mills - Annealing	Low NOx Burners + Flue Gas Recirculation	No	No	5
Iron & Steel Mills - Galvanizing	Low NOx Burners + Flue Gas Recirculation	No	No	5
Iron & Steel Mills - Galvanizing	Low NOx Burners	No	No	5
Iron & Steel Mills - Reheating	Low NOx Burners + Flue Gas Recirculation	No	No	5
Iron & Steel Mills - Reheating	Low NOx Burners	No	No	5
Iron & Steel Mills - Reheating	LEA	No	No	5
Iron Production; Blast Furnace; Blast Heating Stoves	Low NOx Burners + Flue Gas Recirculation	No	No	5
Lime Kilns	Selective Catalytic Reduction	No	No	5
Lime Kilns	Low NOx Burners	No	No	5
Lime Kilns	Selective Non-Catalytic Reduction - Urea Based	No	No	5
Lime Kilns	Selective Non-Catalytic Reduction - NH 3 Based	No	No	5
Lime Kilns	Mid-Kiln Firing	No	No	5
Medical Waste Incinerators	Selective Non-Catalytic Reduction	No	No	6
Municipal Waste Combustors	Selective Non-Catalytic Reduction	No	No	6
Natural Gas Production; Compressors	Selective Catalytic Reduction	No	No	5
Nitric Acid Manufacturing	Selective Catalytic Reduction	No	No	5
Nitric Acid Manufacturing	Extended Absorption	No	No	5
Nitric Acid Manufacturing	Selective Non-Catalytic Reduction	No	No	5
Open Burning <sup>3</sup>	Episodic Ban (Daily Only)	No	No	5
Plastics Products; Specific; (ABS) Resin	Low NOx Burners + Flue Gas Recirculation	No	No	5
Primary Copper Smelters; Reverb Smelting Furnace	Low NOx Burners + Flue Gas Recirculation	No	No	5
Process Heaters - Distillate Oil	Low NOx Burners + Selective Catalytic Reduction	No	No	5
Process Heaters - Distillate Oil	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Distillate Oil	Low NOx Burners	No	No	5
Process Heaters - Distillate Oil	Ultra Low NOx Burners	No	No	5
Process Heaters - Distillate Oil	Selective Catalytic Reduction	No	No	5
Process Heaters - Distillate Oil	Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Distillate Oil	Low NOx Burners + Flue Gas Recirculation	No	No	5
Process Heaters - LPG	Low NOx Burners	No	No	5
Process Heaters - LPG	Ultra Low NOx Burners	No	No	5
Process Heaters - LPG	Selective Catalytic Reduction	No	No	5
Process Heaters - LPG	Low NOx Burners + Selective Catalytic Reduction	No	No	5
Process Heaters - LPG	Selective Non-Catalytic Reduction	No	No	5
Process Heaters - LPG	Low NOx Burners + Flue Gas Recirculation	No	No	5
Process Heaters - LPG	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	5

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
Process Heaters - Natural Gas	Selective Non-Catalytic Reduction	No	No	3
Process Heaters - Natural Gas	Ultra Low NOx Burners	No	No	3
Process Heaters - Natural Gas	Selective Catalytic Reduction	No	No	3
Process Heaters - Natural Gas	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	3
Process Heaters - Natural Gas	Low NOx Burners	No	No	1
Process Heaters - Natural Gas	Low NOx Burners + Flue Gas Recirculation	No	No	1
Process Heaters - Natural Gas	Low NOx Burners + Selective Catalytic Reduction	No	No	3
Process Heaters - Other Fuel	Low NOx Burners + Flue Gas Recirculation	No	No	5
Process Heaters - Other Fuel	Low NOx Burners	No	No	5
Process Heaters - Other Fuel	Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Other Fuel	Ultra Low NOx Burners	No	No	5
Process Heaters - Other Fuel	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Other Fuel	Selective Catalytic Reduction	No	No	5
Process Heaters - Other Fuel	Low NOx Burners + Selective Catalytic Reduction	No	No	5
Process Heaters - Process Gas	Low NOx Burners + Selective Catalytic Reduction	No	No	3
Process Heaters - Process Gas	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	3
Process Heaters - Process Gas	Low NOx Burners + Flue Gas Recirculation	No	No	1
Process Heaters - Process Gas	Low NOx Burners	No	No	1
Process Heaters - Process Gas	Selective Non-Catalytic Reduction	No	No	3
Process Heaters - Process Gas	Ultra Low NOx Burners	No	No	3
Process Heaters - Process Gas	Selective Catalytic Reduction	No	No	3
Process Heaters - Residual Oil	Low NOx Burners + Flue Gas Recirculation	No	No	5
Process Heaters - Residual Oil	Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Residual Oil	Low NOx Burners + Selective Non-Catalytic Reduction	No	No	5
Process Heaters - Residual Oil	Ultra Low NOx Burners	No	No	5
Process Heaters - Residual Oil	Low NOx Burners + Selective Catalytic Reduction	No	No	5
Process Heaters - Residual Oil	Low NOx Burners	No	No	5
Process Heaters - Residual Oil	Selective Catalytic Reduction	No	No	5
Sand/Gravel; Dryer	Low NOx Burners + Flue Gas Recirculation	No	No	5
Secondary Aluminum Production; Smelting Furnaces/Reverb	Low NOx Burners	No	No	6
Solid Waste Disposal; Government; Other Incinerator; Sludge	Selective Non-Catalytic Reduction	No	No	6
Space Heaters - Distillate Oil1	Low NOx Burners + Flue Gas Recirculation	No	No	3
Space Heaters - Distillate Oil1	Selective Catalytic Reduction	No	No	3
Space Heaters - Distillate Oil1	Selective Non-Catalytic Reduction	No	No	3
Space Heaters - Distillate Oil1	Low NOx Burners	No	No	3
Space Heaters - Natural Gas1	Low NOx Burners	No	No	3
Space Heaters - Natural Gas1	Low NOx Burners + Flue Gas Recirculation	No	No	3
Space Heaters - Natural Gas1	Selective Non-Catalytic Reduction	No	No	3
Space Heaters - Natural Gas1	Selective Catalytic Reduction	No	No	3
Space Heaters - Natural Gas1	Oxygen Trim + Water Injection	No	No	3
Starch Manufacturing; Combined Operations	Low NOx Burners + Flue Gas Recirculation	No	No	6
Steel Foundries; Heat Treating Furnaces	Low NOx Burners	No	No	5
Steel Production; Soaking Pits	Low NOx Burners + Flue Gas Recirculation	No	No	5
Sulfate Pulping - Recovery Furnaces	Low NOx Burners + Flue Gas Recirculation	No	No	5
Sulfate Pulping - Recovery Furnaces	Selective Non-Catalytic Reduction	No	No	5
Sulfate Pulping - Recovery Furnaces	Selective Catalytic Reduction	No	No	5

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
Sulfate Pulping - Recovery Furnaces	Oxygen Trim + Water Injection	No	No	5
Sulfate Pulping - Recovery Furnaces	Low NOx Burners	No	No	5
Surface Coating Operation; Coating Oven Heater; Natural Gas	Low NOx Burners Measure	No	No	5
Utility Boilers	Selective Catalytic Reduction	No	No	3
Ammonia Plants	Controls based on those for process heaters and industrial boilers	No	No	3
Cement Kilns	Require combustion controls and post-combustion controls (SNCR) to achieve reductions of up to 70 percent on certain processes	No	No	6
Gas Turbines	Limits for turbines burning natural gas at 25-42 ppm and as low as 9-15 ppm. + limits for turbines burning distillate oil at 65 ppm or below, and as low as 25-42 ppm..	No	No	1
Glass Furnaces <sup>5</sup>	Combustion modifications, process changes and post-combustion controls (SNCR) + RACT limits of 5.3-5.5 lbs NOx/ton of glass removed with limits as low as 4.0 lb NOx/ton of glass removed + coordinate installation of controls with routine furnace rebuilds	No	No	6
Industrial and Commercial Boilers	Limits for boilers larger than 100 mmBtu/hr at levels of 0.15 lb/mmBtu or below for coal and 0.05 lb/mmBtu for oil and gas + limits for mid-size boilers between 50-100 mmBtu/hr at 0.10 lb/mmBtu for gas, 0.12 lb/mmBtu for distillate oil and 0.30 lb/mmBtu for residual oil, 0.38 lb/mmBtu for coal + boilers smaller than 50 mmBtu/hr make annual "tune-ups" to minimize excess air	No	No	1
Iron and Steel Mills	Low NOx burners and FGR for reheat furnaces + SCR and low NOx burners for annealing furnaces + low NOx burners and FGR for galvanizing furnaces	No	No	5
Kraft Pulp Mills	Industrial boilers regulated same as Industrial and Commercial Boilers + SNCR for recovery boilers + lime kilns regulated same as Cement Kilns	No	No	5
Medical Waste Incinerators	Controls similar to those for municipal waste combustors	No	No	6
Municipal Waste Combustors	EPA's regulation for large, existing MWCs emitting more than 250 tons/day + more stringent limits (e.g., 30-50 ppmv) or shorter averaging periods (e.g., 8-hr average).	No	No	3
Nitric and Adipic Acid Plants	Consider a standard of 2.0 lbs NOx/ton of nitric acid produced, representing approximately 95% control. Even lower standards are achievable using SCR. The nation's four adipic acid plants are already regulated at over 80% efficiency.	No	No	5
Open Burning	Restrict open burning on days when ozone exceedances are expected + reduce the amount of refuse burned by recycling municipal waste or mulching agricultural and landscaping waste	No	No	5
Organic Chemical Plants	Controls on industrial boilers and process heaters for these sources	No	No	1
Petroleum Refineries	Regulate refinery boilers and process heaters like other industries + regulate fluid catalytic cracking units by controlling CO boilers + SNCR or low NOx burners on tail gas incinerators	No	No	3
Process Heaters	Limits of 0.036 lb/mmBtu for gas and 0.05 lb/mmBtu for other liquid fuels+ limits same as mid-sized industrial boilers for gas, distillate oil and residual oil-fired units	No	No	3
Reciprocating Internal Combustion Engines	Limits for rich-burn gas-fired engines between 0.4-0.8 g/bhp-hr, for lean-burn engines as low as 0.5-0.6 g/bhp-hr and for diesel engines at 0.5-1.1 g/bhp-hr.	No	No	3
Residential Space and Water Heaters	Set limit on new sources of 0.09 lbs/mmBtu of heat output + incentives to replace older space and water heaters	No	No	5
Utility Boilers	T-fired and wall-fired coal units emissions of 0.15 lb/mmBtu or below + oil and gas units emissions of 0.05 lb/mmBtu + emission rates based on energy output	No	No	3

## Appendix O-- Point/Area Source NOx RACM Analysis for Beaumont/Port Arthur

Source Category	Control Measure Description	Will this advance the 1-hour ozone attainment date?	Will this advance the 8-hour ozone attainment date?	Reason
NOx RACT Rules	States' NOx RACT rules	No	No	1
Nitric/adipic acids	Nitric acid - 2.3 lb/ton extended adsorption; Adipic acid - 7.4 lb/ton extended adsorption	No	No	5
IC Engines	Lean burn - LEC 2 gm/bhp-hr & Rich Burn - SNCR 2 gm/bhp-hr & Diesel -SCR 2 gm/bhp-hr	No	No	3
NESCAUM Utility Report		No	No	3
Gas Turbines	Turbines >25 MW: Wet injection + SCR - 9 ppm (0.04 lb/mm Btu & 8-25 MW: Low NOx combustion - 42 ppm	No	No	3
Process heaters (revised)	NG - ULNB 0.05 lb/mm Btu / Oil - ULNB 0.14 lb/mm Btu	No	No	3
Cement	Production procedures + SCR	No	No	6
Non-utility boilers	Natural gas - LNB + FGR 0.10 lb/mmBtu & Residual oil - LNB + FGR 0.15 lb/mmBtu & Stoker coal - SNCR 0.22 lb/mmBtu	No	No	3
Utility boilers	Gas / oil - SCR 0.08 lb/mmBtu	No	No	3
Glass5	Pressed / blown - LNB 13 lb/ton & Container - LNB 6 lb/ton & Flat - SNCR 9.5 lb.ton	No	No	6
Iron and Steel	Reheat furnace - LNB + FGR 0.2 lb/mmBtu & Annealing furnace - LNB 0.5 lb/mmBtu & Galvanizing furnace - LNB + FGR 0.5 lb/mmBtu	No	No	5
Phase II MARAMA/NESCAUM Utility Boiler	Region-wide reduction program.	No	No	3
Utility Boilers	Natural Gas - 0.2lb/mmBtu; Liquid Fossil Fuel - 0.3 lb/mmBtu; Subituminous Coal - 0.5 lb/mmBtu; Lignite - 0.8 lb/mmBtu; Bituminous Coal - 0.6 lb/mmBtu	No	No	3
Nonutility Boilers	Natural Gas and Distillate Oil - Low heat release rate - 0.10 lb/mmBtu; High heat - 0.20 lb/mmBtu Residual Oil - Low heat release rate - 0.3 lb/mmBtu; High heat release rate - 0.4 lb/mmBtu Coal - Mass Feed Stoker - 0.5 lb/mmBtu; Spreader Stoker and FBC - 0.6 lb/mmBtu; Pulverized Coal - 0.7 lb/mmBtu; Lignite - 0.6 lb/mmBtu	No	No	3
Municipal Waste Combustors (Began operation between 12/20/89 and 9/20/94)	180 ppm at 7% oxygen	No	No	3
Municipal Waste Combustors (After 9/20/94)	180 ppm at 7% oxygen; after first year of operation - 150 ppm at 7% oxygen	No	No	3
Medical Waste Incinerators	250 ppmv	No	No	5
Nitric Acid Plants	3.0 lb/ton of acid produced	No	No	5
Gas Turbines	Detailed equations 40 CFR 60.332	No	No	1

### Explanation of Endnotes

1. The commission has already established reasonable controls that are comparable or superior to this measure.
2. The total NOx emissions from these sources are not de minimis\*; however, additional reductions that could be achieved from this measure would be too small to accelerate attainment. (*reductions are de minimis*)
3. The control strategy cannot be reasonably implemented early enough to advance the 2007 attainment date.
4. This reason code has been removed from adoption.
5. This control measure impacts a category of sources that the total NOx emissions are considered de minimis\*. (*total is de minimis*)
6. There are no sources of NOx in this category

\*De minimis, for the purposes of this analysis, is defined as 1 tpd NOx and 3.8 tpd VOC